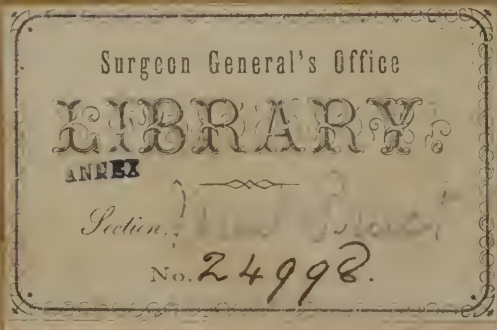




John Hub

Dayton



A. S. Edwards

July 25th 1840



STATE OF NEW YORK

IN SENATE

January 10, 1887

REPORT

OF THE

COMMISSIONERS OF THE LAND OFFICE

IN ANSWER TO A RESOLUTION PASSED BY THE SENATE

APRIL 18, 1886

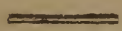
ALBANY: PUBLISHED BY THE STATE PRINTING OFFICE, 1887.

F. Edwards

THE
ELEMENTS OF MEDICINE,
OF
JOHN BROWN, M. D.

July 20. 1840

Translated from the Latin, with Comments and Illustrations:
BY THE AUTHOR.

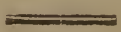


A NEW EDITION, REVISED AND CORRECTED.

WITH A

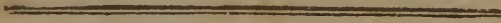
Biographical Preface.

BY THOMAS BEDDOES, M. D.



24498

¹ The coincidence of some parts of this work with correspondent deductions in the
² "*Brunonian Elementa Medicinæ*—a work (with some exceptions) of great genius—must
³ be considered as a confirmation of the truth of the theory, as they were probably
⁴ arrived at by different trains of reasoning." *Dr. Darwin, Zoonomia, p. 75:*



VOLUME I.

FROM THE LATEST LONDON EDITION.



PORTSMOUTH, N. H.

Printed by William & Daniel Treadwell,
1804.

TO

The Ingenious,

THE

Candid & Humane,

The following Production

OF

Unfortunate Genius,

IS INSCRIBED BY

The Editor.

Account of the Origin and Object of this Edition, and of the circumstances in which it differs from the preceding.

I CAN scarcely imagine an undertaking in which, a little while ago, I was less likely to engage than an edition of Dr. BROWN'S *Elements of Medicine* ; and I think it proper to state, that it was not either the hope of fame, or of profit, or enthusiastic attachment to the ingenious author's system, that induced me to submit to a task so extremely unpleasant. The penury in which Dr. Brown lived, and the distress in which he left his family, are so well known, that to mention them can be no indelicacy. Soon after his death, a subscription in their behalf was set on foot, and produced considerable temporary advantage. But as the circumstances which gave rise to that subscription still, in a great measure, subsist, it was conceived by some benevolent persons, that a republication of his system, of which few copies remain on sale, might contribute to the same desirable end. This resolution being finally adopted, it became highly necessary to find a person willing to superintend the edition. For this purpose application was made to me ; and who could refuse his assistance to so good a design ? I fear, indeed, the author's family will not derive any great benefit from the adventure. The very attempt, however, to serve them may afford this consolation to men of genius, pining under poverty and neglect ; that, although they themselves may receive no reward for their useful labors, a sense of their merit may at last procure some regard to those who are nearest and dearest to them ; an idea, in my opinion, full as soothing as the prospect of posthumous fame.

In his translation, Dr. Brown seems to have exceeded his usual negligence. His English, it is true, when he is unfettered by the Latin idiom, shows that he was poorly qualified to do his own work justice, had he exerted his utmost care.—These two causes conspired with the labored perplexity of his Latin style

to render the translation disgustingly uncouth throughout, and in many passages almost impenetrably obscure. Imagine the words of a schoolboy, raw in English, taken down, as he is in the usual manner rendering a Latin author to his master, and you will have a just notion of the style of the work, which I had to refit for publication. Besides, strange as it may appear, he sometimes mistakes either his own meaning, or the import of the English terms in which he tries to convey it. Here is an instance.—

CLIX. *Sitis et calor, quae insignes quoque in morbis sthenicis notae sunt, a sthenicâ in faucium et cutis extremis vasculis diathesi pendent, ita ea obturante, ut nondum perspiratio reddatur, sed sanguinem tamen ad penultimos vasculorum fines pertransire sinat, et corporis genitum calorem, ob retentam adhuc perspirationem, subter cuticulam cumulet.* This passage is thus translated :— *Thirst and heat, which are also remarkable symptoms in sthenic diseases, depend upon the sthenic diathesis in the extreme vessels of the fauces and skin ; the diathesis so obstructing the vessels as not to allow a return of perspiration, but to suffer however the blood to pass into the very neighborhood of the ends of the vessels, and, by means of the suppression of the perspiration, to accumulate under the cuticle the heat generated in the system.* Again : *Calor frigori succedens*, he translates, *Heat overcoming the effect of cold.*

An entirely new translation was what I could by no means undertake. The next thing was to endeavor to render the author's meaning plainer by correcting his language throughout. Hitherto, few, I imagine, except those who attended the lectures in which it was delivered, have had any precise knowledge of a system, which appears to me, in spite of many disadvantages, to have wrought a memorable change in medical opinions and practice. This knowledge will, I hope, henceforward be found far less difficult to acquire.—In the typography of the first edition there was a remarkable peculiarity. The supplementary words inserted in the text were printed in italic characters, and very frequently short explanatory phrases were placed at the foot of the page. This seems to have been done in imitation of the English bible ; nor do I doubt but the author considered his Latin text as sacred, both on account of the purity of the style and the excellence of the doctrine. But as few readers, I conceive

ceive, will regard it with the same reverence, and as the effect is disagreeable, the printer has been directed to change the italic for roman characters, and to take the short phrases into the text. There were also certain corrections, as well as additions to the original work, given in English in the text, and in Latin at the bottom of the page. These I have caused to be omitted. They can be of no use, except in case of another edition of the Latin work, for which they may be easily procured from the former edition of the translation. To complete this account of the alterations I have made, it is necessary to add, that a few of the author's longer notes, for the reader's convenience, are received into the text.

With this statement let the reader compare my instructions, which were "to give a corrected translation of the elements, such as the author, had he taken more time, would have made or wished to make; for it should still remain his book; some freedoms indeed, if that be thought necessary, may be taken, as the original Latin will still remain."

I have only to say further, that I have placed a table of contents at the head of each chapter; and instead of dispersing the principal observations I had to make on the system in notes, I thought it would be more advantageous to give them in connexion.—An illustration by Mr. Christie, which has been found to assist some persons in conceiving the Brunonian doctrines, and a table, composed many years ago, by Dr. Lynch, are also added to this Edition.



P R E F A C E

TO THE

O R I G I N A L W O R K .

THE Author of this work has spent above twenty years in learning, teaching, and diligently scrutinizing every part of medicine. The first five past away in hearing others, in studying what he had heard, implicitly believing it, and entering upon the possession as a rich and valuable inheritance. His employment, the next five years, was to explain more clearly the several particulars, to refine and give them a nicer polish. During the five following years nothing having succeeded to his satisfaction, he grew indifferent to the subject; and, with many eminent men, with the very vulgar, began to deplore the healing art as altogether uncertain and incomprehensible. All this time passed away without the acquisition of any advantage; without that which of all things is the most agreeable to the mind, the light of truth; and so great and precious a portion of the short and perishable life of man, was totally lost. He was, at this period, in the situation of a traveller in an unknown country, who, after losing every trace of his way, wanders in the shades of night; nor was it till between the 15th and 20th year of his studies that a faint gleam of light, like the first break of day, dawned upon him.

Seventeen years ago, in the thirty-sixth year of his age, he had his first fit of the gout. For many years before, he had lived generously, except for the half year previous to this attack, during which he had observed a more sparing diet. In about six weeks the disease finished its course; it did not return till six years after, and not even then, but in consequence of unusual low living for between five and six months. He was now in the vigor of his age, and, excepting the gouty taint, and some debility, brought on by his late unusual abstemiousness, his constitution was good. The gout, according to theory, long prevalent among physicians, was said to depend upon plethora and excessive vigor;
vegetable

vegetable aliment was enjoined, wine was forbidden, and the careful execution of that plan of cure was promised to be rewarded with exemption from the disease. A whole year past in strict adherence to this regimen. During this year, instead of exemption from the disease, he had no less than four fits, exceedingly violent and painful, and of very long duration: In short, the whole year, except fourteen days, was divided between limping and excruciating pain.

If, according to the theory, over-proportion of blood and excess of vigor were the cause of the disease, how, he considered, were such distressing symptoms to be explained? Why had not the disease made its first appearance twelve or fifteen years before, at a time when there was in reality more blood and vigor in the system (*a*)? Why did it only come on after a reduction of diet considerable both in degree and duration? Why had so great an interval of time, during which he had returned to his usual full diet, intervened between the first fit, and these recent ones? and, why had the disease twice, almost instantaneously, come on after the change of a full nourishing diet to a sparing one? The solution of this question was, at length, afforded by the statement of one more comprehensive.—What is the effect of food, drink, and the things that support life? They produce strength. What is their effect afterwards? Always less and less. What is it towards the end of life? So far from giving strength, they evidently prove weakening. Nay, the very same powers, by which life was at first supported, at last put an end to it, commonly through the intervention of disease.

Notwithstanding disease first and afterwards death are produced, not by the privation, but by the abundance of those things, by which life is sustained, he perceived that debility was the cause of his disorder; and that the remedy was to be sought, not in debilitating but strengthening measures. To this sort of
difficulty

(*a*) The blood is made from the food, and is in proportion to its quantity, quality, and the completeness of its digestion. Now, before each of his last fits for the time specified in the text, as well as during the whole course of the attacks of the second year, his food had been almost solely vegetable, and, therefore, was not suited to produce enough, much less, an excessive quantity, of blood, and the digestion was also more imperfect.

debility he thought proper to give the name of *indirect*. Such for two years was the success of the invigorating plan, which he immediately after his reflections and queries carried into execution, that at the end of this time he had only a slight fit, not equal to the fourth part of any of the former fits. Now no physician will deny, that the recurrence of such a disease as the gout, which had made four attacks in one year, would have been more frequent still during each of the next two years, had the same treatment been continued; nor will any one think the addition of two fits every year too much. The mild fit was four times less severe than either of the more violent ones. Multiply, therefore, twelve by four, and according to this computation, the proportion, in which the disease was alleviated will be as eight and forty to one. During the first year, he had made use of vegetable food alone. During these two years, his only food was of the land animal kind, and of the most nutritious quality.—His choice was directed to the best in kind; and he observed no other precaution except being moderate in the quantity he used. Most kinds of fish, whether from the sea or fresh water, he found nearly as debilitating as vegetable matter, when solely or chiefly relied upon for a meal. A young gentleman, who lived with him, and had labored under a very severe asthma, in consequence of the same treatment, had only one fit at the end of the same two years, instead of a fit every day, as he had during the common treatment.

Afterwards, to refute a prevailing opinion, that the gout cannot depend upon debility, because inflammation accompanies it; little doubting that the inflammation itself depends on debility, he subjected the question to experiment. He invited some friends to dinner and by taking certain stimulants in their presence (*b*), recovered the most perfect use of that foot, with which, before dinner, he could not touch the floor for pain. By this he saw, that not only the gout itself, but the inflammation accompanying it, was asthenic, that is, depending on debility. And he found, afterwards, the inflammations affecting the throat in the putrid and gangrenous sore throat, and the joints in

B

rheumatgia,

(*b*) These are mentioned in Dr. Jones's Enquiry.

rheumatalgia, or that rheumatism which depends upon debility, and is improperly denominated chronic rheumatism to be asthenic: as also the inflammation, which is imagined, with whatever justness, sometimes to attack the brain at the end of typhus.

As the gout affects the alimentary canal, and especially the stomach, and in its course is attended with symptoms similar to those that occur in dyspepsia; he was desirous to know if there was any affinity betwixt these diseases, and he found that dyspepsia equally with gout depended on debility, and yielded to stimulant remedies. Nay, he afterwards ascertained, that all spasmodic convulsive diseases of the alimentary canal, and nearly all the diseases of children, (c) were of the same stamp.

Continuing his investigation of spasmodic and convulsive diseases, when they occupy the organs of voluntary motion; he discovered that their nature was also the same in kind, but only greater in degree; as they are exemplified in the spasms and pains, that occur in various parts of the external surface of the body, and in epilepsy, and in tetanus themselves. Hence he discerned, that a vast number of affections, in which upon the supposition of their being inflammatory, no limits had been set to the use of the lancet, instead of arising from an over-proportion of blood and excessive vigor, or any other such cause, depended upon an under-proportion of that fluid, and other causes of debility, and were to be cured, not by bleeding, or any other evacuations, but by filling the vessels and restoring the strength of the whole system.

At first, for the purpose of removing fits of the gout, he went no farther than the use of wine, and other strong liquors, with nourishing food, that is, seasoned meat, and kept the more powerful

(c) A gross and dangerous error! Children are very subject to inflammatory diseases of the thorax, which require bleeding; sometimes when the whooping cough is prevalent, peripneumony supervenes: in which case bleeding is almost essentially necessary to the preservation of life.—Children are subject to other inflammatory diseases as well partial as general. The *croup* and *hydrocephalus internus*, if the latter be sthenic at first, are forms of inflammatory affection, almost peculiar to children. It is true, thousands are cut off at an early period of life, and tens of thousands are kept languishing during childhood in a state of misery, by asthenic diseases. But their chief cause is the want of the necessaries of life.

EDITOR.

erful remedies in reserve. But, for many years past, his surprising success in the use of the latter, has enabled him to find in opium and some other stimuli, the secret of repelling the fits of the gout as often as they returned, and, at the same time, of re-establishing the healthy state, a secret that has hitherto been so much wanted and despaired of. This he has often effected, both in himself and in other persons. It is now seven years since he has been able entirely to prevent the return of the disease.

By similar instances in actual practice, he found that bleeding discharges, which are called hæmorrhages, do not depend on plethora and vigor, but upon penury of blood, or debility arising from some other source, and therefore he rejected them from the number of sthenic diseases, (*d*) among which they had been arranged in the first edition of his text book, reserving a place for them among the asthenic diseases in the second volume of that work. For he saw, that bleeding, other evacuations, abstinence, cold, and sedatives, as they are called, proved hurtful; and that the stimulant plan of cure alone was successful. Even wine and brandy, which had been thought so hurtful in those diseases, he found the most powerful of all remedies in removing them. Hence he learned, that in all the diseases, in which others had supposed there was abundance of blood, there was a deficiency, that the real cause of these diseases was debility, arising from defect of blood and other stimuli; and that stimulants, given in proportion to the degree of the cause, were the proper remedies.

By the light that thus beamed in from practice, he saw, that the cause and cure of fevers, both intermittent and continued, were the same.

Gradually led, as it were, by the hand of nature, around the whole circle of asthenic diseases, he became convinced that they all depended upon the same cause, that is, debility: that they were all to be removed by the same kind of remedies, to wit, stimulants (*e*); and that neither their cause nor their cure differed but in degree. With

(*d*) Sthenic diseases, as will be afterwards explained, are such as depend upon an excessive application of the several powers that otherwise produce health.

(*e*) Wherever the word stimulant is used without a particular qualification of its degree, the degree is understood to be greater than that required in the healthy state, as will afterwards more fully be explained.

With respect to sthenic diseases, the cause or cure of which nobody had understood; he was long ago aware that neither the inflammation, nor the other symptoms attending them, as had been universally believed by systematics, were the cause, but the effect: that the inflammation arose from the cause, i. e. the diathesis, or habit, and that it did not occur at all, except in cases where the diathesis was very strong. In fine, he experienced in his own person, that catarrh was not produced by cold, according to the common opinion, but by heat, and other stimuli, and was removed by cold and other debilitating powers. By this discovery he was led to form a proper judgment of the catarrhal symptoms in the measles: Concerning which the great man who so much improved the cure of sthenic diseases, but who never attained to any knowledge of the asthenic, was misled by the alexipharmic physicians. And, as these symptoms are the most dangerous part of the disease, he was right in supposing, that the proper treatment of them was of great importance to the cure of the whole disease. In consequence it came out that the refrigerating antiphlogistic plan was of as much service in the measles as in the small-pox.

In sthenic diseases he illustrated the cause, enlarged the plan of cure, accounted for the symptoms, and reduced the whole to a certain principle; he distributed all general or universal diseases into two forms a sthenic and an asthenic. He demonstrated that the former depended upon excess, the latter upon deficiency, of exciting power; that the former were to be removed by debilitating, the latter by stimulant, remedies; that the noxious powers, which excited either, were the remedies of the other, and the contrary; and that they acted in the same manner as the powers which produce the most perfect health, with only a difference in degree. He extended the same doctrine to plants. He laid down a principle which is illustrated and confirmed by every particular appearance, and by which every particular appearance is connected and illustrated. Finally, he demanded whether the medical art, hitherto conjectural, incoherent, and in the great body of its doctrines false, was not at last reduced to a science of demonstration, which might be called the science of life—a question which has been answered in the affirmative by every one who has been at due pains to understand the doctrine.

THE
AUTHOR'S PREFACE

TO THE
TRANSLATION.

A PRESSING, and very general, demand for an English translation of the *Elementa Medicinæ*, made several years before the publication of the second edition of that work, and successively repeated with an increasing importunity ever since ; a desire of spreading the knowledge of a doctrine, which had exhibited so many indubitable proofs of its importance and utility to mankind ; an ambition not quite extinguished by advancing years, domestic cares, and a declining state of health, to get the better of the keenest, and most universal, persecution, that ever was raised against an useful and extensive discovery ; the necessity for a translation in the present decaying state of the knowledge of the Latin language ; the danger of the doctrine coming before the public from adventurers unequal to the task ; and some other circumstances, partly of a private, partly of a domestic, nature, with which it would be impertinent to trouble the reader ; all these, at last prevailed with the author to submit, for once, to a task, otherwise not desirable, that of translating his own work. Such a task seemed more naturally calculated to lay the foundation of the commencing fame of an ingenious pupil. But, as no one of many, whose literature and knowledge of the subject completely qualified them for the undertaking, wished to supersede the occasion for his engaging in it himself ; and as the courage of several persons of a different description kept not pace with their affectation or interestedness ; it is to be hoped the public will not be displeased to receive the work from the author himself. This performance is intended for the use of three sets of readers ;
those

those who do not readily enter into a thought conveyed in pure Latin, and, who, therefore, might wish to be possessed of a translation for the sake of comparing it with the original, and thereby of acquiring, renewing, or improving their knowledge of the latter ; those who are only acquainted with such Latin as has prevailed in modern times ; and, lastly, those, who either cannot, or will not be subjected to the trouble of reading Latin at all, and who, surely, may often be better employed.

Both this, and the original work, are intended not for the exclusive use of medical readers, but also for that of the public at large, it being evident, that, without even the exception of the professional knowledge of each individual, that of his own health is preferable to all other. And such an acquisition becomes valuable in proportion to its justness and solidity. The public are presented with a work, that claims the merit of having reduced the doctrine and practice of medicine to scientific certainty and exactness. With respect to the form, in which it is delivered, it is stripped of that jargon of numerous, unmeaning or misleading terms, and all that mystery either in style or matter, that has hitherto rendered the pretended healing art impenetrable to the most intelligent and discerning, and locked it fast up in the schools. No terms are admitted but the few that necessity imposed, and these are every where defined. The style is simple, and suited to the simplicity of the subject. In the language and composition, as far as the thoughts, which are new throughout, and that restraint, which is inseparable from exactness of translation, permit, clearness is every where preferred to elegance, and diffusion to brevity.

The author, in prefixing his name to both forms of his work, has thrown the gauntlet to its numerous, but anonymous, opposers. They are, therefore, called upon, now or never, to disprove it, and the judicious and candid part of mankind to judge between the parties.

OBSERVATIONS

ON THE

CHARACTER AND WRITINGS

OF

JOHN BROWN, M. D.

AT the time I undertook to superintend this republication of the Brunonian System of Medicine, I was pleased with the prospect of recording the life of its extraordinary author. Of the vicissitudes he experienced I had formerly heard enough to be persuaded that they would furnish a narrative sufficiently amusing. I was, moreover, aware of circumstances in his history, which it would be impossible to relate without adverting to the condition of medicine—a subject concerning which, unfortunately for many who have occasion to seek assistance from that art, gross misconceptions prevail throughout society.

I find myself, however, obliged to relinquish the office of biographer, such as I had conceived it. Of late I have had few opportunities of personal enquiry; and very little of the information, I had reason to expect, has reached me. Nevertheless, I may succeed in delineating the mortal portrait of my hero, for his character was exceedingly open to observation; and in his productions the temper and understanding of the man are most faithfully exhibited.

A person, who was his school-fellow, and afterwards his pupil at school, informs me that his parents were mean, but honest. What was the particular occupation of his father I have not heard. Had his condition been superior to that of a petty village artificer, I suppose the original destination of the son would have been higher, for this is an affair in which parents seldom err by excess of humility.

Mr.

Mr. Wait, the late respectable rector of Dumfries school, supposes that John Brown was born in 1735 or 1736. He was a native of the parish of Buncle, in the county of Berwick. He himself, in order to associate his name with that of John Duns Scotus, commemorates the place of his education rather than of his birth. From expressions he sometimes dropped in his lectures, I conclude that he was endowed with that quickness of sympathy, and that sensibility to the charms of nature, which characterize the infancy of genius. This warmth of heart, I believe, he never lost.

I am sorry I cannot minutely trace the steps by which he advanced towards intellectual eminence. Mr. Wait, without whose communications mine would have been a meagre narrative, states that "he early discovered uncommon talents. His aptitude for improvement," continues this gentleman, "induced his parents, after having fruitlessly bound him apprentice to a weaver, to change his destination. He was, accordingly, sent to the grammar-school of Dunse, where, under Mr. Cruickshank, an able teacher, he studied with great ardor and success. Indeed, he was, at that time, regarded as a prodigy. I went the same road to school with him; and his application, I well remember, was so intense that he was seldom without a book in his hand." It is a singular coincidence, that the two individuals, who in these times have been principally celebrated for their attempts to extend the knowledge of animal nature, should have been both natives of Scotland, and that each should have been put to a coarse mechanical employment; John Brown to the trade of a weaver, and John Hunter (according to common fame and the report of one of his biographers) to that of a carpenter or wheelwright.

By an anonymous writer, who seems well-informed, it is asserted that Brown "submitted in his youth to be a reaper of corn, to procure for himself the means of improvement. With the price of such labor he put himself to school, where his abilities and ardor attracted the notice of his master, and procured him the place of assistant to the school (a)." His revolt from the loom,

(a) *Analytical Review* for August, 1789, p. 450.

loom, according to this account, must have been attended with highly honorable circumstances : and the reader will desire fuller information concerning both his motives and conduct than has been transmitted to me. From the custom of the country, we may presume that he had received much more instruction, before he was put apprentice, than commonly falls to the lot of boys of his condition in England. Considering the energy of his mind, we cannot be surprized that a little cultivation should have rendered the gloomy uniform labor of a weaver distasteful. But this, though true, is perhaps not the whole truth. As he was repelled on the one hand, so he might, on the other, have had some peculiar attraction towards literature. The supposition is, at least, conformable to analogy ; since in the history of eminent men, when we are fully acquainted with it, we never fail to discover some incident, which has determined each individual towards the pursuit in which he has excelled. Now I imagine Brown may have applied himself with such unusual assiduity to school learning from a persuasion that it would qualify him to propagate more effectually the tenets of his sect. My conjecture is founded on the following expressions of Mr. Wait : “ He had at this “ time”—the time of his entering at Dunse school—“ sober “ habits : he was exceedingly religious, and so attached to “ the sect of *Seceders* or *Whigs*, as they are called in Scotland, “ that I really believe he would have thought his salvation “ hazarded, if he had heard or read the profane discourses “ of the Scotch establishment. He aspired to be the minister “ of a purer church, of which it was expected he would “ prove a chosen vessel.” Nor is this force of religious sentiment unusual in youthful minds. Samuel Johnson was early struck with superstitious terror : Haller had scarcely emerged from his infancy, when he began to preach to his father’s domestics : and in families, where the hatred of sect against sect is cherished, one may generally perceive its most virulent tokens in the boys. The most humanized of my readers may remember the time when he glowed with zeal against persons who had been taught a different creed :

and where reflection, softening the heart into universal charity, has not introduced perfect indifference as to the religion or irreligion of others, the pious flame must be still alive

The years of Brown's grammar education appear to have been, in no common degree, well-spent and happy. He had vigor of body with vigor of mind, and exerted both. He himself, with much complacency, relates proofs of that strength, which his appearance indicated. When a boy, he says he valued himself on being a stout walker. At fifteen, on a summer's day, he performed a march of fifty miles, between Berwick upon Tweed, and Morpeth in Northumberland. Some years afterwards, he travelled on foot, resting but one hour, and making but one "hearty" meal, from four o'clock in the evening of one day till two in the evening of the day following (two-and-twenty hours) with so short an intermission! During this excursion, he traversed "all sorts of ground, in roads and out, over smooth and plain, mountain and heath." We have seen, however, that he could make a more rational use of his strength than merely to stake it against time and space.

While he was thriving in godliness and knowledge, but at what precise period I am not informed, there occurred an incident which finally diverted him from the path he had hitherto with so much alacrity pursued. At a meeting of the provincial synod of the Merse and Teviotdale, a party of his school-fellows urged him to accompany them to the parish church of Dunse. He manifested reluctance, but yielded to their importunity, and remained to hear the sermon. The scandal did not pass unnoticed. He was summoned before the session of the seceding congregation; but not choosing either to atone by an apology for his sin in mixing with profane worshippers, or to wait for a formal sentence of excommunication, he abdicated his principles, and professed himself a member of the establishment.— Thus, bigotry is often but the masque of avarice, pride or ambition; and here, though the nature of his present zeal was a secret to the zealot himself, we see it fully disclosed by this instructive anecdote. Encouragement at first, and
afterwards

afterwards flattery, from his brethren, seem to have formed a strong connexion between the peculiar articles of his faith and a sense of his personal importance ; the moment this connexion was dissolved, an alteration of sentiment succeeded, not very much unlike that produced in Luther's mind by the offensive measure of the pope : the opinions he had so warmly cherished lost all their value in his estimation ; or rather, perhaps, became odious from the disgrace with which they threatened him. Religious enthusiasm, however, survived this sacrifice to pride ; and his friends still recollect the vehement indignation he expressed on account of the dangerous tendency of Mr. Hume's speculative writings ; which, some time after this event, he found much the subject of conversation at Edinburgh.

Those who regard the Scottish establishment as the true apostolical church may have cause to rejoice, that so ardent a seceder did not persevere in his original zeal. For complaints are sometimes heard in Scotland, as well as in England, of the increase of sectaries ; and he might have become formidable as a propagator of schismatic doctrines. Among the divines of his nation he would have been unrivalled in classical learning ; and I see not what should have hindered a man endowed with so acute and comprehensive a genius from attaining equal pre-eminence in polemical divinity. He would have marched with alacrity into the field of controversy, and confidently assailed the stoutest champion of the adverse host. His vehement eloquence must have been deeply felt by audiences, to whom his dialect was intelligible and inoffensive : and, as little regard will be paid to style, when the thoughts are intent on the high concerns of *grace, faith, good works, election, and reprobation*, he might have seconded, with his pen, the effect of his personal labors. Had the incredulity of the age induced him to undertake a general treatise on christianity, he was capable of rendering Grotius obsolete by language of superior purity and more skilful management of his arguments.—If he had borne the cross as a seceding minister, he must have led a life of the strictest temperance ; since in Scotland the clergy,

clergy, even of the established church, cannot safely indulge in open dissipation. I need not therefore explain how much leisure he would have had for his classical and theological pursuits. Nor would he have enjoyed fewer or less lively sensations of pleasure than a different course procured him; for to a person of his temperament, fame and fanaticism may well supply the place of wine.

He continued at the grammar school till he had nearly attained the age of twenty. In the summer of 1755, his reputation, as a scholar, procured him the appointment of tutor in a family of some distinction in the neighborhood of Dunse. But here, it seems, he did not long continue to be an agreeable inmate. It is likely enough that he had added the stiffness of pedantry to the sourness of bigotry. But I have no information concerning his deportment; and should any of his disciples think a fuller narrative due to their master's memory, some notices may, I conceive, still be collected from the surviving members of the family.

When deprived of this employment, he repaired to the university of Edinburgh. In this busy seat of science, after going through the usual course of philosophy, he regularly entered upon his theological studies: he attended the lectures, diligently applied to the perusal of the authors recommended by the professor, and proceeded so far as to deliver in the public hall a discourse upon a prescribed portion of scripture: which is an academical exercise previous to ordination as a clergyman of the Scotch establishment. At this point he stopped, and relinquished the profession of divinity altogether. The sequel will sufficiently explain his motives for this change. Its immediate consequence was his retreat from Edinburgh to Dunse. Here, to gain time, as may be supposed, for arranging the plan of his future life, he engaged himself as usher to the school which he had lately quitted. In this capacity he officiated from Martinmas 1758 to Martinmas 1759. Mr. Wait, who professes himself to have benefited by the new usher's instructions, mentions, as a proof of the accuracy of his memory, that after once reading over the lesson, consisting of two octavo pages

in Latin, he would lay aside the book and *perleſt* the whole over, without miſtaking a ſingle word. In the courſe of this year, one of the claſſes in the high ſchool at Edinburgh becoming vacant, Brown appeared as a candidate, but, “on a comparative trial, proved unſucceſſful.”

While he remained at Dunſe, it was remarked that the ſtrictneſs of his religious principles was relaxed. He even began to be accounted licentious both in his principles and conduct. At a later period he was open enough in his avowal of irreligion. Whatever ſcope the fact may afford to the eloquence of perſons, accuſtomed to decry Edinburgh as a ſchool where the reaſon of young men is exerciſed more than their faith, it ſeems too evident to be denied, that this revolution of opinion in our ſtudent of theology took place during his reſidence there. The diſtinguiſhing portion of his hereditary creed he had abjured from pique; nor can he be ſuppoſed to have had any rational conviction of the remaining articles; if rational conviction can only originate in ſincere doubt and perfect careleſſneſs in regard to the concluſion to which examination may lead. Under ſuch circumſtances it is eaſy to conceive by what a precarious tenure a ſpeculative ſtudent, placed in a ſituation where information is at hand, and enquiry not only free but fashionable, holds the benefit derived from the religious leſſons of his parents and preceptors. Some unlucky ſuggeſtion may ſtart a perplexing ſcruple, the ſerious inveſtigation of this ſcruple may raiſe an hoſt of difficulties, and deliberation terminate in unbelief.

At the time he renounced divinity, the ſcene before him muſt have directed his thoughts to the ſtudy of medicine. The only difficulty lay in the expence: but his obſervations might have ſuggeſted the means of overcoming this difficulty, independently of the encouraging circumſtance which I ſhall immediately relate. He muſt have been aware that ſtudents of phyſic are, in general, by no means ſuch proficientſ in claſſical acquirements as to ſpeak Latin with tolerable fluency. Hence, before the examinations for a doctor’s degree, which are carried on in Latin, it is com-
mon

mon to have recourse to a private instructor, who converses with the candidate in that language. This preparation is familiarly called *grinding*, as a similar process at Cambridge is, I think, called *cramming*. The translation of inaugural dissertations into Latin, which the students, in most instances, compose for themselves in English, is another occupation from which a good scholar may derive emolument at Edinburgh; the ordinary gratuity for a translation being five, and for an original composition, where that is required, ten guineas.

Of his qualifications for these employments, accident, shortly after his unsuccessful competition for the vacancy in the high school, furnished him with an agreeable proof. Application being made to one of his friends to recommend a person to turn a thesis into Latin, Mr. Brown was mentioned. He performed the task in a manner that exceeded the expectations both of the friend and the candidate. When it was observed how much he had excelled the ordinary style of such compositions, he said *he had now discovered his strength, and was ambitious of riding in his own carriage as a physician*. Towards the close of 1759, therefore, he settled at Edinburgh in the double capacity of teacher and student. At the opening of the session, he addressed a Latin letter to each of the medical professors. They were perhaps already apprized of his merit as a classical scholar; and they were all induced by his application to present him with a ticket of admission to their lectures. After so auspicious a beginning, he soon became famous as a teacher of Latin; and I believe he never afterwards refused to exercise his pen in the translation of theses. He was also at all times ready to furnish an original dissertation according to the system his employer preferred.

I have obtained no particular information concerning the first four years of his medical studies. His circumstances were probably more flourishing than at any former period. From the beginning of the masterly preface to his *Elements* it appears that he prosecuted his studies with his characteristic ardor. In 1763, an old acquaintance found him in

as high repute among his fellow-students as he had formerly been among his school-fellows—a distinction which has never been obtained without the conjunction of ability with industry. He seems, however, during the intervals of his application, to have given into the most dangerous of vices; “for the languor of his appearance seemed to show that he had taken liberties with a constitution originally firm and vigorous.”

In certain universities, destitute of foundations or yearly stipends for scholars, the students live dispersed in ordinary dwelling-houses: and this dispersion, according to my observation, is not less favorable to diligence and regularity than residence in colleges. In mixed company the vicious propensities, peculiar to any class of individuals, will never be countenanced; or, in the language of Dr. Adam Smith, a whole company can never sympathize in those unbecoming practices, to which a few only feel themselves inclined. By this mutual correction, the association of persons of different ages and sexes becomes the great preservative of good manners and good morals. Colleges, which, after the example of monasteries, seem instituted on purpose to prevent this salutary variety, doubtless give frequent occasions to emulation in those excesses, to which young men are particularly prone. A nice observer, too, may perhaps discover that their monastic discipline irritates full as much as it restrains. At Edinburgh the keepers of lodging and boarding houses have generally sober habits; and the observance of early hours is enforced with as much effect, though with less form, than by the porter's list, the fine, and *imposition*. As far as discipline regards learning, every man must estimate its value by his opinion of the effect to be produced by setting grown gentlemen tasks. Where there have existed none of those restraints, which always give more or less disgust, I have seen a large majority of students pursuing knowledge with as great eagerness as any of their equals in age were elsewhere pursuing the pleasures of the chase; and from the same motive—the immediate satisfaction it affords. Nor do I believe that the acquisition of knowledge can be otherwise

otherwise than agreeable, except from the fault of the tutor or the institution. If examinations are considered as powerful incentives to diligence, none can equal in severity those which are carried on at the voluntary meetings, which it has long been the custom to hold at the great school of medicine in Scotland, and which have since been established among the students at the inns of court in London, with the approbation of the most distinguished professors of the law.

Brown, who now seems to have supported himself in affluence as a single man, perceived in the establishment of a boarding-house for students, a resource which would enable him to maintain a family. His reputation for various attainments was, he thought, likely to draw round him a number sufficient to fill a large house. With this prospect he married in 1765; and his success answered his expectations. His house was soon filled with respectable boarders. But he lived too splendidly for his means, and “managed so ill that in two or three years he became bankrupt. Towards the end of 1770, though reduced in his circumstances, he maintained the independence of his character, proving himself to be, in the language of his favourite Horace,

— *Satis inter vilia fortis.*

“He seemed to be happy in his family, and, as far as I could ever observe, acquitted himself affectionately as an husband and a parent. He still frequented the medical classes,” (or lectures;) “and I heard him say he had now attended them ten or eleven years.” [MR. WAIT.]

We have seen how liberally Brown was treated on his entrance upon the study of medicine. From the celebrated Cullen he early received the most flattering marks of attention. This speculatist, like Boerhaave and other men of genius in the same station, was accustomed to watch the fluctuating body of students with a vigilant eye, and to seek the acquaintance of the most promising. There was a period when he made the greatest exertions to gain prof-
elytes

elytes to his opinions ; and his mind was doubtless alive to that pleasure which the encouragement of merit affords to all who are capable of discerning it, when no dread of rivalry interferes with the gratification. But Brown's power over the Latin language served him as a peculiar recommendation ; and his circumstances might induce Cullen to believe that he could render this talent permanently useful to himself. Taking therefore its possessor "under his immediate patronage," he gave him employment as a private instructor in his own family, and spared no pains in recommending him to others. A very strict and confidential intimacy ensued. The favoured pupil was at length permitted to give an evening lecture, in which he repeated, and perhaps illustrated, the morning lecture of the professor ; for which purpose he was intrusted with Cullen's own notes. Though Mr. Wait had not recollected the profuse encomiums of his old school-fellow, his warmth of attachment would be fully testified by subsisting tokens ; to his eldest son, for instance (William Cullen Brown) were given both the christian name and surname of his patron. Other proofs of mutual confidence and esteem might be collected : but friendships originating in protection are very prone to terminate in enmity, unless difference of rank and pursuits totally preclude competition : and it is well known that the friendship in question was far from permanent. My materials do not furnish information concerning the cause or pretext of alienation, which was certainly injurious to the dependant party, and perhaps detrimental to society. In a communication from Dr. S——, likewise an old and intimate acquaintance of Brown, it is said, that after the failure of his boarding-house, he "became impatient, and "unfortunately quarrelled with Dr. Cullen, from a supposition that the doctor had it in his power to extricate him "from embarrassment by placing him in a more liberal and "lucrative situation in the medical line." A report I remember to have heard at Edinburgh coincides with this intimation ; but I relate it only on the authority of rumour. When the theoretical chair of medicine became vacant,

either on the death of Dr. Alexander Monro Drummond, or the refusal of this promising young physician to fill it, Brown gave in his name as a candidate. On a former occasion of a nature somewhat similar, he had disdained to avail himself of recommendation, which he might have obtained with ease; and though, according to the friend whose words I have just quoted, he acquitted himself in a manner far superior to the other candidates, private interest then prevailed over the juster pretensions of merit. At the present competition he was also without recommendation; and, I suppose, could have obtained none. Such was his simplicity, that he seems to have conceived nothing beyond pre-eminent qualifications necessary to success; nor did he harbor any suspicion of that debasing system of influence, which has infected the land so thoroughly, that the post of a scavenger, were it held by appointment, would hardly be procured without cabal, or retained without servility. The magistrates of Edinburgh appoint professors to the college, as well as masters to the school. They are reported deridingly to have enquired who this unknown and unfriended candidate was; and Cullen, on being shown the name, after some real or affected hesitation, is said to have exclaimed in the vulgar dialect of the country—*Why, sure, this can never be our Jock!* With this sneer the application of a man was set aside, whose equal the patrons of the Edinburgh professorships will probably not soon have an opportunity of rejecting. Though this account should come near the truth, it does not follow that the municipal board deserves much censure. In the execution of their trust they are indeed bound to examine the pretensions of the competitors, or rather to cast their eyes round wherever the English language is spoken, and select the person best qualified for the office, even if he should not enter the lists of competition. But they had not our means of deciding; and although he who enjoyed so high a reputation among his fellows, and to whom Cullen partly committed the credit of his system, could not well be deemed a contemptible candidate, there did not perhaps exist reasons to warrant them in raising him

to the vacant chair. Public fame seems the surest guide for such electors : and the reputation, so long enjoyed by the University of Edinburgh, proves that it is a guide sufficiently sure. The danger is, lest its patrons, relying upon the established credit of the seminary, should at any time suffer intrigue to interfere with their choice. In this case a splendid college may indeed be erected, but students from different regions of the globe will soon cease to crowd its halls.

Whether such a sarcasm was uttered or not, Cullen (b) completely estranged the mind of his Latin secretary on a subsequent occasion. As I am not sufficiently acquainted with the particulars, I cannot venture to appreciate his conduct ; but the mortal affront was given, when Brown attempted to gain admission into that philosophical society which published the Edinburgh Essays. After this transaction, an open rupture took place ; but, however it arose, the account furnished, if not written, by Brown, evinces that both parties had before conceived a secret jealousy of each other : the account is as follows :—“ There is a junto
“ of men in Edinburgh who at all times, from fear of his”
{Brown’s} “ learning and abilities, have been his determined
“ enemies ; and by all arts, but good ones, have uniformly
“ sought his ruin, and that of a large and innocent family
“ depending upon him. This conduct, first of all, was the
“ return they made him for great services done to them as
“ a body, and to certain individuals of them as friends.
“ Their open conduct to him was friendly ; their secret a
“ plot, a dark Catalinian conspiracy. Accordingly, his sus-
“ picion of it was late, the full detection later He chose
“ to tear off the mask of their pretended friendship His
“ first step was to make application for being made a mem-
“ ber of a certain literary society, to which no man’s petition
“ had ever been rejected before, or since : foreseeing that he
“ would be rejected. This accordingly happened. But he
“ was previously advised by one of themselves, as a friend,
“ to withdraw his letter of application. A frivolous and
“ false

(b) Jones’s Enquiry into the State of Medicine, 1781, p. 358.

“false cause was assigned for the opposition. The friendly
 “monitor, who had perceived that our author had a new
 “doctrine of medicine in meditation, began, as it would
 “appear, to fear that it might terminate in the extinction
 “of one which he assumes as his own. He was therefore
 “the prime mover of the plot. . . . The answer was, in a tone
 “of firmness, that the application would not be with-
 “drawn. . . . and that the applicer” was resolved to make the
 present conduct of the adviser and his friends “the crite-
 “rion of his judgment of their intentions towards him.”
 The *body* must mean the college of physicians; the *services* I
 presume to have been the translation of their Pharmacopœia
 into Latin, and the *plotter* unquestionably was Cullen.—
 After the failure of this bold experiment upon the strength
 of his credit, the projector had evidently no time to lose in
 seeking some fresh resource for the support of his family.
 The following notice from Dr. S—— applies to this part
 of his history.

“Being estranged from Dr. Cullen’s family, he gradually
 “became his greatest enemy, and shortly afterwards found
 “out the new theory of physic, which gave occasion to his
 “publishing the *Elementa Medicinæ*, in the preface to which
 “work he gives an account of the accident that led to this
 “discovery. The approbation his work met with among
 “his friends encouraged him to give lectures upon his sys-
 “tem. Though his lectures were not very numerously
 “attended by the students, on account of their dependence
 “upon the professors, still it was always remarked that the
 “cleverest among them were all, as they were now called
 “by way of nick-name, BRUNONIANS. Hence arose that
 “persecution which was carried on with such rancour that
 “it at length obliged him to leave Edinburgh.” This
 account of the origin of the Brunonian system, as we may
 conclude from the preceding quotation, is not exact; and
 in other particulars the statement, from evidence I shall
 afterwards produce, will appear overcharged. Meanwhile,
 if it be undeniable that, as the Cullenian hypotheses were
 sinking into disrepute, many of the ablest students resorted
 to

to the standard of Brown, it ought not to be forgotten that it was joined also by the most idle and dissolute. Their misconduct, and their master's imprudence in private life, together with the offensive manner in which he spoke of himself and of others, kept the system and the author in constant discredit.

He was soon in a state of open hostility with all the medical teachers at Edinburgh; and it required nicer management than he could observe, to keep on fair terms with other practitioners of medicine. To a disciple, who was desirous that he should meet one of the professors in consultation, he remarked, "that he (the disciple) was unacquainted with the interested arts of those men; that all their ideas in medicine, and particularly in its practical part, were so diametrically opposite to his, that they never could be brought to any sort of reconciliation."—Like other reformers, who have had to wrestle with powerful opposition, he committed and sustained injustice. Like them too, where his system was concerned, he gradually lost his sense of equity. If we judge by his language—the only way he had to show his disposition—his countryman Knox could scarcely have exceeded him in ferocity. Thus, having remarked the doctrine of spasm, suggested by Van Helmont, and clumsily wrought up into a system by Hoffmann, was banished by Boerhaave from the country which gave it birth, "it found at last," he adds, "amidst a new persecution raised against it by the pupils of Boerhaave—then in possession of the medical chair of Edinburgh—a friend and protector in Dr. Cullen, who had lately become one of the number of those professors.

"This brat," he proceeds, "the feeble, half-vital, semi-production of phrenzy, the starveling of strained systematic dulness, the forlorn outcast of the fostering care to which it owed its insect vitality, was now to be pampered by a crude and indigestible nutriment, collected from all the materials which had composed the several fabrications of former erroneous systems, was to be decorated with every foreign plumage, and in this its totally borrowed and
"heterogeneous

“heterogeneous form, instead of the hideous caricatura,
 “which it was, contrived to excite the derision of mankind,
 “it was to be ostentatiously obtruded upon the world as a
 “new, and respectable doctrine, and held up, forsooth, as
 “the formidable rival of a splendid system (c).”

Such is the torrent of metaphors that rushes upon his imagination when he thinks of the system of his ancient friend and master. Of the past and present condition of the healing art he speaks with greater coolness, but with equal contempt :

“The accomplishments of the regulars have been learn-
 “ing and ingenuity in a few, not directed to improvement
 “in their own profession : a mere shadow of learning, or
 “the study of a bad kind of it, as botany and the other
 “branches of natural history, in the greatest number ; fly
 “attention to reputation for skill ; intriguing with their
 “brethren for countenance ; opposition to improvement ;
 “persecution of discovery ; narrowness of mind under the
 “thin veil of a false pretention to liberality ; affectation of
 “decency ; all for the purposes of trade ; silence, from a
 “consciousness of inability to speak so as to gain by it ;
 “formality, pomp, stateliness, gravity, all making a motley
 “group of absurdities ; invincible attachment to the errors
 “of their education ; aversion to improvement ; ready upon
 “every slight occasion to break out into rage and transport ;
 “invincible bigotry and prejudice ; an over value of what
 “learning they have any pretensions to ; an under value
 “of what they are conscious they want.

“As every country, in proportion as it is distinguished
 “by riches, and openness of manners, for that very reason,
 “becomes the emporium, the scene of action, for high-
 “waymen, footpads, pickpockets, swindlers, sharpers, gip-
 “sies, regular practitioners in law and physic, quacks in both
 “professions, so England has long held and still holds the
 “pre-eminence over all her neighbor countries, in being,
 “for the reason assigned, the place of common resort, in
 which

(c) Observations on the old Systems of Physic, 1787, p. xxxi.

“ which a comfortable subsistence is afforded to all those
 “ different denominations of pursetakers.

“ *Exilis domus est, ubi non et multa supersunt*
 “ *Et fallunt dominos, et profunt furibus.*” (c)

During the heat of contention between the opposers and defenders of the new system, an event happened which I wish I could fairly pass over in silence. But as it has already been the subject of more than one publication (d), there can be no pretence for the omission.

Mr. Isaacson, a student of medicine, had been seized with a fever, which in its progress exhibited the most alarming symptoms. Dr. Duncan was first called in, and afterwards Dr. Monro. Dr. Robert Jones, a new graduate, and a friend to Mr. Isaacson, tampered with the nurse to induce her secretly to administer strong stimulant medicines: they were given, as he asserts, for about twenty four hours, with such effect that, on their next visit, the physicians “ declared the patient free of fever,” though before he had all the symptoms of approaching death. In the afternoon, however, of the same day, he was seized with a raging delirium. Jones in his alarm applied to his preceptor; the preceptor being told that the nurse desired to see him, ordered “ her to be brought before him.” When she was brought before him, he complimented her by a solemn appeal to her understanding concerning the great principles of his system. “ He endeavored to assure her that there was “ either no inflammation in the case at all, or that it was a “ very different affection from the inflammation that physicians were acquainted with; that instead of requiring “ bleeding and other evacuant antiphlogistic means, it required the very same treatment which had been last employed

(c) Observations, pp. lxxxi—111.

(d) See Jones’s Enquiry, p. p. 134—150.—Letter to Dr. R. Jones, by Andrew Duncan, M. D. Cadell, 1782.—Letter from Philalethes to Dr. Andrew Duncan, without date or title, announcing a reply to the former publication, which, I believe, never appeared.

“ployed ; and he asserted with confidence that the inter-
 “mission of the stimulant powers through the day was the
 “cause of all that had happened ; that, in short, the present
 “affection was a disease of debility of the whole system,
 “predominant in the brain, in consequence of the great
 “sinking of strength which constantly follows a total cessa-
 “tion of the use of such highly stimulant powers. He
 “begged therefore as the life of a fellow-creature was at stake,
 “and as she had been so late a witness of the good effects
 “resulting from the method of cure, the continuance of
 “which he still recommended, that she would not allow
 “prejudice and impressions from the false theories of phy-
 “sicians, among whom she had been conversant, to prevail
 “over the high probability of success from this mode of
 “cure. He dismissed her, after obtaining a promise that
 “she would continue the plan of cure in question.” (e)

Brown, for a comic figure, was not inferior to Sancho Panza ; nor indeed much unlike that entertaining personage : and this clandestine conference, if it had been delineated by Cervantes, would have made a good companion for the nocturnal interview between Don Quixote and the venerable duenna, Donna Rodriguez.

The patient, thanks be to fortune, skill, or virtue ! recovered. The Brunonians placed the cure to the credit of their practice, which they reported to have been successful after Dr. Duncan and Dr. Monro had given the patient over ; they published the case ; they asserted that the cure “gave great vexation to the attendant physicians and all their partizans ;” and with the policy usual among aggressors, they complained that Dr. Brown was ill-treated, because he was blamed in “the numerous circles of the physicians’ friends and his enemies, while no opportunity was offered him of vindicating himself from these charges.”

The nurse had threatened, if the secret proceedings should transpire, to deny the performance of her part of what in the *Enquiry* is termed the *paction*. Dr. Duncan, roused by these rumors, applied for information to the nurse and her assistant,

to

to Mr. Isaacson himself, to the mistress of the house where he lodged, to Mr. Edmund Goodwin, and Dr. Monro.— In his letter he has published their respective attestations and depositions upon oath ; it appears that the clandestine proposals were rejected, and that only one unsuccessful attempt was made by the negociator himself to administer a dose of his diffusible stimulants. According to the nurse's testimony, Mr. Jones, on her first refusal declared, if she " would do as he desired her, Mr. Isaacson would give her " a handsome reward when he recovered—that the medicine " he wished her to administer was a bottle of double rum, " of which she was to give him a glassful, with fifty drops " of laudanum in it, the first night ; and another glassful, " with one hundred drops of laudanum in it, the second " night, if the first dose should have a good effect. To this " proposal she answered, that if such medicines were ad- " ministered to Mr. Isaacson in the state in which he then " was, he would not recover to reward either her or Mr. " Jones. To which he replied, that she was a damned " fool for refusing, and that he would give her two guineas " out of his own pocket if she would do it. She said, that " if the best graduate in Edinburgh would give her her apron " full of gold, she would not." This woman deposed moreover, that one evening, while she was employed apart, she heard Mr. Isaacson suddenly cry out, " Good God ! " what is this ? It is laudanum ! I am poisoned !" She then observed Mr. Jones by the bedside with a tea-cup, containing some liquor, in his hand, which he set down on the table, requesting the landlady to give it to Mr. Isaacson at a proper opportunity. The landlady asserts, that, late one evening, she saw Mr. Jones drop one hundred drops of laudanum into a tea-cup, and add some wine, which he immediately carried into Mr. Isaacson's room. She followed him : he endeavored to make Mr. Isaacson, who was so far delirious that he did not appear to know Mr. Jones, swallow the contents ; " on tasting the medicine, he spit it " out of his mouth ; cried out that it was laudanum, and " that he was poisoned ; but to the best of her observation,

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" he

“he did not swallow any of the medicine ;” which, soon after, was thrown into the fire.

The interview, which the nurse herself vows, that she held with Dr. Brown at his house, may cast some suspicion on her integrity. But she might have been thoughtless ; or, though determined to reject his suit, she might have been pleased with being solicited as arbiters between contending systems. The rest of the evidence is also consistent with her testimony.

Dr. Duncan’s just indignation urged him to an immediate prosecution, which, as he was assured by some eminent advocates, would have terminated in the infliction of a severe punishment on the negotiator. Dr. Monro discouraged this idea, for reasons which it would be injurious not to quote ; they are thus assigned in the letter to Dr. Jones : “ He was principally averse to it on your account, because “ he considered you in the light of an imprudent young “ man—he imagined that the mal-practices might be suffi- “ ciently proved of you, although they could not be brought “ home to Dr. Brown, whom he considered as the original “ aggressor. He was averse to it on account of Dr. Brown’s “ wife and infant child, who might have suffered more se- “ verely by it than we could easily foresee. And besides “ this, he thought there was but little danger that Dr. Brown “ should repeat such practices, and still less chance that he “ would again find any student to be his assistant in the “ manner that you had been.” In these reasons Dr. Duncan acquiesced.

Dr. Brown’s “character,” we are informed, “was very “ near ruined as a physician, and as a man (*f*).” By this intrigue, all chance of lucrative employment in his profession, if he ever had any, was destroyed. His character among his countrymen suffered irretrievably ; nor have I courage without better documents to undertake his vindication. Dr. Duncan assures me, that he knows of no reply to his letter ; and if any satisfactory statement could have been produced, it would have appeared in the *Enquiry*. The passage,

passage, relative to this transaction, is evidently apologetical ; but neither in that publication, nor in the letter of Philalethes, have I been able to find any plausible excuse for such a violation of good manners, and good morals.

Things and persons are generally estimated in the gross ; and this unwelcome portion of my narrative, I fear, will raise in many minds a prejudice fatal to the credit of the following system. Just and judicious readers will, however, discriminate. And if, in the case of Bacon, the baseness of the magistrate detracts not from the wisdom of the philosopher, why should the imprudent or unjustifiable means which Brown adopted to carry his principles into practice, influence our opinion concerning the justness of those principles ?

He sometimes discovered the propensity, so common among the framers of systems, in a less offensive way.

A student of medicine died of a low fever in spite of the full and avowed use of diffusible stimulants. The body was opened ; several persons were present ; among others the gentleman that informed me of the occurrence. During the examination of the appearances, Brown with an air of great sagacity remarked that the body was unusually fresh. The dissecting surgeon, whom perhaps kindred devotion to Bacchus had inspired with tenderness for the Doctor, replied that, considering the circumstances, he had scarce seen an instance where putrefaction had made such little progress. "Then, gentlemen," rejoined the doctor, "I appeal to you if we may not consider this as a clear proof of the propriety of our practice."

Brown was elected president of the Medical Society in 1776 and again in 1780. In what years he became a lecturer and graduate in medicine, I must leave to some future biographer to settle. Though he had attended the medical classes at Edinburgh ten or eleven sessions [Mr. WAIT,] he resorted to St. Andrews for a Doctor's degree. His pupils, I believe, following in his train, strove to give to his passage the air of a triumphal progress ; he was certainly accustomed to relate with infinite satisfaction the circumstances

cumstances attending his graduation. He described the professors beyond the Firth as overawed by his fame and presence; it is likely enough that they wished to exchange their diploma for his money with as much expedition as possible.

For several years after 1780, and perhaps before, the professors, the physicians to the infirmary, and the societies were unceasingly annoyed by the adherents of Brown; the students' debates were carried to the highest pitch of violence, by the Medical Society a law was passed, and, I think, put in force, that if any member should challenge another for any thing said in debate, he should incur the penalty of expulsion.

The efforts of the Brunonians to expose the practitioners, who followed a different system, are fully exemplified in a *Letter on the management of patients in the Royal Infirmary* (g). This letter was occasioned by a restriction annexed to the allowance of a very thin beef-stake to a patient in that hospital. It was expressly ordered that the stake should not exceed one inch and five sixteenths in length, or seven eighths of an inch in breadth. This, at least, is the measure of the pattern (h). The tone, assumed in the commentary upon this text, is that of vehement invective: on the authority, as the writer says, "of one of your own students" he gives the follow statement of the hospital diet:

" The Common Fare.

" Soldiers pay 2s. 4d. per week.

" Breakfast—One roll of bread and a measure of milk or beer.

" Dinner—One ditto, and a choppin of weak broth.

" Supper—The same as breakfast.

Common Patients.

" Breakfast—Half a roll, and a measure of milk or beer.

" Dinner—One roll, and a choppin of weak broth.

" Supper—The same as breakfast.

" In

(g). Edinburgh, 1782, pp. 32. Signed *Veri Amicus.*

(h). Letter, p. 9.

“ In a few particular cases, a little meat is allowed and other necessaries, as may appear proper to the physician.”

He then notices the roast beef and porter of St. George's hospital in London, and subjoins this appeal : “ Let me figure the case that you, Doctor, were plunged at once into disease and beggary ; I put this plain question, whether would you choose to be lodged and nursed in St. George's hospital, or to be deposited and starved in the Royal Infirmary, under such medical treatment as your own ? Your victuals,” he proceeds “ are not only scanty but bad. Your porridge is sometimes boiled almost into water-gruel ; your broth is commonly much better qualified to operate as an emetic than to nourish the system ; of your milk we need only say that it resembles the rest which is sold in the streets of Edinburgh. Your beer is not always tolerable even to the palate of an alehouse scullion.” None undoubtedly but members of the medical profession, can have an adequate conception of the wide-wasting misery that daily arises from want of food, fuel and cloathing. Occasionally, in distressful seasons, the gnawing pains of hunger are assuaged by private charity ; and impending death or madness is prevented. But no effort is made to improve the predominant condition of the poor, though it is alike destitute of comfort and of hope. Experience teaches how little they have to expect from those **POLITICAL SWINDLERS**, who, under false pretences, acquire the power of sporting with the wealth and blood of nations. The wretchedness of imprisoned criminals remained unredressed only because it was indistinctly known ; the wretchedness of the indigent is not more clearly understood ; to expose it fully to the eyes of the community is a work of extensive beneficence reserved for some future **HOWARD**. When it is atchieved we shall be astonished at the proportion of human beings that languish in misery or perish prematurely ; the universal feelings of mankind will raise in behalf of these victims of penury ; and their flesh will no longer be devoured by the luxurious creatures of corruption. But our Brunonian “ friend to truth,” seems to work upon

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the compassion of his reader, merely for the purpose of degrading a few professors in the opinion of a set of students. If his letter contain material exaggerations, it could only serve to bring the cause of humanity into disrepute.

In 1782 I remember to have spent an evening in company with Dr. Brown. He assumed the sovereignty of the circle, which consisted principally of his disciples; and nobody thought of disputing his title; he displayed uncommon vigour of imagination, but to me the figures he called up were so little agreeable, that I never desired his conversation a second time. Others received entertainment; and by those who knew him well, he is remembered as "the best companion in the word." His Doric dialect had nothing prepossessing to an English ear. It was so broad as to leave me often uncertain of what he said even in his lectures. And yet before he undertook the charge of a private tutor, he had attended an English master at Edinburgh, "for the purpose of acquiring a proper pronunciation and method of teaching that language, which he had not before had an opportunity of being improved in." [D. S.] But the *vestigia ruris* were not to be effaced, or else he had voluntarily resumed his original notes.

Unprofitable adherence to the house of STUART, had been relinquished at Oxford before my entrance: and Brown was the first person I ever saw absurd enough to profess himself a Jacobite. He had several years since embraced political sentiments thus repugnant to those he once held, and which had now become almost universally extinct. In 1770, "I was surprized," says a gentleman who had known him long, "to find the Doctor a warm admirer of the Scottish aristocracy: the lairds of Clanronald, Keppoch, and Gengary, were the theme of his eulogy; and prints of some of the chieftains who had joined the late Pretender were placed among the divinities of his household." No cause for such a revolution in opinion, is assigned. It did not arise by analogy from his hostility to the professors, for it took place before his rupture with Dr. Cullen. This species of superstition easily fastens upon the mind of the antiquary; and Brown had paid
attention

attention to the antiquities of his country. He was elected assistant Latin secretary to the Antiquarian Society of Edinburgh, without his solicitation or knowledge, and from the sole consideration of his literature, according to the *Enquiry*; but this assertion is contradicted by Dr. Duncan. His contradiction is founded on Mr. Cummyng's declaration when he proposed Brown, that "he knew him to be very desirous of obtaining the appointment."

His conversation was full of contempt for the literature, talents, and doctrines of the medical professors, one great natural philosopher excepted. He continually criminated them as his persecutors, and unjust towards those students who adopted his principles. This injustice is said to have appeared in unusual severity on the examinations previous to *graduation*. In the *Enquiry* these complaints are repeated; and to shew how much the right of private judgment was infringed in the article of inaugural dissertations, the following correspondence is produced: the candidate, it should be premised, was desirous of quoting the sixty-ninth, seventieth, and seventy-first paragraphs from the *Elementa Medicinæ* in a thesis on epilepsy.

"SIR,

"A former experience of your civility prevents my apologizing for troubling you on the following occasion, viz.

"From a strict perusal and attention to my dissertation, I find it necessary to solicit your approbation of inserting the quotation I made from Dr. Brown's printed book, to which you formerly objected.

"Amongst many other reasons, I will submit the two following to your consideration:

"1. That without it I am prevented from saying what I *really believe*, to the manifest injury of my dissertation.

"2. That I am deprived of the liberty other candidates have always enjoyed in making quotations from any author; a privilege too, which was *promised me by Dr. Gregory*.

"As I wish to have my dissertation printed immediately, your answer as soon as convenient, will oblige

"Your humble servant

"J. WAINMAN."

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The answer was as follows :

“SIR,

“ I objected to your quotation, as I have often done to
 “ quotations made by other candidates, not that it con-
 “ tained the opinion of *this doctor*, or of *that professor* ; but
 “ that it contained such jargon, as could not fail to dis-
 “ grace the candidate, and of course the university, which
 “ gave sanction to its publication. As to the liberty you
 “ say, ‘ candidates always enjoyed of making quotations
 “ from any author, right or wrong,’ I never heard of it be-
 “ fore, and *am determined* to give it *no quarter*, neither now
 “ nor hereafter.”

(Signed.) ALEXANDER MONRO.

I must profess myself incapable of entering into these sentiments : and I suppose many readers will concur with me in regarding with contempt the *patch-work* of education ; whether it consist of a specimen of penmanship, retouched by the master for the honour of the school, or an *inaugural specimen*, garbled by the professors for the honour of the University.

Observing the students of medicine frequently to seek initiation into the mysteries of free-masonry, the author of the *New Doctrine* thought their youthful curiosity afforded him a chance of proselytes. In 1784 he instituted a meeting of that fraternity, and entitled it, *The Lodge of the Roman Eagle*. The business was conducted in the Latin language, “which he spoke with the same fluency and animation as he spoke Scotch. I was much diverted,” adds Dr. Macdonald, “by his ingenuity in turning into “Latin all the terms used in masonry.”

In unfolding his system it was his practice first to translate the text book, sentence by sentence ; and then to expatiate upon the passage. For most of his pupils the translation was a preliminary highly necessary ; and he must have considered it as politic to combine literary with scientific instruction. The prospect of this double advantage, might perhaps, from time to time, bring him a few additional hearers ; but whatever was the absolute or comparative

tive merit of the theory he taught, his seats, I fear, were seldom crowded.

The introductory lecture, if my memory is accurate, was intended to impress upon his audience a sense of the importance of the lecturer's discoveries; its effect was rather to render him ridiculous. The dread of pain and death easily persuade us that improvements in medicine are more beneficial than in any other art; but when a man asserts the superior utility of his discoveries to those of Newton, he will with difficulty avoid the appearance of asserting the superiority of his talents. The lecturer, in his cooler moments, would have been sensible that lofty claims produce only laughter or resistance. But his imagination easily kindled; he was thrown off his guard, and he strongly expressed what he fervently believed. He usually proceeded to open his system with animation; but he did not always persevere with the same spirit. He was apt, as he advanced, to fail in punctuality of attendance. As the master's ardour abated, slackness stole upon the pupils; so that his courses not very unfrequently, I believe, shared the fate of Butler's story of the bear and fiddle. The numerous inaccuracies with which, in spite of the remonstrances of his well-wishers, he suffered both editions of his *Elements* to pass through the press evince his negligence in those concerns which might be supposed to lie nearest his heart.

His voice was in general hoarse and almost croaking, but "when he became animated, he had fine cadences and pleasing tones, which took off all the uncouthness of his accent and his manner."

One of his pupils informs me that when he found himself languid, he sometimes placed a bottle of whiskey in one hand, and a phial of laudanum on the other; and that, before he began his lecture, he would take forty or fifty drops of laudanum in a glass of whisky; repeating the dose four or five times during the lecture. Between the effects of these stimulants and voluntary exertion, he soon waxed warm, and by degrees his imagination was exalted into phrenzy.

The subjoined quotation shews that he sometimes endeavoured to enforce his tenets in a manner not very usual; conceiving it lay in his power to remove certain objections deducible “from the real or imagined inflammation of the “brain at the end of Typhus,” and “from the inflamma-
“tory part of the gout,” he called together a party of his confidential pupils.

“He had brought on a slight fit of the gout by unusual “exercise in walking. This was an opportunity for mak-
“ing an experiment which was to decide the whole contro-
“versy. A person called for him before dinner, who was
“in a way of business that led him to drink in the morn-
“ing; he expected a glass from him and was gratified.
“The Doctor for a reason that the reader must perceive,
“collected half a dozen of his principal pupils to dinner,
“and drank with them till he only, in consequence of what
“he had taken before, was considerably affected. He told
“them he had planned some degree of intoxication in or-
“der to explain many inflammations, which were univer-
“sally understood to be accompanied with, or to depend
“upon, phlogistic diathesis. Before the application of the
“stimulus we speak of, he had not been able to put his in-
“flamed foot to the ground, but had supported himself
“in any little motion that he chose to make through the
“house, by his sound extremity, assisted by the use of his
“staff; but before he dismissed his company, he recovered
“the perfect use of his affected leg (*k*).”

A few words will describe the tenor of this unfortunate man’s life, ’till his removal from Scotland. He was so reduced in his circumstances as to be committed to prison for debt, where his pupils attended his lectures. In the abuse of intoxicating liquors he observed no moderation. In 1775 Mr. Wait found him drinking water only. His situation, about that time, would have roused almost any man to a struggle with this destructive habit. His preface discloses the reason of his sobriety. Finding the gout return with severity, after some perseverance in this experi-
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ment of abstemiousness, he returned to the bottle, and never afterwards relinquished it.

His prospect of maintaining himself by teaching medicine at Edinburgh becoming every year worse; he at length carried into execution a design which he had long meditated, and to which he had received some encouragement. In 1786, therefore, he embarked for London, bearing in mind most probably, if he did not utter, Scipio's exclamation against the ingratitude of his country. Immediately on his arrival, an incident befel him which I have heard Mr. Murray, the bookseller of Fleet-street, relate in proof of his simplicity. The peculiarity of his appearance, as he moved along—a short square figure with an air of dignity, in a black suit which heightened the scarlet of his cheeks and nose—fixed the attention of some *gentlemen* in the street. They addressed him in the dialect of his country; his heart, heavy as it must have been from the precariousness of his situation, and distance from his accustomed haunts, expanded at these agreeable sounds. A conversation ensued, and the parties, by common consent, adjourned to a tavern. Here the stranger was kindly welcomed to town; and after the glass had circulated for a time, something was proposed by way of sober amusement—a game at cards, or whatever the Doctor might prefer. The Doctor had been too civilly treated to demur, but his purse was scantily furnished, and it was necessary to quit his new friends in search of a supply. Mr. Murray was the person to whom he had recourse; the reader will not wonder that his interference should have spoiled the adventure.

A London sharper of another denomination afterwards tried to make advantage by the Doctor. This was an ingenious speculator in *public* medicines. He thought a composition of the most powerful stimulants might have a run, under the title of Dr. BROWN'S *exciting pill*; and for the privilege of his name offered him a sum in hand by no means contemptible, as well as a share of the contingent profits. Poor Brown, needy as he was, spurned at the proposal.

It is easy to anticipate the remainder of my tale. Change of residence wrought no change of conduct. Some of his friends were disgusted by those habits which repetition had unalterably fixed. In dictating Brown's resolutions, pride had always its share: Cullen, who never mentioned his abilities without praise, used to add, that his temper rendered it difficult to deal with him. At the present period I have been told, and I can easily believe, that he was more impracticable than ever. He spoke in sanguine terms of the probability that his system would become at length triumphant; but whatever he said or imagined, he effected little. He attempted to open, but never, I understand, completed a course of lectures in London. In 1787 he published, without his name, those "Observations," from which I have already borrowed a passage. He could not in reason expect to find a cordial welcome among his brethren in England. Public opinion can alone awe the body of established physicians in any country into toleration of innovators; and knowledge on this subject was too little diffused for public opinion to operate with effect in his favor. These "Observations" were therefore properly intended for general perusal; but the author was extremely defective in the talent of rendering science popular. Nor was he patient or rich enough to wait for the beneficial consequences that might have resulted, if he could have rendered his doctrine a subject of universal curiosity.

He persisted in his old irregularities for some time, meditating great designs, with expectations not less ardent than if the spring of life, in all its bloom of hope, had been opening before him. At length on the seventh of October, 1788, when he was about fifty-two years of age, he was seized with a fatal fit of apoplexy. He died, if I am not misinformed, in the night, having swallowed as he went to bed a very large dose of laudanum; a species of dram to which he had, indeed, been long addicted. He was at this time about to begin a course of lectures. I am assured by one who had seen him the evening preceding his death, that his appearance did not betray any tokens of distress; nor
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was it apparent that his constitution had run much into decay since his departure from Scotland.

When Cullen, two years afterwards, died in embarrassed circumstances, his friends obtained public aid for his family. Brown's destitute widow and children were saved from distress by private beneficence; but it cannot be expected that the contributions, raised for that purpose, should have proved sufficient for their permanent support.

Dr. Brown's family has been already mentioned as numerous: he left two sons and four daughters. His eldest son is now studying medicine at Edinburgh, where he has experienced great liberality from the professors and the societies of students. His talents will, I hope, meet with a more adequate compensation than those of his unfortunate father.

In the recital of this scanty information, my own sentiments have fluctuated so much that I am doubtful whether I have preserved impartiality, or shall appear consistent in the distribution of pity, ridicule, censure, and applause, among the incidents of Brown's life. Yet the peculiarities by which he was distinguished, appear obvious enough. He was endowed with uncommon susceptibility to impressions. By whatever object they were touched, the springs of his nature bent deeply inwards; but they immediately rebounded with equal energy. This quality is the foundation of all moral and intellectual superiority; but, unhappily, the strong feelings and bold resolutions of Brown were not improved into steady principles. He never seems to have taken pains to form a system of conduct advantageous to himself, and just towards others. As soon as he lost the controul of superstition, his high spirits hurried him into the most intemperate excesses; and, at a later period, his actions can only be regarded as the plunges of despair. The tenderness with which his cordiality inspired those who knew him formerly, I could demonstrate by a variety of testimonies. By a writer already quoted, he is styled "a man of infinite goodness of heart (n)." Dr. S ——— concludes his communication

(n) *Analyt. Rev.* See above.

communication with these expressions: "He was possessed of a great mind that supported him in the midst of all his distresses. He despised riches; detested every thing base, and possessed such openness of heart as to be liable to be taken in by every knave."—He undoubtedly committed an error, which has often been productive of fatal consequences to persons accustomed to scientific speculation. He gave mankind credit for a more sincere regard for truth, and an higher sense of its importance, than they have entertained in any age. He imagined, perhaps, that Plato's fally concerning Virtue was applicable to Science. He therefore utterly neglected those arts by which the imagination is captivated; and trusting to their intrinsic value, bluntly challenged acceptance for his opinions.

Cicero and Bacon were his favourite authors; in his elaborate compositions he imitated the Roman orator with affectation; and it must be confessed, that by taking advantage of the penury and want of precision, which Lucretius and Cicero so loudly lament, he has succeeded to his utmost wishes in constructing a style of classical obscurity. He could, however, write otherwise, and unite at will perspicuity with purity. This may be ascertained by examining the dissertations, which he furnished, at least, with their Latin garb. Several are preserved in a well-known collection (*o*); but for an obvious reason I must leave it to the curious reader to discover, by private enquiry, which were composed by Brown.

Bacon he admired not only for his masterly survey of universal science, but likewise, as Dr. Macdonnel acutely conjectures, because that great author appeared to countenance him in the disrespect with which he treated his predecessors.—He had little medical erudition. At first he probably read more than ordinary students; but after he had constructed his theory, he seldom perused or consulted any medical author. He was impatient when any difficulty was started which he did not see clearly how to solve (*p*):
nor

(*o*) See Thesaurus Medicus, iii. and iv. Edinburgh, 1785.

(*p*) Dr. Macdonnel.

nor would he ever acknowledge any exception to his principles. An argument against his fundamental propositions, which I had mentioned in conversation to a favourite pupil, was communicated one evening, to the master in my presence, a little before the hour of lecture. He said little in reply at the moment. But it appeared that the objection worked upon his mind; in the course of his lecture he waxed unexpectedly warm; and at last, addressed himself particularly to the pupil who had stated the objection. He did not attempt to expose its futility, as might easily have been done; but, exhorting him to suffer no insinuations to divert his attention from the *doctrine*, he proceeded to deliver against the exercise of the understanding, a diffusive that might have done credit to the pulpit.

The Observations, and the Elements of Medicine, are all the productions which he avowed. But there prevailed a suspicion, and it has been publicly mentioned (*q*), that he was the author of the Enquiry, published in the name of Dr. Jones. By his most confidential disciples I have been assured, that they never heard him drop an hint of having assisted in its composition. In manner it certainly bears a strong resemblance to the "Observations;" there are, besides, as the reader may observe in my quotations, forms of expression peculiar to Scotland; but the professed author may be said to have derived the one from his preceptor, and the other from the country in which he resided. This book, we are told, was composed as speedily as it could have been transcribed by an ordinary hand. It is unquestionably ill arranged, tedious, uncouth, arrogant, and illiberal; yet it contains passages presenting juster views of medicine than I remember to have elsewhere seen, and conceived in the genuine spirit of Bacon.

He designed a Latin elementary treatise of morality on philosophical principles (*r*)—*Elementa Morum*; but he never, perhaps, committed any portion of such a work to paper. We may fairly presume that it would have been original,

(*q*) Dr. Duncan's Letter, p. 25.

(*r*) Dr. Macdonnel.

original, luminous, and profound. And since no man, not deeply skilled in such knowledge, as physicians should possess, will ever trace back human actions and passions, along their winding course, to the fountain head, the failure of Brown's design may be regretted as an heavy loss to literature.

Having received a little additional information, too late for insertion in the proper place, I annex it here. To Mr. Wait's account of his quickness in mastering languages, it may be added, "that Brown displayed a genius for literature far superior to any scholar that had ever been under the care of Mr. Cruikshanks. In the course of two years, he could read all the Latin classics with the utmost facility; in the Greek language, he made the same remarkable proficiency." This intelligence comes from Dr. S——, who likewise mentions the astonishing power of his memory, and adds, that he first went to Duns school in 1751, when he must have been above fourteen years of age. The fact is remarkable, as he does not appear to have been before instructed in the rudiments of the learned languages. The same gentleman confirms my account of the motives of his strenuous application. "The leading members of the seceding congregation at Duns, to which his parents belonged, were struck with the proofs of capacity he manifested at the country-school, where he learned reading and writing; they encouraged him to go to the grammar-school, that he might be afterwards educated as one of their ministers, expecting he would greatly contribute to the promotion of their particular interest."——

I have pleasure in recording that, by advice of the friend who brought him the first thesis to translate, he addressed a Latin letter, to the late excellent Alexander Monro, then professor of Anatomy at Edinburgh, requesting gratuitous admission to his lectures. Having succeeded in this instance, he applied in the same manner to the other medical professors.

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His intercourse with Cullen forms the most curious part of Brown's history. The following memorandum includes his reasons for dissatisfaction with his patron, as they were assigned soon after the separation to a person who acknowledged his talents, without being a partizan in his disputes, or a follower of his doctrines.—“They lived upon the strictest intimacy for many years ; and Brown could call for a bottle of wine in Cullen's house, when he pleased. During all that time no man in Brown's company could contradict any of Cullen's opinions without danger of offending him. After the quarrel, he said Cullen had promised him his interest for the first vacant chair in the college ; but when the late Dr. Gregory died, instead of using his interest in Brown's favour, he did the reverse—that, to try him further, Brown petitioned for admission into the philosophical society, but was rejected through Cullen's means.” Here only on one side of the question is shewn : and the representation comes from a man of impetuous passions, who, to obtain our full confidence, should either have been less violent in defending or opposing Cullen.—Complaints of disappointed expectations are still more common in the intercourse of patronage, than of faithless vows in that of gallantry ; this happens, I suppose, because offers and promises are extracted from *harmless* expressions, by which persons who amuse themselves with gallantry and patronage, do not *intend* to convey any particular meaning.

OF Dr. BROWN'S PRIVATE PRACTICE.

TO some readers it may appear strange that I should have finished the life of a physician, who caused so great an uproar in the medical world, without more particular notice of his private practice. I enquired with some solicitude, but in vain, whether during the long period of his studies he was peculiarly observant of diseases. One circumstance I have lately learned ; and it will surprize those who believe him to have inculcated contempt for the sciences auxiliary to medicine : my authority however is unquestionable. The season before he became an independent lecturer, he was industrious to acquire more minute anatomical knowledge than he had gained by attendance on the public lectures ; and for some time attended a private instructor at five o'clock in the morning, and continued with him for two hours ; botanical information was added, on these occasions, to the anatomical. He had formerly been advised by Cullen to qualify himself for giving demonstrations in anatomy. Nothing could be imagined so entirely repugnant to his turn of mind ; no wonder, therefore, the advice was not followed.

Brown somewhere condescends to speak of his own "very large practice ;" but this is a compliment which every medical writer apparently thinks that usage justifies him in paying to himself.

I remember to have heard of an house at Edinburgh, which the Brunonians opened for the reception of poor patients ; probably they were not able to procure funds for its permanent support. The founder of the sect was, I believe, seldom consulted but in cases given up as hopeless ; and he was then apt to speak with imprudent confidence. According to Dr. S——, "his wish to ride in his carriage would, in all probability, have been gratified, had it not been prevented by his sudden death afterwards in London." If this surmise is founded upon any real tokens of approaching prosperity, I could wish they had been assigned. For Brown went to London with no favourable

omens ; every extraneous circumstance was against him, and what else could avail him in a place, where it is well known to men of observation, that success has seldom been in proportion to merit ? Dr. JOHNSON, who must have witnessed physician after physician carrying away the prize of public favour from competitors, far superior in particular skill and general abilities, declares that “ in a great city “ medical reputation is, for the most part, totally casual.” “ By an acute observer,” he subjoins, “ who had looked on “ the transactions of the medical world for half a century, a very curious book might be written on the *fortune of physicians.*” The idea appears to me so happy that I shall venture to prosecute it through a few pages.

Such a book, with a due extension of the plan, would afford opportunities for displaying professional science, wit, knowledge of the world, and benevolence. For if it be true that many have been received in the name of the goddess of health, who were, in reality, not the least active among the ministers of death, the mistake deserves to be cleared up ; and a proper explanation would be better than “ curious ;” it would not only teach how some members of *the faculty* have contrived to retain a privilege which the priesthood has lost, but furnish I know not how much useful instruction besides.

OF REPUTATION IN PHYSIC.

On the most superficial enquiry, it would be manifest that *this* man prospered because he had been of a certain university ; *another*, merely because he belonged to a particular sect ; a *third*, because he happened to be in the way of procuring a recommendation to some leader in politics or fashion. A great number would be seen to have succeeded in life for the same reason precisely that Falstaff succeeds upon the stage. Few analyse their sensations, and the first impression made by these adventurers was pleasing. As far as the dramatic personage is concerned, the reason is unquestionable, but it by no means applies so happily to the other case. The qualities producing the happy impression,

profession, have, in truth, frequently borne no nearer a relation to professional merit, than Falstaff's pleasantry to solid worth of character; in a variety of instances, they have been no other than symmetry of features or softness of address.

It is calamitous enough for individuals, labouring under disease, to fall into bad or indifferent hands; but when the caprice of fortune elevates her worthless favourites to the first eminence in so important a profession as medicine, a more extensive injury is done to society than we should at first imagine. To calculate its amount requires a great deal of thought. Beside the mischief they perpetrate with their own hands, these intruders occupy the station due (if the general welfare is to settle the precedence), to physicians of enlarged views, who would make a beneficial use of its advantages, and impel the defective art on towards perfection. Is an example necessary to enable you to conceive what might be effected by the powerful influence of medical men, enjoying the confidence of the great? A number may be given, but one will suffice; and it is the better for its simplicity. We have not observations from which we can certainly deduce the difference, in point of efficacy, between certain warm medicinal springs and common water, heated to the same temperature. The problem, merely for its curiosity, deserves to be solved; and it happens to be peculiarly interesting to that order, from which doctors in vogue receive their amplest gratuities. They have shewn little anxiety for the removal of this difficulty, either for their own direction in practice, or by way of return to their benefactors.

They will too often, I fear, be found to have been worse than inattentive to the advancement of their art; and to have discouraged useful investigations by insinuation, if not by direct opposition. Pride and avarice will always combine to render a prosperous adventurer in medicine, whose views are narrow, jealous of improvements and hostile to improvers. The internal monitor whispers that it was not by knowledge he rose, but by knowledge he may sink. It is therefore the constant expedient of dullness to persuade
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the world that men of genius are deficient in judgment ; though it be certain that the very persons who have been most remarkable for devising new means of relieving distress and removing uncertainty, have also been the most acute in discerning the real relations of things. Still, however, *the old way* is judged *the safest*, and crafty mediocrity treasures up the spoils of the credulous and the rich.

It is possible to measure the number of degrees by which medicine is more imperfect than it would have been if the public was not so liable to misplace its confidence, and had not actually so often misplaced it. For this purpose, our enquirer, I apprehend, will find in the progress of a kindred art, a standard of easy application. Let it be supposed that a succession of men of specious carriage and mean talents had flourished for a century past, in the place of our great improvers of surgery. Then good part of their discoveries would have been lost, for we cannot believe that, under discouragement, and with inferior opportunities, Pott, Hunter, and their predecessors could have rendered equal services to humanity. Of these services a concise but clear account should be given ; the same scrutiny should then be extended to the labours of the physicians that have flourished during the same period ; it may begin with Radcliffe, and be carried down to our own times. Thus ordinary readers would be put in a condition to judge how far it betrays a spirit of wanton disparagement, to affirm that a physician in a great city, “is the mere plaything of fortune, they that employ him, not knowing his excellence, nor they that reject him, his deficiency (s) ;” these assertions, if they be well-founded, inevitably lead to a conclusion more important than satisfactory, for however we may be startled, we must infer *that the greatest repute in medicine affords scarce the slightest presumption of superior skillfulness.*

Of the fortunate sons of Esculapius, several have been wary enough not to expose themselves to criticism ; in most cases, however, we have memorials sufficient to guide our

(s) Johnson's Life of Akenfide.

judgment ; some have left written documents of their powers ; here the proportion between reputation and ability can be estimated with great precision.

Considering that his enquiry can be useful only by inculcating salutary circumspection, our author should not be deterred by the first sentiments of repugnance which *the attack* would excite in many minds, nor by the respect due to his virtues, from examining the title of the celebrated Fothergill to present confidence, or posthumous reputation. He should insist the more on this decisive example, because Fothergill really appears to have done his best towards improving the art that enriched him ; and because it would be difficult to prove that any among his equals in popularity, have performed, or could have performed greater things. How far he excelled in sagacity of discrimination, or fertility of resources, would be easily shewn by an impartial survey of his works ; and little doubt would remain whether his patients would have sustained much disadvantage, or our present stock of information much diminution, if any well-meaning man of plain sense had moved in his sphere. If the smallest scruple should be left, there exists a piece of evidence which it may be the more difficult to resist, as it comes from the mouth of the worthy Doctor himself. Fothergill and others, have been heard by Dr. G. Fordyce, “to state in a serious harangue, their
“inspiration, not only in the knowledge of diseases with-
“out enquiring into their external appearances, but in mak-
“ing prescriptions to flow from their pen, without any pre-
“vious composition in their mind ; not in compliance
“with the prejudices of their patients, but from their own
“belief (t).”

From such a comparative estimate, the chief reason why surgery has so far distanced medicine, would appear. Should it be said that surgery must, from its nature, have outstripped medicine, as mechanical philosophy necessarily attained some degree of perfection before chemistry, the justness of the observation may be acknowledged. But after a lib-
eral

(t) Fordyce on Fever, p. 160.

eral allowance for this cause of inequality the author of the Investigation would find a far more powerful cause necessary to account for the whole effect.—He might corroborate his inference by an enumeration of the improvements actually made in medicine ; from which it would be evident that they have been principally owing to persons enjoying moderate reputation in the country.

Objections will occur to hasty reasoners ; and these the author must take care to obviate. “A physician of great eminence may be too busy to write ; he may, also, be highly useful in his generation without leaving any traces of his skill behind.” He could not, however, well be more busy than several of the most eminent surgeons, who have found time to write extensive treatises ; moreover, his practice and conversation, without the aid of his pen, would so widely spread the knowledge of his discoveries, that the patients of every village apothecary would have cause to bless the London luminary of physic.

The answer to these objections affords a criterion, by which we shall be as little liable to be deceived, as when we judge of the value of a fruit-tree by its produce. *If a physician has attained to great eminence without having made some assignable improvement in physic, if he has neither executed nor promoted any designs, tending to this end, he may be safely set down as the narrow-minded creature of artifice, or the spoiled child of chance.* In an age where every incident is brought within reach of every eye, we may with perfect safety apply to personages so conspicuous the maxim of the schoolmen, that “what does not appear, is to be reputed not to exist.”

The work in question doubtless requires courage as well as other valuable qualities ; yet the author, if I do not mistake, would incur less danger at present than at any preceding period. The possessors of surreptitious or accidental fame, would infallibly join in crying or hunting him down, and by signs of alarm bear witness to the merit of the production. But I have reason to believe that the combination would fail in bringing it into total discredit. Some progress

progrès has been made in arranging the peculiar properties of animated nature, and in recommending to mankind the knowledge of themselves. A series of propositions, expressed in intelligible language, and capable of comparison with appearances, has been formed. These propositions, which occur principally in the writings of Dr. Brown, Mr. Hunter, and the author of *Zoonomia*, may be regarded as the foundation of a new science, not less generally interesting than any of the preceding : for it would be difficult to assign a reason why the celestial motions, the working of machines, or chymical phænomena, should be objects of liberal curiosity ; to the exclusion of the effects produced by the principle of life. One reason, of which the force will not be easily eluded, may be assigned in behalf of the latter study. It directly tends to promote the well-being, and prolong the existence, of the student. The time therefore cannot be far distant, when instruction concerning the causes of health and disease will be acknowledged to form a necessary part of all rational education ; and the nearer we approach to this period, with less hazard may the analysis proposed by Johnson, with the plan so enlarged, and the purpose so ennobled, be executed.

There is, still, an addition which, in my opinion, would contribute somewhat to precision, and somewhat to secure the sick against the danger of medical slaughter. This appendix I should call *JATROLOGIA*, a denomination from which the learned reader may infer, that I have in view some such application of the Linnæan method to Physicians, as Baron Born has exemplified in his classification of Monks.

If those assemblages of human animals, that constitute political societies, were arranged according to the nature of their occupations, one class would consist of individuals, depending for their support upon opinion. This class, being provided with a name of Greek origin, might be easily split into orders ; of these orders the medical tribe would make one. We have the order broken into genera ready to our hands : of the distribution into species (which is
more

more difficult) a specimen is subjoined.—Our writer's present concern is only with the genus—*Doctor of Physic*. This genus we may subdivide into sections, or groups; as Linnæus sometimes manages with genera, comprehending a number of species.

S E C T. I.

DOCTORS *as desirous, at least, of doing good and extending knowledge, as of amassing wealth.*

1. *The philanthropic DOCTOR, D.* equally sensible of the importance and imperfection of medicine; compares the phænomena of health and disease with unwearied assiduity that he may form a just arrangement of the actions of life, persuaded that this is the only sure guide in medical practice; cautiously tries new remedies, and abides by the best; beats the coverts of science, that he may himself start something useful; is humane in his conduct, not so much from sudden impulses of the passion of pity, as from a settled conviction of the misery prevailing among mankind.

Var. *a.* *The shy philanth. D.* sick with disgust at the manœuvres of his intriguing brethren, runs into the opposite extreme, and keeps too closely retired from public notice.

Var. *b.* *The renegado phil. D.* possessing activity of mind and integrity of principles; relinquishes the practice of physic, partly for the same reason as Var. *a.* and partly from dissatisfaction with its helpless state; applies his talents to literature or science.

Obs. 1. Several of the greatest accessions to human knowledge are owing to this second variety.

Obs. 2. A careful examination and comparison of these two varieties, with some of the succeeding species, will elucidate the nature of those physicians, that have usually had great *local vogue*.

More frequent than formerly—not apt to flourish in great cities—otherwise not confined to any particular situation. As self-love grows more enlightened, the more common will this sp. of D. become, till it supplants all the

others; man being an animal less liable to be duped as his ignorance decreases.

SECT. II.

D. *Mere collectors of fees, regardless of medical science, given to artifice and intrigue, each species after its own manner.*

3. *The bullying DOCTOR D.*

— *Inexorabilis, acer*

looks big, struts, swaggers, swears.

Obs. Surgeons, in our times, more frequently bear these marks. According to a most acute contemporary author, the famous RADCLIFFE was a complete specimen of the bullying D. “With small skill in physic, and hardly any learning, he got into practice by vile arts.—He would neglect a nobleman that gave exorbitant fees;” and to heighten the insult by contrast “at the same time carefully attend a servant or mean person for nothing—he was surly and morose; treated his patients like dogs—extended his insolence even to the Royal Family—scorned to consult with his betters on what emergency soever; looked down with contempt on the most deserving of his profession, and never would confer with any physician who would not pay homage to his superior genius; creep to his humour, and never approach him but with the slavish obsequiousness of a court flatterer.”

3. *The bacchanalian DOCTOR. D.* given to sottishness, if not to drunkenness—generally somewhat of the Bully.

4. *The solemn DOCTOR. D.* with garb, voice, gestures, and equipage, contrived to overawe weak imaginations, and hide the futility of his art.

Obs. 1. D. of this remarkable species first practised physic with pomp: they invented or borrowed from the other professions those barbarous habiliments, of which ridicule has but lately stripped physicians. In times, when an huge wig, or a flowing gown, could more effectually command respect than sound morality, substantial justice, or useful skill, the stratagem succeeded to admiration.

Obs. 2. D. of this species, when a pretext offers, speak ostentaciously

ostentatiously of their experience—never suspecting any of their hearers may know that there are understandings which multiplicity of appearances serves but to confound.

5. *The club-hunting* DOCTOR. D. frequenting the crowded haunts of men; pushing himself forward, saluting all he knows, and all who will know him; talking much and loud.

Obs. In England, D. of this species have of late been frequently seen in paroxysms of frantic loyalty, and of *ci-visme* in France.

6. *The burr* DOCTOR. D. fastening himself upon you as tenaciously as the heads of the noisome weed (*centaurea calcitrapa*), from which the trivial name of the sp. is taken, fix upon your cloaths.

Obs. Nothing in art, but the juggler's address in making you take what card he pleases out of a pack, equals the dexterity with which D. of this sp. force themselves on patients.

7. *The wheedling* DOCTOR. D. with an everlasting smirk upon his countenance—frequent at the polite end of large cities, and at places of fashionable resort.

Var. *a.* *The Adonis wheedling* D. D. with an handsome face, joined to the wily address, characteristic of the sp.—flourishes as watering places; sometimes joins to his profession the trade of a fortune-hunter; and if he succeeds, “gives physic to the dogs.”

Obs. 1. D. of this sp. when most moderate, prescribe for every rich patient two draughts a day, and one night draught, beside pills and powders. Hence needlessly to swallow nauseous drenches may be numbered among the curses of wealth.

Obs. 2. *The Adonis* D. has sooner or later a patient of note, ill of a fever or some disease, that usually terminates favourably; in case of recovery the female busy-bodies of the place, exert their spirit of cabal in behalf of the wonder-working youth, and his fortune is made.

8 *The case-coining* DOCTOR. D. publishing forged or falsified cases.

Obs. “A very fertile source of false facts has been opened
“for

“for some time past. This is, in some young physicians, “the vanity of being the authors of observations which “are often too hastily made, *and sometimes, perhaps, very “entirely dressed in the closet.* We dare not at present be “more particular ; but the next age will discern many instances of perhaps the direct falsehoods, and certainly the “many mistakes in fact, produced in the present age, concerning the virtues and powers of medicines.”

CULLEN. *Mater. Med.* I. 153.

A-kin to this flagitious abuse is the practice of purchasing false attestations, on oath, for advertisements ; and what is still worse in effect, though not in intention ; a custom beginning to prevail among persons of distinction—who cannot be supposed capable of discriminating diseases, or deciding on the efficacy of drugs—but who, nevertheless, permit Quacks to use their names in testimony of cures, which they *suppose* themselves to have witnessed.

9. *The good-fort-of-man* DOCTOR. D. a good sort of man, armed, by some mistake, with a diploma.

Var. *a.* *The gossiping good-fort-of-man* D. fetches and carries scandal.

Obs. Varieties numerous as the hues of the chamæleon.

10. *The Sectarian* DOCTOR. D. dwelling among his own people at first ; and by them often pushed on to spread devastation among the rest of mankind.

Obs. Varieties manifold ; each distinguishable by the livery of its sect—one is too curious to be omitted.

Var. *æ.* *The inspired Sect.* DOCTOR. D. believing himself to be inspired with the knowledge of diseases and remedies.

In civilized countries not much more frequent than witches. Among rude tribes, as among the Tartar hordes, a kindred variety is universally found. See Gmelin's Travels. But these seem rather to pretend to inspiration, than really to believe that their deity serves them in the capacity of Prompter : and they conjoin the characters of priest and conjurer with that of physician. I have not been able to ascertain whether our variety receives the afflatus, except

cept in its medical capacity : and the miracles it has wrought in this, are not so perfectly authenticated, as to silence cavillers.

Obs. People are now-a-days delicate in giving recommendations on some occasions ; but the best bred persons make no scruple of pressing a favourite physician or apothecary upon their acquaintance. Yet one would think that they are nearly as competent to speak to the merit of a footman, as of a prescriber or compounder of drugs. Sects sometimes improve this propensity into a regular system of cabal. The deeper the hypocrisy, or the wilder the enthusiasm of the Sect. Doctor, the more eagerly will his brother-fanatics dash through thick and thin to serve him. Now, as belief or disbelief in certain points of theology, has no apparent connection with skill in the administration of antimony, mercury, opium, and bark, we may deduce from this fact a rule which is probably as little liable to exception, as any that be laid down on the whole subject. *Never call in a physician, BECAUSE he is recommended by a person of the same Sect ; the more you are urged, be the more on your guard against the snare.* This rule extends to all dæmoniacks possessed by the *corporation-spirit*, and to all sets of persons remarkably gregarious.

Observation.

Concerning this decad of doctors, there remains a caution to be laid down ; and that it may make the greater impression, I shall deliver it in the style of my models, the naturalists. *Notandum in toto hoc genere naturam mirabiles edere lusus.* It is indeed applicable to all the species ; individuals being apt, like hybrid plants, or mule animals, to exhibit the marks of two species, wholly or in part.

OF THE BRUNONIAN DOCTRINE.

A complete investigation of Dr. Brown's theory of living nature, with its application to the knowledge and treatment of diseases, would, at least, equal the original work in size; besides, if I had any inclination to write such a commentary, I should not consider this as the proper place for introducing it. I have, however, a few words to say on the outlines and formation of the system. I shall subjoin some reflections to put medical students and readers, not professional, in the way of profiting by the true principles he promulgated without being misled by his doubtful or erroneous positions.

Of Dr. Brown's Fundamental Propositions.

The varied structure of organized beings it is the business of anatomy to explain. Consciousness, assisted by common observation, will distinguish animated from inanimate bodies with precision more than sufficient for all the ends of medicine. The cause of *gravitation* has been left unexplored by all prudent philosophers; and Brown, avoiding all useless disquisition concerning the cause of *vitality*, confines himself to the phenomena, which this great moving principle in nature may be observed to produce. His most general propositions are easy of comprehension.

I. To every animated being is allotted a certain portion only of the quality or principle, on which the phenomena of life depend. This principle is denominated **EXCITABILITY**.

II. The excitability varies in different animals, and in the same animal at different times. As it is more intense, the animal is more vivacious or more susceptible of the action of *exciting* powers.

III. Exciting powers may be referred to two classes. 1. External, as heat, food, wine, poisons, contagions, the blood, secreted fluids, and air. 2. Internal, as the functions of the body itself, muscular exertion, thinking, emotion and passion.

IV. *Life is a forced state*; if the exciting powers are withdrawn, death ensues as certainly as when the excitability is gone.

V. The *excitement* may be too great, too small, or in just measure.

VI. By too great excitement weakness is induced, because the excitability becomes defective; this is *indirect debility*: when the exciting powers or stimulants are withheld, weakness is induced; and this is *direct debility*. Here the excitability is in excess.

VII. Every power that acts on the living frame, is stimulant, or produces excitement by expending excitability. Thus, although a person; accustomed to animal food, may grow weak if he live upon vegetables, still the vegetable diet can only be considered as producing an effect, the same in kind with animals, though inferior in degree. Whatever powers therefore, we imagine, and however they vary from such as are habitually applied to produce due excitement, they can only weaken the system by urging it into too much motion, or suffering it to sink into languor.

VIII. Excitability is seated in the medullary portion of the nerves, and in the muscles. As soon as it is any where affected, it is immediately affected every where; nor is the excitement ever increased in a part, while it is generally diminished in the system; in other words, different parts can never be in opposite states of excitement.

I have already spoken of an illustration, drawn up by Mr. Christie from a familiar operation, to facilitate the conception of Brown's fundamental positions. I introduce it here as more likely to answer its purpose than if separately placed at the end of my preliminary observations. "Suppose a fire to be made in a grate, filled with a kind of fuel not very combustible, and which could only be kept burning, by means of a machine containing several tubes, placed before it and constantly pouring streams of air into it. Suppose also a pipe to be fixed in the back of the chimney, through which a constant supply of fresh fuel was gradually let down into the grate, to repair the waste occasioned by the flame, kept up by the air machine."

"The grate will represent the human frame; the fuel in
"it

“it, the *matter of life*, the *excitability* of Dr. Brown and the “*sensorial power* of Dr. Darwin ; the *tube* behind supplying fresh fuel, will denote the power of all living systems constantly to regenerate or reproduce excitability ; while “the *air machine*, of several tubes, denotes the various *stimuli* applied to the excitability of the body ; and the *flame* “drawn forth in consequence of that application represents “*life*, the product of the exciting powers acting upon the “excitability.”

“As Dr. Brown has defined *life* to be “*a forced state*,” “it is fitly represented by a flame, *forcibly* drawn forth, “from fuel little disposed to combustion, by the constant “application of streams of air poured into it from the different tubes of a machine. If some of these tubes are “supposed to convey *pure* or dephlogisticated air, they will “denote the highest class of exciting powers, opium, musk, “camphor, spirits, wine, tobacco, &c. the diffusible stimuli of Dr. Brown, which bring forth for a time a greater “quantity of life than usual, as the blowing in of pure air “into a fire will temporarily draw forth an uncommon “quantity of flame. If others of the tubes be supposed to “convey common or atmospheric air, they will represent “the ordinary exciting powers, or stimuli, applied to the “human frame, such as heat, light, air, food, drink, &c. “while such as convey impure and inflammable air may be “used to denote what have formerly been termed sedative “powers, such as poisons, contagious miasmata, foul air, &c.

“The reader will now probably be at no loss to understand the seeming paradox of the Brunonian system ; that “food, drink, and all the powers applied to the body, “though they support life, yet consume it ; for he will see, “that the application of these powers, though it brings forth “*life*, yet at the same time it wastes the excitability or “*matter of life*, just as the air blown into the fire brings “forth more *flame*, but wastes the *fuel* or *matter of fire*. “This is conformable to the common saying, “the more a “spark is blown, the brighter it burns, and the sooner it is “spent.” A Roman poet has given us, without intending “it, an excellent illustration of the Brunonian system, when “he says,

“Balnea,

“Balnea, Vina, Venus, consumunt corpora nostra,
“Sed Vitam faciunt Balnea Vina Venus.”

“Wine, warmth, and love our vigour drain ;
“Yet wine, warmth, love, our life sustain.”

Or to translate it more literally,

“Baths, women, wine, exhaust our frame,
“But life itself is drawn from them.”

“Equally easy will it be to illustrate the two kinds of
“*debility*, termed *direct* and *indirect*, which, according to
“Brown, are the cause of all diseases. If the quantity of
“stimulus, or exciting power, is proportioned to the quan-
“tity of excitability, that is, if no more excitement is
“drawn forth than is equal to the quantity of excitability
“produced, the human frame will be in a state of health,
“just as the fire will be in a vigorous state, when no more
“air is blown in, than is sufficient to consume the fresh
“supply of fuel constantly poured down by the tube be-
“hind. If a sufficient quantity of stimulus is not applied,
“or air not blown in, the excitability in the man, and the
“fuel in the fire will accumulate, producing *direct debility*,
“for the man will become *weak*, and the fire *low*. Car-
“ried to a certain degree they will occasion death to the
“first, and extinction to the last. If again, an over pro-
“portion of stimulus be applied, or too much air blown in,
“the excitability will soon be wasted, and the matter of
“fuel almost spent. Hence will arise *indirect debility*, pro-
“ducing the same weakness in the man, and lowness in the
“fire as before, equally terminating, when carried to a
“certain degree, in death and extinction.”

“As all the diseases of the body, according to Dr. Brown,
“are occasioned by direct or indirect debility, in conse-
“quence of too much or too little stimuli, so all the de-
“fects of the fire must arise from direct or indirect low-
“ness, in consequence of too much or too little air blown
“into it. As Brown taught that one debility was never to
“be cured by another, but both by the more judicious ap-
“plication of stimuli, so will be found the case in treating
“the defects of the fire. If the fire has become low, or
“the

“the man weak by the want of the needful quantity of
 “stimulus, more must be applied, but very gently at first,
 “and increased by degrees, lest a strong stimulus applied to
 “the accumulated excitability should produce death, as in
 “the case of a limb benumbed by cold (that is weakened
 “by the accumulation of its excitability in consequence of
 “the abstraction of the usual stimulus of heat), and sud-
 “denly held to the fire, which we know from experience is
 “in danger of mortification, or as in the case of the fire
 “become very low by the accumulation of the matter of
 “fuel, when the feeble flame, assailed by a sudden and
 “strong blast of air, would be overpowered and put out,
 “instead of being nourished and increased. Again, if the
 “man or the fire have been rendered *indirectly* weak, by
 “the application of too much stimulus, we are not sudden-
 “ly to withdraw the whole, or even a great quantity of the
 “exciting powers or air, for then the weakened life and
 “diminished flame might sink entirely, but we are by lit-
 “tle and little to diminish the overplus, of stimulus so as to
 “enable the “excitability, or matter of fuel, gradually to reco-
 “ver its “proper proportion. Thus a man who has injured his
 “constitution by the abuse of spirituous liquors, is not sud-
 “denly to be reduced to water alone, as is the practice of
 “some physicians, but he is to be treated, as the judicious
 “Dr. Pitcairn of Edinburgh, is said to have treated a high-
 “land chieftain, who applied to him for advice in this sit-
 “uation. The Doctor gave him no medicines, and only
 “exacted a promise of him, that he would every day put
 “in as much wax into the wooden *queich* out of which he
 “drank his whisky, as would receive the impresson of his
 “arms. The wax thus gradually accumulating, diminish-
 “ed daily the quantity of the whisky, till the whole *queich*
 “was filled with wax, and the chieftain was thus gradual-
 “ly, and without injury to his constitution, cured of the
 “habit of drinking spirits.”

“These analogies might be pursued farther ; but my
 “object is solely to furnish some general ideas, to prepare
 “the reader for entering more easily into the Brunonian
 “theory,

“theory, which I think he will be enabled to do after per-
 “rusing what I have said. The great excellence of that
 “theory, as applied not only to the practice of physic, but
 “to the *general conduct of health* is, that it impresses on the
 “mind a sense of the impropriety and danger of going from
 “one extreme to another. The human frame is capable
 “of enduring great varieties, if time be given it, to accom-
 “modate itself to different states. All mischief is done in
 “transition from one state to another. In a state of low
 “excitement we are not rashly to induce a state of high
 “excitement, nor when elevated to the latter, are we sud-
 “denly to descend to the former, but step by step, and as
 “one who from the top of a high tower descends to the
 “ground. From hasty and violent changes the human
 “frame always suffers, its particles are torn asunder, its or-
 “gans injured, the vital principle impaired, and disease, of-
 “ten death, is the inevitable consequence.”

“I have only to add that though in this illustration of
 “the Brunonian System (written several years ago), I have
 “spoken of a tube constantly pouring in fresh fuel, because
 “I could not otherwise convey to the reader a familiar idea,
 “of the power possessed by all living systems, to renew their
 “excitability when exhausted, yet it may be proper to in-
 “form the student, that Dr. Brown supposed every living
 “system to have received at the beginning its determinate
 “portion of excitability, and therefore, although he spoke
 “of the exhaustion, augmentation, and even *renewal* of ex-
 “citability, I do not think it was his intention to induce
 “his pupils to think of it, as a kind of *fluid substance*, exist-
 “ing in the animal and subject to the law by which such
 “substances are governed. According to him, excitability
 “was an unknown *somewhat*, subject to peculiar laws of its
 “own, and whose different states we were obliged to de-
 “scribe (though inaccurately) by terms borrowed from the
 “qualities of material substances.”

T. C.

II

IT was not unusual for Brown's disciples to disagree, when they were called upon for a strict interpretation of his principal tenets. If they be rigidly examined, they will be found, I think, not quite consistent with his own important doctrine of the accumulation of excitability, during different states of inaction. It appears to me, that according to his first chapters (xviii), living beings ought to have proceeded through languor to death in one unbroken tenour of wakefulness, and that all the images and lamentations which sleep has suggested to the poets, would have been lost. He who assumes that a certain portion of excitability is originally assigned to every living system, by his very assumption, denies its continual production, subsequent diffusion, and expenditure at a rate equal to the supply, or greater or less. That the brain is an organ destined to secrete the matter of life, he could never have supposed, otherwise he would not have expressed a doubt whether excitability be a quality or a substance.

If we admit a successive supply of this principle, we may solve in a very easy manner, several difficulties, for the sake of which new epicycles must be added to Brown's system. In the cold bath we may imagine the generation of sensorial power, to proceed with small diminution, while the actions on the surface of the body are considerably abated by local subduction of heat. Thus the well-known glow will be the effect of undiminished production within, while external expenditure is diminished. But weak persons frequently do not experience any glow. Here the action on the skin affects the system universally; the production, therefore, is checked from the torpor of the discerning organ, and this state of the brain explains the head-ach and chilliness, subsequent to the misuse of the cold bath. These effects are not, in my apprehension, easy to be reconciled to the hypothesis of a fixed original stock of excitability; the same thing may be said of seeds and eggs long preserved, without sensible change, in a state capable of germination and growth. Sleep sometimes produces no refreshment, and yet it seems not to be imperfect or disturbed in proportion

portion to the languor felt on awaking. This I have attributed to a failure in the supply of excitability (*a.*); and nervous fever is imputed by another physiologist, to this cause of debility, of which Brown had no suspicion.—If an illustrative analogy be desired, his excitability might be compared to a fluid lodged in the body as a reservoir. According to the statement which I think more consonant to the phænomena, excitability would be like a fluid issuing from the brain as water from a spring. These resemblances might be traced a little way, but they soon fail, as always happens in matters so essentially dissimilar.

The hypothesis of Brown is happily adapted to the limited term of life; according to the other supposition, we must conceive old age and death to depend upon a limited power of secretion in the brain. The difference is scarcely perceptible here, but in terms; it is, however, pleasing to suppose that wiser ages will be employed in the culture of the human species to which prolongation of life is essential: and we can more easily reconcile our thoughts to augmentation of power in a secreting organ, than of the original provision of excitability; so that the doctrine, in other respects the more probable, seems more conformable to the prospect of improvement.

Of Brown's Application of his Principles.

The most negligent observer might bring specious objections against that uniformity of operation in stimulants, which is taught in the first propositions of the following elements: "heat and wine, it might be said, can never act in the same manner, for no person is intoxicated by heat." In the progress of his work we find the author relaxed, in some degree, the rigour of his principles. When the excitability is wasted by one stimulus, excitement, he says, may be produced by another; nor does it seem necessary, according to the examples quoted in the latter part of the thirty-first paragraph, and the subjoined note, that the second stimulus should be more powerful than the first.

The

(*a.*) Observations on Calculus, &c.

The succession in the note is, *food, thought, wine, food, punch, opium, punch, thought, and speech*; and this is not conformable to the ascending scale of stimuli, according to his estimate in other passages.

He also admits some modification of stimulant power, from the manner in which different stimuli are applied. Thus heat stimulates the surface more than the subjacent parts; and stimuli received into the stomach exert more action there than on any other part.

It is extraordinary that he should not have extended this inequality of operation to the constituent, as well as the integrant parts of the system. It was his principal fault, *naturam tanquam e præaltâ turri despicere*; hence his explanation of minute appearances, will often be found unsatisfactory. The fourth and sixth chapter of Part II. afford several examples; I shall select one: "Thirst and heat," he observes, (CLIX.) "depend upon sthenic diathesis of the extreme vessels of the fauces and skin. These vessels become so much constricted as to prevent the discharge of the perspirable matter. Meanwhile the blood, flowing near the extremities of the exhalant vessels, lodges under the cuticle, the heat which is generated in the system, and which would be carried off, if the perspiration were free." He explains sthenic thirst from a similar constriction of the vessels, which secrete saliva and mucus; and in the small-pox, the pustules are said to be occasioned by a similar constriction, which detains the contagious matter under the cuticle. This permanent constriction, we are told, is not spasm; no distinction, however, is attempted, except by referring constriction to excess, and spasm to defect, of excitement.

Upon this reasoning, it may be remarked, 1. That excessive excitement of vessels consists in excessive oscillations—in the increase, not in the suppression, of their healthy functions; and 2. That to account for morbid alteration in the ordinary state of any discharge, we ought to look for an alteration in the action of those vessels, by whose counteracting powers it is regulated in health. The
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balance in the perspiration depends on the cutaneous exhalants and absorbents ; but the properties of the lymphatic system seem never to have struck the imagination of Brown, though the investigation was carried on with so much ardour during the period of his studies ; attention to these anatomical discoveries would have assisted him in the full explanation of many diseases, which, though they pass under the same denomination, he has most justly classed as of a nature entirely opposite ; the one sthenic, the other asthenic ; but to make out this explanation, he must have acknowledged in these different vascular systems, some degree of inequality in the way in which they are affected by stimulants that operate on both. Thus if the power of absorption be sooner increased by the causes inducing the sthenic diathesis than that of exhalation, there is no occasion to imagine any constriction to account for the dryness of the skin and fauces. The consequent more speedy exhaustion of excitability in the absorbents, would likewise have suggested the rationale of that discharge that follows the state of dryness or *huskiness* of the skin, fauces, or urethra, of the trachea and its ramifications, when these parts are affected by inflammation.

A great part of the symptoms of Brown's *asthenic form of disease*, depend upon imperfect absorption from indirect debility of the vessels destined to that office ; thus persons whose lungs have been weakened by inflammation after a meal expectorate mucus. In this case the food excites the whole system ; the activity of the bronchial glands is increased, more mucus is secreted, and part becomes superfluous, on account of the comparative inactivity of the absorbents. *Quibus post inflammationem superest urethræ debilitas profluit mucus limpidus, postquam tensus fuerit penis.* The reason is the same.

Had it been once allowed by Brown that the different constituent parts of the body, bear a different relation to the same agents, he must have admitted the operation of specific stimulants to an unlimited extent. This however, would have destroyed the universality of his principles, which

which he considered as the great beauty of his system ; but his own opportunities of observation were probably too few, to force upon him a conviction of their insufficiency ; it is easy to exceed equity and prudence in refusing to hearken to testimony, and we may daily see speculative men forgetting that philosophy does not more consist in petulant rejection of information than in credulity.

Of the Formation of the Brunonian System.

It is believed that hints thrown out by Cullen, were the seed from which Brown raised his doctrines.

The connection between the two men, is doubtless favourable to the supposition of a communication of ideas, and it is confirmed by the circumstantial evidence of a common term, from which the other terms, employed by Brown, might be constructed by an obvious analogy. The hints suggested by Cullen occur in the CXXXth, and some of the following paragraphs of his *Institutions of Medicine*.

“ It is,” he says, “ probable that the nervous fluid in “ the brain, is truly capable of different states or degrees of “ mobility, which we shall call its states of *excitement* and “ *collapse*.” In his youth, this author had imagined a mechanical hypothesis respecting the nervous fluid, which he regarded with fondness through life, and unfolded with great prolixity in the decline of his powers (*b*). When he wrote the passage I have quoted, his thoughts were turned from the living body to an electrical machine ; and he evidently does no more than describe the common experiment, in which a congeries of flexible fibres is made to stand erect, and to diverge by electricity, and then shrinks together on the application of a conducting substance. His idea of excitement has therefore nothing in common with that of Brown ; and, on comparison, I am persuaded it will appear that Brown was very little indebted to the physiology of his master.

A material correction of the Brunonian theory, may be more safely ascribed to one of Mr. Hunter’s discoveries,
than

(*b*). See his *Materia Medica*.

than its origin to these obscure opinions of Dr. Cullen. An intelligent writer, whose expressions bespeak personal observation, gives the following account of the extent and occasion of this correction. "In the first promulgation of his doctrines, Dr. Brown did not sufficiently distinguish between the actions of the living body and its powers.— *Excitement* and *strength* were at first considered by him as synonymous terms; and on the state of excitement, his distinction of diseases was entirely founded. To the last he had but two classes; diseases of increased and diminished excitement.

"After many discussions of his doctrine, in which the distinction between the powers and actions of the living body was pressed upon him, he adopted the term *excitability* to express the disposition to action, and to replace the terms *irritability*, *sensibility*, and *inability*, which he had discarded from his system (c)."

An alteration of some consequence respecting discharges of blood, which was made in the interval between two Latin editions of his elements, is noticed by the author himself. What corrections and enlargement are further required, the curious reader may determine by a careful comparison of the following system, with the kindred systems of two contemporary authors; constant reference being had to nature at the same time.

Of Predisposition to Disease.

Among a number of individuals equally exposed to any cause of disease, we constantly find some affected, and others escaping. The circumstances on which exemption and aptitude depend have been anxiously investigated; and if we were well acquainted with the powers that favour and resist morbid influences, we should be able more effectually to accomplish one of the two grand purposes of the medical art—the preservation of health. But although facts have been noted, the principle lies involved in total obscurity. Brown does not purposely elude the difficulty, but

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his principles lead him beside it; and we may doubt whether the term *predisposition* ought, in strict propriety, to have appeared in his Elements; for predisposition is with him a slight disease, differing only in degree from that into which the person predisposed falls. (Chapter VIII. Part I.)

Between those actions of our different organs, and of the same organ which frequently occur together, or in succession, a bond of union is formed by habit, as in the case of our ideas. Of any two movements, therefore, if the former tend to introduce the succeeding, the second must take place, unless it be prevented by some interposing force. Hence it is manifest that robustness of constitution, principally consists in the strength of connection between the several members of the series, and proneness to disease in the facility with which the series may be broken. On this principle we may understand why brutes are more robust than the human species. Their actions both of body and mind are less diversified than ours; and being in consequence more frequently repeated in the same order, they acquire greater force of union, or, as it has been lately termed, *strength of catenation*. It may deserve to be considered whether the remarkable exemption of negroes from the contagious fevers that have lately raged in America and the West Indies, and the comparatively small mortality among them depend on their uniform life (*d*).

Persons

(*d*). "Although the contagion seemed to vary much in different descriptions of people, it is highly probable that the virus of the contagion itself was uniformly the same, only variously modified by peculiar constitutions, habits, or modes of living. Thus among sailors, perhaps a scorbutic taint, joined to extreme irregularity and imprudence, rendered the disease infinitely more fatal than among any other class of men. On the other hand, among field-negroes, who certainly possess an idio-syncrasy peculiar to themselves, and whose mode of living is generally temperate and regular in a remarkable degree, the virus of the contagion was so blunted as to act in the mildest form. Why, however, it should operate with most violence on Europeans just arrived, and who had never entered the torrid zone before, is a singularity I do not pretend to explain." Chisholm on the malignant pestilential fever which raged at Grenada in 1793, p. 130-1, one of the most fatal diseases on record.

Persons who have enjoyed uniformly good health, are said to be in greater danger when they become ill ; and in cases where the opinion is just, we may deduce an explanation of the apparent paradox from the same principle ; for the disturbance of the functions betrays the intervention of a powerful cause.

Are not the embryos of organized beings placed in their peculiar receptacles, that they may be secure against violent impressions, till the movements of their organs, by repetition, come to proceed with a steady pace, and the animal machine is mounted ?

Pregnant and puerperal women are among the persons most liable to be affected by the slightest causes of disease. In the former, from the great change of the sanguiferous and glandular systems, new irritative and sensitive motions are perpetually introducing themselves ; and at the time of parturition, there is a sudden dissolution of all the newly formed associations ; at this critical period they require to be guarded with the nicest vigilance from all sudden changes of temperature, irregularities of diet, and exertions of body and mind.

In the transition from climate to climate, it is obvious that our habitual movements, especially those of the cutaneous vessels of all denominations, must be thrown into total confusion. In this state of disordered action, there can be no power of association or connection to protect the system. It has also been universally observed, that contagious fevers are liable to make their attack after intoxication, when the whole internal man is tumult.

In the account of the Grenada fever, there is a scale to shew the gradation in which the natives of different countries, Africans, Americans, Creoles, and Europeans, assembled in that island, were liable to be infected and destroyed. This scale will serve as an illustration of the two last mentioned causes ; a thousand others are at hand.

“ It is curious,” says the writer, “ and may be useful to observe the gradation of this fatal malady, with respect to the various descriptions of people exposed to its infection.

“ Neither

“Neither age nor sex were exempted from its attack, but
 “some were more obnoxious to it than others, and the
 “colour had evidently much influence in determining its
 “violence. The scale of its violence, or the gradation it
 “observed with respect to the different classes of the in-
 “habitants, appeared to be the following :

“I. Sailors, more especially the robust and young, those
 “least accustomed to the climate, and those most given to
 “drinking new rum.

“II. Soldiers ; more especially recruits lately from
 “Europe, and the most intemperate.

“III. White males, in general, lately arrived, more
 “especially young men from Europe.

“IV. All other white males, more especially the lower
 “classes ; and of them, the most intemperate, those de-
 “bilitated by recent sickness.

“V. White females, more especially those connected
 “with the shipping, and those lately from Europe.

“VI. People of colour, from Mustees to Cabres,” (that
 is, I think, inversely as the darkness of complexion).

“VII. Negro men, more especially sailors and porters.

“VIII. Negro women, more especially house wenches.

“IX. Children, more especially those of colour.”

Infants, whose organic movements are not yet regulated by habit, seem to afford an exception to the rule of predisposition. They are, it is said, less liable to some contagious fevers ; and when infected, their chance of recovery is much greater ; the latter circumstance has been noticed by various observers (e). If children were only less liable to be infected, the difference might be fairly supposed to depend on their not coming so often within the infecting distance ; but after infection they are protected by some unknown peculiarity. Is the contagion weakened, when first swallowed by a diarrhoea, as was the case with some persons who received the dangerous infection at the Black affizes at Oxford ? Or has the gastric liquor of children,
 some

(e). See for instance, Campbell's *Observations on Typhus*, 1785, p. 55.

some power to render the poison inert? This inferiority of power in one or two particular contagions, to infect and destroy children, deserves further enquiry.

Of the Depressing Passions.

There are several other opinions, which, in a complete revival of the Brunonian system, would require particular examination; such are his doctrine concerning hereditary diseases, the peculiar seat of sthenic inflammation, and the nature of the passions. This last subject is of great importance, and if, in treating it, Brown has failed, he has but shared the fate of other writers. The *mechanism of the passions*, or the state of our different organs, while we are under their influence, has never been explained. If any proof be required of the general want of information on this subject, it may easily be produced. Writers, educated in different systems, and who cannot be supposed to have been misled by the undistinguishing ardour of youthful enthusiasm, have found no better resource than to adopt Brown's theory (*f*).

In fear, grief, and anxiety, some parts manifestly betray, by their paleness and coldness, diminished exertion. Now, as no two parts, according to our author, can be in opposite conditions at the same time, what could he in consistency do, but assert that the doctrine of heat and cold is exactly applicable to the passions (Part I. Chap. iii. n.)? In high spirits, therefore, we are to suppose ourselves animated by something corresponding to the warmth of summer; in tranquillity we are lowered by a subtraction of this mental stimulus down to temperate, and in grief we sink to the freezing point; how far the common opinion varies from this of Brown, I cannot exactly say, because I do not understand what particular change the words *depressing* or *sedative* passions, are designed to indicate. When I try to assist my apprehension by some analogy, I find nothing in nature to help me out, but am obliged to think of certain passages
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(*f*). See Dr. Rush on the fever of Philadelphia, p. 31. "Fear debilitates only because it abstracts its antagonist passion of courage."

in books of romance, where the enchanter is described as inducing a state of permanent torpor by the motion of his wand. To discover whether any of the passions have a *benumbing* operation, does not appear very difficult ; let us take a transient look into the mind of a mother sorrowing for the loss of her son, I ask whether her ideas are more or less vivid than usual ? whether she does not exert herself to recollect all he said or did between the cradle and the grave ? Whether after minutely considering what he has been, does she not set herself with equal earnestness to fancy what he would have been ? and whether every picture formerly drawn by hope, does not pass again before her imagination, with the figures more strongly illuminated, and more distinctly embodied ?

- “ Grief fills the room up of my absent child ;
 “ Lies in his bed ; walks up and down with me ;
 “ Puts on his pretty looks ; repeats his words ;
 “ Remembers me of all his gracious parts ;
 “ Stuffs out his vacant garments with his form ;
 “ Thus have I reason to be fond of grief.”

CONSTANCE in the Play of King John.

If this expression of sorrow be not too strong, while an happy meeting is still believed possible, it may be doubted whether the faculties of Shakespeare or Schiller, faculties strained to their utmost pitch, are equal to that intensity of thought which takes place when this hope is finally destroyed. Fear and anxiety excite images of equal vivacity, and on considering the subject, it will appear that for these states of mind, *perturbation*, which occurs in the writings of the ancient philosophers, is a far more apt term than *passion*. Had it not been for inaccurate language, which the author of the *Enquiry into the State of Medicine* justly calls the greatest of all plagues in science, the opinions I am inviting the reader to compare with nature, would probably never have existed. Neither should we perhaps have been taught, that in grief the mind moves slowly—an assertion as distant from the truth, as if it should be said that animals in full chase of their prey, move more slowly than when they are not actuated by any appetite ;
 for

for the eagerness, with which some train of ideas is then pursued, admits of a comparison with hunting.

The excitability, therefore, is exhausted by any passion or perturbation, in the same manner as by excessive excitement in other cases. Whether temporary weariness, or irreparable debility shall ensue, depends upon the intensity and duration of the exertions, made by the organs in action. The explanation of the difference between *weeping* and *tearless* grief, with the means of curing either and changing the latter (which is a much more dangerous disease) into the former, depends on principles, not to be found in the following system. In the present specimen of criticism, it is the less necessary to enter upon these enquiries, as the public may soon expect better instruction on the pathological part of this subject than I am able to give.

Conclusion.

The Brunonian system has frequently been charged with promoting intemperance ; the objection is serious, but the view already given of its principles shews it to be groundless. No writer had insisted so much upon the dependence of life on external causes, or so strongly stated the inevitable consequences of excess. And there are no means of promoting morality upon which we can rely, except the knowledge of the true relations between man and other beings or bodies. For by this knowledge we are directly led to shun what is hurtful, and pursue what is salutary ; and in what else does moral conduct, as far as it regards the individual, consist ? It may be said that the author's life disproves the justness of this representation ; his life, however, only shews the superior power of other causes, and of bad habits in particular, and I am ready to acknowledge the little efficacy of instruction, when bad habits are formed. Its great use consists in preventing their formation, for which reason popular instruction in medicine would contribute more to the happiness of the human species, than the complete knowledge of every thing which is attempted to be taught in education,

education, as it is conducted at present. But though the principles of the system in question did not correct the propensities of its inventor, it does not follow that they tend to produce the same propensities in others.

The distinguishing merit of Brown is obvious; he avoided all false analogies, and confined himself within the proper sphere of observation for a physician. Hence at a time when I could not be suspected of that disposition to diminish the faults, and magnify the excellencies of his system, which my share in the present publication may be supposed to produce; I was led to remark, that "if he has not always discovered the truth, he is seldom forsaken by the spirit of philosophy (g)." Before him investigations relative to medicine, had been carried on just as rationally as if to discover the qualities of the horse, the naturalist were to direct his attention to the movements of a wind-mill. There existed no system which was not either entirely, or in a great measure, founded upon the observed or supposed properties of substances, destitute of life. Thus Boerhaave taught that diseases depend upon changes of the blood, similar to those which certain oily, watery, or mucilaginous liquors undergo; and I have already had occasion to shew that Cullen referred the phænomena of life to an imaginary fluid, endowed with the same properties as the electric fluid; though of this the very existence is still problematical (h). His predecessors having in this manner

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(g). Observations on Calculus, p. 159.

(h). Mr. Hunter, who deserves so much praise for ascertaining facts, has been led astray in some of his attempts to establish principles, by a different, but a very curious species of delusion. In treating of that obscure subject, for instance, the coagulation of the blood, he observes that it sometimes takes place very quickly, as in mortification: but then "it is to answer some good purpose, and arises from NECESSITY, which appears to act as a stimulus in disposing the blood to coagulate." He adds that by "actions taking place from necessity, effects are meant which arise from some unusual or unnatural change going on in the parts, and become a stimulus to action. The stimuli from this cause may vary exceedingly among themselves: but as we are unable to investigate them, I have included them under this general

term,

left MAN entirely out of their systems, or assigned him an unimportant place, Brown achieved the important service of restoring him to his proper station in the centre. We have other obligations to him ; but as I have already had occasion to point out some of them in the course of these preliminary observations, and as the rest will be discovered by an attentive perusal of the following work, I shall leave the task of singling them out, and appretiating them to the impartial reader. In forming this estimate he should have before him, 1. The difficulty of emancipating the mind from the dominion of inveterate and accredited error. 2. The much greater difficulty of giving a new form to a complicated and obscure science.

Three years ago I had occasion to observe, that the opinions of Brown had been so widely diffused by oral communication, as to affect the whole practice of medicine in Great Britain. In pamphlets recommending repeated doses of opium to support excitement, and in other publications, it would be easy to detect attempts to purloin his language and ideas ; but it is unnecessary, for though literature has always been infested by a race of pilferers, original genius has seldom been injured by their dishonest practices. Brown cannot now be defrauded of his just reputation. His writings have lately been republished (k),
and

“ term, *stimulus of necessity.*” (*On the blood*, p. 24.) It may be laid down as a rule in logic, that general terms ought never to be employed, unless we can substitute particular terms expressive of appearances in their place. Mr. Hunter confesses his ignorance of those changes, which he comprehends under the phrase, *stimulus of necessity.* It is manifest, therefore, that it refers to nothing cognizable by sense ; and his position amounts simply to this, *the blood coagulates because it must coagulate.* This is not the only occasion on which this ingenious anatomist has been betrayed into the mysticism of occult causes ; and it would probably create some surprize in an ancient poet to find allegorical beings like NECESSITY and DEATH, figuring in a modern work among the principles of physiology. It is easy to excuse Mr. Hunter for mistaking nominal for real essences ; but the example deserves notice as it so clearly shews the extensive utility of the philosophy of words.

(k). See *Brunonis Elem. Med. cum Prefatione Petri Moscati.*

and are gaining credit on the continent of Europe. In America his superiority to preceding systematic authors, appears to be acknowledged alike by students and professors (1).

To speak of the dangerous influence of his system on practice, I think as useless now as to detect plagiarisms. His disciples have sometimes disgraced themselves by that rashness, which was too much the characteristic of his school. But a cool perusal of his work will not produce the effect of his animated, and sometimes frantic prelections. What he has left can only inform or exercise the understanding; but he retains no power to inflame the imagination from the grave.

(1). See Rush on the yellow fever, and some inaugural dissertations lately published at Philadelphia.

Since the preceding pages were printed, I have received further indubitable proofs of the ascendancy which the truths, promulgated by Brown, are gaining over men's minds in different parts of Europe. A translation of his "OBSERVATIONS" under the title of *Compendio della nuova dottrina medica di G. Brown* was published at Pavia in 1792. It has been since republished at Venice, and so has Moscati's Edition of the *Elementa*. The translation is by Dr. Rasori, who has prefixed a sensible introduction, and added many judicious notes. In a letter, accompanying a copy of his translation, Dr. Rasori says, "In the University of Pavia, undoubtedly one of the first in Europe, there is hardly a student, endowed with talents, who is not a Brunonian. The doctrine begins equally to spread in Germany. Many of the periodical publications of that country have noticed it, and the *Elementa* have lately been published there. A friend at Genoa assures me, that several surgeons to French men of war have informed him, that Brown is known and much admired in France. In the University of Pavia, Brown is in high esteem even with some of the most respectable professors; and in other parts of Italy I can assert from my own knowledge that old physicians have not refused their sanction to many of the Brunonian principles."

A late pamphlet entitled *Jacobi Sacchi in principia Theoriae Brunoniae animadversiones*, but supposed to be written by Professor Carminati, affords ample confirmation of the account, given by Dr. Rasori. The first sentence runs thus: *Quaerenti mihi causas incredibilis prope illius commotioni*

commotionis animorum, atque ingentis ferè plausus, quibus nuper, imè singularis illa hypothesis, cui novum universae Medicinae systema celeberrimus Angliae scriptor & medicus BRUNO superstruxit, ab iis optimae spei adolescentibus excepta esset, qui in florentissimo Ticinensi Archigymnasio salutaris artis studiis omnibus mecum incumbunt, per arduum sane non fuit eas . . . invenire. After some pages of introductory matter, the author objects strongly to Brown's definition of life—*quod ideam vitae non in proprietate seu incitabilitate, sed in actione collocavit.* He adduces various instances in which organic bodies lose sense and motion, without losing their susceptibility of feeling and moving, when differently circumstanced. Professor Carminati, he says, having killed a cat by mephetic air, took out the stomach with the intestines, and exposed them to the influence of a frosty air in his court-yard. They lost by degrees their peristaltic motion, and were frozen stiff. Next day, they were put into warm water; and when they were thawed, the peristaltic motion returned, and lasted for a long time. This seems to be little else than a dispute about terms. The objector next controverts Brown's grand discovery—*omnia quae viventium partibus admoventur, sive interna sive externa sint, perpetuo incitantia esse.* He produces the application of cold bodies and blood-letting, as examples of effects produced on the living body otherwise than by stimulating. He forgets that it is the residuary heat and the residuary blood which Brown regards as stimulants, inferior indeed in efficacy but still stimulants. The effect of alkaline substances on acid generated in the stomach, and some other similar cases, are afterwards specified, as not comprehended under the general proposition. The author however seems aware that no Brunonian can want the wit to repel these objections. He mentions caustics as exceptions to the rule; he however allows that they are partly beneficial by stimulating, and omits to mention that part of their operation which is *not* stimulating. During this skirmishing, in which the adversary of Brown takes care to retreat nearly as much as he has advanced, he appears to gain courage, for he now attacks the new system in its strongest post. Opium, he affirms, is a medicine which although it has some stimulating power, removes irritation *non eo, sed alio sibi proprio principio.* So are all sedatives. Under this head the power of opium to allay excruciating pain and restrain irregular motions is copiously exemplified; the writer seems to suppose that pain always implies excess of action, and convulsions excess of general power. He acknowledges that volatile stimulants remove *quasdam nervorum aegritudines, sed eas quae a vera debilitate procreantur.* At the close of this article an argument occurs, which I know not how the most determined Brunonian will answer. It is this; if there were no difference but in energy between opium and other drugs, it might be compensated by increasing the dose of these, which is contrary to experience.—An acute opponent would not, the reader may be sure, fail to bring forward the specific action of quick-silver, cantharides and other bodies; he even contends that universal stimu-
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lants by no means tend to evince that the *excitability* is one and indivisible, since they are compounds, and their several constituent parts may act upon several portions of the system. Brown was totally inattentive to the association of motions; and our Italian critic does not omit to take advantage of this imperfection. He quotes several instances of the sympathy of similar parts (as the decay of corresponding teeth), and argues from them in the following manner: *juxta diversas aut similes partes, sive sensibilitas sive irritabilitas aut diversa aut similis seu aequalis est . . . Hinc ubi causa praedisponens, aut idem stimulus seu eadem causa occasionalis, quae in aliqua corporis sede morbum intulit, ad aliam quoque similem referatur, nascetur illico causa proxima, ejusque effectus, nempe morbus: quod quidem fieri non posset in diversa parte, licet eam quoque idem stimulus pertingat.* Lastly, the author contends that Brown has improperly given the common name of *excitability*, to irritability and sensibility, properties essentially different.—The theory being thus dismissed, the practice of the Brunonian school is brought under examination. Frozen limbs, it is said, are to be warmed gradually, but only lest the vessels should be burst by the sudden expansion of their contents. So also, a small quantity of food is to be given to persons who have been long fasting, merely because the digestive powers are weak, and not to avoid violent excitement from accumulation of excitability. The writer protests equally against the use of small stimulants in *direct* debility, and of a stimulus nearly equal to that which has induced *indirect* debility, in cases of an opposite nature. On the latter principle, he thinks, the most powerful stimulants ought to be given in the most violent peripneumonies, and blood-letting to be avoided. Under the former head, he asks: *Quis ubi siphylis faciat atrociter ejus sanationem, validioribus posthabitis mercurialibus, committet lenioribus?*—To prove the reality of contrary indications, the complication of true peripneumony with malignant petechial fever and other diseases, requiring the use of debilitating and strengthening means at the same time are adduced. Several pages are employed to shew that a low temperature is not debilitating and the converse. The Brunonians will easily shew by a few obvious distinctions, to how little purpose the author has laboured here. In conclusion, he points out what he deems absurdities in Brown's opinions concerning the itch, scurvy, epilepsy, and some other disorders.

But whatever justness there may be in some of these remarks, whatever errors Brown may have committed in the application of his principles, and however short his doctrines may fall of a perfect system of medicine, I will venture to predict that his credit on the continent will remain unshaken. The introduction of his opinions will have a most beneficial influence upon those by whom they are adopted as well as upon those by whom they are rejected. Brunonians will not imitate the stupidity of the disciples of certain ancient philosophers, but exercise their reason in expunging, adding and correcting, as experience shall dictate. With regard to Anti-Brunonians a recent example will explain

explain my meaning. When Lavoisier first announced his system, the chemists who were most scandalized by it, found themselves obliged to revise their whole stock of facts and deductions; the immediate consequence was an entire change in their opinions. Though they would not go over to Lavoisier, they could not adhere to Stahl, but reluctantly abandoned half their errors. The dissemination of the Brunonian doctrine will bring about the same thorough lustration of opinions in medicine, and the most pernicious among the prevailing prejudices will be relinquished without a contest.

The reader may estimate what it is to have put so many nations into the right path of medical investigation. It is true, indeed, that we in Great Britain, suppose ourselves to have enjoyed the privilege of being purblind, while the eyes of foreigners were sealed to the agency of those causes that actuate animated nature; and would it not be a pity if we should lose our distinction? But though we should be outstripped in medicine by the awakened genius of France, or the enlightened industry of Germany, we shall not be without consolation: since in consequence of Brown's discoveries, our countrymen labouring under disorders, such as we cannot cure, stand a chance of profiting by the collective efforts of human ingenuity.



TABLE OF EXCITEMENT AND EXCITABILITY.

	EXCITEMENT.	DEATH.	EXCITABILITY.		DISEASES.	CAUSES.	CURE.					
						NOXIOUS	IMMEDIATE					
Predisposition to Sthenic Disease.	0		80	} Indirect Debility.	} Sthenic Diathesis.	} Excessive action of powerful stimuli; as heat, exercise, food, abundance of blood, violent passions of the mind, contagion, and the like.	} Indirect debility.	} The indication of cure is to support the excitement. The remedies are powerful stimuli, as electricity, opium, æther, spirituous, liquors, wine, musk, cinchona bark, snake root, camphor, rich soups, and the like.				
	5		75						} High Sthenic.	} The same as above, but not to that excess which induces indirect debility; yet acting with greater force than in the next range of disease.	} Greatly increased excitement.	} The indication of cure is to diminish the excitement; which is to be effected by avoiding powerful stimuli, and employing slight or defective stimuli, as lying cool in bed, tranquillity of mind, bleeding, purging, spare diet, and the like.
	10		70									
15		65	<p>The range of good health is with propriety ranked from thirty to fifty degrees in the scale; for perfect health, which consists in the middle point solely, or forty degrees, rarely occurs; in consequence of the variation of the stimuli to which man is continually exposed, as meat drink, and the passions of the mind; which sometimes act with more power, sometimes with less, so that the excitement commonly fluctuates between thirty and fifty degrees.</p>									
20		60	} Good Health.									
25		55	} Mild Asthenic.	} Direct Debility.	} Asthenic Diathesis.	} A deficiency of the stimuli necessary to the maintenance of good health; and an improper application of powers, which, though stimulant, do not stimulate in a sufficient degree.	} Diminished excitement,	} The indication of cure is to increase the excitement. The remedies are powerful stimuli, such as are exhibited for the cure of indirect debility, but with this difference, that here it is necessary to begin with a small degree of stimulus, and increase it gradually.				
30		50							} High Asthenic.	} Defective stimuli alone; as cold, diet sparing and not of good quality, fear, and the like.	} or	} The indication of cure is here the same as above, but stimuli must be applied somewhat more cautiously.
35		45										
40		40	} Perfect Health.									
45		35	} Predisposition to Asthenic Disease.									
50		30	} Death.									

TO

JOHN BROWN, M. D.

THIS TABLE IS DEDICATED, AS A TESTIMONY OF RESPECT,

BY HIS FRIEND AND PUPIL,

SAMUEL LYNCH.

THE
ELEMENTS OF MEDICINE.

THE FIRST AND REASONING PART.

CHAP. I.

EXPLANATIONS.

Of medicine—Of health, good and ill—Of diseases local and universal—Of predisposition.

I. **M**EDICINE is the science of preserving the good, and of preventing and curing the ill, health of animals.

II. The application of this science to vegetables, may be named Agriculture.

III. Good health consists in a pleasant, easy, and exact use of all the functions.

IV. Ill health consists in an uneasy, difficult, or disturbed exercise of all or any of the functions. Diseases come under this head.

V. Diseases either extend over the whole system, or are confined to a part; the former may not improperly be called universal or general, the latter local.

VI. The former are always universal from their very commencement, the latter only in their progress, and that but seldom. The former are always, the latter never, preceded by predisposition. The former proceed from an affection of the principle of life, the latter from local injury. The cure of those is applied to the whole body, of these to the injured part.

VII. To the province of the Physician belong all universal diseases, and as many of the local, as being at first limited to a part, afterwards affect the whole body, and assume, in some measure, the appearance of universal diseases.

VIII. Predisposition to disease is that state of the body,
which

which recedes from health, and approaches to disease, in such a manner, as to seem still within the boundaries of the former, to which, however, it bears only deceitful resemblance.

IX. These three states of health, disease, and predisposition, constitute the life or living state of animals; to which that of vegetables is not dissimilar, though more imperfect.

C H A P. II.

Of life—Of the exciting powers, external and internal—Of excitability—Of excitement—Of stimuli.

X. IN all the states of life, man and other animals differ from themselves in their dead state, or from any other inanimate matter, in this property alone; *they can be affected by external agents, as well as by certain functions peculiar to themselves, in such a manner, that the phenomena peculiar to the living state can be produced.* This proposition extends to every thing that is vital in nature, and therefore applies to vegetables.

XI. The external agents are reducible to heat, diet, and other substances taken into the stomach, the blood, the fluids secreted from the blood, and air. How poisons and contagions come under the same view shall afterwards be explained.

XII. The functions of the system itself, producing the same effect, are muscular contraction, sense or perception, and the energy of the brain in thinking, and in exciting passion and emotion. These affect the system in the same manner as the other agents; and they arise both from the other and from themselves.

XIII. If the property which distinguishes living from dead matter, or the operation of either of the two sets of powers be withdrawn, life ceases. Nothing else than the presence of these is necessary to life.

XIV.

XIV. The property, on which both sets of powers act, may be named *Excitability*; and the powers themselves, *Exciting Powers*. By the word *Body*, is meant both the body simply so called, and also as endued with an intellectual part, a part appropriated to passion and emotion, or a soul: the usual appellation in medical writings is *system* (a).

XV. The effects, common to all the exciting powers, are sense, motion, mental exertion, and passion. Now their effects being the same, it must be granted, that the operation of all the powers is the same (b).

XVI. The effect of the exciting powers acting upon the excitability, may be denominated *Excitement*.

XVII. Since some of the exciting powers evidently act by impulse, and the identity of the effect of others implies the same mode of operation; and since they all possess a certain activity; they may be denominated *stimulant*, or *stimuli*.

1. Stimuli are either universal or local.

2. The universal stimuli are exciting powers, so acting upon the excitability, as always to produce some excitement over the whole system. The appellation of universal, is convenient to distinguish them from the local.

3. The local stimuli act only on the part to which they are applied; and do not, without previously producing an affection in it, affect the rest of the body.

M

CHAP.

(a) No disquisition is here meant to be entered into, as religion is now where interfered with, but left to its proper guardians.

(b) That is, since sense, motion, mental functions, and the passions are the only, and constant, effects of the exciting powers, acting upon the excitability; and since these happen, whether one, or more, or all the powers, or whichever of them, act, the irresistible conclusion, that arises in the mind, is, that, the effect of the powers being the same, the mode of operation of them all must be the same. This mode of reasoning, which is certainly as just as it is new in medicine, will often occur, and, we trust, will stand the test of the most scrupulous scrutiny.

C H A P. III.

Of the nature of excitability—and exciting powers—Of poisons—contagious—debilitating food—Of the sedative or depressing passions—Of the nature and limits of excitement—Of its production—Succession and substitution of stimuli—Treatment of exhausted—and accumulated excitability.

XVIII. WE know not what excitability is, or in what manner it is affected by the exciting powers. But, whatever it be, whether a quality or a substance, a certain portion is assigned to every being upon the commencement of its living state. The quantity, or energy, is different in different animals, and in the same animal at different times. It is partly owing to the uncertain nature of the subject, partly to the poverty of language, and partly to the novelty of this doctrine, that the phrases of the excitability being abundant, increased, accumulated, superfluous, weak, not well enough sustained, not well enough exercised, or deficient in energy, when enough of stimulus has not been applied—tired, fatigued, worn out, languid, exhausted or consumed, when the stimulus has operated in a violent degree—at other times in vigour, or reduced to one half, when the stimulus has neither been applied in excess nor defect, will be employed in different parts of this work. Both upon this, and every other subject, we must abide by facts; and carefully avoid the slippery question concerning causes, as being in general incomprehensible, and as having ever proved the bane of philosophy.

XIX. As there is always some excitability, however small, while life remains, and as the action of the exciting powers always takes place in some degree, I conclude that they have all more or less of stimulant effect, and that this must be either excessive, in due proportion, or too small. A great quantity of blood stimulates in excess, and, therefore, produces the diseases that depend upon too much stimulus; but an under proportion of blood, though debilitating in its effect, and inducing the diseases that depend
upon

upon debility, must still be understood to be stimulant; only so much less stimulant, as the penury is more considerable: The same conclusion applies to all the other exciting powers, though poisons, contagions, and a few other powers, may to some seem exceptions. But

XX. Poisons either do not produce the universal diseases, which are our present subject: or, if they do, by producing the same effect as the ordinary exciting powers; their mode of operation must also be allowed to be the same (*a*).

XXI. Some contagions accompany diseases depending on too much stimulus, as the small pox and measles; others those that consist in debility, as the petechial typhus, the plague. If both these are the product, not of contagion alone, but also of the noxious stimulating powers, acting in conjunction, which is a fact ascertained; the effect being the same, the conclusion is unavoidable, that the cause is also the same, and the mode of operation of both the same. It must, therefore, be admitted that the operation of contagions is stimulant (*b*). Moreover, no remedies, but those that cure diseases, produced by the usual noxious powers, remove those supposed to be induced by contagions. Finally, the great debilitating energy, observable in certain contagions, no more proves that *they* act differently from the ordinary noxious powers, than an equal or greater degree of debility arising from cold proves that *it* acts differently (*c*).

4. It might appear to some, that certain kinds of food, not sufficiently nourishing, and, therefore, of hurtful tendency; as also that emetics, and purgatives, and sedative passions.

(*a*) This proposition of frequent occurrence in this work, that identity of known effect always implies identity of cause though unknown, will be found to be a mode of reasoning of equal service in guarding our reader from the deceitfulness of abstract reasoning, and in leading him into a proper mode of investigating solid and useful truth.

(*b*) This is all that is contended for at present; the degree of their stimulus will be afterwards considered.

(*c*) At the freezing point, or below it, man, and similar animals of warm blood, could not live a second in a dense medium, such as that of water; but the animals of cold blood can.

passions, as they are called, belong to the number of powers, the operation of which forms so many exceptions to the ordinary stimulant operation.

5. Vegetable matter in general, when used alone for nourishment, is hurtful; it is so, at least, to those who have been accustomed to better fare, and that by a debilitating operation; yet even vegetable food, since it supports life, however poorly, longer than a total want of food, must, of course, be stimulant. But, if asthenic diseases, in some instances, arise from vegetable food, and not always from fasting; this must be owing to a certain change produced in the system, by which the sum total of stimuli is rendered less fit to act upon the excitability. That this is the case, is proved by the most stimulant food losing part of its effect by continued use, and requiring the substitution of another stimulus in its place, to produce equal excitement.

6. The operation of emetics and purgatives is also to be explained, as diminishing the sum total of excitement; which is supported, either by some affinity between the exciting power and the excitability, or by agreeable sensation. That it is sometimes the affinity, sometimes the sensation, is evident from the occasionally hurtful effect of things most grateful to the sense, as the legumina, and other articles of vegetable food; and from the salutary effect of disagreeable things, as the several forms and preparations of opium: Both which produce their effect, the former by a debilitating, that is, an insufficiently stimulant, the latter by a considerably stimulant, operation (*d*).

7. The

(*d*) Suppose a certain power, as 40, to mark the degree, in which the sum total of proper stimulant operation consists, and the excitement, produced to that degree, to arise from different exciting powers, all of them conducing to the same effect, by the operation of each having a proper affinity to the excitability, or producing an agreeable sensation; the inference to be drawn is, that a certain suitableness in the mixture of the whole to the excitability, as well as the degree of stimulus, produce the effect. Again, suppose certain ingredients, which cannot be denied to be stimulant, added to this mixture, the effect of the added article will be one of two: it will either increase the excitement first produced, without altering the agreeable state which that had induced;

or

7. The sedative affections, as they are called, are only a less degree of the exciting ones. Thus fear and grief are only diminutions, or lower degrees, of confidence and joy, not passions different in kind. The news of gain produces joy, and grief arises from the loss of money. Here then no operation of a nature contrary to stimulant takes place; it is nothing but a diminution, or inferior degree, of stimulant operation. The subject of the passions admits of the same reasoning in every respect as that of heat (*e*); and in the same manner all the bodies in nature, that seem to be sedative, are debilitating, that is, weakly stimulant; inducing debility by a degree of stimulus greatly inferior to the proper one.

XXII. Since the general powers produce all the phenomena of life, and the only operation, by which they do so, is a stimulant; it follows, that the whole phenomena of life, every state and degree of health and disease, are also owing to stimulus, and to no other cause.

XXIII. Excitement, the effect of the exciting powers, the or it will, still without any reason for supposing it not stimulant, diminish the excitement that had arisen from the combination of the agreeable articles. And this will happen merely from the effect of a discordant combination of exciting powers, while that, which diminishes the exciting effect of the others, as well as these others, that constituted its given sum, are both stimulant; but the former in a higher, the latter in a lower degree, and therefore acting over all as debilitating powers. Mustard taken with meat, or onions with beef-steaks, are agreeable to most tastes; but they are, though still stimulant, disagreeable to others, and debilitating. Peas-soup and peas-pudding, though, independent of the animal juice infused into them, they are far from being salutary, will be well borne by many; while in others, especially those who have been accustomed to more stimulant meals, and in persons who are gouty, and liable to complaints of the first passages, they will produce morbid affection. The same thing is to be said of beef-steaks with onions, which agree with the healthy state, and disagree with the unhealthy state of the first passages. With regard to all these enfeebling matters, there is no question about their being stimulant; the whole effect is to be referred to their rendering a mixture, stimulant in a certain degree, less so.

(*e*) The doctrine of cold as an active power, and opposite to heat, is now universally rejected, and it is considered as only a diminution of heat.

the true cause of life, is, within certain boundaries, proportional to the degree of stimulus. The degree of stimulus, when moderate, produces health; in a higher degree it gives occasion to diseases of excessive stimulus; in a lower degree, or excessively weak, it induces those that depend upon a deficiency of stimulus, or debility. And, as excitement is the cause both of diseases and perfect health; so that which restores the morbid to the healthy state, is a diminution of excitement in diseases of excessive stimulus, and an increase of excitement in diseases of debility. These intentions are called Indications of Cure.

XXIV. This mutual relation obtains betwixt excitability and excitement, that the more weakly the powers have acted, or the less the stimulus has been, the more abundant the excitability becomes; the more powerful the stimulus, the excitability becomes the more exhausted.

XXV. A mean stimulus, acting on a mean or half consumed excitability, produces the highest excitement. And the excitement becomes less and less, in proportion either as the stimulus is applied in a higher degree, or as the excitability is more accumulated. Hence the vigour of youth, and the weakness of childhood and old age. Hence, within a shorter period, a middle diet will produce vigour, and excess, or abstemiousness, debility.

XXVI. Every age, therefore, and every constitution, if the excitement be properly directed, has its appropriate degree of vigour. Childhood, and that weakness, which depends on abundant excitability, admit of little stimulus; by less than the due proportion it is rendered languid, by more it is oppressed. Old age, and that weakness, which is occasioned by a deficiency of excitability, require a great deal of stimulus, become enfeebled by less, and are overset by more. The reason of the latter phenomenon is, that the excitability, without which no vital action is produced, does not exist in the degree necessary to vigour of the functions; while the former is to be explained from the exciting or stimulant power, without which the excitability lies dormant, not being applied in the degree requisite to

vigour.

vigour. The failure of stimulus may be such, as to produce death. On the contrary, the exhaustion of excitability may go so far, as to extinguish life by the extreme excess of stimulus.

XXVII. The circumstances, under which excitement is produced, have two boundaries.

XXVIII. One of these is, exhaustion of the excitability from violence of stimulus. For all the stimulant powers may carry their energy to the degree, under which no excitement will arise. The reason is, that the body becomes no longer susceptible to the operation of stimulus; another expression for which is, that the excitability is consumed.

XXIX. The cessation of excitement, from the exhaustion of the excitability by stimulus, may be either temporary or irreparable: it may arise either from the short continuance of a strong stimulus, or the long application of one more moderate. Both cases come to the same; the strength of the stimulus compensating for the shortness of its application, and the length of its application for its greater moderation in degree. A force of stimulus as six operating for a space of time as one; and a force of stimulus as one operating for a space of time as six, will produce the same effect in wearing out the excitability. The effect of the former is sudden death; of the latter a more gradual death preceded by diseases. And though a most exact measure of excitement be kept up, yet death at last, however late, will supervene.

XXX. Ebriety, debauch in eating, sweat, languor, heat, either alone or succeeding to cold, dulness of mental exertion from excessive thinking, depression of mind from violence of passion, finally, sleep; are all consequences of the short application of a high degree of stimulus, operating an exhaustion of excitability. The long continuance of less excessive stimuli is followed by the feebleness of old age, by predisposition to diseases of debility, as well as those diseases themselves. The termination of both is in death.

XXXI. When the excitability is wasted by any one stimulus, there is still a reserve capable of being acted upon

by

by any other. Thus a person, who has dined fully, or is either fatigued in body, or tired with intellectual exertion, and therefore has a disposition to sleep, will be refreshed by strong liquors; and, when these have produced the same sleepiness, the more diffusible stimulus of opium will arouse him (*f*). Even after opium fails, and leaves him heavy and oppressed, a stimulus still higher and more diffusible, if there be any such, will have the same effect. A person fatigued with a journey will be roused by music to dance and skip; and he will be enabled to run after a flying beauty, if she fly so as to leave him hopes of overtaking her.

XXXII. The exhaustion of excitability, by successive stimuli, is most difficultly repaired; because the more stimulant operation has been employed, that is, the more stimuli have been applied, there remains the less susceptibility to fresh stimuli, by which the failure of excitement might be removed.

XXXIII. The reason of the difficulty is, that no means of reproducing the healthy state, or the proper degree of excitement, are left; except those that occasioned the waste, that is, an excess of stimulant operation, rendering the body less and less susceptible of stimulus.

XXXIV. After this waste of excitement, there is danger of speedy death, unless proper measures be taken to preserve

(*f*) A gentleman, engaged in a literary composition, which required an uninterrupted exertion of his mental faculties for more than forty hours, was enabled to go through it with alacidity, by supporting himself in this manner. After dining well and setting to business, he took a glass of wine every hour. Ten hours after he ate something nourishing, but sparing in quantity, and for some hours kept himself up with punch not too strong. And, when he found himself at last like to be overcome by an inclination to sleep, he changed all his stimuli for an opiate; and finished his business in forty hours. What he had wrote was now to be put to the press. He had next to watch and correct the proofs, which cost him between four or five hours further continuance of vigilance and activity. To effect this he took a glass with the master printer, while his men were going on with their part of the work. The succession of stimuli in this case was first food, next the stimulus of the intellectual function, then wine, then the food varied, then punch, then opium, then punch and conversation.

serve life by a powerful stimulus, but less than that which occasioned it, and then by one still less, till by means of the moderate stimulus, that is suitable to nature, or one somewhat greater, life may at last be secured. The difficult cure of drunkards and gluttons, affected with disease, sufficiently evinces, that this consideration applies to all the exciting powers that stimulate in excess. This proposition applies to the most difficult part of the practice of medicine.

XXXV. The excitability thus exhausted by stimulus constitutes *debility*, which may be denominated *indirect*, because it does not arise from defect, but excess of stimulus.

XXXVI. Through the whole progress to indirect debility, the second application of every stimulus has less effect than the first, the third less than the second, and so forth to the last, which produces no more excitement; this effect takes place in proportion to the degree or duration of the several applications, though each gives some excitement. Hence, before the establishment of indirect debility, and just as it is upon the eve or being established, the stimulus which is producing it, should be withdrawn; a debilitating power should be applied; as in giving over drinking wine at the end of an entertainment, and substituting water in its place, or applying cold to a person who has been exposed to an excessive degree of heat (*g*).

XXXVII. The progress to indirect debility is also retarded by diminishing the excitement from time to time, and proportionally increasing the excitability, and thereby giving more effect to the action of stimuli. Take for example, cold bathing, or lowering the diet from time to time, or a similar abatement of other stimulant powers.

8. If cold sometimes seems to stimulate, it produces this effect, not as actual cold, but either by diminishing excessive heat,

(*g*) A convalescent from a disease of debility was prescribed wine, but not to carry it to excess. A hiccup was the signal, by which he was to understand, that he had carried that stimulus too far. He desisted, and ended his jollity with two or three tumbler glasses of water; which prevented the establishment of the indirect debility into which he was about to fall.

heat, and restoring the proper stimulant temperature (*h*), or by rendering the body accessible to air, or by accumulating the excitability diminished by excessive stimulus, and heightening the effect of the exciting powers, before acting too languidly. An instance of this operation of cold occurs in the torrid zone, where actual cold is scarcely to be procured; in the use of refrigerants, as they are called, in fevers; and in the contraction, by means of cold, of the scrotum previously relaxed by heat. Nay, such is the efficacy of this cause, that sthenic diseases may be more certainly produced by cold, alternating with heat, and either preceding or following it, than by pure heat.

XXXVIII. The other condition or circumstance, limiting excitement, is, a state of the exciting powers insufficient to produce excitement. As this case arises from deficiency of stimulus, and abundant excitability, it ought to be distinguished from the other, which supposes abundance of stimulus, and deficiency of excitability. This distinction is required also for the purpose of practice. All the exciting powers may fall so far short in stimulant force, as to produce this effect. They all, therefore, equally serve to illustrate and confirm this proposition.

XXXIX. In

(*h*) The principle upon which the operation of the cold bath depends has never been understood, and therefore all reasoning, as well as practice, with respect to it, has been conducted in quite a vague and random manner. Suppose a range of excitement, the middle and healthy point of which is 40 degrees of excitement, the ultimate degree of its excess 70. It is, therefore, the intermediate degrees between these extremes, to which the practice of cold bathing is applicable. From 80 to 70, the former of which is the head of the scale, and constitutes the range of indirect debility; and likewise through all the intermediate degrees from 40 down to 0, the cold bath, which is a weakening power, as well as every other, is improper. It is a mistake prevalent among systematic writers and lecturers, that cold is of service in the fevers and other diseases of the torrid zone. The truth is, that, in that country, there is no access to the use of actual cold. All that can be done there is, by various means, to diminish the excess of heat, which is constantly rushing from those degrees of it which stimulate and excite, to those, in which its ultimate stimulant power destroys excitement, and leaves nothing but indirect debility.

XXXIX In this case, the excitability becomes abundant, because, in consequence of the stimuli being withheld, it is not exhausted. Thus, in the cold bath, the excitement is diminished, because the stimulus of heat is reduced, and, therefore, the sum of all the stimuli falls short; so that the excitability, being less exhausted by stimulus, is increased (*i*). The same conclusion applies to famished persons, to water drinkers, to those who are in a state of refrigeration from other causes, to those who have suffered evacuations of any kind, to those who have neglected the stimulus of exercise, to those who have neglected the use of that stimulus, which exercise of the mind affords, and to persons in low spirits. The

(*i*) This is altogether a negative circumstance. The accumulation, increase, or abundance of excitability, take any term you please, is not occasioned by any action or operation, but by the want of action, the want of operation. To form an adequate idea of it, suppose a scale of excitability of 80 degrees, as in the line here drawn.

EXCITING POWER.

0 10 20 30 40 50 60 70 80

EXCITABILITY.

80 70 60 50 40 30 20 10 0

At the commencement of life, the sum total assigned is understood to be 80, because no part, as yet, is wasted by the action of stimuli. Next it is wasted in proportion as these are applied from the beginning to the end of the scale. Its wasting is, therefore, owing to action and operation, but its accumulation to the reverse, the want of the action or operation of the exciting powers, as is expressed by the numbers placed above those first mentioned. Thus one degree of exciting power applied takes off one degree of excitability, and every subsequent degree impairs the excitability in a proportion exactly equal to its degree of force. Thus a degree of stimulant or exciting power equal to 10, reduces the excitability to 70; 20 to 60; 30 to 50; 40 to 40; 50 to 30; 60 to 20; 70 to 10; 80 to 0. And on the contrary, the subtraction of stimulant power allows the excitability to accumulate. Thus, when the excitement is at 79, constituting only one degree of life, take off one degree of exciting power, and two degrees of excitability will arise. As 80 degrees of exciting power leave no excitability, so 70 degrees of exciting power leave 10; 70 20; 50 30; 40 40; 30 50; 20 60; 10 70; 0 80. Hence death takes place from nothing positive, but from the negation of the only means by which life is supported; which are the several exciting or stimulant powers, now fully explained.

The withdrawing of any stimulus is the more likely to produce direct debility, as the person has been accustomed to a higher degree of it (*k*). Take, for an example, the gout, and many other diseases, which, under the same circumstances, affect some, and spare others (*l*).

XL. During the increase of excitability, the excitement proportionally decreases, nor is there any case, in which this process, carried far enough, will not produce death. This is confirmed by the effect of all the debilitating powers, mentioned above; every individual of which, as often as it proves urgent, has a rapid tendency to produce death.

XLI. The defect of any one stimulus, and the proportional abundance of excitability, are for the time, compensated by any other stimulus, and often with great advantage to the system. So a person, who has dined insufficiently, and therefore has not been well enough stimulated, is re-freshed by a piece of good news. Or, if during the course of the day, he has not been sufficiently invigorated by the stimulant operation of corporeal or mental exercise, and is consequently likely to pass a sleepless night, he will be laid asleep by a dose of strong liquor. When the latter is not at hand, opium will supply its place. The want of the venereal gratification is relieved by wine, and the want of the latter is made amends for by the use of the former, each banishing the languor occasioned by the want of the other. The same conclusion applies to the use of those stimuli, for which we have an artificial, rather than a natural,

(*k*) For instance, persons accustomed to drink wine, and eat well-seasoned nourishing animal food, will be more hurt by a water and vegetable regimen, than those who have not lived so high in that respect. The inhabitants of Britain could not live long upon the diet of the Gentoos. Persons in genteel life could never undergo the work of day labourers upon their fare.

(*l*) Vegetable aliment, and fruits and cold roots, as cucumbers, melons, acid drinks, and many other things not sufficiently stimulant, will bring on a fit of the gout, all or any one of them, at any time; while there are other persons free from the taint which distinguishes that disease, who can use them with impunity, or, at least, with much more freedom and less harm. Something similar to this observation applies to most diseases.

ral, craving. The longing for snuff, when it cannot be gotten, is gratified by the practice of chewing tobacco ; and, when any one is languid for want of tobacco to chew, smoaking supplies the place of it. Nay, when the functions, as they often do, have undergone a temporary lesson, and on this account there is no access to the use of certain customary and natural stimuli ; the substitution of others, less habitual, and less natural, will support life, till the desire for the natural stimuli is restored, and these can be employed to support the natural vigour as usual, and health is finally established (*m*).

XLII. As, in this manner, the superabundance of excitability, proportioned to the deficiency of stimulus, may, through all the degrees from its smallest to its greatest quantity, be worn out to a certain extent, by one stimulus, and then another, and the danger of its morbid accumulation be warded off, till the sum be brought down to that, which is suitable to health ; so, the more abundant the excitability is, that is, the more stimuli are withdrawn, or the greater the failure of the most powerful stimuli, is ; the less it is in our power to maintain that mediocrity of excitability on which the vigour of life depends. So much debility may be induced and excitability so far accumulated, that the restoration of excitement shall become impracticable. This proposition is both illustrated and confirmed by the action of every debilitating power, as cold, famine, thirst ; and it is exemplified in fevers.

XLIII. This superabundant excitability so speedily brings on death, that the only means of restoring health is first to encounter it with a very small dose of diffusible stimulus, a dose scarcely exceeding the scanty portion of stimulus, that occasioned it : after wasting a part of the superabundance, we may proceed to a somewhat stronger dose ;
and

(*m*) This proposition is of the utmost importance, as holding out the true principle, upon which so many actions and feelings of human life, both in health and disease, are to be explained, and particularly as laying down an indication, which applies to $\frac{2}{3}$ ths of all febrile diseases, and includes our artificial as well as our natural desires and appetites.

and thus be constantly taking off whatever superfluity still remains, till at last the salutary mediocrity is regained. This state is the converse of that debility, which arises from a worn-out excitability (*n*), and the danger accruing from it. To give examples, a famished person is not immediately to be gratified with a full meal ; a person afflicted with long continued or excessive thirst is not immediately to be indulged with a large draught ; but food should be given bit by bit, and drink drop by drop, then both of them by degrees more plentifully. A person benumbed with cold should be gradually warmed. A person in deep sorrow should have good news gradually communicated to him. The news of the safety of the Roman soldier, who survived the disaster of his countrymen at Cannæ, should have been communicated to his mother in a round-about way ; at first as having no better foundation than doubtful report ; then as being somewhat more to be depended on ; afterwards as being still more probable ; then as not admitting a shadow of doubt : and last of all, before he was introduced, the mother should have been at the same time fortified, or had a part of her very abundant excitability taken off, by other stimuli, and a glass of Falernian wine.

XLIV. Since life is solely the effect of stimulus ; which also produces disease in proportion to its excess or defect, the remedies of both these deviations from the proper standard should be accommodated to their degree ; and a large sum total of stimulus, through the course of the disease, must be applied to a great degree of debility, or, what comes to the same thing, to a very abundant excitability ; but the quantity to be applied at any one time should be small, in the same proportion as the excitability is abundant.

XLV. The debility arising from defect of stimulus may be called DIRECT ; because it is not produced by any positive

(*n*) An instance of a worn-out excitability is that debility which arises from intoxication ; one of an accumulated excitability is that which dram-drinkers experience the day after a debauch, in consequence of which their hands shake till they are re-excited by their favorite cordial.

positive noxious power, but by a subduction of the things necessary to support life.

XLVI. Through the whole course of direct debility, every deficiency of stimulus is increased by a second, the second by a third, the third by a fourth, till the effect at last comes to be a cessation of any further excitement. Excitement therefore, is never to be lessened, and debility increased, with the view of giving greater effect to a new stimulus by accumulating excitability. For, as often as this is put in practice, the morbid state is increased; and, if the debility should happen to be great, any further increase may induce death, but will never increase the strength. For, though debility may be induced in this way at pleasure, the excitement to be obtained from a stimulus to be applied after is confined within narrow boundaries (*o*). Take for an example, cold bathing in dropsy; in the gout; in fevers (*p*); in persons who, previous to this, have been much exposed to cold; or in any sort of debility. Who would

(*o*) Suppose, that in place of an excitement of 40 degrees, the excitement is gone down to 30, and the excitability mounted up to 50, and a debilitating power, such as the cold bath, or any of those that are just now to be mentioned in the text, has been superadded, reducing the excitement to 25, and accumulating the excitability to 55. Suppose also, that any stimulus is next employed, with a view to raise the excitement, and sink or reduce the excitability; what will be the result? As an accumulated excitability admits of a very small degree of stimulus at any given time, while the accumulation of excitability, and sinking of excitement, even to death itself, can be effected in the shortest space of time, and by any one of the debilitating powers; consequently, the loss of vigour by the first practice, and the reparation of it by the last, will bear no proportion to one another; there will be no possibility of regaining the vigour thrown away, much less any hope of procuring more than existed before it was lowered.

(*p*) By fevers here are meant those diseases, so named, which depend on evident debility, and not any of those which, though most injudiciously so named, depend upon an opposite cause. Instances of the former we have in all the fevers of the intermittent or remittent kind, in synochus, typhus, and the plague itself, with others that have never been considered as fevers. Examples of the latter occur in synocha, or the common inflammatory fever, in the several diseases of the same stamp accompanied with inflammation in a particular part, as in the throat, lungs, and various parts of the external surface.

would treat fasting, deep sorrow, weakness of the mental functions, languor from inactivity, penury of blood, which are all cases of direct debility; who would treat such cases, I say, by superinducing more direct debility, with a view to advantage from the very scanty stimulus, that can be admitted. The accumulation of excitability is only proper where there is a predisposition to indirect debility, or asthenic diathesis.

XLVII. With respect to the two kinds of debility, we must never attempt the cure of the indirect by the direct, or of the direct by the indirect, in the vain hope of obtaining benefit from the subsequent employment of any stimulus. Indirect debility appears in the range of scale from 70 up to 80; the direct, in all the degrees below 40 to 0. The only cases, that admit of debilitating operation, are those of excessive excitement from 40 up to 70. For the cure of diseases within this latter range, all the directly debilitating powers are proper, and, for the most part, they only; because there is no access to the use of the indirectly debilitating powers, till they have run their full course of stimulant operation from 40 to 70, at which last only they become debilitating; and, though sometimes, and under certain circumstances, they may be employed, the safest general rule is to avoid them.

C H A P. IV.

Of the seat and effects of excitability—Of the inequality with which different powers affect the system—Which parts most affected—Proportion of the partial to the general affection—What parts the ordinary powers most affect—Partial and local affections similar and synchronous—Remedies do not act partially.

XLVIII. THE seat of excitability in the living body is the medullary nervous matter, and muscular solid; to which the appellation of *nervous system* may be given. In this the excitability is inherent, but is not different in different parts of its seat. This is evident, because the exciting powers will immediately rouse into exertion any of the functions that distinguish living animal systems; or, in other words, produce sense, motion, thought or passion (a)

9. Different exciting powers are applied to different parts of the nervous system, none to them all at once; but the mode of their action is such, that, wherever they are applied, every one immediately affects the whole excitability.

XLIX. Every one of these powers always affects some one part more than any other, and different powers affect different

(a) If a small quantity of an opiate, or a large one of any strong spirit, taken into the stomach, can instantly alleviate an excruciating pain in a part the most distant from that to which the remedy is applied, and, in a short time after, remove it altogether, as is now well known, how is that to be explained but by the above proposition; it being impossible to pretend that it is carried in the vessels? Nor is any other of the many hypotheses, that have been thought of for the solution of this fact, more admissible. Should it be imagined, that it moves along the nerves according to the last opinion, we demand proof of that assertion; which has not yet, and will not easily be produced; while the fact just now assigned carries its own demonstration in its bosom. The question resolves itself wholly into the following solution: Why does opium at once relieve the gout in the stomach, on the external surface, and in the remotest extremity of that surface? Because the property in the living system, upon which and by which it acts, is one and the same over all.

different parts in this unequal manner. The affected part is generally that to which the power is directly applied.

10. Moreover, the more excitability was assigned to any part originally, that is, the more vivid and sensible it is, the operation of each exciting power, whether acting with due force, or in excess, or in defect, is the more considerable (*b*). Thus the brain and alimentary canal possess more vivid excitability, that is, more propensity to life, than other internal parts; and the parts below the nails, than other external parts.—Nevertheless, the affection of the part bears no proportion to that diffused over the whole body.

L. An estimate may be formed of the degree of affection in the part most affected, and of that which is diffused over the whole body, by comparing the affection of the former with as many less affections, taken together, as there are equal parts in all the rest of the body. Suppose the greater affection of a part (*c*) to be as 6, and the less affection of every other part to be 3, and the number of the parts less affected to amount to 1000; which is keeping greatly within the truth. The ratio of affection confined to the part, to the affection of all the rest of the body, will be as 6 to 3000. That this estimate is accurate, or nearly so, appears by the effect of the exciting noxious powers, which always act upon the whole body (*d*); and from that of the remedies,

(*b*) That is to say, if the exciting power acts with that force which produces health, the degree of its action is greater upon the given than any other part; as also when its action is either greater or less than that of the middle salutary degree.

(*c*) As the inflammation of the lungs in peripneumony, the inflammation of the foot in the gout, the effusion of water into a general or particular cavity in dropsy.

(*d*) The hurtful powers, which produce peripneumony, in common English, the inflammation of the lungs, are excess in eating, drinking, exposure to heat, or to the alternation of heat with cold, an over proportion of blood from inactivity, or an increased velocity of its motion from violent labour, &c. the effect of any or all which must fall as much upon every other part of the system as upon a small portion of extreme vessels in the lungs, and therefore the morbid affection produced cannot be confined to the latter, but must be extended to the former.

The

remedies, which always remove the effect of the noxious powers from the whole body (*e*), in every general disease (*f*).

L I. Temperature particularly affects the surface of the body ; diet, the stomach and bowels ; the blood and other fluids their respective vessels ; labour and rest both the vessels and muscular fibres ; passion and meditation, the brain ; all these affect the parts mentioned (each that upon which its action is exerted) more than any other equal part.

L II. Instances of the greater excitement of a part than of the rest of the body, are afforded by the earlier sweating of the brow of an healthy person, when he is using exercise ; by checked perspiration ; by inflammation, or some analogous affection in general diseases ; by head-ach and delirium. Proofs of a less excitement in a part are excessive perspiration not occasioned by labour or heat, especially when cold and clammy, profusion of the other excretions, spasms, convulsion, partial palsy, weakness or confusion of intellect, and again delirium.

L III. As the operation of the general powers, whether exciting in excess, in due proportion, or in defect, is directed to some one part a little more, than to any other equal part ;

The whole body must partake of the morbid change ; it must be one common affection pervading the whole. If this is not probation, let any thing left on record by authors, or any living physician, produce a single hurtful power, that, without affecting the system over all, can penetrate into the innermost recesses of the lungs, and there produce an inflammation. I shall be content with one such hurtful power, and in exchange for it, when produced, give up my whole doctrine.

(*e*) Here too I throw the gauntlet. Find a single remedy which removes the disease by an operation confined to the lungs. There is not one.

(*f*) A wound in the lungs, among other effects, may produce an inflammation. But that is not a peripneumony, or a general disease at all. It is, on the contrary, a local one, arising from a local cause, and to be removed by local remedies, if access could be had to them. And though nothing has been more common than blending such cases of local and general disease, at the same time no error, that has hitherto crept into the art, needs more to be corrected. Such an accident is as much a peripneumony, as an inflammation from a contusion in the foot is a gout, or the swelled legs of women heavy with child is dropsy. But of all this, more hereafter.

part ; the effect must be of the same kind in that part as in the rest, and, as well as the general operation, be either in excess, or in just proportion, or deficient, but never of an opposite nature. For, as the exciting powers are the same, and the excitability every where the same, it is impossible that the effect should not be the same. The excitement, therefore, is never increased in a part, while it is diminished in the general system—nor diminished, while the general excitement is increased. There is no difference here, but in degree ; nor can different effects flow from one and the same cause.

II. For though, on account of the great sensibility of certain parts, for instance, of the stomach (*g*), and the action, either stimulating or debilitating, exerted by the exciting powers on them, these parts run soonest either into direct or indirect debility, or into high excitement ; this effect is but of short duration, and the rest of the functions are soon hurried into the same state. Thus, nausea, vomiting, diarrhœa, and other similar symptoms, produced by strong liquors and opiates : as well as the same affections apparently, and the gout, colic, gripes, and other similar symptoms, occasioned by abstinence and water drinking : likewise good appetite, and the removal of these turbulent symptoms of the stomach and intestines, in the convalescent state, in consequence of a proper administration of food, drink, and diffusible stimulants ; all these are shortly followed by a similar state of the rest of the body, and the establishment of indirect debility is the consequence of the first case ; that of direct debility succeeds the second ; and health over all is the termination of the last.

LIV. No part, therefore, is the seat of general affection ; they extend over the whole body ; because, with the inequality above stated, the whole excitability is affected in every general disease.

LV. Neither does the affection of the most suffering
part

(*g*) For the same reason, i. e. the sensibility of the general system, wine and other strong liquors, as well as opium, induce indirect debility sooner upon these parts than others.

part take place first, and afterwards spread over the system; for as soon as the excitability is affected any where, it is also and immediately affected every where. Both facts are confirmed by the operation of every exciting power, affecting the whole body as quickly as any one part; by general morbid affections appearing equally soon over all the system, and commonly sooner, than in the part most affected in the course of the disease (*h*). Therefore

LVI. Every affection of a part, that occurs in general diseases, however formidable, is to be considered as only a part of the affection inherent in the whole body; and the remedies are not to be directed to a part, as if the whole disease lurked there, and was only to be removed thence, but to the whole body, all which it affects (*i*).

(*h*). The pain of the thorax in peripneumony, which is the sign of the inflammation within, never appears so soon as the general affection, and in more than one-half, of many hundred cases, where this fact has been painfully scrutinized, it did not appear till one, two, or three days after the commencement of the general affection. Likewise the pain of the gout is not the first of the phenomena of that disease. But all these, and many more particulars, will be brought in with more advantage in their proper places afterwards.

(*i*) When the affection of a part is external, and, therefore, accessible, the application of a remedy over it, in conjunction with the use of the internal remedies, is of service, in consequence of their mutually assisting each other. A rag drenched in a liquid opiate helps the operation of that remedy taken internally; but that is still by operating upon the excitability over all.

C H A P. V.

Of Contraction and its effects—Excitement the cause of density—Difference of strength in the muscles in health—in sickness—and after death.

LVII. MUSCULAR contraction depends upon excitement, and is proportional to the degree of excitement (*k*). This is proved by all the phenomena of health and disease, and by the operations of all the exciting powers and of all the remedies. Force and propensity to motion are the same. We must judge from facts, not from appearances. Consequently, tremor, convulsion, and every affection comprehended under it, are to be imputed to debility. The noxious exciting power in these cases is a stimulus uncommonly irritating applied to the part.

LVIII. The degree of contraction, that constitutes spasm, is not an exception from this proposition. This is a continued and deficient, rather than a great and due action; and in so far as it is a strong contraction, it depends upon the local stimulus of distension, or of something equivalent to distension. It consists in diminished excitement, is devoid of force, and removed by stimulant remedies. The appearance of symptoms, being ever fallacious, ought not to be relied on as the foundation of any judgment. Take now both the fact and the explanation.

LIX. As the degree of contraction, in so far as it is a healthy function, depends upon strength, we are to hold it as certain, that the density of muscular fibres, considered as simple solids, is proportioned to the degree of their contraction.

LX. It must therefore be admitted, that excitement is the cause of density. And the density is rendered greater and greater by the excitement in proportion to its degree. It is easy to perceive this through all the intermediate degrees

(*k*) It has already been proved, that all the functions depend upon excitement, and therefore contraction among the rest.

degrees of strength ; from the highest, or that which takes place in madness, and the density corresponding to it, to the lowest, or that debility which is observed in the article of death, in death itself, and after death, with a laxity corresponding to it. This is proved by the weakness of the fibres in their dead, and their strength in their living, state ; the only cause of which difference, we know for certain, to be excitement (1).

LXI. Hence the cavities of the vessels, through their whole tract, over the whole body, are diminished in a state of strength, and increased in weakness. This is the true cause of diminished perspiration, not constriction from cold or spasm.

C H A P. VI.

The forms of diseases and predispositions—Relation between health, predisposition, and disease—All from varied excitement—Life regulated by excitement—Sthenic and asthenic diseases—and diatheses.

LXII. EXCITEMENT, the effect of the exciting powers, when of a proper degree, constitutes health : when either excessive or deficient, it proves the occasion of disease, or of predisposition, previous to the formation of disease. The state both of the simple solids and fluids depends upon the state of health, which is regulated by the excitement (a).

12. The first cause of the formation of simple solids, and the sole cause of their preservation, is excitement. Under the direction of the excitement, the living solids produce the

(1) Experiments have been made by baron Haller and others, to ascertain the comparative strength of muscular fibres, and the criterion of judgment was their greater or less disposition to break by appended weights ; but the power by which any body resists stretching, is the density of that body. Those experiments show, that the fibres in the living body are prodigiously stronger than in the dead.

(a) This proposition overturns the principal systems that have ever appeared in the profession of medicine. But more of it hereafter.

the blood from an external matter taken into the system, keep it in motion, form its mixture, secrete from it various fluids, excrete them, absorb others, and circulate and expel them from the body. It is the excitement alone, through its varying degrees, that produces either health, disease, or recovery. It alone governs both universal and local diseases: neither of which ever arise from faults of the solids or fluids, but always either from increased or diminished excitement. Hence the cure is never to be directed to the state of the solids or fluids, but only to the diminution or the increase of excitement.

LXIII. Affections peculiar to parts, or organic maladies, being foreign to this part of the work, in which the treatment of the general state of the body only is considered, they are passed over at present.

LXIV. That life is entirely regulated by excitement appears, 1. because the exciting powers have a stimulating effect only: 2. because the activity of the functions is proportional to the strength of the exciting powers: and 3. because efficacious remedies are such as oppose deficient stimulus to excessive excitement, and excessive stimulus to deficient excitement.

LXV. The notion of health and disease being different states is disproved by the identity of the operation of the powers producing or removing each state.

LXVI. The general diseases, arising from excessive excitement, are called *sthenic* (*b*); those that originate from a deficient excitement, *asthenic*. Hence there are two forms of diseases, and both are always preceded by predisposition.

LXVII. That this is the only real origin of diseases and predispositions is proved by the same powers, which produce

(*b*) Their old name is phlogistic: but as that word is absurdly metaphorical from an old notion of that sort of diseases depending upon fire or flame; and because it was not a proper contrast to the term here to be opposed to it; as also because it is still more ridiculous when applied to plants, which are comprehended in this doctrine; it has been thought proper to reject it, and substitute the other in its place

duce any disease or predisposition, also producing the whole set of diseases to which it belongs ; and by the same remedies, which cure any disease, or predisposition, also curing all the diseases and predispositions of its respective form (c). Betwixt these opposite sets of disease and predisposition, perfect health is the mean, leaning to neither extreme.

LXVIII. The exciting powers, which produce sthenic predisposition, or sthenic diseases, should be denominated sthenic, or stimulant, in a strict sense. Those that pave the way to asthenic diseases, or produce them, should be called asthenic, or debilitating. The state producing the former or the predisposition to them, may be called *sthenic diathesis* ; that which occasions the latter, with the predisposition peculiar to them, *asthenic diathesis*. Each of these diatheses is a state of the body common both to predisposition and disease, which differ only in degree. I distinguish the powers, that raise both the diatheses to the measure of disease, by the term *exciting noxious powers*. The sthenic diseases, in which the pulse is much affected, should not be denominated fevers or febrile diseases, but *pyrexies*, for the sake of distinguishing them from the asthenic diseases, that disturb the pulse, for which fever is the proper name.

CHAP.

(c) The same noxious powers produce, and the same remedies remove, both catarrh and peripneumony, diseases only differing in degree. The powers producing them are excess in the use of stimulants, and the remedies whatever moderates that excess. Evacuation, cold, and ~~starving~~, are the means. All the difference is, that more of the means are employed for the cure of peripneumony than for that of catarrh. The noxious powers producing indigestion and fevers are also the same, to wit, debilitating ; and the remedies the same, to wit, stimulant. Only a small degree of the remedies, proportioned to the slightness of the degree of the cause, is sufficient for the cure of indigestion ; while the most diffusible stimuli are required to effect the cure of fevers.— Stimulants, in one degree or other, make the cure of all asthenic diseases ; evacnants, and other weakening means, in different degrees, form the whole cure of the sthenic form of diseases. Might not this have been known long since ?

C H A P. VII.

The effect of both the diatheses, and of the most perfect health itself—Sthenic powers raise—asthenic lower the functions—Why man is not immortal—Conversion of the diatheses into each other—Fallacy of symptoms—Life a forced state.

LXIX. THE common effect of the sthenic noxious powers upon the functions is, first, to increase them, then to impair them in part, but never by a debilitating operation (*a*). The effect common to the asthenic noxious powers, upon the *functions*, is to diminish them, in such a manner, as sometimes to seem, though the appearance is fallacious (*b*), to increase them.

LXX. If the just degree of excitement could be constantly kept up, mankind would enjoy eternal health. But two circumstances prevent that. Such is the nature of the sthenic diathesis, that it wastes the sum total of excitability assigned to every being upon the commencement of its living state, and thereby sooner or later induces disease, and afterwards death. This is one cause of mortality.

LXXI. The asthenic diathesis is hurtful by not supplying the degree of excitement necessary to health, and thereby allowing the state of life to approach more nearly to that, in which death consists. This opens another gate of destruction to mankind.

13. Further, diseases and death are consequences of the change of either diathesis into the other. Either diathesis, by means of the noxious powers producing the other, when these

(*a*). The inability to perform motion in peripneumony arises not from debility, for two good reasons; first, no powers, but those that produce all the other symptoms, produce it; and the same remedies that remove the other symptoms, are equally effectual for the removal of it.

(*b*) Spasm and convulsion, supposed to arise from increased influx of the nervous power, are both occasioned, and cured, by the same powers, as all the other symptoms.

these are employed as remedies (*c*), may, by accident, inadvertence, or design, be completely converted into the other; and by opposite measures, carried to a certain extent, it may be changed back to the same state from which it set out (*d*). This observation will be found of the greatest consequence in the cure both of predispositions and diseases (*e*). What is wanting to further illustration shall be given

(*c*) Stimulants are the proper remedies for curing the gout; but, they may be carried so far as to produce so much sthenic diathesis as to border upon indirect debility. A consequence of which is vomiting, purging, a feeling of burning in the intestines, intermission of the pulse, and strangury; which are only to be cured by substituting watery drink and low diet in place of those opposite remedies. Nay, the stimulants may be carried so far, as to effect the establishment of indirect debility. Hence will arise paralytic affection, anasarca, dropsy, &c. The evacnants and other debilitating remedies, by which the diseases of sthenic diathesis are removed, may, by being pushed to excess, produce the last mentioned diseases, as depending on direct debility.

(*d*) Pushing the remedies of sthenic diseases too far, may reduce the patient to an incipient dropsy; and the remedies of the latter may be urged to such excess, as to pass the range of sthenic diathesis, and terminate in indirect debility. A is affected with a disease of debility, where the excitement has gone down to 10, the excitability mounted up to 70, degrees in the scale. What is to be done? By a proper use of high stimulants the 30 degrees of lost excitement may be restored, and as many of superfluous excitability discharged, and the excitement and excitability made to meet again at the middle point of 40. If the remedies are carried up to any degree betwixt 40 and 55, they have gone too far, and produced predisposition to sthenic diseases; if still farther, but not exceeding 70, they will have produced one or other of these diseases. But carried beyond 70, the diseases, which their operation produces, are those of indirect debility. Any disease of this sort, when treated according to a rule lately delivered, will be cured. But if the stimulants adapted to this purpose be urged further, the sthenic diathesis will again be produced; and the debilitating power, suited to the removal of it, may carry down the excitement below 40 into the range of predisposition betwixt 40 and 25; and then by a further abuse of remedies, which should only be used in the range betwixt 40 and 70, the excitement may return to the same point from which it set out, to wit, the point of 10, and the excitability rise to its original point, that of 70.

(*e*) It must never be forgotten, that we are nothing in ourselves, but while we have any excitability remaining in proper capacity to be acted upon, we entirely depend on the exciting powers acting on it.

given hereafter. Hydrothorax succeeding peripneumony is an instance of the change of sthenic diathesis into asthenic. Again, the immoderate use of stimulants may convert any asthenic affection into a sthenic one; as when a violent cough, a catarrh, or an inflammatory sore throat, is induced in consequence of the treatment of the gout, though proper in kind, being carried to excess in degree.

14. Though excitement regulates all the phenomena of life; yet the symptoms of diseases, which either its excess or deficiency produces, do not of themselves lead to any proper judgment respecting it; on the contrary, their fallacious appearance has proved the source of infinite error.

LXXII. From all that has hitherto been said, it is certain, that life is not a natural, but a forced state; that the tendency of animals every moment is to dissolution; that they are kept from it, not by any powers in themselves, but by foreign powers, and even by these with difficulty, and only for a time; and then, from the necessity of their fate, they yield to death.

C H A P. VIII.

Of predisposition—Definition—Predisposition necessarily precedes disease—even in case of contagions and poisons—Criterion of general diseases—What diseases are not general.

LXXIII. PREDISPOSITION is a state intermediate betwixt perfect health and disease. The powers producing it are the same with those which produce disease.

LXXIV. The period of predisposition will be shorter or longer, according to the greater or less force of the noxious powers that have induced it; and the interval between health and actual disease will be more quickly or slowly passed over.

LXXV. That predisposition necessarily precedes diseases,

is evident, as it arises from the same exciting powers, acting upon the same excitability, from which both health and disease arise, and is an intermediate state betwixt both. And, as the excitement of health differs much from that of disease; it cannot be supposed, that the former immediately mounts up to the latter, and skips over the boundaries of predisposition: nay, the contrary is certain and beyond a doubt.

LXXVI. Contagious diseases do not furnish an exception to this observation; because, whether the matter of contagion act by a stimulant or a debilitating operation, its operation is the same with that of the ordinary powers, that is to say, the cause of disease is the same (*a*). If, as sometimes

(*a*) The small-pox and measles are cured by the same means as peripneumony or any other sthenic disease; and, excepting the contagious matter, arise from the same stimulant hurtful powers; they must, therefore, with the same exception, be the same. The only difference is, that they are accompanied with a contagious matter, and the other sthenic diseases are not. The amount of which is altogether unimportant. For, if the ordinary powers have not operated, the affection does not come under the definition of general disease; none of the functions receding from their natural state, and the eruption amounting to no more than a slight local complaint. It is, therefore, only of use to regard the general circumstances of these diseases, making no more account of the local part, than to consider, arrange, and treat it as such. It is well known, that, when by the means used for the cure of sthenic diseases without contagion, and their sequel, eruption, the sthenic diathesis is prevented or removed, the local part gives no trouble; and that the disease is never dangerous but from the neglect of that management. But the management is nothing else but the ordinary one in any sthenic case. If it should be contended, that, all that being granted, still the eruption may contribute a little: Be it so, and it can be but very little; what is the effect? The cure shows it; which is exactly the same as in sthenic diseases without eruption. The disease, therefore, being the same (for its mere local part is out of the question, as only requiring a peculiar exposure to cold, which is equally proper in every sthenic disease); every part of reasoning respecting it, and, consequently, that affecting the question about predisposition, must also be the same. If, therefore, other general diseases have their predisposition, so must the small-pox, the measles, and the plague itself. If it should still be said, that the eruptive diseases, though in other respects the same with the non-eruptive, differ, in so far as predisposition

sometimes happens, no general affection follows the application of contagion, if no undue excess or defect of excitement is the consequence, the affection is altogether local and foreign to this place.

LXXVII. Any morbid affection that poisons may produce without predisposition is not to be considered as a general disease, both for this very reason, and because it can neither be removed nor relieved by the usual treatment of general diseases; and the diversity of the effect proves, that both the cause and exciting noxious power are different from the general ones. In one word, since predisposition and disease differ only in degree, the unavoidable conclusion is, that whatever, with a given force, produces the latter when acting with a less force, will produce the former. The only cure for most poisons is their early discharge from the system. And if, as often happens, others, by wounding an organ necessary to life, are fatal; the effect of both is foreign from our present subject, and to be referred to local diseases.

LXXVIII. In the powers producing either predisposition or completely formed general disease, the only thing worth investigating is the proportion which those producing the predisposition bear to those producing the disease; in order to learn the degree of noxious force possessed by each, and the degree of curative means necessary to remove the effect. Distinctions between the powers producing predisposition, and those that excite disease, under the general appellation of predisponent or occasional causes, have been multiplied and
 tion is required as a common circumstance between them; the answer is, that that difference only respects their local part, which, without the powers producing the disease, is insignificant and a mere local complaint. As general sthenic diseases, the small-pox and measles, and as general asthenic ones, contagious fever and the plague, to the full extent of their generality, have their period of predisposition; we may have occasion afterward to establish the question about predisposition to them even as local diseases, but this is not the place for it; all that was required here being to settle the question about predisposition to them as general diseases. In the same point of view all that has been said of contagious diseases, will apply to diseases in which poisons may have been concerned.

and refined upon without end. But the whole system of remote causes, as they have been called, is false in its first idea. The noxious powers, whatever they be called, that produce diseases, also produce the predisposition to them. Which being once admitted, as it henceforth must, the whole fabric of aetiology, or of the doctrine of remote causes, must fall to the ground : Consequently, *simply remote causes*, not divisible into predisponent and occasional ; *relative remote causes*, or such as are so divisible ; *internal* and *external predisponent*, *internal* and *external occasional*, *causes* ; *approaching causes*, or *causæ proprioeres*, *proximate causes*, of which, not only one, but often several, are assigned to every disease, must cease in medical language, and attention will be turned away from the endless pursuit of distinctions without a difference, to the study of the solid and useful facts that nature holds up to contemplation in great abundance, when once our eyes are fairly opened to them.

LXXIX. The knowledge of predisposition is of great importance ; as enabling the physician to prevent diseases, from his acquaintance with the powers that lead to them ; to comprehend the true cause of them founded in predisposition ; and to distinguish them from local affections, which are widely different. Such is the simplicity to which medicine is thus reduced ; that when a physician comes to the bed-side of a patient, he has only three things to settle in his mind. First, whether the disease be general or local ; secondly, if general, whether it be sthenic or asthenic ; thirdly, what is its degree ? When once he has satisfied himself in these points, all that remains for him to do, is to form his indication or general view of the plan of cure, and carry that into execution by the administration of proper remedies.

LXXX. As predisposition and diseases themselves are the same state ; a criterion, by which general good may be distinguished from local diseases will be found in this single circumstance, that general diseases are always, local never, preceded by predisposition. An inflammation in some
part

part of the stomach, or as it has been commonly called, "the inflammation of the stomach," as if it were always of the same kind, produces many symptoms, that bear so great a resemblance to general sthenic diseases, such as peripneumony, that by systematics and nosologists, this and many other inflammations of internal cavities have been united into an order of diseases, supposed all to partake of one common nature. The gastritis, however, which is its nosological name, is essentially different, both from peripneumony and all the other general diseases of the order with which it is associated, both in other respects, and in that of which we are speaking. As arising from certain local noxious powers, it is not preceded by predisposition. So when I come to the bed-side of a patient under these circumstances, though I had no previous knowledge of the nature of his disorder, whenever I hear that he has swallowed ground glass, small fish bones, or, perhaps, a great quantity of cayenne pepper, I can be at no loss to discern the nature of the disease, and to find, that it is altogether local; and that for two of the best of all reasons; first, the person having been in perfect health immediately before that accident; and, secondly, because the substances he had swallowed were such as would naturally divide a sound part, or, in the language of our profession, produce a solution of continuity. From this, again, inflammation is an inseparable consequence. And it is equally an universal fact in the animal economy, that, when any part, whether internal or external, which possesses great sensibility, is wounded or otherwise injured in its substance, the pain arising from the inflammation superinduced spreads symptoms of disorder over the whole system, which are liable to mislead those, who are not in possession of the criterion we here point out. As such a case then, is not preceded by predisposition, which peripneumony as well as every other sthenic, and every asthenic disease must, from the proofs of the universality of the fact, be allowed to be, it must be local.

LXXXI. As the affection of a part is always the original source of local diseases, and as the distinctions, we have stated,

stated, are established upon the solid basis of truth ; the following disorders must be rejected from the number of general diseases, however great their resemblance to them may be. Whatever affections, then, arise from any state of a part ; from stimuli or from debilitating circumstances not producing any commotion in the whole body, or only in consequence of the violence of the local cause ; from compression of a part ; from obstruction ; from other diseases whether general or local, and not from the exciting powers which produce general diseases (*b*) ; all these must be rejected from the number of general diseases, and that for the most solid reasons ; to wit, their differing from them in the noxious powers that produce them, in their true cause (*c*), in their cure (*d*), and in every essential respect, agreeing with them in nothing, but in a deceitful and deceiving superficial appearance.

CHAP. IX.

(*b*) Let it here be added, that the powers producing general diseases, are those that act upon the excitability, and are, thereby, quickly communicated over the whole system ; while those, that act upon the solid texture of a part, so as to cut, prick, bruise, or contuse it, &c. are the powers productive of local disease.

(*c*) The cause of the inflammation of the stomach has been mentioned. To concentrate it into a definition ; it is a solution of the continuity of a solid part in the stomach, by mechanical or acrid means, followed by inflammation and pain, and, in consequence of the great sensibility of the part, propagating symptoms of disorder over all the system. The cause of the general diseases here alluded to is an increase of excitement, and the inflammation accompanying those diseases arises from that increase.

(*d*) The cure of gastritis, or the inflammation of the stomach, is to contrive means to keep the hurtful, and all rude matters, from coming into contact with the inflamed part, and leave that part to heal ; taking care, neither to increase the local affection by too sthenic a diet, nor to produce a tendency in the inflammation to run into gangrene, by the abuse of evacuations and other debilitating powers ; and if, than which nothing is more likely, the acuteness or continuance of pain should at last bring on a state of general debility, then to use the palliative means of preventing that bad consequence. The cure of peripneumony is to weaken the system, from the very commencement of the disease, by diminishing the energy of all the exciting powers ; that of the abundance of the blood by bleeding ; that of the over-proportion of the other fluids by purging, ~~fasting~~[†] that arising from the stimulus of heat and other excessive stimuli by cold, &c.

† *fasting*

C H A P. IX.

The general diagnosis—Variety of diseases from variation in the excitement—Marks of general disease—How to attain useful medical knowledge—Origin of certain internal local affections.

LXXXII. THE violence and danger of universal diseases is in proportion to the excess of excitement (*a*), or its indirect or direct deficiency (*b*); as appears from all that has been said above: consequently, their principal variety depends upon this variation of the degree of excitement.

LXXXIII. The only diagnosis (*c*) of any importance is that, by which general diseases are distinguished from those local or symptomatic affections, which, by throwing the whole system into disorder, assume a certain resemblance to universal diseases. The following marks are sufficient for the discrimination of every general disease; first, its being preceded by a diathesis, and this followed by a disease similar to it, and removed by an operation of the remedies of an opposite nature to that which occasioned the disease; while,

(*a*) The excess is contained between 40, the point of health in the table, and 70.

(*b*) The cases of indirect deficiency or debility are comprehended betwixt 70 and 80. The direct are all the degrees below 40. Betwixt 40 and 55 consists predisposition to sthenic; betwixt 40 and 25 the predisposition to asthenic diseases.

(*c*) Diagnosis is the doctrine of distinguishing diseases from one another. It was naturally thought to be of the greatest importance, when diseases were supposed very numerous, and as different from each other as their names and the various appearances of their symptoms. That, however, has been found to be altogether a mistake in this work, in which the endless variety of general diseases is reduced to two forms, a sthenic and an asthenic one, without any other difference but what consists merely in degree. The huge volumes of diagnostics are then in this chapter superceded; and much labour, not only irksome to the artist, but worse than useless, often pernicious to patients, is proved to be superfluous.

while, on the contrary, local affection is distinguished by the affection of a part, and the disorder of the system not arising from any change in the excitement, but being such as may be traced back to that affection; and by the absence of the diathesis of the disease which the local affection resembles, or only its accidental presence.

LXXXIV. In order to attain to this useful knowledge, learn what is necessary from anatomy; waste no time in superfluous study of it; peruse the works of the illustrious Morgagni; dissect subjects; distinguish residuary effects from causes that have passed away; examine diligently many bodies of persons who have been hanged, or have died of wounds, but were otherwise healthy; compare these diligently with the bodies of those who have died of lingering or often repeated diseases; compare every particular with every other, the whole with the whole; guard against rash hypotheses, which if you can, you will be among a very few, who have ever been able to do it; never expect to discover the cause of general disease in dead bodies; be circumspect in forming a judgment.

LXXXV. Internal local affections often consist in a taint that remains after general diseases have passed away: it may therefore assist in forming a right opinion to remark, that there will be less reason for suspecting such a local affection, the less the patient has been subject to general diseases, and the contrary.

C H A P. X.

*The general prognosis, or general judgment of the event—
Danger according to the degree of the diathesis and impor-
tance of the most affected part.*

LXXXVI. SINCE the powers producing sthenic and asthenic diathesis always act upon some one part with more force than upon any other equal part ; it follows, that the danger of disease during the predisposition, and of death during the disease, increases in proportion to the degree of diathesis, or to the importance of the part principally affected. But, its degree being given, the more equal or general the diathesis is, the more safe it is. Nor does it ever fall heavy upon an organ necessary to life, without instant danger. Hence it is, that peripneumony, apoplexy, phrenitis, erysipelas, and the gout, when the two latter much affect the head, are chiefly formidable.

LXXXVII. Local and symptomatic affections ought to be distinguished from general diseases, and the remarks in LXXXIII. LXXXV. transferred to this place.

C H A P. XI.

The general treatment—Indications of cure—Mode of action of remedies—Sthenic and asthenic remedies—how to be employed—Local and general remedies—What regard is to be paid to contagious matter—When the middle or tonic treatment is proper—Peculiar circumstances must regulate the indication—Persons subject to indirect, and direct debility—Cure of indirect, and direct debility—Danger of weakening the body.

LXXXVIII. THE indication for the cure of sthenic diathesis is to diminish, that for the cure of the asthenic diathesis

diathesis is to increase, the excitement, till that degree, which constitutes the mean betwixt its extremes, and which is suited to good health, be restored. This is the only indication of cure that universal diseases admit.

LXXXIX. As both diatheses arise from an operation of the exciting powers, the same in kind, but varying in degree : so they are both prevented and removed by an action of the remedies, also the same in kind, but opposite in degree, to that which produced them. As the cause, so is also the plan of treatment, confirmed by an induction from the whole series of facts and phenomena (*a*). The same debilitating remedies, which remove any one sthenic disease, remove that whole set of diseases : and the same stimulant means, which cure any one asthenic disease, remove all the rest (*b*). Are not palsy, in so far as it is curable
and

(*a*) Suppose the sthenic diathesis mounted up to 60 in the scale ; to reduce it to 40 it is evident, that the 20 degrees of superfluous excitement must be taken off, and, therefore, that remedies operating with a stimulus, weak enough to produce that effect, must be employed : they are still, however, stimulant, and of consequence, though they remove it, still the same in kind, as the powers that produced the diathesis ; it having been proved, that they are not to be supposed sedative, both for the reasons already given, and for this additional one, that proof has not been yet brought of a single sedative in nature. As their stimulus, however, is less than that which is required to support the ordinary state of health, they are understood to be debilitating, and, therefore, proper remedies of sthenic diathesis.

(*b*) Suppose the asthenic diathesis to have sunk down to 20 ; to raise it up to the standard of health, it is plain, from all the propositions hitherto laid down, that the 20 degrees of deficient stimulus must be restored, and, therefore, that remedies operating with a degree of stimulus adequate to the production of that effect, must be used. All the difference betwixt the force of this stimulus and that of the other, is only a difference of 40 degrees. As, therefore, the debilitating powers, though stimulant, employed in the first, removed the morbid superfluity ; so the stimulant powers used in this case, called stimulant by way of eminence, remove the morbid deficiency, and, thereby, restore the degree of excitement, that constitutes the standard of health.

(c), and dropfy, in fo far as it is a general affection (d), as well as the gout, and fevers, both relieved and removed by the fame remedies? And are not peripneumony, the fmall-pox, the meafles, rheumatifm, and catarrh, removed by the fame remedies, to wit, evacuants, cold, and ~~starving~~[#]? But all thefe remedies in the afthenic cafe increafe, in the fthenic diminifh, the energy of life. In both cafes the operation is the fame, nor is there any diverfity but in degree.

XC. The remedies, therefore, of fthenic diathefis are powers exciting by a weaker ftimulus, than that which is fited to health; which in this work are denominat- ed, for the fake of brevity, *debilitating or antifthenic remedies*.

XCI. The remedies of afthenic diathefis are powers exciting with more force, than fuits the beft health; they may be called *ftimulants or fthenic*, for the fake of diftinction.

XCII. Thefe remedies are to be employed with more or lefs freedom in proportion to the higher, or lower degree

(c) When the prevalence of debility, and that to fuch a degree, as to deftroy the connexion that fubfifts betwixt the fibres of mufcles, and that function of the brain which we call will, takes place in parts of the fystem, not only remote from the centre of activity, but beyond the circulation, it muft be of difficult cure; becaufe the moft powerful means of effecting that operation act moft powerfully when taken internally, and much more feebly when applied to the fkin.

(d) What is called dropfy confifts of a cafe which is a general difeafe, and a number of others, which are only fymptoms of local internal difeafes, and to be treated in the laft part of this work. Thefe arife from obftructions in the large veffels next the heart, from tumours, whether fcirrhouf or fteatomatous, impeding by their preffure the return of the blood by the veins to the heart. It is the general cafe that is here alluded to, and the public may depend upon it, that it is to be cured, though not by evacuant means, but, on the contrary, by the high diffufible ftimuli, neceffary to the cure of the difeafes of high[#] debility, fuch as the extremity of typhus fever, and an expiring gout. All thefe are cured by high ftimulants.

Fasting + Low

degree of each diathesis, and of the local affection depending upon it. And such a choice should be made, that the most powerful may be adapted to the most violent case. But the cure of no disease of considerable violence, and scarcely of any disease at all, ought to be intrusted to any one remedy. The use of several remedies is preferable to that of one; because their energy is applied to the system to a greater extent, and the excitability is more completely and more equally affected. The person, who means that his remedies should go to a particular part, and there, from a local operation, and not by an affection of the excitability, serve his purpose, is equally wise with him, who, by cropping a twig, expects to eradicate a tree. What remedies are of general, what of local operation, shall next be described.

XCIII. General remedies are those, which, acting upon the excitability, by an operation diffused over the whole body, reproduce the state of health.

XCIV. Local remedies are those, which act by a similar operation on a part, and, by an operation confined to that, restore the sound state.

XCV. Since every universal disease, every predisposition, depends upon increased or diminished excitement, and is removed by the conversion of that into the degree which constitutes the mean betwixt both; in order both to prevent and cure diseases, we must always use the indication proposed, and stimulate or debilitate; never wait, or trust to the supposed powers of nature, which have no real existence.

XCVI. In the indication of cure, the only regard to be had to morbid matter, is to allow time for its passing out of the body. For whether it acts like other exciting powers, sometimes by stimulating, as in the small-pox and measles, at other times by debilitating, as in contagious fevers and the plague, or its action consists in only giving the peculiar form of its respective disease, and, thereby, adding a local affection to a
general

general one ; in either case there is no room for a new indication.

XCVII. For if the disease, as a general one, be properly treated, every eruption and its consequences, every species of inflammation, every species of ulceration, give way to the happy effect of the general plan of cure. And when the event, in consequence of a bad method of cure, threatens to be unfavourable, the local symptoms are proportionally aggravated. This was proved in the small-pox long ago, and in the measles lately (*e*) with equal certainty ; it is proved in the plague, at least as often as this disease is treated by remedies proper in kind and administered in due proportion ; it is proved in the malignant or gangrenous sore throat (*f*), and in other forms of typhus, with a similar

(*e*) After the discovery of the nature of the catarrh, the catarrhal symptoms in the measles came naturally to be inquired into. A full trial was given to the refrigerant debilitating plan, in the author's own family, as well as among several patients, and lately among near an hundred patients in England, treated by the father of one of the author's pupils ; who all did well, while others, who were kept warm, according to a practice that Dr. Sydenham had left as he found it among his alexipharmic contemporaries, many died, and all had a bad recovery. The author's own son and name-son, a boy about six years of age, was stript half naked and allowed to go out and play as he pleased. The only check upon him was, his being allowed nothing but fluid vegetable matter, when he returned home with a keen appetite. This matter will be further explained, and in a more proper place, hereafter. But what has been said was in illustration of the hint in the text.

(*f*) This case of disease has been considered, as wholly and solely seated in the throat, and therefore conjoined with other diseases, where that local affection was understood to be the essential symptom, and a symptom that connected all the cases. But the other cases are sibilic, or to be cured in the ordinary way of bleeding and evacuation ; while such a practice is certain death in it, as being not only an asthenic case, that is a case of debility, but one of the highest ; and, instead of depending upon the affection of the throat, the affection of the throat depends on it. Give stimulants to the patients labouring under the inflammatory sore throat,

similar local affection. In the two last instances, the danger of life depends upon the degree of general affection, without which there is no occasion for any apprehension from the local. And the same proposition is so true, with respect to the three former, that, though the contagious matter has been applied, yet, without the general noxious powers preceding, no real general disease arises, the danger is in proportion to their violence, and the whole cure depends upon the general remedies. These facts all concur to show, that no kind of matter, whether contagious or not, contributes any thing towards the general disease it accompanies and discriminates; or, if it does contribute, that it acts exactly as the ordinary powers do.

XCVIII. During both overabundant and deficient excitement, the healthy perspiration is diminished during the predisposition, and suppressed in the course of the disease (which has been already hinted, and will more fully be demonstrated hereafter). It is, therefore, proper that it should be carefully kept up, for the purpose of discharging any hurtful matter from the body. But this suggests no new indication of cure; since the only means of effecting this purpose are those, which tend to remove both the diatheses in proportion to their force, and which are not serviceable as local, but as general remedies (*g*).

XCIX. Should

throat, and you kill them; bleed, purge, vomit, and starve, in the gangrenous case, and you ensure the same fate. Such, however, are the diseases, that systematics, nosologists, and other strangers in the city of nature, have, from their ignorance of the place, in spite of their natural distance, brought all together. (See Dr. Cullen's *Genera Morborum*, all the three editions, genus VII). As soon will Mile-end and Knightbridge meet; as soon will London place itself on the Calton-hill, and become an elevated suburb of Edinburgh.

(*g*) The discovery of the support of perspiration upon a principle, which extends to all the phenomena of the subject, was reserved for this work. The heating remedies of the alexipharmic

XCIX. Should a person, who during the former part of his life has lived luxuriously, at an advanced age, either from intention or necessity, abate a good deal of his usual indulgence, and yet preserve some appearance of an abundance of fluids and of vigour; he must not, as is commonly done, be supposed to labour under plethora and excessive vigour; but, on the contrary, unless there be a recent and evident cause for it, which is possible, he must be held for one who labours under indirect debility; and so much the rather, if, to noxious powers already too invigorating, among which all those that fill the vessels are to be numbered, directly debilitating powers have succeeded. In this case it is neither a debilitating or asthenic plan of cure, for that would increase the direct debility; nor a plan too sthenic, for that would increase the indirect debility,

the

mic physicians were intended to support the perspiration, and, thereby, throw out a morbid matter: which was a very unlucky thought in the sthenic diseases, the principal of which were peripneumony, of which we have already so often spoken; phrenitis, in which the brain was supposed to be inflamed; and the small-pox and measles; because the nature of those diseases, and the tendency of all the powers producing them, was to check the perspiration, (see No. LXI.) from the excess of their stimulus; consequently, the addition of more stimuli, by way of cure, would check it still more. But these diseases are only three out of an hundred general diseases; whereas the followers of the great man, who corrected that abuse through a fiery persecution (*as through fire*) against himself, went all into a much worse extreme. Their imitation of their master transported them into a rage to carry the plan of promoting perspiration, by the same means, through the remaining 97 of the hundred. And they succeeded with a vengeance. For, as it is the nature of these diseases to transmit too great a quantity of fluids through the perspiratory pores, in consequence of the debility, which constitutes their cause; certainly the increase of that debility, that is to say, the increase of the cause, should increase the effect. Which it most certainly did, through all the systems that have appeared for more than a century past. "Stulti dum fugiunt vitia, in contraria currunt." This is intended only as a hint, to enable our intelligent readers to understand the fuller explanation of perspiration, which will soon follow.

the principal cause, and, consequently, the disease ; but it is a middle method, which is commonly called tonic, that should be pursued (*b*).

C. Since we ought to adapt the efficacy of the curative means to the degree of disease (under which, for the sake of brevity, let predisposition also be comprehended), regard should be had, in the indication of cure, to age, sex, habit, constitution, climate, soil, in fine, to the operations of all the exciting powers in general, of all the noxious ones in particular, of all the remedies, whether they have been proper or improper.

CI. The subjects of direct debility are women ; persons in a state of inanition ; those who have been insufficiently stimulated ; those who have a delicate set of solids ; those who have been accustomed to moisture, whether from the climate or soil ; finally, all persons in a languid state, which has not been preceded by high excitement,

(*b*) The blood is made from the food, and elaborated by the powers of digestion ; that is, the more nourishing food is taken in, and the more strength there is in the system to convert it into real blood, the more, and also better, blood will be produced. The quantity of blood, so produced, may go to excess, as well as every other exciting power, the principal of which it is. But the question is, when, in whom, and under what circumstances, is an overproportion of blood generated ? Common sense would say, not at the beginning or the end of life, when the degree of nutriment used is far from being so considerable, as at the middle and vigorous period of life. Again, which of the two sexes is supposed most liable to generate this morbid redundancy of the vital fluid ? A simple creature, aided by nothing but natural sagacity, would be apt to say, the men ; both because they eat more, and, from the greater variety of the modes of promoting digestion to which they are addicted, digest better. How medical systematics would laugh at such simplicity ! How contrary that would seem to mystery, their lydian stone, under which they think all wisdom so safely lodged, as to fear it would be dangerous to turn it up, and examine what was under it ! What sort of habits are most liable to it ? Not those, who have the greatest bulk of simple solids, whether they eat or not, much less those, who are liable to bleeding discharges, who can neither eat nor digest ; but all those who eat and digest well.

excitement, arising either from noxious powers, or the mode in which they may have been treated.

CII. On the contrary, the persons in whom indirect debility is prevalent are adult males; persons of too full an habit; persons who are over stimulated, and the diathesis is the stronger, the longer they have been over stimulated; those who have been overheated, whether they have been wet at the time or not; all those, in short, who, having been once vigorous, have been rendered languid either by the ordinary noxious powers, or by improper treatment, when diseased.

CIII. In the cure of indirect debility; whatever be its degree, from whatever sort of excessive stimulus it has arisen; little less of the stimulus, which is to be employed as the chief remedy, than that, which produced the disease, should, at first, be used; and then less and less, till the disease is cured.

CIV. When the first part of the cure is completed, and the convalescent can use the more permanent and natural stimuli, he should gradually be confined to them, and drop the use of the more diffusible; though if he has been in the habit of using much stimulus, he may be indulged in something extraordinary in that way for some time (*i*).

CV. The

(*i*) This indulgence is chiefly intended for those, who have gone to some excess in the use of the stimulus of drink, and who still, without it altogether, are not capable of taking enough of food and other durable stimuli for their support. The aim, however, of all such persons (with the exception only of those who are of an advanced age, or of those whose debility threatens to run to a certain course), should be to lay aside the daily use of drink altogether, and to indulge in occasional approaches to excess as seldom as possible. Some persons, even beyond the fiftieth year of their age, when they found they could eat and perform all their other functions with vigour, have had the resolution to abstain from all sorts of strong drink, not only with impunity, but with a most wonderful improvement of their health and vigour. Another advantage, arising from this management, is, that, whenever any disease, to which a person may be liable, (such as the gout, various affections of debility, chiefly prevalent in the alimentary

CV. The cure of the hurtful effect of any stimulus should first be set about by changing it for a less ; this for a still less ; and the intention of cure should be always to pass from the use of the more violent and diffusible, which nature in her healthy state rejects, to that of the more durable, and more suitable to nature when unoppressed, till the healthy state can at last be maintained by the usual means (*k*).

CVI. In the case of indirect debility, where the view is to restore vigour, a debilitating plan of cure should be avoided ; because no sort of debility is to be cured by another, or any degree of it by any degree of another kind. It is only in the progress to indirect debility (*l*), that directly debilitating powers are suitable for the purpose of supporting the vigour, which is, in that case, in danger of being worn out (*m*) : such as cold bathing,

alimentary canal ; in a word, the diseases of either form of debility), either returns, or threatens to return ; a return to the use of wine and other strong drink will become an excellent remedy, and even supercede the use of high diffusible ones. That practice would be attended with this further advantage, that, when the occasion that called for it was over, and the disease prevented or removed, the person might again lay aside the use of drink, with all the good consequences he had formerly experienced from the practice, and thereby both prolong his life, improve his health, and enjoy the proper and vigorous use of all his functions.

(*k*) In many diseases of debility arising from a former excess, the stimulant effects of which have passed away, the use of cold water, though in gratification of the patient's craving, and of other thin potions, as well as of vegetable aliment in a fluid form, and of evacuation of every kind, is most hurtful.

(*l*) Betwixt 40 and 70.

(*m*) At 65 there are only 5 degrees of vigour left, which, either by a continuance of the same excessive stimuli that produced them, or, by the addition of a degree proportioned to that effect, would be worn out. Remove some of the stimulant powers, the excess of excitement will be diminished, suppose to 60 ; remove more of the former, and the excess of the latter will be further diminished, till the excitement is reduced to its natural healthy standard of 40. The state of excitement, then, within this range, that

bathing, lowering the diet, weak drink, and a similar abatement in the use of the other stimuli.

CVII. For the cure of direct debility, we should begin with the smallest degree of stimulus, and then rise to the use of a greater and greater, till the morbid abundance of excitability be gradually worn off, and health at last restored.

CVIII. When the disease arises from the want of any one stimulus, the return to its use should be gradual, and facilitated by other stimulants more powerful than itself.

CIX. Also in this part of the general method of cure, debilitating, either directly or indirectly, should be avoided; both for the reason formerly given, and also, because the stimulant plan of cure, which is the only proper one, when carried to excess, converts the sthenic diathesis, that between 40 and 70 into the asthenic, (between 70 and 80), and the latter into death (at 80). For which reason, while, on the one hand, debilitating powers are to be avoided; it must, on the other, not be forgotten, that the power employed in the cure should be accommodated to the degree of morbid state. The thirst, which is occasioned by debility, is increased by cold water, and hurried on to the higher symptoms of nausea and vomiting; it is quenched by pure wine, or spirit, which prevent the troublesome symptoms that would otherwise follow. Pure wine increases the thirst, that proceeds from a sthenic cause, and excites the same troublesome symptoms,

that is, between 40 and 70, especially in proportion to the approach of the excess to 70, is that, to which only directly debilitating powers should be applied. In all cases above 70 where the excitement is gone, and below 40 where it constantly decreases all the way, till it is lost at 0, directly debilitating powers are pernicious. How bad then must the only practice be, that we find in books and lectures, a practice transmitted from the first accounts of our profession, and which deals in the use of no other means but directly debilitating ones? Bad, indeed, must it be!

toms, which cold water does in the other case ; cold water cures it, and prevents the future disorder.

CX. Since, therefore, the same powers excite all the phenomena of life, and produce sometimes an excess, sometimes a just proportion, sometimes a deficiency, of vigour, according to the various degrees in which they are applied ; and since the same observation extends to the same powers, when they are applied as remedies of diseases ; let it be a general rule, never unguardedly to convert either diathesis into the other. And, as every disease, that debilitating powers remove, is sthenic, every one, that is cured by stimulant means, asthenic ; the knowledge of this may furnish the proper means of caution against mistake.

THE SECOND PART.

CHAP. I.

Of the noxious powers, which produce either diathesis, sthenic, or asthenic.

CXI. THE powers producing the state of the body, upon which the predispositions to sthenic or asthenic diseases, as well as those diseases themselves, depend—in other words, the powers producing both the sthenic and asthenic diathesis—were enumerated before (XI. XII.)

The noxious powers producing both diatheses. HEAT stimulates the whole system—particularly the surface—Hence the inflammation in phlegmasiæ is always external—and perspiration from the strong contraction of the small vessels of the skin is checked or suppressed—Hence contagious matter is detained—EXCESSIVE HEAT debilitates—particularly the cutaneous vessels—How it checks perspiration in asthenic diseases—COLD debilitates—Identity of operation of other debilitating powers—excessive heat, and cold, debilitate by producing painful sensation—Cold never useful but in sthenic diseases—Does not condense the living solids—Phenomena it produces by stopping the waste of excitability—Cold affects the surface most—MOISTURE—No food can be too stimulating, except flesh of land-animals—Seasoning—Spirituos

Spirituous liquors—Diffusible stimuli—Scale—Direct and indirect stimulus of food—Of vegetable food—How diffusible stimuli produce debility—Of plethora—Muscular exertion—Of penury of blood—Of discharges of blood, falsely called hemorrhages—Secreted fluids in too great quantity stimulate—In too small debilitate—exertion and inertness of intellect—Effect of the passions—Of air—Powers applied singly seldom produce diathesis.

CXII. HEAT, which is necessary to the production, the growth, and the vigour of animals and vegetables, as also to the form of the elements (*a*), from its action upon the surface of the animal body, directly stimulates the whole; an effect which it also exerts upon vegetables. To this action of heat there is no exception while it keeps within a certain range; but when it is either deficient, where it takes the name of cold, or excessive, its effect varies. This stimulus, when moderate, produces its due effect; in an higher degree it produces more or less of sthenic diathesis.

CXIII. But as the action of heat is somewhat more exerted upon the surface than in the internal parts, where the temperature is nearly stationary, it stimulates the former more than the latter. Hence, in the phlegmasiæ (diseases with inflammation of a part) the inflammation is always external.—This agent increases the tone of all the muscular fibres, and consequently their density (see Chap. V.): which produces a suppression of perspiration, by some imputed to constriction from cold, by others to constriction from spasms; both erroneously. Hence, as the diameters of all the vessels are diminished, to those of the extreme vessels every where, and especially of the skin, where the cause is more powerfully exerted, are often entirely effaced.

But

(*a*) In a certain degree of diminished heat water freezes; but if such a diminution of it could be found as to freeze air, the whole fabric of the universe would rush into dissolution.

But this entire suppression of the perspiration is incompatible with predisposition, and arises only from the diathesis, when it extends to the just measure of disease. The perspiration is diminished during the predisposition; but the condensing power is not sufficient to suppress it, till it attains the degree of producing the disease.

CXIV. Hence in the measles and small-pox, the irritating matter, together with the perspiration, is detained. And not only in these, but all other sthenic diseases, is the perspiration suppressed, the excitement both upon the surface and in the rest of the body increased, and catarrh in particular induced (*b*).

CXV. Heat in excess, whether the excess arise from long application or intensity, constantly debilitates, by diminishing the tone, and producing laxity instead of density. This effect is somewhat greater upon the skin, to which the direct energy of heat is applied, than in the interior parts, in which there is little change of temperature. Hence arises sweating as in the torrid zone; hence the diameters of all the vessels, and particularly of the perspiratory vessels, are enlarged. Hence proceed the colliquative sweats in fevers, and a similar state of the bowels. Hence, also, corruption of the fluids, and not from any change immediately produced by corrupting or putrefactive powers. The idea of certain powers having a tendency to corrupt our fluids, and

(*b*) Calefacients, or heating things, were one of the means that the alexipharmic physicians employed to force perspiration; but the principle is now laid down, that shows they produce the opposite effect. Hence the merit of Dr. Sydenham in recommending cold, both in the small-pox and in peripneumony, in which disease he took his patients out of bed, and placed them in an easy chair. Happy had it been for the profession, and happier for the sick, had he extended his improvement to the measles and catarrh, and all the rest of the few sthenic diseases, and stopt there; but by extending his antiphlogistic and refrigerant doctrine to the whole form of athenic diseases, the harm and good he did were in the proportion of 97 of the former to three of the latter.

and of certain others to correct that effect, and take off the degeneracy, long prevailed in the minds of systematics, and is not among many of their followers yet laid aside. Heat was one of the number; but that it acts so, is disproved, not only by the explanation here given, but by the certainty of the fact, that the same effect is produced by cold, as well as every other debilitating power.

CXVI. Excessive heat in the violent measles, in the confluent small pox, in fevers, and in every kind of asthenic disease, in which the perspiration is checked, does not lessen the deficiency, though it expands and enlarges the vessels, but, on the contrary, increases it; *i. e.* diminishes perspiration.

CXVII. Cold, a power unfriendly to animals, vegetables, and the elements, weakens the whole system, but the surface most, of which almost alone it diminishes the temperature. It produces this effect by a direct operation, always in proportion to its degree. Cold, equally with excessive heat, produces atony and laxity of the vessels, gangrene, and the other effects of excessive heat. In Siberia the phenomena of cold on the human body very much resemble those of heat.

CXVIII. That these effects of the extremes of temperature arise from their debilitating, not from their generating putrefaction—from an affection of the excitement, not of the fluids—plainly appears from this; that other exciting noxious powers, such as fasting, over-abundance of blood (as in the case of those who die of peripneumony), and similar noxious powers, which neither have been, nor can be, supposed to affect the fluids by any direct operation (*c*), produce corruption

(*c*) Fasting, acids, and cold, have all the same effects upon the fluids that the putrefying substances were supposed to have; but surely acids produce no putrefactive process; neither can want act as positive matter; nor cold be supposed to produce any such effect. In a word, any corruption that is produced, arises only from the weakness of the heart and arteries, predominant in their extremities.

tion of the fluids, and all the other symptoms; and the same stimulants, which remove the latter, remove the former. Nay, the supposed antiseptics, such as wine, peruvian bark, acids, and other things of that kind, either have no such property under any circumstances; or they neither are given, nor can be given, in such quantity, as to affect the composition of the fluids: In fine, the effects of inanimate matters upon one another can never, with any propriety, be transferred to living systems. Though, then, the fluids are frequently corrupted, the corruption is the effect of weakness of the vessels, which prevents them from being sufficiently mixed and diffused, but it is never the original cause of disease.

CXIX. The disagreeable sensation both from cold and heat in extreme, is also hurtful, by diminishing the sum total of stimulant operation, which, in so far as it is agreeable, is serviceable by stimulating. (See note (*d*) in par. XXI.)

CXX. As cold is naturally so debilitating, and as all debilitating powers diminish excitement, it can never be of service but in sthenic diseases, that is, in those which are in their progress towards indirect debility (see CVI.); because the excitability, already too abundant, can never be rendered more abundant, or, when too much wasted, be more accumulated, without an aggravation of the disease (XLVI. XLVII.); excitability admitting of less stimulus in proportion as it is either more abundant, or more ultimately wasted (*d*). When
the

extremities. They cease to act; the fluids within stagnate, and, under the heat of the body, degenerate. This is the true cause of the corruption. And the remedies are not correctors of the corrupted mass; but whatever invigorates the whole body, and consequently the heart and arteries. Nothing can be more absurd than to suppose that a glass or two of wine and water, a little bark, and so on, after being blended in the whole mass of fluids, should go to a portion of fluids in the extreme vessels, even without the circulation, and, by mixing with it, change its qualities.

(*d*) This obscure phrase, *more ultimately wasted*, has nothing answering to it in the original latin. It seems quite inconsistent with XXVI. and the other passages referred to. EDITOR.

the debility is moderate, a mistake of this kind is less evident : but in a high degree of debility of either sort, a violent disease, or even death itself, may be the consequence of the smallest increase of debility (*e*).

CXXI. As cold as well as excessive heat relaxes, as is seen in the cure of the small pox, and of every sthenic disease, we learn, that the property of cold to condense inanimate matter does not extend to living matter (*f*). The diminution of the bulk of the surface, or the shrivelling of the skin, arises from debility of the arteries, which do not propel the fluids with sufficient force to distend the small vessels of the skin. In this way cold produces asthenic diathesis.

CXXII. But, as always less and less excitement arises in proportion as stimulant operation has been applied, till at last it ceases altogether ; cold, as well as any other directly debilitating power, may, at some degree produce health and all the degrees of sthenic diathesis

(*e*) When the debility of the indirect kind is very moderate, that is, the excitement has not sunk much below 40 in the scale, the short suspension of a few degrees more would not do much mischief. Suppose the excitement at 30 instead of 40, and a dip in cold water has brought it down to 25, the effect even of that is not of a trifling nature ; the debility by this means has passed the whole range of predisposition, and arrived at the degree where disease commences. It is true the excitement will rise the moment the person is taken out of the bath ; but still something is lost. The very accumulation implies a reduced disposition in it to be acted upon by stimuli. A person, who has abstained from any one stimulus for a given time, when it is again applied, will not bear near so much of it as he did formerly. If he abstain longer, he will bear still less, till, at last, he will be fit to bear none at all. If, on the other hand, the excitement should have fallen to 10, an addition of debilitating power would be attended with the utmost danger, not only of increasing the disease, but of inducing death.

(*f*) It has been alleged, that the diminution of the bulk of the body by cold, furnished an argument in favour of its being an astringent to it, as it certainly is a condenser of dead matter.

diathesis (*g*) ; in the following way, however, only. It stops the waste of excitability, makes the body more susceptible of stimulant operation, checks the progress to indirect debility, and stems the latter. But it only affects this by checking the effect of heat and other stimuli, which accelerate indirect debility, and by keeping the excitement within the bounds of vigour. Hence vigour in cold countries, when the body is defended by clothes, the shelter of a house, the warmth of a fire, as well as by its own proper motion. Hence also the bracing, by cold, of parts that have been relaxed by excessive heat. Lastly, hence a remedy for the corruption of the fluids, which consists in invigorating the vessels, not in correcting the degeneracy of their contents. This effect of cold upon the surface, which is nearly the only part of the system subject to refrigeration, is somewhat greater than on the internal parts (*h*).

CXXIII. The debilitating effect of temperature, and therefore also its hurtful tendency, is increased by moisture.

CXXIV. Of the articles of diet, the only food in danger of being too stimulant, is the flesh of land-animals, used in great quantity. Meat too salt, and hardened, especially when it has now begun to spoil, is an exception.

CXXV. The

(*g*) From the highest to the lowest, from that degree of it, which, under the circumstances here mentioned, produces a moderate catarrh, to that, where the modification of its action rises to the degree of being adequate to the effect of producing a peripneumony.

(*h*) This account of the salutary operation of cold is not complete, even according to the author's own principles. For as disagreeable sensation, in his opinion, debilitates, cold may very often be so applied as by removing the very disagreeable sense of heat, that attends some diseases, to produce an effect equivalent to stimulation. It is, I believe, exactly in this way that bathing the body with cold water proves serviceable in low fevers.—One great defect of this system is the omission of the actions produced by painful and pleasurable sensation. ΕΔΥΤΟΑ.

CXXV. The same observation applies to condiment ; of which a very small portion, upon account of its high degree of stimulus, is sufficient.

CXXVI. Spirituous or vinous liquors, in which the alcohol is always diluted, stimulates more quickly than seasoned food ; its stimulus is in proportion to the quantity of alcohol that it contains.

15. But there are stimuli, which possess an operation as much quicker, and more powerful, than that of the articles of diet, which are the agreeable and proper stimuli in health, as their operation is of shorter duration. To these the name of *diffusible* may be given. They rank above strong liquors in the following order :

16. Next to these liquors, and immediately above them, stands musk ; above it volatile alkali ; higher than this æther ; and the highest of all, as far as experiments have yet thrown light upon the subject, is opium (*i*).

17. These, according to their degree, possess the property of converting the asthenic diathesis into a cessation of all diathesis, or of restoring health ; of carrying health into sthenic diathesis, the sthenic diathesis into indirect debility, and the last into death ; which they accomplish with so much the more ease and promptitude, as they are more powerful than all other stimuli.—In the use of the diffusible stimuli great care should be taken to apply them only to the cases that require them ; which are only the diseases of the highest debility, or of which the intolerable pain, besides tormenting the patient, threatens the worst consequences.

CXXVII. The

(*i*) We are pretty certain of the exactness of that place in the scale which we have assigned to opium. Nor is our arrangement of the others uncountenanced by the same kind of criterion ; but having not yet made all the trial necessary to establish the proposition, we defer any final decision of this point to an after opportunity.

CXXVII. The stimulus of the articles of diet, not exclusive of the diffusible stimuli, should be denominated *direct*, because it acts directly and immediately upon the excitability of the part to which it is applied. Direct stimulus, at least in so far as it regards the food, is assisted by another stimulus, depending upon a distention of the muscular fibres, on which account, for the sake of distinction, the latter should be called *indirect*. The latter is owing to the bulk of animal and vegetable food ; the former is produced by a relation or affinity of the stimulus to the excitability. The indirect acts upon the living solids in so far as they are to be considered as simple ; the direct acts upon them as living only. From a long and habitual excess in food and drink, at last indirect debility arises, and the group of diseases depending upon it (*k*).

18. All these stimuli have also a tendency to produce asthenic diathesis.

CXXVIII. Vegetable food taken in whatever quantity, and too sparing an use of animal, as also meat too salt, and deprived of its native juices by keeping, when at the same time better nourishing matter is withheld, constantly weakens, and thereby produces asthenic diathesis through all its degrees. Hence arises that remarkable imbecility both of body and mind, which distinguishes the Gentoos, who follow the brahminical ceremonial

(*k*) When I make a meal of animal food, much less bulk is requisite to give the same nourishment, than when vegetable matter is the only one made use of. What makes the difference is, that there is something in the animal matter which affords a nourishing stimulus independent of its bulk ; and though the vegetable matter is not altogether devoid of that kind of stimulus, it, however, possesses it in a much smaller degree. Both stimuli are necessary, but chiefly the direct, by which animal food chiefly acts ; and therefore is the vegetable the worst and weakest sort of aliment, because it chiefly acts by its bulk of matter. A small portion of the indirect stimulus is necessary ; hence the very general use of bread. But our vigour of mind and body depends upon the direct.

ceremonial of religion. Hence the diseases of the poor every where (*l*); hence scrofula (*m*), fevers (*n*), epilepsy, cough with profuse expectoration and hemorrhage, and the whole band of asthenic diseases. The direct debility flowing from this noxious power, affects the stomach somewhat more than other equal part (Chap. IV); the consequences are loss of appetite, sickness, vomiting, very loose belly, and other disturbances of the first passages.

19. Excess in the use of food consisting of the proper materials produces these effects, as well as improper aliment: as may be inferred from the universal effect of all the other stimulant powers, when their operation has been pushed to the same excess (*o*). The mean betwixt

(*l*) The nourishment of animal food needs only a little support of tension from a moderate quantity of bread; but that vegetable food, even when supported by strong condiments, in no quantity whatever, ever gives due support, appears plainly from the instance brought in the text. Of the poor labouring people in Scotland, who chiefly live on vegetable matter, it would take three to go through the work that one Yorkshire man, nourished by bolting fat pork, can easily execute. And among the Gentoo servants a dozen is not able to perform as much work as a single English servant. A year's experience of vegetable food, and its pernicious consequences (see the Preface) has now put the question, about the supposed salutary effects of low living, and the pretended virtue of a rigid observance of it, beyond all doubt, and brought irrefragable proof of its weakening effect.

(*m*) Scrofula, though supposed hereditary, produces its worst effects, not from that circumstance, but the method of management, both for the prevention and cure.

(*n*) Various particular, and sometimes specific causes, have been assigned for the production of fevers; but it shall be proved, that, whatever debilitates in a high degree, is adequate to that effect.

(*o*) It will now appear how far an assertion of the opposers of this doctrine is just or calumnious: low living and ~~starving~~ are condemned for the facts and reasons assigned; but can it now be said, that the doctrine is friendly to intemperance? On the contrary, it has reduced the fact to its proper standard, reprobating the extremes, and establishing the mean under which virtue takes her post. It is certainly as immoral, or irreligious, if you will, to hurt health, and hasten death by abstinence, as by a luxurious excess. There is a gloomy luxury in superstition, a cheerful one in sensuality; both bad.

betwixt the extremes of the hurtful powers, in so far as diet is concerned, is abstinence (*p*).

CXXIX. Abstaining from the use of condiments, which, without animal food (*q*), are not sufficient to give strength, produces additional weakness.

CXXX. Neither diffusible stimuli nor spirituous liquors are necessary for the young or the vigorous; they are not even safe, on account of their tendency to produce indirect debility. In persons accustomed to strong liquors, in the old and debilitated, weak, cold, acid, and fermenting liquors have great effect in bringing on the asthenic diathesis directly, as excess in strong liquors has indirectly.

20. If the diffusible stimuli are withdrawn from persons habituated to them, the same effect follows as when the durable are withdrawn. The excitability accumulates, and direct debility comes on. Hence the diffusible stimuli may be said to produce asthenic diathesis. But asthenic diathesis is never the consequence of withdrawing them, at least in any considerable degree, but when they have been habitually used. And all the hurtful effects which they have most untruly, to the great detriment of mankind, been said rather, than are now said, to occasion, arise not from themselves, but from the want of knowledge how to manage them. And though the operation of diffusible ought to be supported by that of durable stimulus; it should not be confounded with the debilitating powers. What disturbances, during the operation of opium, will not a breath of cold air upon the body create? And how easily, as well as quickly, are they all

(*p*) At least it stands at the foot of the scale of directly debilitating powers, if they are to have the rank of standing uppermost, as being most hurtful, and to be followed by the enumeration of the indirectly debilitating powers, as being next so, which, by the way, is the rank that nature seems to point out for both.

(*q*) As in the case of the Gentoos, who make use of a great deal of condiment with their vegetable aliment.

all removed, by carefully covering up the patient ! As there are cases of indirect debility from an habitual abuse of strong drink, there are also others from a mistaken or intemperate use of the diffusible stimuli, particularly opium. Both of them require nicety and skill in the management of them for their cure ; for which consult Chap. XI. from par. CIII. to CX. The management is out of our present question ; but from this observation, we can clearly find, as it was to be expected from the analogous operation of the other exciting powers, that the diffusible stimuli, when their operation is carried to excess, will also produce an asthenic diathesis of the indirect kind.

21. Other diffusible stimuli, as well as opium, and the more durable one of strong liquor, by an indirectly debilitating operation, produce asthenic diathesis.

CXXXI. An abundance of chyle and blood is another stimulus : by this the excitement is every where increased, and particularly in the blood-vessels, in a degree proportioned to the abundance. The quality of the blood, at least, as a cause, is of no effect, it is the quantity only that is. The quantity, by distending the muscular fibres of the vessels, acts with a constant impulse (*r*). The doctrine of plethora, so noted in the
 medical

(*r*) The blood by its quantity distends the muscular fibres of the vessels ; that distension stimulates the excitability in the fibres, and produces excitement, commonly called their irritability ; thus excited, the fibres contract ; the contraction of each portion sends the wave onward to another portion : when the wave has passed any given portion of vessels, its fibres again relax, and make way for the next, which is pushed along in the same manner. In this way the circulation goes on in all cases while life remains ; contraction and relaxation constantly alternate ; the former propelling the wave before the latter opens to receive the next. But the vessel may be in different states with respect to its power of either contracting or relaxing. When it is weak, which every part of the vascular system is as often as all the rest of the system is weak, both the contraction and relaxation of each portion of vessel is imperfect. The contraction from its smallness, and the
 relaxation

medical schools, is only applicable to sthenic diathesis, and takes place in proportion to its degree (*s*).

CXXXII. The effect of distention is increased by the velocity of the blood, both as arising from other sources, and especially from muscular motion, a motion, which, by compressing the veins, carries the blood more quickly back to the heart.

CXXXIII. Nothing is more effectual than these two last mentioned stimuli, in producing sthenic diathesis, and the diseases depending upon it. These diseases are violent in proportion to the over proportion of the blood, and the rapidity of the force with which it flows; a fact, that is proved by all the exciting powers, all the symptoms of those diseases, and, especially, the pulse; it is also proved by the great efficacy
of

relaxation from its being more owing to the passive state of the simple, than the active state of the living, fibres, leave betwixt them a large diameter upon the whole. But, in a vigorous, or sthenic, state of the whole system in general, and of that of the vessels in particular, the contractions are strong and forcible, and the relaxations active and in consent with the contractions. Hence the diameter of each portion of vessel is diminished upon the whole, and while the quantity of the blood is at the same time increased, the action and re-action are great; the blood distends with mechanical, the vessels resist with vital energy; the mutual effect of both upon the excitability is considerable; all is activity, all is force, and these are in exact proportion to their cause over all the sthenic diathesis. This state of the vessel, in so far as it respects the muscular fibres, is its tone; in so far as it respects them as simple solids, its density. It is a sthenic state of the vessel, opposed to the asthenic first described, which is distinguished by the epithets of atony and laxity; which, however, opposed to tone and density are only relative terms, employed for convenience, not absolute; like the term cold, used for diminished heat, they only signify a diminution of tone and density.

(*s*) It is a curious fact, that, while the truth of this proposition is demonstrated, the plethora of the schools is only understood of a state of the vessels diametrically opposite to a just idea of plethora.

of bleeding, purging, abstinence from food, and rest, in the cure of the disease (*t*).

CXXXIV. While an over-proportion and velocity of blood is a chief cause of sthenic diathesis ; there is nothing more powerful in producing the asthenic, than that penury of blood which the greatest celerity of motion accompanies. Hence, the smallness, weakness, and quickness of the pulse : Hence the excitement is diminished every where, and, in preference to other equal parts, in the whole sanguiferous system, and that in exact proportion to the penury.

22. From this state of the vessels, arises the discharge of blood from the lungs, from the uterus, from the anus, or around the anus, from the urinary passages, and through the perspiratory pores. Hence arise disturbances of the stomach, want of appetite, loathing of food, and, therefore, upon account of want of nourishment, and the languor of the digestive organs, always less and less blood arises in the system. So great a penury of blood is the principal origin of bleeding diseases ; which never happen but in the asthenic state. The same penury of blood acts in this manner, chiefly affecting its own vessels, because, according to a law so often mentioned, its debilitating energy chiefly falls upon them. In sthenic diseases, that have advanced to their height, or a little beyond it, a few drops of blood from the nose, or a dropping of blood from the same, or any other part, demonstrate only a predisposition to indirect debility, but not an establishment of it, and that the matter still remains within the operation of excessive stimulus (*u*).

23. Thus

(*t*) Relief from bleeding and other evacuations, is certainly a good argument for the cause of the disease being so far owing to an over-proportion of blood ; and rest is as good for the proof of agitation of the vessels being concerned in the cause : besides, exercise is otherwise a noted cause of quickness of the pulse : and the hurtful powers and symptoms are equally decisive.

(*u*) Who ever heard of a flood of blood coming from the lungs in a peripneumony ? Or, who has not heard of it in consumptive cases ;

23. Thus it is not an excess in the quantity of blood, but laxity and atony of vessels from its deficiency, that upholds the bleeding discharges; which proceed in their course, not with any effort or active impulse, but

a

cases; which are the diseases depending upon the laxity of vessels of which we are speaking. What vigorous woman, found in all her functions as a woman, ever fell into perpetual floodings? What had been the state of these women before the disease? Did they eat and digest so completely, as that there was any reason for supposing their vessels were filled with blood? No; long before the arrival of the disease their appetite was puny, and, considering the kind of matter they made use of, to wit, vegetable, it was not to be supposed more beneficial from its quality than its quantity. What was the idea to be gathered from their symptoms, and particularly the pulse? The pulse had all the marks of an asthenic one; being weak, small, and quick, like that of a new-born infant. What was the state of their habit? Was it vigorous and robust? It was the reverse; soft, delicate; the habit lax; a falling off in flesh, with weakness over the whole system, and total loss of appetite. What were the remedies employed to remove this supposed offspring of plethora? Bleedings, repeated without end; other evacuations with the same freedom; vegetable food in a fluid form; and a horizontal posture, with their head lower than their body and under-extremities. Miserable are the resources of ignorance, and contemptible their execution! Fill a rigid tube, open at both ends, full of water, and the fluid, no doubt, will run out at the end which is most below an exact horizontal position. But that is not the case with the fluids in living vessels. The excitement, distinguishing them from all rigid inanimate tubes, counteracts the effect of gravity, while its living state remains: In proportion to the degree of which, the sides of the vessel will embrace their column of fluids, and prevent the flowing out of the fluids, in proportion to the degree of excitement; and before the gravity can act, the excitement must be extinguished, and the living system reduced to a lumpish mass of dead matter. It is the latter that enables them to produce that effect. And, therefore, bleeding discharges can never happen, either in health or sthenic diathesis, unless in that very high degree of it that approaches to indirect debility, and even then, only in the forced, scanty, manner described in the text; whereas, after the establishment of indirect debility, or in the case of direct, the great discharges only can happen, and that without force, in great plenty, but still short of what would happen if no excitement restrained it.

a diminution of tone : They are all asthenic, and the asthenic diathesis, as far as it depends upon them, consists in direct debility.

24. But, as every other exciting noxious power may induce indirect debility, so also, may an over-proportion of blood. For the vessels, distended beyond all bounds, may, by the excess of that stimulus, exhaust their own excitability, and, thereby, put an end to their excitement. Upon which the forcible contractions are converted into languid ones, or such as can scarce be called contractions at all ; and the area formerly effaced becomes extremely patulous. The finer parts of the fluids flow through the patulous extremities of the arteries, wherever they find an out-let, and carry with them, sometimes serum, sometimes red blood.

In the asthenic diathesis, as well as the sthenic, it is not the quality of the blood, but its quantity, which is prejudicial, and the fault in quantity here is deficiency. The deficient quantity produces the symptoms of the pulse described above, by not sufficiently distending the vessels, and giving them sufficient excitement. Plethora, which has been thought to belong to this form of diseases only, has absolutely no existence in it. The state of the vessels, with respect to the quantity of blood in them, that is pleasant and suitable to health, is the mean betwixt the extremes that have been described.

CXXXV. This state of the blood and vessels, that is, penury of blood, and atony and laxity of the vessels, chiefly from direct, sometimes from indirect debility ; though the latter case is exceedingly rare, is the chief origin of asthenic diseases ; of this the very hurtful effects of evacuation, especially bleeding, as well as vomiting, purging, and every other mode of diminishing the bulk and quantity of fluids give full proof. This proof has of late received a further confirmation,

in the singular success of the cure by other stimulants first, and then by every mode of filling the system (x).

CXXXVI. The different fluids, secreted from the blood, are, by the distention which they give to their respective vessels, also understood to stimulate. In this respect the milk and semen, by the abundance of each in its respective vessels, and likewise the perspirable fluid, are the most remarkable. The commotion of the secretory organ (y) is easily diffused by means of the excitability, which is one undivided property, over the whole body, and, when it rises to excess, is capable, with other powers that communicate an excess of excitement, of producing sthenic diathesis.

CXXXVII. The same secreted fluids, when they do not sufficiently distend their respective vessels, when they do not communicate enough of excitement, make no inconsiderable part of the hurtful powers, that constitute asthenic diathesis.

25. For which reason vomiting, purging, and every other evacuation, are powerful inducers of asthenic diathesis, which they effect in proportion to the debility that attends their operation. The same thing is to be

(x) Systematics allow that there are many diseases, which are a reproach to their art, from their never yielding to their method of cure, but on the contrary, becoming worse and worse in proportion to the time and pains taken about it. Of these *opprobria medicinae* (it would be better, I believe, to call them *opprobria medicorum*) few are more so than the bleeding diseases; which seem uniformly to have proceeded from evil to worse under the evacuant debilitating plan; while it has now been found, that the high stimulant plan removes them with the greatest success.

(y) It has been said above, in chap. 4, that the excitability is one uniform undivided property over the whole living system; and that, wherever it is acted upon in any part of its seat, it is affected over all. This fact, which is strictly true and universal over every part of living matter in nature, with the utmost ease explains many things, that were confessedly inexplicable upon every other medical doctrine; and, among the rest, the several affections of the secretory system.

be said of excess in venery, which is partly an indirect, partly a direct, always a great, debilitating power (z).

26. Sometimes the secretory vessels seem crammed with a colluvies of fluids, capable of producing indirect debility, as in that overflowing of bile, which distinguishes the yellow fever of the torrid zone (a). Here too the debilitating effect tends, by means of the excitability, to diffuse the diathesis over the whole system.

From this source arise, a languid action of the extreme vessels (b), a slow motion of the fluids, lastly a stagnation

(z) Nothing is more effectual in hastening death than a love marriage betwixt an old man of worn out excitability, and a young beautiful virgin: I need not explain to any reader on which side; that of the man or the wife, either the love or the danger lies.

(a) I have been so often, and by persons of good sense enough to make just observations, informed of the necessity of purging off the redundancy of that fluid, which not only fills the intestines, but diffuses itself over the whole alimentary canal; and, then, of following out the cure of the disease by the use of wine, spirits, and the diffusible stimuli, that I have, though at first with some reluctance, admitted the fact.* The reason of the slowness of my assent to it was, that, upon every other occasion of any accumulation of matter in the first passages, even in the colic itself, I had always found the practice of invigorating the peristaltic motion, by stimulants, sufficient to clear away all such extraneous matter; while vomiting and purging, by their relaxing effect upon the vessels, served to generate more, and increase the cause of the disease, which is always debility. This I found not an exception to that general principle, but an instance of a sort of local disease, from an over-repletion of the exhalant mucous and biliary vessels.

(b) These are the exhalants that pour out the saline, watery part of the blood unchanged; the mucous glands that change, by their secretory operation, the fluid they receive from the blood; the pori biliarii that change the fluid that they receive from the extremities of the veins of the gate, and of the hepatic artery, or artery of the liver; the little ducts which these form by the union of numbers into single vessels; the hepatic duct or great biliary vessel of the liver, which receives the bile from all the ducts; and, lastly, the ductus communis chole-dochus, or the duct that may be denominated in English, the general receiver of all the bile, whether from the great duct of the liver, or that which sends to

* This has not been found true in the billious fever, that lately prevailed in the United States. L. S.

stagnation and corruption of them. The diminution, or temporary destruction of excitement, over so considerable a part of the system (*c*), communicates debility, by means also of excitability, to the rest of the body, and, in conjunction with other noxious powers that produce too little excitement, gives rise to the asthenic diathesis.

27. The various sorts of gestation, as riding on horseback, going in a carriage, using an hobby, and sailing, as also of exercise and labour, by rousing the muscles into contraction, and thereby accelerating the motion of the blood in the veins toward the heart, while the valves prevent its taking a contrary direction, greatly promote excitement in all the vessels, and, therefore, over the whole system; and the effect may go so far as to produce sthenic diathesis (*d*).

28. As nothing contributes more to health than moderate and frequent exercise, and as its excess acts in the manner just described, a degree, either greater or less than the salutary degree, will produce the asthenic diathesis; the former by wasting the excitability, the latter by with-holding a necessary stimulus; that is, the one by debilitating indirectly, the other directly.

CXXXVIII. Thinking,

the gall-bladder a part of the bile that returns in the same vessel to the general receiver. These, and besides them, the inhalants or absorbents as they are called, to wit, the small vessels that take up from the exhalants and other arterial terminations of vessels, the fluid, called lymph, which is once more to be returned into the circulation; are the vessels that suffer the concurrence of symptoms described in the text.

(*c*) How great the space in the whole system is that these vessels occupy, may be easily imagined, when it is considered, that every evanescent artery, over the whole body, terminates in one or more of these colourless vessels that have been described.

(*d*) Too undistinguishing again! These kinds of gestation are well known often to produce general languor; and even the symptoms of debility. So does swinging, especially circular swinging, or *twirling*. So, I believe, does walking at a certain slow rate, or *sauntering*; by which I have found the force of the circulation to be much diminished. EDITOR.

CXXXVIII. Thinking, which more immediately affects the brain, than any other equal part of the system, encreases excitement over the whole body (*e*). Intense thinking, whether for once in a great degree, or often repeated in a less degree, or habitual, may alone prove hurtful; but, in conjunction with other powers also hurtful from their excess of stimulus, becomes more so, and may produce sthenic diathesis.

CXXXIX. An evident cause of asthenic diathesis is that state of the intellectual function, in which excess in thinking, by wasting the excitability, ends in indirect debility; or that deficient, weak, vacant state of mind, incapable of keeping up a train of thought, which produces the same hurtful effect by direct debility. This faulty state of the mind contributes greatly to weaken the system (*f*).

CXL. Violent

(*e*) None of the exciting powers have more influence upon our activity than the two which are just going to be mentioned, the exercise of our intellectual function, and that of passion or emotion. With respect to the former, Homer observes of the hero, whom he gives for a pattern of eloquence, that upon his first address, that is while he was under some agitation, and had not yet gotten into his train of thought, he was awkward in every motion, and in his whole attitude; he looked down to the ground, his hands hung straight along his sides as if powerless; his whole appearance was torpid. But when he once entered upon his subject, his eyes were all fire, his limbs all motion, with force, grace, and energy. Upon commencing a lecture, the pupils have often observed the same torpor in the lecturer, and a similar vivacity and life in a few minutes, when he had gotten fairly into his subject: the report which a lecturer's daughter, upon looking through the hole of a door, while the lecture was going on, made to the family and some company then present, was, that her father looked, in his lecture, as if he would look through his hearers. Mr. Donaldson is one of the few great masters, in the art of painting, who never fail, with a most exact likeness, to display the whole influence of the mind upon the features. A miniature of the author, done by him, as a present, is reckoned the greatest master-piece in these respects, that ever came from the hands of a painter.

(*f*) It may often be remarked by physicians, that their patients, after every other proper part of cure has been executed, are never completely restored to their healthy state, till they are again engaged in their usual occupations both of mind and body.

CXL. Violent passions, as great anger, keen grief, unbridled joy, rising to such a pitch as to destroy excitability, have the same effect as excessive thinking, and admit exactly of the same reasoning.

CXLI. Passion so strong as to exhaust the excitability induces that asthenic diathesis, which is occasioned by indirect debility, and diseases of that stamp. Hence epilepsy, hence apoplexy, which, when the mind has been screwed up to the highest pitch of passion, often proves fatal.

CXLII. On the contrary, deficiency of passion, (as in melancholy, grief, fear, terror, despair, which are only lower degrees of joy, assurance, and hope, and imply only a privation of the exciting passions, and are by no means positive emotions of a contrary nature) tend to produce that asthenic diathesis, which depends upon direct debility. The immediate consequence is loss of appetite, loathing of food, sickness, vomiting, pain of the stomach, diarrhoea without pain, or with pain, indigestion, colic, the gout, and fever.

CXLIII. The exercise of the senses, when it is agreeable, has great effect in exciting the whole body, and in producing emotions, which, together with the noxious powers mentioned above, may easily produce sthenic diathesis. These emotions are felt in drinking, dancing, in agreeable entertainments, where the eye is dazzled with the splendour of the dishes, of the company, and of all the objects around.

CXLIV. The exercise of the senses, when excessive, produces indirect debility. On the contrary, when the senses are either in part destroyed, or impaired, or disagreeably affected (*g*), the mind is dejected, and the whole body thrown into a state of languor and direct debility.

(*g*) Nothing is more clearly disagreeable than an obscure light, as when one reads with a small or unsnuffed candle. Hence the luxury of more candles than one, or of wax or spermaceti candles. This is often experienced at Ranelagh, and may be seen in children exquisitely amused.

debility. In both cases, especially when there is a concurrence of other debilitating powers, the asthenic diathesis arises.

CXLV. The effect of the air, independently of its sensible qualities, and its use in supporting respiration, is less obvious, than that of the other powers that have been spoken of; at the same time it cannot be doubted, that its application to the whole surface of the body is a necessary stimulus. The air is seldom applied in a pure state: it is commonly blended with foreign matters that diminish its stimulating power; and, though its salutary stimulus depends upon its purity, it is uncertain whether ever its purity goes so far as to stimulate in excess, and thereby produce sthenic diathesis. The lately invented balloons, by which men ascend above the clouds, would throw much light upon this matter, if it were not for the cold of the upper regions of the atmosphere. Be that as it may; since we live commodiously enough, without air of the greatest purity, too pure an air has probably a tendency to produce sthenic diathesis, by stimulating in excess.

CXLVI. But, as nothing is more common than impure air, and as every impurity diminishes its stimulus, a very impure air without doubt debilitates, and produces asthenic diathesis. Accordingly, impure air is a frequent cause of typhus, as is evident from the fate of those who died in the black hole of Calcutta (*b*). Whether ever the air, from an excess of purity, produces asthenic

(*b*) Is it so certain that these people died of typhus? I hope to elucidate this question soon by experiment. In the mean time I may refer the reader to a case, in which the inspiration of oxygenic air produced exactly the same violent effects as opium had done. The circumstances of the patient rendered it absolutely certain that he had taken very little wine or other stimulants, indeed less than usual. This case would have been the occasion of great triumph to Dr. Brown, had he lived to read it. See a case of epileptic affection in *Letters from different physicians to Dr. Beddoe*. The case is singular in degree, but not in kind. EDITOR.

asthenic diathesis, is the more doubtful, because, as has been said, it is as yet undecided whether it produces sthenic diathesis or not.

29. Contagious matter, in so far as it may have any tendency to produce general diseases, in one form produces sthenic, in another asthenic diseases, and, therefore, acts like the ordinary noxious powers, and admits of exactly the same reasoning. But, in so far as it only occasions eruption, without making any change in the excitement, it is to be referred to the local diseases.

30. To poisons, if they act as general stimulants, all the reasoning that has been employed with respect to the other noxious powers, will apply. It is not, however, likely that they are general stimulants.

CXLVII. It is seldom by the separate, almost always by the united, operation of all the powers, that both the diatheses, whether they remain within the range of predisposition, or rise to the degree of actual morbid state, are produced, and by no inherent power in the system.

C H A P. II.

*The cause of each diathesis—Sthenic from too great—
asthenic from too little excitement.*

CXLVIII. THE cause of sthenic diathesis is too great an excitement of the whole living system by the powers abovementioned. All the functions are first increased, a disturbance or irregularity then takes place in some, others are impaired ; but not, as long as this diathesis lasts, by a debilitating operation.

CXLIX. The cause of the asthenic diathesis, arising from the debilitating noxious powers, is too little excitement of the whole living system, impairing all the functions, disturbing some, giving a false appearance of increasing others, but always debilitating. It must now appear to the reader, to what simplicity the hitherto conjectural, incoherent, erroneous, mysterious, and enigmatical art of physic is reduced. It has been demonstrated, that there are only two forms of diseases ; that the deviation from the state of health, in which the morbid state consists, is not either repletion or inanition ; or changes in the qualities of the fluids, whether of an acid or alkaline nature ; or the introduction of foreign matters into the system ; or a change of figure of the extreme particles, or a disproportion in the distribution of the blood ; or an increase or decrease of the power of the heart and vessels as regulating the circulation ; or a rational principle governing the actions of the body ; or an alteration in the extreme particles, as being of too large or too small a size ; or an alteration of the pores, as being too narrow or too capacious ; or a constriction of the superficial vessels from cold ; or a spasm of these vessels, producing a reaction, as it is called, of the heart and interior vessels ; or any thing that any person has yet thought of
respecting

respecting the cause and nature of morbid state. On the contrary it has been proved that health and disease are the same state depending on the same cause, that is, excitement, varying only in degree; and that the powers producing both are the same, sometimes acting with a proper degree of force, at other times either with too much or too little; that the whole and sole province of a physician is not to look for morbid states and remedies which have no existence, but to consider the deviation of excitement from the healthy standard, in order to remove it by the proper means. The reasoning part of this doctrine, it is expected, the reader will find irreprehensible and unanswerable; and the practical part, from the astonishing cures that have upon innumerable occasions been effected, will ever stand in support of the truth and utility, as well as simplicity of the whole.

C H A P. III.

The sthenic diathesis—Increase of all the functions previous to the disturbance of the functions.

CL. PREVIOUS to the disturbance of the functions, which the hurtful effects of both sets of powers produce, and which never happens till after the formation of disease (*a*), and even then only when the attack is violent,

(*a*) During the predisposition to peripneumony, as well as to every other disease, neither the symptoms of disturbance, or any other symptoms at all appear. And in mild cases, such as catarrh, the symptoms of disturbance occur not through the whole course of the disease: But when a disease is, like the peripneumony or the gout, of a violent nature, then the system is commonly disturbed, and in a most conspicuous degree. The affection of the lungs in the former, from the inflammation within, and of one of the feet, or some other part in the latter, from an external inflammation, give extreme disturbance to the affected parts, while there is a disease of the same nature as the gout, that is dyspepsia, or indigestion, in which the inflammation never appears.

lent, all the senses are acute, the motions both voluntary and involuntary (*b*) are vigorous, there is an acuteness of genius, great sensibility, and tendency to passion and emotion. The several parts of the body are perceived to be in a state of vigour from the following marks; the heart and arteries from the pulse; the extreme vessels on the surface of the body from the colour; all the muscles from the strength they exert; the internal secretions from the great quantity of milk and semen; the digestive organs from the strong appetite, the power of digestion, the vigour of body, and the manifest abundance of blood.

CLI. A comparison of the state of the intellectual faculties, and of the disposition to passion and emotion, in this diathesis, in good health, in the second form of diseases and the predisposition to it, will show how much they are heightened in the sthenic diathesis. So much for the increase of the functions.

CHAP.

(*b*) The voluntary motions are those that are performed under the influence of the will, such as the motion of the limbs in walking, or in any sort of exercise. The organs, by which they are moved, consist of bundles of moving fibres called muscles. The involuntary motions are those of the interior part of the system, such as those of the heart and vessels connected with it; the peristaltic motion in the first passages, which are the passage to the stomach, the stomach itself, and the whole convolutions of the intestines; as also those of the womb, of the bladder of urine, and so forth. None of the latter are under the influence of the will.

C H A P. IV.

The sthenic diathesis illustrated by an explanation of its symptoms—Functions increased from excitement—Shivering from lessened perspiration—Increased circulation—High colour of the skin—Delirium—Thirst and heat—Affection of the thorax—Paleness and corrugation of the skin—Pale urine—Costiveness—Appetite—Proper diet—Symptoms affecting the stomach explained—Why inflammation in phlegmasiæ is external—Local sthenic inflammation—Phrenitis—Peripneumony—Pustules.

CLII. THE increase of the force of the senses, of the motions, of the intellectual faculty, and of the passions, depends upon the increase of excitement in every one of their organs, by which, beside other effects, the motion of the blood through them is quickened.

CLIII. The onset of every sthenic disease is announced by shivering. This depends upon a diminished perspiration, by means of the diathesis being exquisitely strong in the extreme vessels of the skin. The same explanation is to be given of the sense of cold, which commonly accompanies the shivering; and of the dryness of the skin.

CLIV. In these diseases the pulse is stronger, harder, fuller, and somewhat more frequent, than in the healthy state. Its fulness and hardness are owing to the plentiful use of animal food during the predisposition. The force and frequency are occasioned by this or any other stimulus, as strong liquor or exercise, whether corporeal or mental: Nay all the stimulant noxious powers are adequate to this effect.

CLV. If, in the progress of the disease, the pulse sometimes becomes weaker, softer, emptier, and quicker, that is a bad sign. This circumstance is occasioned
either

either by the debilitating plan of cure being pushed beyond the proper bounds ; or where this method of treatment has been neglected, it may be owing to debility induced by the excess of excitement. The former of these is direct, the latter indirect debility ; both to be avoided.

CLVI. The redness of the surface of the body, which is often preceded by paleness, and by a great increase of secretion, is occasioned by an over-proportion of blood, in consequence of an excessive sthenic diathesis obstructing the perspiration. The same is the cause of the head-ach and pains in different parts. For, as the head-ach so quickly and easily yields to bleeding, it is seldom to be suspected of being owing to inflammation within the head. And the reason for so thinking is strengthened by this further circumstance, that the inflammation arising in general diseases affects external parts only, as far as we know at present.

CLVII. The delirium also, that sometimes arises in a violent state of disease, is not to be imputed to inflammation, and for the same reason ; for it yields so readily to bleeding and other evacuations, that there is no reason for suspecting inflammation within the head. That abundance of blood, by distending the vessels to excess, is the sole cause, is proved on the one hand by the redness of the face (c), which indicates this abundance, and on the other by bleeding removing the disease at once.

CLIX. Thirst and heat, which are also remarkable symptoms in sthenic diseases, depend upon the sthenic diathesis in the extreme vessels of the fauces and skin ; in consequence of which these vessels become so constricted that the perspirable matter cannot be discharged. At the same time as the blood finds its way very near
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(c) This redness is no proof of abundance of blood ; temporary excess of exertion in the vessels of the part will produce it. In many diseases it comes and goes, where no plethora can be suspected. EDITOR.

to the extremities of the vessels, it accumulates under the cuticle the heat generated in the system, which would be continually carried off, if the perspiration were free. So also from the affection of the ends of the vessels in the throat, the saliva and other fluids, by the free flow of which the throat is lubricated and freed from that sense of dryness, which is called thirst, are now suppressed, and prevented from flowing out, and thirst is the consequence.

CLX. Hoarseness, cough, and expectoration, which are sometimes observed in sthenic diseases, commonly succeeded each other in the following order:—hoarseness, then a dry cough, then a cough with expectoration. The cause of the hoarseness and dry cough is an obstruction of the exhalants and mucous vessels, which terminate in the bronchia, and are prevented from transmitting their contents to lubricate the air-vessels (*d*), so that the hoarseness may be removed, and the expectoration take place with freedom. Again, the expectoration is afterwards free, because the diathesis being now diminished, and allowing the ends of the vessels to be relaxed, and the fluids to be poured out in abundance upon the air-vessels, this whole organ is stimulated, and the fluids are thrown out with a cough or convulsive motion.

CLXI. As the greater freedom of expectoration now implies an abatement of the diathesis; so too great a flow, and too long a continuance of it, shows, that the diathesis is declining fast into the asthenic state; either
from

(*d*) The bronchia are the divisions of the wind-pipe running through the substance of the lungs, and blended with the blood-vessels. In the substance of the lungs, besides these two sets of vessels, the air-vessels and blood-vessels, there are likewise exhalants, small arteries, and mucous glands, coming off from the extremities of the red arteries. The wind-pipe is covered with the latter; and the great quantity of mucus thrown up from the lungs, often in perfect health, and in innumerable cases, both of sthenic and asthenic general disease, sufficiently proves the existence of the source from which it flows.

from indirect debility, as when the disease, in its progress, has much exhausted the excitability; or from direct debility, as when the plan of cure, proper in kind, has been pushed beyond due bounds.

CLXII. These symptoms, while they stop short of direct debility, or are not yet changed into the indirect, are occasioned by heat, and whatever stimulates in excess, and removed by cold, and whatever acts as a weakening power.

CLXIII. Paleness and shriveling of the skin, clearness of the urine, and bound belly, which chiefly happen about the beginning of the disease, arise from a degree of the diathesis, shutting up the ends of the vessels in such a manner, that either nothing is excreted, or the thinner part, as in the case of pale urine, only escapes. The cessation of the affection of the urine, of the obstructed perspiration, and of the costiveness, shows that the diathesis is now gradually abating, the disease becoming mild, and that it may entirely be removed by emetics, purgatives, sudorifics, and other debilitating remedies.

CLXIV. In sthenic diseases, when they are mild, the appetite is often not much diminished; and still oftener more food is desirable than is serviceable. But every thing, except the lightest vegetable matter, in the form of watery potion (*e*), will do harm.

CLXV. When either from indulgence in rich food, or from a stimulant plan of cure, or from the disease having arisen from very active, noxious powers, and attained its highest degree of violence; in any, or all these circumstances, the other bad symptoms, mentioned above, break out directly, and the violent disorders of the stomach, or an acute pain of the thorax, show themselves indirectly.

CLXVI. In a violent diathesis, therefore, where there is little appetite for food, but a very great desire for

(*e*) It should be cold too, according to this system. EDITOR

for drink ; the patient is by all means to be gratified with the latter ; but food should be avoided, as producing loathing, sickness at stomach, and vomiting. These symptoms are not usually of long duration, unless when the diathesis is now changing or actually changed into the asthenic state by the means mentioned above : but on removing the other symptoms by the proper debilitating plan of cure, they go off. When the sickness and vomiting are urgent, and begin now to be a little more obstinate, and have lasted some time, one may know that the diathesis still remains short of the change into indirect debility, by the following marks : if the pulse still maintain moderation in its frequency, and has not much abated of its fulness and force ; if artificial vomiting and purging diminish the morbid vomiting—in a word, if the debilitating plan of cure still succeeds. But, it will then at last be understood that the disease is converted into the opposite, when these symptoms every day increase ; when the pulse becomes weaker and weaker ; when griping and liquid stools are superadded to the symptoms that disturb the stomach, and when the antisthenic or debilitating plan of cure is now of evident detriment.

CLXVII. While these affections of the stomach and intestines, still stop short of indirect debility, excessive excitement will produce great disturbance in the stomach ; this origin having on account of its great sensibility more proneness to indirect debility than any other (LIV) : the most powerful stimuli too, and those that are signally efficacious in producing sthenic diathesis (*f*) are first applied to it, and exert a greater force upon

(*f*) As high seasoned animal food, wine, spirituous drink, cordials, and the whole train of high diffusible stimuli. Some of these, as meat and wine, have no effect upon the external surface, or any other part : others, as some of the condiments, such as mustard and strong spirits, and above all the diffusible stimulants, as æther, camphor, and opium in a liquid form, do act upon the external surface, and by their application to it support their own internal

upon the excitability in that than any other part. These stimuli are the several preparations of animal food, the several kinds of strong liquor, the several condiments with which they are seasoned, the various diffusible stimuli, as the different preparations of opium, volatile alkali, camphor, musk, and æther. These all act upon the stomach with more force than upon any other part; than upon the intestines below, because they undergo a change from the first digestion before they pass into the upper portion of the intestinal canal; than upon the lacteal vessels, because they are not received into them till they are further diluted, and have undergone another change from the digestive operation, and when so changed, they are next carried to be mixed with the blood; than upon the heart and arteries, upon account of further dilution in those vessels, and a constant change taking place through the whole course of the circulation; than upon the terminations of the arteries, whether exhalant or glandular, and whether these excrete from the body a matter already corrupted, or carry back by the lymphatic vessels an useful matter to the blood—and that both for the reasons that have been given, and particularly because some great change is made in the exhalants and glands; than upon the lymphatic vessels, where a new fluid is constantly flowing in upon the old in these parts by means of anastomosing branches, and chiefly in the thoracic duct; than upon the other blood-vessels, upon account of the great change that a repetition of the circulation produces; than upon the muscular fibres, whether voluntary or involuntary, because the stimuli never come in contact
with

internal use. Thus, to prevent or remove the gout, anasarca, sprains, and so forth, the application of any of those highly diffusible remedies, just now mentioned, will greatly contribute, along with their use as taken into the stomach, to support the general operation. These, and innumerable others, are so many facts that have been suggested by observations and trials made in the prosecution of this doctrine.

with these ; than upon the brain or medullary substance, for the same reason, as well as from the great distance of these parts from the part that received the first contact of the stimuli. In one word, as all the exciting powers, whether salutary or hurtful or curative, act somewhat more powerfully upon certain parts than upon others, which parts are generally those first affected, and with which they come into direct contact ; these, therefore, in preference to others, are most liable to pass either from sthenic diathesis into asthenic, or from the latter into the former. Whether however the excitement has been increased or diminished in a peculiar part ; and whether its diminution has been owing to direct or indirect debility, and in either way the asthenic diathesis has been produced ; all the rest of the body soon follows the kind of change that has taken place, because the excitability is an uniform, undivided, universal property of the system. Since the agents have been, and are the same, that is, either excessively or insufficiently stimulant, or so to an ultimate excess ; and since the excitability upon which they have acted, and still act, is the same, that is, since the whole consideration of the cause is the same, the effect must also be the same, that is, the same sort of actions, whether in excess or defect, must be established over the whole body.

CLXVIII. The inflammation, which accompanies the phlegmasiæ, or sthenic diseases, accompanied by local inflammation, occupies an external part, as far as its nature has been yet ascertained. The reason is, that heat, which is the most powerful noxious agent in those diseases, either alone, or alternating with cold, or succeeding to it, has much more power to stimulate externally, where it is directly applied, than internally, where the temperature is nearly stationary, and therefore raises the general diathesis to the degree of actual inflammation in some one part. Hence the throat, the different joints, the face, where the form of inflammation

mation is different, as when the inflammation of erysipelas appears there ; hence the lungs, which are to be considered as an external part, because the air has direct access to them, are all more liable to inflammation than other parts. And, besides the peculiarity in the mode of action of heat, there is in the part, that is to undergo the inflammation, a greater sensibility (see above LIII. II.) than in others, or a more accumulated excitability ; by means of which it happens, that of the parts that have been mentioned, sometimes one, sometimes another is affected, more than the rest (*g*). To this consideration of the cause it may be added, that whichever of the parts we have mentioned has been injured,

(*g*) In the inflammatory fore-throat the inflammation affects the throat, which is also sometimes the seat of an erysipelatous inflammation. In erysipelas, sometimes the face, sometimes one of the legs, sometimes the ear, sometimes the temples, are inflamed. I have frequently been affected with an erysipelas, that begins with an acute inflammation and pain in one ear, which is thickened to four times its usual dimension ; from that it spreads over the whole hairy-scalp till it reaches the neighbourhood of the ear in the opposite side, never, however, affecting that ear : this progress has been sometimes from the right to the left, sometimes from the latter to the former, in proportion as either had been more exposed than the other to heat, or the alternation of heat with cold, or their succession to each other. This disease is sthenic, but in a mild degree, and to be removed by coolness, cold water, low vegetable fluid diet, and a slight purge. It was once greatly aggravated by wine, spirituous drink, and the diffusible stimuli. In rheumatism, the inflammation attacks a large joint, sometimes shifting from one to another, sometimes several at a time, and, in contradiction to the erysipelatous, is deep seated, extending to the interior part of the true skin, which is the case with every such inflammation, called therefore, phlegmonic ; while its seat in erysipelatous is betwixt the scarf-skin and outer part of the true skin upon the corpus mucosum. To these phlegmasiæ, depending upon the general cause of the disease, and especially upon the effect of temperature, may be added that which an inflammation in one of the ears accompanies, though this case is seldom admitted into the number of the phlegmasiæ. It is, indeed, sometimes local, arising from local injuries, but is as certainly at others, a general disease, and to all intents and purposes a phlegmasia.

injured, in whatever manner it may have undergone the inflammation peculiar to the phlegmasiæ, that part, in every subsequent attack of phlegmasia, is in more danger of being inflamed than the rest. This is the true cause of the frequent recurrence of some of the phlegmasiæ, as the inflammatory sore-throat, and rheumatism (*h*). Peripneumony is a disease less frequent than any of the rest of this form, because the seat of its inflammation is exempted from many stimuli, liable to produce sthenic diathesis with its accompanying inflammation.

31. As inflammatory fever, catarrh, the mild small-pox, are unattended by inflammation (unless that in the last a local inflammation from a local cause, quite different from that which makes our present subject, takes place), and as the inflammation in peripneumony, violent erysipelas, and similar violent affections, is found the highest in degree; I conclude, that the degree of inflammation, when it is a symptom of general sthenic diseases,

(*h*) These two diseases, in young vigorous persons, are very liable to be exceedingly troublesome by the frequency of their occurrence. In the younger part of my life the violence in degree, and frequency of recurrence, of the sthenic inflammatory sore throat, was very distressing, as the least variation of the external temperature, superadded to a full nourishing diet, not without the stimulus of a chearful glass, was ready to renew, not only the inflammation, but the whole phænomena of the disease. The same thing I have often observed in the frequent recurrence of rheumatism in persons of the same age and habit, perhaps, with some difference of temperament. But it is to be observed, that, in proportion to the advance of life, and diminution of vigour, both these diseases become much less frequent, and much less violent. Nor is any thing more common than their giving way at this time to a very opposite disease, the gout, which depends upon a superaddition of direct debility to the indirect, that laid the foundation of it. I am pretty certain my inflammatory sore throat, or erysipelas, never happened spontaneously, nor without an addition of stimulant power, to those that produce that disease, in consequence of carrying to some excess the plan of cure suited to the removal or prevention of the gout.

diseases, is proportioned to the degree of the sthenic diathesis (*i*).

CLXIX. The inflammation in this case, is only a state of the inflamed part analogous to that of the rest of the body. And as the inflammation is produced by a greater degree of excitement in the inflamed, than in any other equal, part ; so, before the disease comes on, of which the inflammation is only a part or symptom, the excitement of that part is understood to be proportionally greater than in any other part (*k*).

CLXX. This inflammation, which for the sake of distinction may be called general sthenic inflammation, should be distinguished from another, which is a local affection, arising from local noxious powers, or depending upon a fault in the organ, or a solution of continuity (*l*).

CLXXI. To this last the term of sthenic local inflammation applies. General inflammation always depends

(*i*) It shall by and by be showed, that this sort of inflammation is only a part of the general diathesis, somewhat higher in degree than in any other part, but far short of the degree constituted by the whole general affection.

(*k*) See above par. L. and LI. Suppose the excitement in every part of the system to be 45 at some point in the period of the predisposition, and 54 in the part to be inflamed ; after the coming on of the disease the same proportion will hold : when the excitement has now mounted up to 60, the excitement of the part will be understood to have gone to 69 ; keeping up still the same proportion. But these 9 degrees of greater excitement in a part come far short of the sum total of excitement in all the parts affected with the general sthenic diathesis ; that you may suppose 3000 : and then the conclusion will be, that the general sthenic diathesis consists in a sum total of morbid affection, as 3000 ; while the inflammation of the part is only an affection of 3 degrees of excitement.

(*l*) Solution of continuity in all its forms, whether as being the effect of puncturing, cutting, bruising, compression, erosion from acrid matter, or from heat, or cold, is always followed by an inflammation, which, when it goes on briskly, and needs to have its violence restrained, should be called as is expressed in the next paragraph.

depends upon sthenic diathesis, is a symptom or part of it, never precedes it, always succeeds to it sooner or later, arises from the same noxious powers which produce the other symptoms, and is reduced by the same remedies. In contradistinction to which, the local affection arises from some local injury, producing a solution of continuity, or deranging the texture of the part; and if the injured part is not very sensible, the affection extends no further. But when the injured part is endued with a high degree of sensibility—suppose the stomach, the intestines, among the internal parts; among the external, the tender substance under the nails—in these cases, the effect of the inflammation is propagated over the whole system, and, in consequence of an affection of all the vessels, excites a tumult every where. The same local sthenic inflammation, whether it be fixed in the part, or from its propagation gives more general disturbance, yields to no remedies, but those that act upon the affected part first, and heal the solution of continuity. Let it suffice to have said so much at present upon these inflammations, for the sake of establishing necessary distinctions. More is afterwards to be said upon the local, in its proper place. There are two inflammations still remaining, one universal and one local, to be more fully explained in that part of our work where the proper order requires it.

CLXXII. Inflammation, also, as often as it affects a vital part, produces symptoms of disturbance. Whether ever the general sthenic inflammation affects the brain and its membranes, is hitherto not ascertained (*m*). It is more probable, that the commotion in the head, and other violent symptoms in phrenitis, do not depend upon inflammation, as the following phænomena seem to

(*m*) Phrenitis has been thought, and commonly even defined, an inflammation of the brain; an opinion that, however universal, seems to be liable to much doubt: nay, there are many reasons for adopting an opposite one, as will appear from the reasoning in this paragraph of the text.

to show : 1. the ease by which the cure is effected, all the symptoms readily yielding to bleeding, purging, and other asthenic remedies ; and, it not being very credible, that the effect of actual inflammation in a part so delicate, and so necessary to life, could be so easily effaced : 2. There is no certain proof, after recovery, of the existence of inflammation during the disease : 3. Analogy makes for the same conclusion ; for, as has been said above, general inflammation does not arise internally in any general sthenic diseases ; on the contrary, as often as it occurs, it is always in an external part (*n*). Nay all the symptoms are such as arise from the general sthenic hurtful powers, and, also, yield to the general antisthenic remedies, and in proportion to their degree.

CLXXIII. The same that we have assigned as the cause of phrenitic affection also is the cause of head-ach, redness of the eye, as well as of delirium in phrenitis.

CLXXIV. There is, however, no reason to doubt, but that inflammation is the cause of that disturbance, which happens to the lungs in peripneumony. To the part where the pain is felt externally, whatever part of the thorax it is, an actual inflammation is opposed internally. And, as the inflammation is proportional to the degree of general sthenic diathesis, and never happens but in a high degree of that diathesis ; so the pain is proportional to the degree of inflammation (*o*) ; and the

(*n*) It was long an opinion, that the inflammation in rheumatism might be transferred to an internal part, as the stomach ; but that, also, is now laid aside, and all the cases where there could be the least appearance of any such transference, have been found to be cases of the gout, or some analagous disease or debility.

(*o*) The inflammation was supposed a chief and primary circumstance, and its cause and seat, the cause and seat of the whole disease ; while the general sthenic diathesis, and all the symptoms depending on it, was supposed the offspring of the inflammation.

But

the state of the pulse must be estimated by paying a due regard to its cause. In the case of an high diathesis, and high degree of inflammation, its effect, the pain, seated in some part of the thorax, sometimes about the sternum, sometimes nigh the nipples, sometimes further back on either side, sometimes in the back between or above the shoulders, is acute and pungent, and the pulse very hard and strong. When the diathesis, and the part of it we call inflammation, ~~are~~^{is} the pain is less acute, more dull, and easier to be borne; the pulse is not soft and yielding, according to the common notion, but still hard and strong, though less so than in the other case. Afterwards, in the progress of the disease, the pain abates, becomes dull, the respiration, which had been much disturbed by it, becomes more easy and free. The pulse which before was only less hard, now becomes truly and positively soft, and that in proportion to the degree of indirect debility, occasioned by a neglect of the proper plan of cure; or in proportion to the production of direct debility, from the antisthenic or debilitating plan of cure having been pushed too far. But the hardness of the pulse, and violence of pain, are never to be imputed to the inflammation being seated in the membrane; nor is

But the truth is, in every respect, the reverse of this account. The general sthenic diathesis is the effect of the general exciting hurtful powers. As the effect of these, in a less degree, it exists during the predisposition, and before the arrival of the disease; and, after the disease is come on, it subsists, as certainly, as such, for one, two, or three days, as afterwards, when the sign of the inflammation, the pain, makes its appearance. It is only an increase of it, that induces the latter; and it is not to be cured by any contrivance of throwing any thing into the inflamed part, there being no such thing to be found in nature, but by the several means of removing the common cause, that is, evacuant and other debilitating remedies. These, while, at the same time, they remove the other symptoms, by also removing the disease, prove that the common cause of the whole is the general diathesis. The inflammation, therefore, instead of being the cause of the general disorder, is a consequence, like every other symptom.

is the softness of the former, and dulness of the latter, to be attributed to its occupying the soft parenchymatous substance (*p*), it being impossible that an inflammation, if it occupied either of those parts, should not reach the contiguous points of the vessels in the other. The cause, therefore, of those symptoms that has here been assigned, must be admitted.

CLXXV. The pustules, which accompany certain sthenic diseases, arise from a contagion, taken into the body, diffused over the whole, and, in passing out, detained along with the perspirable fluid, under the scarf-skin. The cause of the distention, and, therefore, of the great number of pustules, is the sthenic diathesis, taking place in a high degree over the whole body, but in a still higher in the vessels of the skin, for the reasons formerly assigned, (see above, par. CXIII. and CXIV.) In which operation the muscular fibres of the vessels, because they are as much increased in density, in so far as they are considered as simple solids, as they receive an increase of tone, in so far as they are considered as living (see chap. V.), are on that account so shortened, as not sufficiently to transmit the imperceptible vapour of the perspirable fluid. All the sthenic hurtful powers have a tendency to produce this effect, but heat, in a degree within its stimulant range, and short of indirect debility, more than any other. The same is the cause of costiveness.

32. Sthenic diseases are often followed by debility, sometimes direct, at other times indirect, as is exemplified in the change of peripneumony into hydrothorax, the explanation of which is evident from what has already been said.

CHAP.

(*p*) Such, however, and many other distinctions, equally false, frivolous, and misleading in the practice, have been at all times universally received by systematic, and lately by nosological writers.

C H A P. V.

The asthenic diathesis—Its characters.

CLXXVI. BEFORE the disturbance, which only supervenes in a violent degree of morbid state, all the senses are dull ; the motions, both voluntary and involuntary, are slow ; the acuteness of genius is impaired ; the sensibility and passions become languid. The following functions are all in a state of languor, as is discoverable from the annexed marks : The languor of the heart and arteries is discernable in the pulse ; as is also that of the extreme vessels on the surface, from the paleness, the dryness of the skin, the shrinking of tumours, the drying up of ulcers (*a*), and the manifest absence of sthenic diathesis, to produce any symptoms like these. That the muscles are in a state of torpor is demonstrated by their weakened action ; and that the internal secretions are deficient, is equally certain from the penury of semen and milk, and the redundancy of fluids in a state of degeneracy. The languor of the digestive organs is manifested by want of appetite, loathing of food, sometimes thirst, sickness, vomiting, weakness of the system, and evident penury of blood.

CLXXVII. In the same diathesis, whether remaining within the latitude of predisposition, or raised to the measure of actual disease, the intellectual faculties and the passions are impaired. In this way are the functions impaired.

CHAP.

(*a*) These symptoms have lately been construed into so many marks amounting to a proof of the existence of spasm upon the extreme vessels ; but we shall, by and by, find a much better explanation of them.

C H A P. VI.

The asthenic diathesis illustrated by an explanation of its symptoms—Shivering and sense of cold from checked perspiration—Weak circulation from defect of stimuli—Bad sign when the circulation becomes suddenly strong—Pale and dry skin—Head-ach—Delirium—Thirst and heat whence—Appetite—Affection of the stomach—Cramps—No internal inflammation—Symptoms attending gout—Nature of the asthenic pulmonary affection—Head-ach and delirium, not from inflammation—Nature of asthenic inflammation—Of putrid sore-throat—Diffusible stimuli cure gouty inflammation—Confluent small-pox—Pustules, and other eruptions—Curious eruption in some cases of small-pox—Heat whence—and coldness in one stage of asthenic disease—How in violent sthenic diseases some functions are impaired, but not from debility—and in asthenic diseases augmented in appearance—Of spasm and convulsion—Action of opium—Of discharges of blood—Sthenic and asthenic affections of the lungs compared—Similarity of symptoms—Cured by opposite means.

CLXXVIII. SHIVERING is not unusual at the commencement of asthenic diseases of any considerable severity ; it depends upon the perspiration being greatly checked. The cause of the great check is weakness of the whole system, but particularly of the heart and arteries, in consequence of which they propel the fluids every where with difficulty, and in the extreme vessels with still more difficulty, or scarce at all. Hence the perspiration ceases. The same explanation is to be given of the sense of cold, when it accompanies the shivering.

CLXXIX. In asthenic affections the pulse is weak, soft, small, and very quick. The softness (when it can be

be perceived for the smallness), as well as the smallness, is occasioned by an under-proportion of blood, arising, during the period of predisposition, from a scantiness of animal food, and an excess in the use of vegetables; or from a deficiency of aliment upon the whole, whether from one or other of these sources. The cause of the weakness and very great quickness of the pulse is the same deficiency of nourishment, as well as of all the stimuli, as strong liquors, mental or corporeal exercise, and an under-proportion of blood.

CLXXX. Since the excitability can only be gradually worn down (see above, par. XXVI. XLIII.), and the strength, thereby, repaired; if, at any time, the pulse becomes full and hard too soon; and without a proportional relief of the symptoms, it is a bad sign, and happens because the stimulant plan of cure has been pushed beyond the proper rule (see above, par. XLIX.); this is a case of indirect debility superadded to the direct (see above, par. CLVI.)

CLXXXI. The cause of the paleness and dryness of the skin is the same as that of a checked perspiration; viz. the weakness of the heart and arteries. Hence the blood is not sufficiently propelled to the surface of the body.

CLXXXII. Head-ach (which is a most frequent symptom in asthenic affections) and pains in the joints (which are more rare) are occasioned by a scantiness of blood: for such is the effect of the blood in distending the vessels, that a moderate distention, such as takes place in health, excites an agreeable sensation; and every thing, either above or below that standard, occasions an ungrateful one, and, therefore, when it rises to a certain degree, pain. But in this case, we can much less suspect inflammation to be the cause of the pain than in sthenic diseases; because, not only the pain here, but even delirium, yields so easily to the stimulant method of cure; which would not readily happen, if so delicate and sensible an organ, and one so
necessary

necessary to life, laboured under an affection so likely to destroy the texture of the affected part.

CLXXXIII. Neither, in general, is delirium to be imputed to inflammation. It is, on the contrary, to be attributed to a scantiness of blood, and a deficiency of other stimuli. Nor can this be doubted; since stimulant remedies, which have no effect in filling the vessels, successfully and quickly cure every delirium depending on debility (*b*).

And, when, in consequence of the removal of the disease, and of the re-production and establishment of the healthy state, enough of nourishment is taken in and digested, then it is that, at last, the mental functions are completely and solidly re-established.

CLXXXIV. Thirst and heat, which are not less remarkable in asthenic, than sthenic diseases, arise from the asthenic diathesis in the throat, and on the surface of the body. In the latter case, the perspiration; in the former, the excretion of the saliva, the exhalable fluid, and the mucus, are checked by the atony and relaxation of the extreme vessels. In consequence of the former, the throat, not being sufficiently lubricated with a due quantity of its respective fluids, is scorched with thirst. The effect of the latter is, that, the perspirable fluid being detained under the cuticle, the heat, which in a free perspiration usually goes off into the air, and remains nearly of the same degree, is accumulated and increases. But the increase of heat does
not

(*b*) This is an observation as new, and of as much importance as any in this whole work. Physicians, hitherto, had no distinct notion of a variety of inflammations; and had scarce any idea of any inflammation, but such a one as was to be treated with bleeding and evacuation; nay, often, when they had no reason to suspect inflammation at all, the mere circumstance of pain was, in their estimation of it, sufficient to warrant a profusion of bleeding without end. But, the truth is, that pain may not only arise from an inflammation, which they had no idea of, and which was to be cured by stimulants, but it arises from spasms, convulsions, and even from emptiness.

not depend on the state of excitement, or, as it is commonly called, on the principle of life, since it happens both in the sthenic diathesis, and, likewise, in indirect, as well as direct, debility. But the weakness of the vessels on the surface of the body (under which the throat, and whatever part is accessible to air, are comprehended) is a part of the debility of the heart and arteries; the latter a part of that of the whole system.

CLXXXV. This asthenic thirst, which is a much more frequent and more violent symptom than the sthenic, is preceded by loss of appetite; the loss of appetite is succeeded by loathing of food, by sickness, vomiting, often by an acute pain of the stomach, and other troublesome symptoms; to the explanation of which we next proceed.

CLXXXVI. Want of appetite, and loathing of food (*c*), depend upon debility of the whole body; as is proved by the powers that produce them, always acting by debilitating; and by the remedies, which both prevent and cure them, always acting by a stimulant and strengthening operation. The cause of appetite
is

(*c*) These symptoms of want of appetite, loathing of food, thirst, sickness at stomach, vomiting, and acute pain of the stomach, as well as those that follow to CXCIV. and from that to CXCVIII. form a chain of symptoms depending upon increasing debility, which, instead of being different in kind, are all connected by an uniform operation of nature. And they furnish an instructive instance of the erroneous mode of judging of the nature of symptoms, and morbid affections, which has been so prevalent in all systems of physic, that we are yet acquainted with. However different in appearance, they are not only similar, but all unite in forming one and the same kind of disease, one and the same morbid affection: which is proved by their arising all from one and the same set of hurtful powers, to wit, debilitating; and by their being cured by one and the same set of remedies, to wit, stimulant. The former powers may vary in degree, but they are all debilitating; and the latter may also act with different degrees of force, but they are all stimulant. And the state of the system, from which the former constitute a deviation, as well as that, to which the latter produce a return, is health, which is always the same.

is a strong and sound contraction of the fibres of the stomach, by which digestion is supported (*d*), and the excretion of a fluid, as the gastric liquor, and the saliva (*e*): and to both effects a certain emptiness of the stomach is necessary. But none of these circumstances can take place in a state of debility. The fibres do not contract with force; the extreme vessels do not pour out their fluids; the food, before taken in, is not dissolved or digested, and in that state thrown out of the stomach; but continues in a great measure unchanged and undissolved. Hence there is no appetite for food, and

(*d*) The fibres of the stomach are muscular, and partly longitudinal, partly oblique, or approaching to circular. When the food is taken in, the former are contracted and shortened, by which they raise the under part of the stomach, which is unfixed, upwards. These gradually relax as the food, after its first digestion in this organ, and its conversion into a more fluid form, in the same gradual manner, passes out of the pylorus, or under orifice of the stomach. This operation takes off the distending weight in the direction from above downward; and, as the food in proportion to its conversion from a more solid to a more fluid form, is more and more collected into the under part of the cavity of the stomach, this gives a pressure in the lateral way, and, therefore, throws the other fibres into contraction, by which the sides of the stomach are squeezed together, and, thereby, perform the office of throwing out, by the pylorus, the remaining part of the alimentary matter. Besides these successive actions, the muscular substance of the stomach is so constructed as to be provided with fibres, the motion of which, when the stomach is full, is upward and downward; when empty, downward only. All these motions give the alimentary matter the mechanical agitation necessary to promote its mixture.

(*e*) The gastric fluid, poured into the cavity of the stomach, as well as the saliva that follows it from the palate, and the watery or other drink taken in by the mouth, contribute to change the food more and more into a fluid consistence, which is a change only of its form: but, by certain means, a change also of its nature, called in chemistry proper mixture, takes place. This change is chiefly effected by the gastric fluid, to which, perhaps, a certain relation that the other fluids bear to the alimentary matter in this living organ, contributes. Another means of promoting the solution that goes on in this process is the heat of the stomach.

and in a higher degree of this affection loathing takes place.

CLXXXVII. In the same manner thirst has been explained (see par. CLXXXIV.); and in the same manner is sickness, which is a higher degree of affection from the same cause, to be explained; for when there is strength and vigour, sensation is most agreeable in every part of the system, as well as in the stomach and neighbouring parts.

CLXXXVIII. With respect to vomiting; it is the most considerable of all these affections: for to such a height has the atony and laxity of the fibres in the stomach gone, when it comes on; to such a degree has the collection of crude matters proceeded, and the distention of the stomach from these last, and from extricated air, that the fibres are oppressed, and cannot perform their motion from the upper to the lower part, which is commonly called the peristaltic motion. And, as in every case, both of health and disease, the tendency of that motion is always in an opposite direction from the stimulus; downward when the stimulus proceeds from the mouth, and upwards when it comes from the stomach; hence the crudities and air acting as a local stimulus, direct all the motion, that they excite, towards the upper parts of the canal. This inverted motion, being contrary to nature, can never be agreeable; and hence, before the arrival of the vomiting, sickness arises; which when it continues for any time, must be violent, because the local stimulus rouses the muscular fibres into violent and irregular motions.

CLXXXIX. The cause of pain in the stomach and intestines, and other parts, both internal and external, under asthenic diathesis, is spasm. Spasm in any internal cavity, that is, in the organs of involuntary motion, arises from a relaxation and atony of the fibres, (in consequence of the debility common to the seat of the spasm with the whole body) accompanied by a distending

ing matter : this distending matter in the stomach is the fordes or foul crudities ; in the intestines, hardened excrement ; in both, air let loose. The effect here does not so much depend upon the distention as upon the lax state of the distended fibres ; for the fibres, when strong and vigorous, easily repel the distending power, which overpowers them in this state : but the relaxed fibres, of which we are speaking, yield more and more, in proportion to the urgent force exerted on them, till losing all power of alternate motion, they continue immovably contracted. All which arises from that property in muscular fibres, by which, when they are stretched, they do not, like common elastic matter, contract only after the distending power is removed, but even while it remains. In this state the sensible fibres undergo a certain violence ; and hence the pain (*f*). But, that more is to be attributed to their own laxity, than the distending matter, is proved by stimulants restoring the tone and density, which are exactly in proportion to each other, as depending upon the same cause. After the application of stimulants, they contract ; and, re-acting like healthy fibres, without any other assistance, as has lately been ascertained, they restore the peristaltic motion, and drive downward before them the matter, still remaining, and still continuing to distend them (*g*). In this way wine, aromatics, and volatile alkali, and, above all the rest, the various forms

(*f*) Pain arises here from diminished action. Sensation, either agreeable or disagreeable, always follows any considerable increase or diminution of the irritative motions. EDITOR.

(*g*) The prevailing notion with respect to this kind of affection has been, and still is, that its cause is the matter here spoken of, which is only an effect of the cause, and that its cure, when the affection is in the stomach, is vomiting to carry off the supposed cause. But its true cause is the laxity of the fibres, and their atony from the general debility, yielding to the distending force of the matter, and thereby losing their tone and density more and more ; while vomiting therefore increases, stimulating removes the disease.

forms of opium, dislodge all such hurtful matter without either vomiting or purging, and without any difficulty, in a very short space of time.

CXC. The pain, which is so often felt in the external parts of the body, also depends upon spasm, but without any distending matter : for an effect of volition on the voluntary muscles produces the same effect ; so that the spasm is excited in the same manner as by distention, and often with the most exquisite pain. Now as the effect is the same, that is, spasm arising from debility, and as it may be removed by restoring the strength ; the cause also must be the same, and be reducible to debility, together with something that acts like distention, and possesses a power equal to it. By this way of reasoning (*h*) we may often safely ascend from the contemplation of known effect to the unknown cause. The pain we speak of at present, is that produced by spasm of the muscles.

CXCI. There is another pain, more diffused, and equally troublesome, which is not supported by distention, but by another local stimulus : this pain equally arises from debility, has equal tendency to increase the debility, and, by its debilitating operation, after having induced other symptoms of debility, soon occasions death. This pain arises from a strong acid, which is sometimes

(*h*) A way of reasoning never made use of in medicine before, but which runs through, and influences most of the propositions in this work. It is further to be observed, that, upon no occasion can we ever arrive at an adequate knowledge of abstract causes ; that the eagerness of mankind to rush into wild and fanciful explanations of them, without any regard to real phænomena of nature, has been the cause of all the false phænomena that ever appeared in the world, and that the only sure and faithful guide to the study of causes is a cautious and painful investigation of the effects and phænomena of nature that proceed from them. See more upon this important subject, and, indeed, a complete discussion of it, in my book, entitled, "Observations on the old Systems of Physics."

sometimes predominant in the alimentary canal, when under the influence of great debility, of which cholera is the chief instance ; but all the affections of the alimentary canal besides, that are accompanied with vomiting and a loose belly, are more or less examples of it.

CXCII. This acid is not the primary cause of the disease ; it is only a symptom arising, after the complete establishment of the disease, from the same source as the other symptoms, viz. debility ; and it may be removed by the same remedies. This acid increases the debility both of the first passages and the rest of the body : but while it exerts that operation over the whole body, its chief influence is in the part where it exists, and where it is most urgent to lessen the violence of the disease.

CXCIII. But, though it be itself, like spasm, the offspring of debility, and tends to create further debility ; still there is not, either for the sake of changing, or throwing it out of the body, occasion for any other indication of cure : For, as it has its rise from a general cause, so it all along depends upon that ; and whatever has the effect of overcoming the other symptoms, has also that of overcoming this. For this, as in the case of spasm, stimulants,—not emetics, not purgatives, or any other debilitating powers,—are required.

CXCIV. As this acid produces pain in the internal parts, or in the organs of involuntary motion ; so in the external parts, or organs of voluntary motion, pain is occasioned by something that produces the same effect as the acid, and depends upon the will, and acts in conjunction with the convulsive state ; and, as in the spasm of the voluntary muscles, there is no matter that corresponds with the distending matter sometimes lodged in the stomach, so in this there is none to correspond with that which produces the pain. Nay, as the spasmodic case is represented by any cramp of the muscles, so is the convulsive by any convulsion, but
above

above all, by epilepsy. Finally, as in the former, the same reasoning from known effect to unknown cause proves the sameness of the external and internal case, it equally proves their sameness in the latter (*i*).

CXCV. The simple course of the morbid affection, from its slightest to its most violent degree (to take a review of the subject from the place where we set out), is this : it begins with loss of appetite, and is brought on by want of food and of other stimuli, or by an over proportion of stimuli, and proceeds through all the intermediate degrees to the spasmodic or convulsive pain. For the reasons lately assigned, there is first no appetite for food, and if the patient perseveres in the debilitating process of cure, and food is not administered, (such, suppose, as can be taken in the form of soup), a loathing of it follows. By-and-by, if nothing is used to produce stimulant effect, thirst will come on ; there will be the keenest desire for that most debilitating power, cold water, which will be preferred to the greatest dainties, and will be greedily swallowed (*k*). To this,
sickness.

(*i*) All this reasoning with respect to spasm and convulsion, showing them to be the same, and only a part in the whole, a link in the chain of the other asthenic affections, which have been mentioned, as well as the facts and arguments next to be brought, which will serve to prove all that follow to be also the same, is, of itself, of the highest importance to mankind. In a particular manner, the whole tribe of diseases of the alimentary canal, and almost all those of children, all, indeed, but the contagious eruptive ones, are both explained, and their principle of cure ascertained, with geometrical exactness. Here, then, at once is a discovery, upon scientific principles, of the true nature, and certain cure, of more than one-half of the diseases of the human race ; the method of cure arising from this doctrine having never failed in any of them, and never succeeded upon a contrary plan, the debilitating and evacuant, so universally recommended by the authority of the schools. The spasms and convulsions of the external parts, unless when immoderate in degree, are equally certainly removed by the new method, and even epilepsy and tetanus yield to it.

(*k*) When this asthenic thirst comes on, it is the highest luxury in nature to be allowed a free indulgence in the use of cold water, which is always hurtful in proportion to the degree of its coldness.

sickness immediately succeeds, and very soon, vomiting, unless prevented by a diffusible stimulus, such as a glass of pure spirit, or if one fails, a second, and perhaps, in some cases, a third. When the affection rises a little higher, during the vomiting a violent pain is felt in the stomach, giving a sensation as if there were a bar of iron in it, forcibly stretching and tearing it across (1). When the affection becomes still more severe, every species of torture is undergone; an head-ach comes on with a sense of strokes like those given by an hammer. These violent symptoms are communicated to the alimentary canal, for the most part not immediately, but in consequence of the disease remaining, with the intervention of intervals of deceitful respite. The belly is often affected with very painful gripes, and is exceedingly loose; but, what will not be wondered at in an inverted state of the peristaltic motion, it is oftener constipated, and, from time to time, undergoes all the vicissitudes of alternate vomiting and purging. Among the troublesome symptoms, that have been mentioned, are comprehended dyspepsia, the gout, diarrhœa, dysentery,

(1) A lady, after nursing her twelfth child for seven months, was found by her husband, a physician well acquainted with the new doctrine, very low spirited one evening. She was of a delicate, thin, exhausted habit, and had been subject often before, towards the end of her periods of nursing, to loss of appetite, colic, dejection of spirit, and as often cured by removing the child from her breast, and putting her upon a rich stimulant regimen. Her friend and physician perceiving the cause of her dejection, ordered two of their daughters, who happened to be grown up, to sit up and rock the child in the cradle all night, and also watch their mother to administer to her the things he had ordered. They themselves went to bed. The reader should have been informed that such was this lady's lowness of spirits, that tears burst from her eyes upon hearing the sudden order for the weaning of the infant. The husband fell asleep; but in an hour's time was awakened by the noise of a most violent vomiting she had fallen into. She had a pain in her stomach at the same time, from her account of which the description above was taken. All this had been occasioned by her applying the child's mouth to her nipple.

sentery, cholera (*m*), the colic (*n*), the iliac passion (*o*), the green purging of infants, the worms, that waſting

(*m*) Or that diſeaſe, the urgent ſymptoms of which are alternate vomiting and purging, the effect of which, while their cauſe is a general weakneſs over all, but prevalent in the firſt paſſages, is to increaſe the weakneſs, from which they proceed to ſuch a degree, as to hurry on the patient's death, with every ſymptom of expiring debility, in the ſhort ſpace of ſixteen hours. This happened in the warm countries, as the ſouthern parts of Europe, and eſpecially in the torrid zone, whether in Aſia, Africa, or America.

(*n*) The colic has been commonly treated by purging and bleeding, and low diet ; but in no inſtance has that treatment of it been ſucceſſful. Opiates were particularly forbidden upon the ſuppoſition of their conſtipating the belly ; but the truth is, that the colic, as well as diarrhœa (which has been ſuppoſed a diſeaſe of an oppoſite nature, from the ſeeming contrariety of looſeneſs of the belly and conſtineſs to each other), are the ſame kind of affection, only differing in degree. And the colic is to be removed by no other means than thoſe that remove the ſimple looſeneſs ; that is by durable and diſſoluble ſtimulants.

(*o*) Which is that higher degree of colic where vomiting comes on, and the perſiſtatic motion is ſo inverted as to occaſion the rejection of ſtercoraceous matter by the mouth. Sometimes in the progreſs of the ſame diſeaſe, eſpecially when treated only by evacuation and bleeding, a portion of gut is inſinuated into the cavity of the next portion. This is called in the art Volvulus, or Intus Suſceptio. The quick and effectual cure of colic before the ſymptoms of volvulus make their appearance, is a good proof that the latter is induced by the purgative medicines, employed to clear away the obſtructing cauſe, acting with ſuch relaxing effect, and urgent violence, as to turn back the inverted motion in one part, while it continues inverted in all the reſt, and particularly in the portion next to it. The ordinary evacuant plan, therefore, is a cauſe of the violence of the diſeaſe in all its ſtages ; and laſtly, of the laſt, which becomes a local and immoveable affection. Nothing could be more abſurd than the reaſoning that has directed the practice of phyſicians. In which, beſides the general rules of bleeding to cure bleeding, vomiting to cure vomiting, and purging to cure purging, and beſides the contradiction of employing purging in colic, which by the laſt rule only applies to diarrhœa ; they have taken it into their head, that a good means of removing the obſtructing matter in colic, was to throw in a large quantity of heavy ſubſtance with the intention of forcibly diſplacing it ; reaſoning in that way not ſo well as a ſoldier would do in clearing away
any

ing of the body called tabes, or atrophy (*p*), both of them diseases chiefly of children, and their most frequent diseases.

CXCVI. As the cause of the disease increases in violence, and the exciting noxious powers prove more urgent ; the external parts are drawn into consent, and

now

any foul matter from his fire-lock ; for it should have been remembered, that whatever effect such substances, as quick-silver, might have by their weight in pushing downward any obstructing matter, they must operate with a contrary effect, as often as in the convoluted state of the intestinal canal, the course of any portion was upward. . Neither did it ever strike them, upon any one occasion, what they should never have left out of view upon every occasion, that the idea of the action of dead matter upon dead matter, whether mechanical or chemical, that is, perceptibly or imperceptibly mechanical, is never to be transferred, in sound reasoning, to the mode of action of the same dead matter on living matter ; the excitement in no case whatever admitting of any such analogy.

(*p*) These two diseases, according to a theory that has at all times prevailed in the schools, and has pervaded all medical systems, are supposed to originate from an obstruction in the mesenteric glands, through which the chyle, or alimentary matter, after undergoing a double preparation, one in the stomach, and another in the first convolutions of the intestines, has to pass before it arrives at its common receptacle, the thoracic duct, in order to be thrown into the venous mass of blood ; and to remove it, still upon the same idea, as if all the cavities of the animal economy, whether great or small, were to be cleansed like the soldier's fire-lock, no limits were set to the use of gentle aperients, and particularly the use of mineral waters. And they used gravely ("risum teneatis amici!") to tell us, that with the help of a course of time, suppose the arrival of the infant or child, at the seventh year of his age, that would carry off the disease by its detergent operation, provided the obstruction were not so great as to induce death before the lapse of that period. That all this is silly theory devoid of all foundation in truth, is proved by the completion of hundreds of cures in the shortest spaces of time, by means of durable stimuli, which act upon their delicate frames with such efficacy as to supercede, unless in the most violent cases, all use of the diffusible. This remark applies likewise to worms, for the cure of which no bounds were set to the use of purgatives, upon the idea of clearing away the stuff in which these vermin nestled ; a practice not so judicious as that of some foolish boys, who

now the organs of voluntary motion are affected. Sometimes the legs, sometimes the arms, and other parts, differently upon different occasions, are tortured with cramps; sometimes the thorax all round; sometimes the shoulders, sometimes the sides, sometimes the back, sometimes the neck are affected with pain, from which no part of the human body is exempted; the region of the lungs, of the liver, and of the stomach, are especially liable to them. The smart pains that affect these parts, and are supposed to proceed from internal inflammation, are, in reality, owing to spasmodic or convulsive affection (*q*). That this is their true origin is

who place their success in bird-catching upon the chance of bringing down the nests from the top of high trees, by throwing sticks and stones at them; while other boys, both more sensible and alert, climb up and seize every one of them. The cause of worms is the same as that of all the other diseases we have spoken of, differing in nothing but in what they all differ from each other, mere degree. Debility over all, but prevalent in the alimentary canal, occasions a weakness both in all the other functions, and particularly in that of the peristaltic motion. This state implies a similar weakness in the vessels that pour their fluids into that cavity; their weakness implies an enlargement of their diameters, and that enlargement an increase of the quantity of fluids thrown in, without any increased impulse behind. Hence arises a colluvies of matter, which the increased peristaltic motion is not able to throw off. The colluvies is increased by the use of vegetable matter and fruit taken into the stomach, and depositing their faculent parts on the intestines. The indication of cure is not to increase either the general, or particular part of the cause, by purging, and the use of other debilitating powers, but to strengthen the whole living system; and especially the intestinal canal, by the whole round of stimulant remedies diffusible or durable. To this treatment the tabes and atrophy will yield in a few days, or even hours; the worms in as many weeks. And they are all increased by the common plan of cure, as universal experience has proved to a demonstration.

(*q*) Endless have been the bleedings and other evacuations employed to remove those painful affections, and as dismal has been the effect of that method of cure. The universal rule, suggested by the principles, and confirmed by the practice of this new doctrine, is to invigorate the whole system, and apply any diffusible

is proved by the application of stimuli, which remove the affections, often immediately, always in a short time, and reproduce the healthy state. It is proved by the unsuccessfulness of the contrary method of cure, which consists in bleeding, purging and abstinence. Nay, what even makes more for the same conclusion, is, that, while abstinence almost alone is often sufficient to produce the pains, rich food also alone has proved sufficient to remove them (*r*).

CXCVII. The

ble stimulus, particularly laudanum, to the pained parts. By that practice I know not one cure, of some hundreds, that either I or my pupils have performed, that has failed. The gout will sometimes make its attack in this way. But whatever be the particular force of disease, with which they may seem to have any connection, the only diagnosis here necessary is to be sure that the true peripneumony is not the morbid state. When that is out of the question, and whether the painful complaint be denominated bastard peripneumony or not, the only indication of cure is what has been just now mentioned. A young lady, with whom I am nearly and tenderly connected, has been often affected with an acute pain in her right side, mostly fixed and solitary, sometimes accompanied with a certain numbness and senselessness in her extremities, commonly with loss of appetite, and some degree of head-ach. The effectual method of cure is to apply rags dipped in laudanum, volatile alkali, or æther, and renew them as often as they become dry, and to support her internally with durable and diffusible stimuli, proportioned in kind and quantity to the exigency of the case. This method of cure of a morbid affection, that upon the contrary debilitating evacuant plan would be readily and quickly converted into an incurable asthenic disease, has always proved infallible in removing the attacks, which never after return but when she has enfeebled herself by keeping the house too much, and neglecting air, exercise, and the use of the other diffusible stimuli. Friction used over all the affected parts, is also found useful in supporting the stimulant operation of all the other remedies. There is in the fens of Lincoln, where an eminent physician, and follower of this doctrine, practises, a disease called a bastard peripneumony; in which, though it had always baffled all the efforts of the common evacuant practice, he never lost a patient, by exercising the contrary one.

(*r*) This I have often experienced in the case of the gout. Before dinner, when my stomach was empty, I have limped in going abroad to dinner. But after having made that meal heartily, and taken a glass or two of wine, I have returned with a perfectly firm step, and free from all feeling of pain and uneasiness.

CXCVII. The same pains, sometimes combined with inordinate motion (*s*) sometimes without it (*t*), are absolutely free from inflammation. To distinguish them from the pains that flow from inflammation or a similar origin, the accompanying symptoms must be attended to. A sthenic diathesis indicates that whatever pains occur are sthenic; and we may gather from the asthenic diathesis that the pains appearing in it participate of its nature and are as certainly asthenic. This remark is of general application to diseases of daily occurrence, and overturns the common practice. Even head-ach, which is so frequent an affection, may ten times be removed by the stimulant plan, for once that the contrary answers (*u*).

CXCVIII. Symptoms of disturbance occur also in asthenic diseases as well as in sthenic. Such a state of disturbance (*x*) takes place in the alimentary canal in the

(*s*) As in the convulsive kind so lately spoke of, where the enormity of motion is sometimes external, and in the organs of voluntary motion, sometimes internal, as in cholera and so forth.

(*t*) As in the spasmodic pains, head-ach, pains in the legs and soles, where there is an inability to perform the due motion.

(*u*) The true reason for all this, and innumerable errors in the practice, is that the leaders in the profession never understood any diathesis but a sthenic one, or any indication of cure but an asthenic, to which they gave the name of antiphlogistic, as they did that of phlogistic to the diathesis. By his reformation of the erroneous plan of cure that his contemporaries, the alexipharmics, had introduced, in the small-pox and the few other sthenic diseases that ever occur, in all the rest of the general diseases Dr. Sydenham's authority confirmed the error. He left also the measles as he had found that disease, and all other general diseases, which are much more in frequency than 97 out of the 100, or 97 to 3 of the sthenic. Great men had need to be cautious, as the least inadvertency in them, not to say essential mistakes, never fails to lead their followers, who are commonly servile imitators, and implicit believers, into capital error. If ever they attempt any thing of themselves it is commonly to raise a crazy superstructure upon a false foundation, it is commonly to refine upon error ad infinitum.

(*x*) All in the original from "Talem" in the last line to "febribus" in the first of the next page inclusive is erased, as being an anticipation of a subject, that is to follow in the CC paragraph.

the cases of hysteria, colic, dyspepsy, and the gout. Thus in the alimentary canal, besides the pains, mentioned above, a certain sense of burning, anguish, contortion and direful torture, exhibit a set of appearances, formidable in the highest degree, both to the patient and bystanders, and which beget a suspicion of their proceeding from inflammation. But that these affections have nothing to do with inflammation, and that they depend upon a state of the part quite the reverse, has been proved by the success of the stimulant method of treatment in every instance in which it has been tried (*y*). This is confirmed by the use of wine, opium, and

(*y*) Till this doctrine appeared, it was impossible to erase from the minds of physicians an impression that had been deeply made there, that nothing but the only inflammation, that they were acquainted with, could be the cause of such pain and torture, as is described in the text. I have more than once experienced the whole concourse, here mentioned, and have always found them to yield to the most stimulant method of cure, that I could contrive. I once laboured under this modification of asthenic disease for no less than ten days, and was always able to overcome it in two hours, and procure an interval of complete ease and relief for the rest of the day. The remedies employed were the whole round of diffusible stimuli, as opiates in all their forms, camphor, musk, volatile alkali, and æther, &c. By these the functions for the time were completely restored. But their stimulant effect was no sooner perfectly gone off, that is, after the interposition of a long sleep, through the night, than the symptoms returned with a violence little short of what it had been the day before. This was proof positive, that their nature was asthenic, or consisting in debility; since they yielded to stimulant remedies; and that the debility was exquisitely great, since it required so high a degree of stimulant operation to remove it. While that is the undoubted fact, there is a nicety with respect to proportion to be attended to in this case. It is a rule, that the degree of curative means, whether in the cure of sthenic or asthenic diseases, should be accommodated to the degree of the diseased state or degree of the cause. If too little of the curative means is employed a proportional part of the disease will remain: if too much, the disease will be more than removed, that is, another state which may be morbid in another extreme, may take place. Too much was once employed in this affection, and the effect was, that the disease was not eradicated till the tenth day of its course from the beginning.

and other diffusible stimuli. Afterwards and along with them animal soups, then solid meat, the usual way of living, and precautions against debility, effectually re-establish the healthy state (z). This plan of cure proves to a demonstration, that these affections are very foreign both to sthenic inflammation and every degree of sthenic diathesis; and, as general sthenic inflammation does not appear to affect internal parts, this affords another argument against inflammation being here the cause (see CLXXXII. and CLXXXIII).

CXCIX. The asthenic pulmonary affection is accompanied with so intolerable a fixed pain, that no bounds

(z) The rule here is, if indirect debility be the cause, to begin with a high degree of stimulant cure, and gradually reduce it to the ordinary degree that is sufficient for the healthy state. And the caution is to be sure of this gradual reduction, otherwise the indirect debility will be liable to return the moment the effect of the stimuli is gone off. By an attention of this kind a disease depending upon indirect debility may be cured in the sixth part of the time, that would be taken up by the cure, when the remedies are every day carried beyond the due bounds. For example, if the indirect debility be in the table the effect of an application of 71 degrees of exciting power instead of 40, that is to say, the excitement is worn down to 9 instead of being up at 40; it is evident, that an application of 71 degrees by way of remedies, will leave the disease where it was. Suppose only 65 degrees of stimulant power administered; the excitement will fall to 65, and the wasted excitability rise to 15. Next day let only a degree of exciting power as 60 be applied; then the degree of excitement will be that number, and that of excitability 20. Five degrees of exciting power still less will reduce the morbid excitement to 55, and raise the excitability to 25. And so on may the matter go, till the excitability is raised to 40 and the excitement reduced to the same number. But, if the reduction be much less by the day, the cure will be proportionally slower. Nay, such an error may be committed as to increase the disease instead of reducing it, which will happen, as often as a degree of stimulant power is applied, which is more than equivalent to that which produced the disease. All this attention and caution is necessary in the cure of asthenic diseases of indirect debility; while that of those of direct debility is easy and simple, to wit, to give the stimulants in small proportion and often repeated, till the disease is removed, unless, which may happen, you can guess the proportion, which may suffice to remove the disease at once, or at least, twice.

bounds have been set to bleedings for the cure of it. But they have not only been useless, but detrimental, and often fatal; whereas, on the contrary, the stimulant plan of cure has always succeeded (*a*). In this affection the respiration is interrupted, and nearly all the symptoms that accompany an actual peripneumony, distress the patient to such a degree as to give rise to the suspicion, or rather to establish a firm persuasion, of the presence of inflammation. Or if any difference was observed betwixt this affection and that species of phlegmasia, the observation only suggested a futile distinction, and a question concerning the seat of the inflammation. The opinion that inflammation is the cause of these symptoms still subsisted. But that the disease depends on pure debility, is abundantly evident from the arguments already adduced. It is increased by the antiphlogistic, and removed by the stimulant plan of cure.

CC. The following formidable symptoms, which most medical writers have imputed either 1, to irritation, as typhomania and the starting of the tendons; or 2, to plethora alone; or 3, to plethora joined to mobility; are manifestly owing to debility (*b*), the common

(*a*) A young lady afflicted with these symptoms was in the course of a month bled thirty times, always with a temporary relief, but with a return of the disease more violent than ever. She was then put upon a stimulant plan, and in less than a month restored to her perfect health. This was among the most early cures taken from this doctrine.

(*b*) No diseases are more opposite to each other than high febrile diseases, such as the common inflammatory fever, or peripneumony, and proper fevers; the former, in the table, standing at the head of the scale of increased excitement, and the latter at the bottom of the scale of diminished excitement. And the same method for the cure of both has been pursued, to wit, the evacuant, debilitating. If, in peripneumony, large quantities of blood were taken at a time, the difference has been made up in the cure of fevers by repeating it the oftener; while all the other

evacuations

common cause of asthenic affections : these are stupor in apoplexy, in epilepsy and in fever ; the false wakefulness, called typhomania, starting of the tendons, and coma, in fever ; convulsion and diminution of the voluntary motions in epilepsy and apoplexy. This appears from the debilitating noxious powers, whether acting directly or indirectly, alone producing these diseases ; and from the stimulant remedies alone, relieving or removing them. It is in vain to impute apoplexy to plethora ; as if at a period, when the body is nearly worn out and almost bloodless, when the usual degree of aliment is neither desired, nor taken in, nor digested, more blood could be produced than in the flower and vigour of human life. On the contrary, at the time when apoplexy comes on from indirect debility, induced by old age or excessive incitement, the solids are languid, the quantity of fluids deficient, as is also their fountain, the blood. Epilepsy depends likewise upon debility, and the same scantiness of fluids, only here the debility is commonly of the direct kind. Fevers may arise from indirect debility, as in the confluent small-pox (*c*),

or

evacuations were carried on with the same profusion in both. When they talked of the respective causes of those diseases, phlogistic diathesis was the word for the high sthenic diseases, and irritation for the high asthenic. But these were words only, while in fact the method of treatment of both was the same, at least, in kind ; and scarcely different in degree. To whatever part of any system of physic we turn our attention, we constantly see one mode of practice running through the whole, and that too, notwithstanding of the supposed great number of diseases, very limited. It turns all upon bleeding, other evacuations, starving, and some other trifling directions under the title regimen. It was all antiphlogistic to use their own language ; and, whatever other language they held, the nature of the disease, if we are to judge from their treatment, was phlogistic.

(*c*) The confluent small-pox, as depending upon a very high degree of debility, is ranked among the high fevers in the after part of this work, because the scale is not regulated by the appellations given by physicians, or by any of their erroneous distinctions, but by strict regard to the degree of excitement. And for the same

or where drunkness has been the principal exciting noxious power applied ; but at the same time, the most frequent cause of fever is direct debility. And in all these cases, debility is the primary cause and final termination both of the violent symptoms and the others.

CCI. Among the symptoms of disturbance sometimes also appear those affections of the head ; great head-ach in fevers, imbecility of intellect, confusion of thought, and delirium often sufficiently furious, though occurring in the highest degree of debility, and leading to efforts beyond the strength. This state often happens towards the end of typhus even when malignant. Inflammation is apprehended, blood is let directly from the head, blisters, which serve for *extreme unction* in the art of medicine, are clapped on, silence and darkness are prescribed, even the most gentle stimulants are forbidden. In consequence of the emptiness of the stomach, as well as of the vessels of the whole body, and of the great degree of languor from the want of many stimuli, vertigo is superadded to delirium, and the patient, deprived of strength, sense and intellect, breathes out his last.

CCII. But in this case there is either no inflammation, or, if there be, it is altogether of a different nature from the general sthenic one. That it is not the latter, the unsuccessfulness of the debilitating plan of cure, and the incredible success of that which first stimulates, and afterwards fills the vessels, afford certain proof : And that it is not any other species of inflammation is evinced by the sudden restitution of health. Now, as an impaired use, or confusion of the intellectual faculty is, in a certain degree, always the consequence of debility, whether arising from any other source, or from emptiness

same reason is the violent cholera marked nearly in the same place ; because the debility, taking place in it, is nearly equal in degree to the most sinking febrile debility ; in a word, because the same degree of debilitating power produces, and the same degree of stimulant operation removes, the diseases so afforded.

ness of the vessels, and that too even in persons, who are otherwise healthy ; where is the wonder, if, in the highest degree of inanition, compatible with life, in the greatest diminution of excitement, where scarcely a shadow of life is left, the highest degree of failure in the intellectual function, that is, delirium, among other instances of impaired function, should also take place ? Nay this very fact is indubitably certain. For fasting, drinking water contrary to custom, after a course of hard drinking, or both eating and drinking to intemperance, a gloomy state of mind, grief, terror, despair, not only induce temporary delirium, but frequently bring on downright madness. The same conclusion applies to any considerable loss of blood. For how many wounded persons, have not at all, or not till a long time afterwards, recovered the use of their senses. To say nothing of contusions and other injuries, by which the texture of the brain is injured, as belonging to local diseases, of which we are to treat afterwards ; how does cold prove fatal ? Does not a delirium, in this case accompanied with a diminution of all the functions, precede death ? From these weighty, numerous and authentic facts, which include all the powers, it follows that head-ach, every degree of failure of the intellect, and that highest degree of delirium, by no means depend upon general sthenic inflammation, the only inflammation hitherto distinguished ; but that they arise from the highest deficiency, both of other stimuli, and of a proper fulness in the vessels, that is from debility. Debility then is the most frequent cause of these symptoms, as is proved by the quick restoration of health upon the new plan of cure.

CCIII. But if ever the asthenic inflammation, mentioned (see CLXXI. and CCII.) before, excites the tumult of symptoms, which are our present subject ; it produces that effect in the same manner precisely, that debility produces it, by means of a penury of blood and deficiency of other stimuli. For,

CCIV. The

CCIV. The general asthenic inflammation is but asthenic diathesis, more violent in some one part than in any other equal part (see XLIX). The degree of asthenic diathesis constituting the inflammation is however by no means to be compared with the degree of diathesis in all the rest of the system; because the whole affection diffused over the whole body is far more considerable than that confined to a part (see XLVIII. XLIX. L. LI).

CCV. Inflammation, in this case, is only a state of the inflamed part, of the same kind with that of all the rest of the body. And, as the inflammation is constituted by a less excitement in some one part, than in any other equal part; so, before the establishment of the disease (*d*), of which the inflammation is a part, a symptom, or sequel, the excitement of that part is understood to be proportionally lower, than that of any other part.

CCVI. This should be distinguished from local inflammation: It is general, and depends upon a general diathesis, and only takes place when the diathesis has attained to a certain degree; while local inflammation arises from some noxious power, that produces a solution or vitiation of the texture of the part, without regard either to diathesis or degree: The general inflammation is

(*d*) See above, par. CLXIX. and compare it with this. The meaning in both is, that, as certain parts of the system have more excitability than others (LI.), so those parts, which in the diseased state are more affected than any other, that is, are either more excited, as in sthenic inflammation, or less, as in asthenic, than any other, keep up the same proportion of disparity before the arrival of the disease, before the appearance of any of the symptoms, and while, as yet, nothing but mere predisposition has taken place. The truth of this proposition is established by that of another so comprehensive as to extend to the whole subject of life; which is, that over the whole living creation, throughout the universe, health, predisposition to disease, and disease itself, are the same state, only differing in degree, (vide par. XXIII. and LXV.) Health, therefore, is also comprehended under this same proposition.

is brought on by the same noxious exciting powers, which produce the general diathesis, only applied in a higher degree; and the same remedies remove both the diathesis and the inflammation: The local inflammation depends upon noxious powers, that only injure a part, and it is removed by remedies that change the state of the part; but is not affected either by general noxious powers, or general remedies. Those inflammations, which accompany the gout, the putrid sore throat, the gangrenous sore throat, and sore eyes are examples of universal inflammation: Local inflammation will be illustrated by examples in its proper place (*e*): General inflammation is attended by debility over the whole system; which debility is only a sequel of the local, and that not always. To remove the former the general method of cure (see LXXXVIII.) is adapted; but the cure of the latter turns upon healing up the part. Thus there are four sorts of inflammation; two universal, a sthenic, and an asthenic; and two local, one of which is sthenic, and the other asthenic. The former often ends in suppuration, but is often dispersed without suppuration; the latter in gangrene, sometimes in sphacelus, sometimes in death. If, at the end of typhus (*f*) inflammation affects the
brain

(*e*) As in the inflammation, that is produced by a wounding instrument, when a person, previous to such an accident, is in health, and continues to be so after the accident. Or it may still be local, though a person is in bad health when it happens, but so, however, as that the general state of the health is understood to have no concern in it. A wound in a very tender part may induce disorder over the general system; but still all the symptoms can be traced to the wound, and not to the ordinary cause of general disease.

(*f*) Or a low-nervous fever, which is a disease of the highest debility, next to the plague, and often not inferior to that disease in malignity, and, therefore, to be arranged in the scale, as next to that disease, which stands at the bottom of diminished excitement. Physicians have constantly confounded the different degrees of this disease with sthenic ones, affecting the pulse. But they are diametrically opposite, as shall be pointed out when we come to the proper place for such distinctions.

brain or its membranes, which (*g*) is, however, not proved, or very likely, this will serve for an instance of an asthenic general inflammation.

CCVII. As general sthenic inflammation is occasioned by a quantity of blood, stimulating the vessels by distention; by stimulating, increasing their excitement; by increase of excitement, producing more forcible and more frequent contractions; by these, increasing the tone of the fibres as living, and their density as simple solids, and thereby diminishing their diameters; and, consequently, causing the blood to flow with great effort through the contracted vessels, and to produce pain from the force of the contractions and the narrowness of the space through which it has to pass; and as the same, though in a less degree, is the cause of sthenic diathesis over the whole vascular system, whether red or colourless: So,

CCVIII. The cause of general asthenic inflammation is also abundance of blood in the inflamed vessels, producing the same effects in the inflamed portion as in the sthenic inflammation; and, notwithstanding the penury

(*g*) Though strongly asserted. A professor in his lectures gives a case of a typhus fever, where, upon account of delirium and some other symptoms, thought to announce an inflammation in or near the brain, the patient was so freely bled, that the state of the pulse (which is said to have been, in his words, "a pulsus vacuus" "if ever there was such a pulse,") forbid any further bleeding. The patient was given up, and the extraordinary physicians withdrew, leaving the ordinary one of the family, only, about him. This gentleman, from some impression on his mind, began to think, that another bleeding might be tried with advantage. He bled him, and the patient recovered. This is an account of a case that I pretend not to understand, and I believe it will be no less puzzling to my readers, and the more puzzling, the more sense they have. It is, however, brought as an example, that in a seeming expiring debility, the highest degree of asthenic diathesis, there may be an universal sthenic debility, that requires bleeding. I have mentioned it, not for the sake of information, but of caution to the reader. Any person may see the frivolity and lightness of the theories of our profession, but it requires knowledge and discernment to guard against the seduction of facts.

penury of blood in every part of the vascular system besides, flowing abundantly into the inflamed vessels, upon account of a greater atony and laxity in them, distending them and producing the phænomena peculiar to all inflammations (*h*).

CCIX. As the indication of cure for the former is, to diminish the quantity of blood, which is the first cause of the violent exertion, and, thereby, to reduce the excessive excitement to the healthy degree, and the excessive contractions, which constitute the exertion, to such moderate contractions, as are pleasant and agreeable to health : So

CCX. The indication of cure for the latter is, first, by powerful stimuli to propel the blood in every part of the system, that the portion which loiters in the languid vessels of the inflamed part, may be also propelled, and the vessels relieved of their burthen ; and then by the gradual administration of seasoned animal food, in the form of soups, and, when the strength is recruited, in a solid form, to replenish the whole system of vessels.

CCXI. The local inflammation will be treated of afterwards, each in its proper place.

CCXII. That inflammation of the throat, which ends in what they call a putrid (*i*) fore throat, is singularly

(*h*) These definitions apply to all the four inflammations (par. CCVI.) with respect to the state of the inflamed vessels ; their differences only depending upon the general state of all the rest of the vessels, which in the local, may be quite the healthy state of these, while, in sthenic general inflammation, it is the sthenic, and in this, the asthenic diathesis, that are conjoined with the inflammatory state. Further, as their cause is influenced by these general circumstances, so also is their cure ; the sthenic and asthenic general inflammations requiring the remedies of the diathesis to which they respectively belong, and the local only the remedies suited to heal up the part.

(*i*) The disease, here mentioned, is neither described, nor, seemingly, understood, in medical books and lectures. In this work it is taken, as every thing else is, from nature, at the bed-side of the sick,

larly insidious. During the first days it differs little in its appearance from the sthenic sore throat. The general symptoms are also similar. The pulse scarce exceeds the measure of the sthenic pulse in its frequency and other characteristics. For some time the whole disease proceeds with gentleness and tranquillity, excepting that a constant rejection by spitting of a tough mucous matter is troublesome. At last, if it is not counteracted by the most powerful stimuli, a period arrives, when all the symptoms suddenly become alarming; when the pulse becomes very quick, very weak, and remarkably small; when the strength, over the whole system, sinks; and now it is not a moderate portion of diffusible stimulus that will prevent the lamentable fate of the greatest ornament of human nature (*k*). The best plan of cure is to prevent the mortal period by employing the most powerful stimuli.

CCXIII. The diffusible stimuli are so powerful in removing the inflammation of the gout, that, sometimes, strong liquors, as wine, and spirits, or spirits diluted with water, as warm as can be borne, have in a few hours removed the most violent fit, and restored the use of the affected foot. The same remedies are of equal efficacy in removing the general symptoms (*l*).

CCXIV. The

sick, and deserves so much the more attention, that, though it is a disease of the utmost malignity, it seems to have been altogether overlooked. Its appearances are mild at first, but, without both skill and attention, it will end fatally.

(*k*) All this refers to a lady in Scotland, of singular worth and amiability, who died, but not in consequence of the plan of cure, which this doctrine enjoins, having been followed; especially at the period of the disease when it was most wanted.

(*l*) Treated in the way, here and formerly (vid. the pref.) mentioned, the most violent degree of the disease always gave way in a few days, and milder cases in as many hours. From hard walking in very hot weather to inspect the beauties and majesty of Hampton Court, I have myself very lately had a slight fit of the gout; but it gave me no sort of trouble, never hindered me from business, and I repelled it in less than thirty-six hours.

I never

CCXIV. The inflammation in the gangrenous sore throat is not, according to the common opinion, a primary affection ; but, like every other general asthenic inflammation, depends upon the general diathesis, which, in this case, is manifestly asthenic, being a part or symptom of the diathesis, when that has attained an high degree.

This inflammation has nothing in common with the sthenic general inflammation, which distinguishes the sthenic inflammatory sore throat (*m*), or with the two local inflammations.

CCXV. The crowded pustules, in the small-pox, when it is converted into the confluent kind, that is, into an asthenic general disease, become partakers of the new diathesis, and, instead of sthenic, which was their first

I never found a single case baffle me but one, where the patient, who, with his valet, had quacked himself into the gout as well as other complaints, and particularly an habitual costiveness, by forcing every passage by the belly, for the space of seventeen years. I was dismissed, without having my directions complied with ; and without being allowed to accommodate the remedies to his practice of purging and throwing up injections, so as to endeavour, at least, to prevent or mitigate their hurtful effect. For, it must be observed here, that, as every directly debilitating power is an exciting hurtful means of bringing on any asthenic disease, so the effect of every evacuation, and particularly that by the belly, is well known to be a certain means of bringing on a fit of the gout. Among many other means of inducing that disease, a single dose of Glauber's salt, though that be but a mild cathartic, will bring a fit of the gout on me at any time.

(*m*) Yet in their systems of nosology, which are laboured volumes of distinctions without differences, begun, within this half century, to be superadded to the former modes of systematizing ; which, without this new one, had sufficiently disgraced the art, and needed no more than the most absurd of the whole, or that the misled fancy of men could invent, to complete, in all its copartments, the vast fabric of error, and particularly in the last of these, that published in Edinburgh, the putrid sore throat, as described above (CCXII.) was left out, and the gangrenous, which is that just now alluded to in the text, conjoined with the common sthenic sore throat, though diametrically in its nature opposite to it.

first state, become asthenic; and, as by their local stimulus, they before quickly changed the sthenic into the asthenic diathesis, by inducing indirect debility; so now, by the debilitating influence of their asthenic nature, they establish asthma, or a state of debility over the whole system, which they afterwards aggravate, till death often ensues (*n*).

CCXVI. To throw light upon these two species of small-pox, by comparing their respective methods of cure, it may be observed, that the treatment in the one case should be quite different from that in the other (*o*). The remedies of the distinct small-pox, and of its accompanying eruption, are cold and whatever, by evacuation or otherwise, debilitates. The remedies of the confluent kind, as well as of its accompanying eruption, are heat, short of the indirectly debilitating degree; and all the powers, which stimulate as quickly, and as powerfully as possible, and, consequently, the most diffusible.

CCXVII. They differ besides in this, that all the hurtful powers in the distinct kind are sthenic; all in the

(*n*) There cannot be a more exquisite stimulus in living nature, than that universal cake of inflamed pustules, which covers the whole surface in the confluent small-pox. It is no wonder then, that, when it is superadded to the ordinary stimulant hurtful powers, to which this disease first owes its violence, and afterwards that very eruption; the united effect of both should soon pass the whole range of excessive stimulus, and quickly run into the state of indirect debility (see par. CC.) Such is the nature and progress of the small-pox, in passing from the sthenic into the asthenic state, that is, from one disease into another of a most opposite nature.

(*o*) The cure of the distinct small-pox is the debilitating; that of the confluent, the stimulant plan. The cause of the former is sthenic diathesis, that of the latter the asthenic, occasioned by indirect debility; which is a distinction unattended to in general, and with very bad effect upon the practice. For, when the confluent small-pox is established, the pustules flat, and signs of mortification coming on, the covering the patient with a single sheet is as common as in the distinct small-pox.

the confluent asthenic. And this distinction equally applies to both diseases, and both eruptions.

CCXVIII. And as the sthenic or distinct pustules have a direct tendency to produce a sthenic inflammation, and kindly suppuration; so the tendency of the asthenic or confluent, is as directly to gangrene, sphacelus, and death.

CCXIX. The boils, carbuncles, and buboes, which often accompany the plague, and sometimes typhus, arise from a contagious matter, taken into the body, and detained with the perspiratory fluid, under the cuticle, and in the glands. The cause of the detention, and, therefore, of this eruption, is a total cessation of motion in the extreme arteries, especially the glands and perspiratory terminations, upon account of the universal debility, and the very great languor of the heart and arteries. This appears from several circumstances: 1. there is no eruption during the period of predisposition, when some vigour still remains, and, therefore, the perspiration goes on in a certain degree; 2. there is none in cases of sudden death from the violence of the disease; 3. no eruption or disease in all the cases, where these are early prevented by the use of the more powerful stimulants; 4. the disease is always mild, and the eruption always sparing, in proportion to the proper management of the stimulant plan of cure. For, whether the suppression of perspiration be the consequence of a very great degree of the sthenic diathesis, or of an equal degree of the asthenic as in the present case; all the foreign matter, that should be thrown out of the system along with the perspirable matter, is, together with it, detained; and when so detained below the cuticle, by stagnating, and acquiring a more acrid nature, it produces local inflammation, either of a sthenic or asthenic nature, in proportion to the different nature of each, or rather of the habit.

CCXX. In the same manner is that eruption which diversifies the skin in the gangrenous sore throat to be explained;

explained ; as well as another, which supervenes in that state of the small-pox, which by reason of the debility of the system, would otherwise turn out well ; but which, if the new eruption be not opposed by the most powerful stimuli, is sure to end in death. Both these eruptions (*p*) are spotted, both red ; one is marked by smaller, the other by larger spots ; in this the colour is a fine scarlet, far exceeding all art, and almost the power of nature herself to produce in any other circumstances. Both are owing to a suppression of the perspiration by debility : the former is removed by the stimulant plan of cure, which removes all the other symptoms ; in the uncommon eruption, the debility produced in the preparation, to render the small-pox mild, must be opposed, as soon as the eruption appears, and the strength must be restored by the use of the most diffusible stimuli : The pustules, which are few, do not even attain to the measure of actual general disease, and are, therefore, unattended with danger, and not to be regarded. If this practice is followed, the recovery is both certain and quick ; but, if it be neglected, or if a contrary plan of cure be adopted, death is inevitable (*q*).

CCXXI. Heat

(*p*) A young child of mine, who had been long weakly, and often, in consequence of that, snatched from the jaws of death by being properly supported, according to the principles of the new doctrine, had been prepared to receive the small-pox, and inoculated. After the eruption was completed, and it was now certain it would be exceedingly moderate, one morning he was brought before me covered over with the appearance of the eruption described in the text.

(*q*) It is certain, that the safe conduct of the small-pox depends upon debilitating the habit which is to receive the infection ; and it is as little doubtful that we may carry that operation a great way, by lowering the diet, purging the belly, and applying intense cold to the surface, and, by all means, guarding against all alternation with heat. By this means the phlogistic diathesis, chiefly arising from the ordinary powers, and in part, as it would seem, from the contagious matter, is prevented or removed ; the great
flow

CCXXI. Heat is not peculiar to sthenic pyrexiaë (*r*), but belongs also to other sthenic diseases. Nor is it so confined to the diseases, as not also to arise in all the degrees of predisposition in proportion to the degree (*s*). Nor is this all. Heat also attends all asthenic diseases, whether febrile, which is a distinction without any good meaning, or not febrile, and also the predispositions to them

flow of the fluids to the surface checked; and the diameters of the perspiratory, as well as of all the other vessels, kept open and patulous. But it had been long a question with me, whether this debilitating operation might not be carried too far. If it be certain, as it is, that extreme debility suppresses perspiration, surely the process pushed near to that degree must endanger that event. This phenomenon happening to my child, solved the doubt that I had not yet decided, and it seemed to be in perfect conformity to the principles of this doctrine, to understand, that, as this child had been formerly weak, and, perhaps, still retained some degree of that state, the further weakening him by the preparatory management, for the better regulating this disease, had been carried too far. A surgeon happened to be by when the child was under examination; I asked him if he had ever seen such a case, for I had neither seen, nor heard, nor read, any thing like it. His answer was, that he had seen three, and all of them fatal. I knew how that would happen, that is, that they would continue the debilitating practice they had been following. On the contrary, I ordered the child spirit and water, and a little of an opiate, then restored the meals that had been taken from him, and brought him about to his perfect health (for the small-pox gave no trouble) in twelve or sixteen hours.

(*r*) Pyrexia is the word for sthenic diseases affecting the pulse, called febrile, or fevers, very improperly, while the term fever is reserved for the high asthenic diseases that have been confounded with the pyrexiaë.

(*s*) That heat takes place in predisposition, is a matter of daily observation. Thus, when a person has no other symptom of disease, it is often remarked, sometimes by himself, sometimes by another, who may have happened to feel his hands, that he is certainly not quite well as his hands are hot. When this heat happens, either in the hands or feet, without any cause to account for it consistently with health, it is a sure prelude of disease, that is, a sure mark of a considerable predisposition to disease: and the kind of disease, of which it is the harbinger, is oftener asthenic than sthenic.

them all, in proportion to the degree of debility. There is not a more certain mark of the decline of a disease, whether sthenic or asthenic, than a return of that temperature, which is commonly called cool, to distinguish it from morbid heat.

CCXXII. The heat is then only natural, when neither diathesis is present. From that point it increases, through all the degrees of increased excitement, till indirect debility, from excess of stimulus, is established; and it increases in proportion to the degree of excitement, rendering the perspiratory vessels always less and less patulous. It also increases through all the degrees of diminished excitement to a certain boundary, which is fixed by a cause by-and-by to be explained; it increases in proportion to the degree of decreasing excitement, though the latter all along renders the perspiratory vessels more petulous; and, thereby, among other effects, diminishes the motion of all the vessels, and particularly of the perspiratory.

CCXXIII. When the heat has attained its highest degree, and the debility has increased in proportion, it is at length in the extremities, and then gradually in the rest of the body, succeeded by cold. This is a bad sign. In the progress of debility motion begins to be very languid, first in the small vessels at the extremities of the limbs, and then in cases altogether. Hence, as animal heat, whether in due proportion, or in excess, depends upon the due, or to a certain degree deficient or excessive, motion of the blood and other fluids, the heat of the body, in the present case, almost entirely disappears; that is, the effect, according to an universal law of nature, subsides along with the cause. The same thing happens in both extremes of excitability, that is, of excessive abundance in direct, and of great exhaustion in indirect debility; for, whatever be its source, debility is always the same.

CCXXIV. As in sthenic diseases the excitement is for the most part much and equally increased over the whole

whole

whole body ; the heat is also equally diffused. To this, the only exceptions are, 1. where the violence of the disease produces indirect debility in certain parts, as in the stomach, in which sickness indicates the near approach of that state ; or 2. where direct debility comes on from the debilitating plan of cure having been pushed too far. But, so long as the sthenic diathesis prevails, and supports a high excitement, that heat will almost always be equal.

CCXXV. The same thing happens in moderate debility. Accordingly, through the whole course of predisposition, and in all cases short of almost a total cessation of motion, the heat is pretty equal. The effect of cessation of motion has been explained. But, before that happens, if any inequality of heat occurs in diseases of moderate debility, as is frequently the case in the hands and feet ; the reason is, that a greater degree of debility has been induced upon those parts, than upon others ; by cold, for instance, labour, or sweating, any way excited, especially when the sweat has been cold and clammy. Not only in the gout, but also in other affections both of direct and indirect debility, a burning heat, chiefly distressing to the soles of the feet, torments the patient, especially in walking. That this arises from debility, checking perspiration, is proved by fatigue, cold, and other debilitating powers proving hurtful to it ; and heat, rest, and other stimulant powers, giving ease.

CCXXVI. It remains now to explain, how too great excitement, in high sthenic diseases, impairs some functions without a debilitating operation ; and how too small an excitement, in violent asthenic diseases, seems to increase some functions, though the appearance is always fallacious.

CCXXVII. If, in peripneumony, synocha, and violent rheumatism, the voluntary motions are impaired to such a degree, that a person can use neither his hands nor his feet, any more than a paralytic person ;
this

this is not owing to debility, or diminished excitement, whether directly or indirectly (*t*), as is evident from this double proof; 1. if the apparent debility were real, stimulants would be of service, and 2. debilitating remedies of disservice (*u*). But the reverse is the truth. For the same debilitating powers, which cure the other symptoms of confessed excessive excitement, also remove this indisposition to the performance of motion; and the contrary powers increase the affection.

CCXXVIII. Again,

(*t*) When the excitement is at 40 all the functions are performed in the best and completest manner. Above that there is more force through all the steps of predisposition, but with less durability and steadiness; which is exemplified by the comparison of hard labourers, who at the same time are well supported, and gentlemen, who live well, without using a proportional degree of labour or exercise to prevent a luxuriant state of vigour. When two such persons are subjected to a comparative trial of their vigour in any exertion, the former will be found to go through the exertion with more steadiness, and to hold out longer and better than the other; even though his first efforts may have been inferior in force to those of his antagonist. And the reason is evident; a moderate and proper degree of vigour, will bear an addition of stimulant operation longer than a higher degree of it approaching to morbid state; because the distance of the excitement from indirect debility, which puts an end to excitement, is greater in the former than in the latter case. The difference in the well-supported labourer is 30 before he can reach an increase that leads up to 70; whereas that of the gentleman is perhaps not more than 20. The exertion in the struggle adds stimulus; which will be better borne by him who has least and yet enough, than by him who has more, but of a superfluous degree, and more liable to run into the extreme of a cessation of excitement. The effect of the exertion in the labourer will be to carry him soon up, by its stimulant operation, to the degree of excitement where the gentleman began, suppose that to be 50, and perhaps by and by to 60. But the same stimulus of exertion in the gentleman will have the effect of first mounting up to 60, and by and by to 70, where the excitement begins to cease.

(*u*) Who would administer, wine, opium, and the other high stimuli, whether durable or diffusible, to cure the inability to perform motion in either peripneumony or that rheumatism which is highly sthenic? Or rather who would think of any other means of removing that symptom, than the debilitating powers, so effectual in removing all the rest, and not less so in removing it?

CCXXVIII. Again, in spasms and convulsions, either of the involuntary motions in the internal parts, as in dyspepsia, in colic, in dysentery, in cholera, in hysteria, in violent vomiting or diarrhœa, (great numbers of which affections happen every day, without being distinguished by names); or in the burning affection of the alimentary canal, which is considered by physicians as an inflammatory affection; or in affections of the voluntary motions externally, as in the lock-jaw, in tetanus (*x*), and in many spasms of other parts; or in convulsion, epilepsy, and many other similar affections;

(*x*) Tetanus is a violent spasmodic motion of the muscles of the head, neck, and upper part of the thorax, whereby the head is kept immoveably in the same position, in which it had been found upon the coming on of the spasm. The teeth also, from the affection occupying the muscles of the under jaw, are kept immoveably locked, and hence the name of lock-jaw. Besides the affection of the muscles, that has been mentioned, there is scarce one muscle in the whole body, free from one degree or other of the affection. Further, there is a most painful feeling over all, but especially in the parts most affected. This disease sometimes happens in cold countries, such as this, in consequence of a wound in any sensible part, or when small bones, as the ossa spongiosa, are bruised, crashed and dashed into the softer parts. The part of it called lock-jaw is frequently a symptom in fevers. But the disease is more frequent in warmer countries than this, as in the south of Europe, where the excess of heat is liable to run into indirect debility. It is most frequent of all in the torrid zone, where indirect debility is the most constant attendant on heat. As a violent and permanent contraction of the muscles was the most striking symptom of it, and systematic physicians supposed every such contraction the effect of an increase of excitement, or, to use their own words, an increased influx of the nervous fluid or nervous power into the parts affected; consequently their indication of cure was to relax the rigid contracted parts. Hence no bounds were set to their emollient relaxing measures. Such were bleeding, other evacuations, and warm bathing. But experience soon taught, that all these increased, instead of removing the disease. Of late opium, because it was thought a sedative, was tried. The trial succeeded. But immense quantities of that medicine were found necessary to effect the complete cure. Laudanum used to be thrown in without measure, or any other rule, but to give it on till the disease ceased.

tions ; if the functions seem very much increased, this is not owing to increase of strength, that is, to increase of excitement, as will appear to any unprejudiced judge from the following two-fold consideration ; 1. if this were a case of really increased strength, debilitating powers, or the remedies of sthenic diathesis, would remove it ; and 2. stimulants not proceeding to their ultimate effect of inducing indirect debility, but confined within that limit, in which they remove asthenia, would increase it. But the truth is just the reverse (y). For stimulants alone, which remove the other signs of acknowledged debility, also remove these spasms and convulsions ; and debilitating powers increase them or change the disease into a worse (z).

CCXXIX. As

(y) Who does not now know, that bleeding, and evacuations of other kinds are hurtful, and that stimulants proportioned to the degree of the cause, are the only successful remedies ?

(z) A certain gentleman in his desk, speaking of the method of curing epilepsy or the falling sickness, and recommending, among other evacuant and otherwise debilitating means, small but frequently repeated bleedings, unguardedly contradicts himself in his very next sentence. " However," says he, " we regular practitioners are liable to be too cautious and even timid sometimes. For I have known a bold practitioner in the country, who cured an epilepsy by very profuse bleeding. In a few months after the patient died of an universal dropsy, but the epilepsy never returned." I would ask this gentleman, what sort of a cure that was, that converted a disease, which may come and go for many years, nay even for a long life-time, into one that, in a very short time, proved fatal ? What reason would a podagric have to thank any one, who should convert the gout in him upon any violent attack, into a fatal dropsy ? That sort of treatment is not curing a disease but increasing it, and that even to death. The convulsive symptoms of an asthenia may pass away ; but the asthenia remains. You may cease to call it epilepsy ; but dropsy still shows that the cause of the disease remains, nay is prodigiously increased. This fatal mistake of an increase of the disease upon the whole, for the cure of an inferior degree of it, proceeds from an improper use of directly debilitating powers in place of the proper stimulant ones. But there are cases, where the last, by being carried too far, produce the same fatal mistake. Thus in peripneumony, to get rid of the hard pulse, and the acute pungent pain (see above, CLXXIV. and the notes), the bleedings are carried so far as to produce a fatal hydrothorax, or dropsy of the chest.

CCXXIX. As we know not what contraction is (and we are indeed ignorant of the manner in which every function of the living system (*a*) is performed) we shall not dispute whether it be an increased or diminished function : we shall however by no means allow these spasmodic and convulsive motions to be any other than an impaired function (*b*) ; for, if, within certain boundaries, excitement, when increased, produces more strength, and less when it is either diminished without limitation, or excessively increased ; and if every function so arising is properly defined to be either a function increased in proportion to the increase of excitement as contained within its boundaries, or as a function diminished in proportion to the deficiency of the same excitement, without limit, or to the ultimate increase of exciting power beyond the stimulant range ; in the last of these cases it is a most proper definition

(*a*) This is, perhaps, the first philosophical performance in which care has been taken to keep clear of abstract causes. The prosecution of them has contaminated almost every department of knowledge that had been treated scientifically. See the introduction to my Observations on the principles of the old Systems of Physic, &c. where it will appear, that even the great sir Isaac Newton did not altogether avoid this error, especially in the question he put, however modestly, with respect to an all-pervading æther ; the wanton aerial theoretical fabrics that have been raised upon which, have, in spite of lord Bacon's better directions, disgraced the philosophy of the middle of the eighteenth century. Compare what you will find in that book with the III. Chap. paragraph XVII^l. in this.

(*b*) I know not what the abstract state of muscular fibres is, either when they contract and relax with rapid, violent, and morbid force, or when they remain immoveably fixed in one forcible permanent contraction : But I know, that nothing but debilitating powers produce these effects, and nothing but invigorating ones remove them, which is enough for me, who mean to prove myself a sure and cautious observer of the phenomena of nature ; and in my practice as a physician, to avoid, after the example of many others, groping in the dark under the guidance of abstract reasoning, but to view every subject of observation by nature's clearest light.

definition to say, that the function is diminished ; and in the first, that it is increased (c).

CCXXX. The

(c) In the spasmodic and convulsive state of the function of motion, when compared with the vigour of the same function in its healthy state, who would say that the former is greater than the latter ? The healthy and vigorous state of motion consists not in the degree of the contraction, but, with a certain degree of that, in the well proportioned alternation between contraction and relaxation ; of which we have proof indisputable in this mode of motion being best performed in that middle state of vigour, that intervenes betwixt the extreme of the healthy, or moderately increased vigour, and the other extreme of direct or indirect debility. The increase of vigour and excitement keep pace to a certain extent, even through some degrees of morbid excess of the latter : but a period, and that short of indirect debility, arrives, as in peripneumony, where the excitement is increased beyond the healthy state, and must be reduced in order to restore the due healthy vigour. There are other cases, as that of mania, or Athenic insanity, where the conjoined increase of vigour and excitement will still go further. But in every case the increase of vigour, still judging of it from its effects in the healthy state, ceases before that of excitement ; and, perhaps, we may make a step towards finding the boundary, by observing, that the greater sum total of excess of exciting power is, the sooner does the point arrive, beyond which the vigour does not proceed. In peripneumony it ceases at a certain period of the disease where the salutary effect of bleeding and other debilitating means shows that the increase of excitement is still going on. But here the sum total of excitement, considering the state of all the other functions, is greater than in mania, where the function chiefly increased in vigour is only that of voluntary motion, while all the functions of involuntary motion are very little affected. From this investigation we can clearly discern, that every increase of excitement leads to a morbid increase of vigour, and that there is, somewhere or other, a point in the scale of increasing excitement, and below the point of indirect debility, where the vigour is no further increased ; and this inference arises with respect to the practice, that we should be very observant of both facts, as pointing out a very material distinction in the indications of cure ; that in indirect debility being to stimulate, while that at the cessation of vigour is to continue to debilitate till the sum total of excessive vigour be reduced to the proper and healthy. The inability to the performance of motion in peripneumony is an instance of the latter ; that of the conversion of the same disease from excess of debilitating cure is an instance of the former.

CCXXX. The notion, therefore, hitherto received with respect to these motions, is false. It goes upon the supposition (*d*), that the motions proceed from an excessive influx of the nervous fluid, according to the first manner of expression (*e*), or of the nervous power (*f*), as they now speak ; that is, if the words have any meaning,

(*d*) Indeed they have talked so confidently of it, that they may more justly be arraigned of going upon a *petitio principii*, or that error in logic, where a point chiefly required to be proved, is taken for granted, and made a ground work of other reasoning.

(*e*) From a microscopical observation of Leuenhoeck, where he once thought he saw a hollow cavity in the nerves (but could never see it again, nor any body after him, though that instrument has been infinitely improved since his time), the celebrated Dr. Boerhaave took his noted intertexture of vessels, making the whole mass of living bodies consist of such. The functions were, at that time, supposed to depend upon an inelastic fluid secreted in the brain, and distributed in the cavities of the nerves, to every part of the system. Much reasoning has been employed in refutation of that beautiful, though fanciful, system. But the only reason, that should have been employed against it, was to deny the truth of the hypothesis upon which it was built ; and that negative argument might have been supported by this positive one, that it is now known, that the nerves are solid substances, and not hollow tubes. The next theory that was taken up was, that though the nerves were solid substances, yet they were porous, and, therefore, fitted to receive into their pores an elastic fluid, like the electrical, the magnetical, and like, or rather a modification of, the supposed æther of Newton ; that this inelastic fluid also floated upon the surface of the nerves, and formed an atmosphere around them, and by it all the functions of living systems, even those of the most perfect, the human, were explained. For a full account of it see the Preface to the Observations on the Principles of the old Systems of Physic, from page 19 to page 58. Among other applications of the æther, under the denomination now of nervous power, one was to make its influx into the muscular fibres affected with spasm, or convulsion, the cause of these morbid motions ; as its influx, as an inelastic fluid, into the hollow cavities of the nerves, had been before supposed to afford the same explanation.

(*f*) That was their word, after an ingenious philosopher in Edinburgh, whose dissertation upon this subject is given at full length in the place of the Observations referred to, had ridiculed them out of their æther.

meaning, from an excessive excitement in the fibres (g). Now as, according to the logicians, "error draws on error;" so this false notion of the abstract cause led to another mistake with respect to the operation of opium. And as they senselessly enough supposed excessive motions to be occasioned by an excess of the principle of life, at least in the labouring parts, so they either thought, or taught, that opium possessed the virtue of checking or allaying, as a sedative, these motions; an hypothesis contrary to the whole analogy of nature, and to the certain proof afforded by all the exciting powers, every one of which has proved to be stimulant, not one sedative; but though it should be a question whether there be not in nature, or among those powers, that are commonly applied to animal bodies, something sedative, how can there be any uncertainty as to the stimulant power of opium? Has it not the same effect upon the Turks, that wine has upon us? Or, are we to suppose, that the troops of that people, on their march to battle, chew opium, to check their natural alacrity, and to depress their courage? If fevers, if the gout, if indigestion, if the colic, if asthma, and the whole train of spasmodic and convulsive diseases, in fine all asthenic diseases, have lately, to the conviction of every person who has given the subject due consideration, and, contrary to the expectation and opinion of all men hitherto, been proved to yield to the various forms of opium without difficulty; and if all the diseases, in which it is serviceable, have been demonstrated to be affections depending on debility, are we to allow that opium proves of service, by an operation

(g) It is here to be observed, that the change of the theory here has led into a vagueness of terms. It might have been proper, had the notion of either an inelastic, or elastic, fluid, been retained, to have called the supposed cause of the function a fluid, and to have talked of its influx as such; but now that we know nothing about it, or whether it has any existence at all, to call it a power, and yet to talk of its influx or efflux, its flowing in or out, is surely vague and incoherent.

eration that is further debilitating, or rather that extinguishes the miserable remains of nature's motions? If various kinds of wine, and other strong liquors, have a very great effect in removing the same diseases, which has likewise been discovered by late experiments, and are, therefore, beneficial by the same mode of operation as opium, are we to allow that this similitude of operation argues a diversity, nay an opposition in the nature of the powers that agree, with such harmony, in producing the same effect? Lastly, if opium cures diseases, that depend upon a confessed deficiency of motion (*h*) as well as diseases in which the motions, though seemingly increased, are in reality diminished; what can be opposed to so cogent an argument, added to so many strong ones already advanced? In truth, opium is not a sedative; on the contrary, as it is the most powerful of all the agents that support life, and that restore health, and a truly blessed remedy, to the divine virtue of which the lives of so many mortals have been owing, and, in future, will be owing; so it must be acknowledged, that spasms and convulsions, over which it has such great power, do not consist in increased, but diminished excitement, and that opium cures them by the same operation by which it cures any other of the diseases depending upon debility.

CCXXXI. Sometimes in diseases there is a preternatural flow of blood. Thus in sthenic diseases blood drops from the nose; is sparingly expectorated from
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(*h*) In one fit of the gout, when its paroxysms were allowed to return, in consequence of a disrelish that I had taken for a certain stimulus of the drink kind, and, therefore, all at once abstaining from stimulus, I fell into a state of perfect inaction, and, though without feeling of pain or uneasiness, so devoid of muscular force, or capability of producing any motion or exertion, that even the slight degree of muscular contraction necessary to support my posture in bed failed. In that state, when my eyes were glazed, the whole dangerous paroxysm was removed by changing my drink into a more agreeable one; any strong drink would have answered, and opium best of all.

the lungs; or tinges the urine. The first and last of these three are considered as critical signs; but they indicate only an abatement of sthenic diathesis, and a disposition to indirect debility. This effect, for the most part, soon goes off, leaving behind it a state of convalescence. Soon afterwards health is re-established, for indirect debility is seldom induced to any considerable degree.

CCXXXII. Great and continued discharges of blood, whether from the uterus, from the anus or its vicinity, or from the nose, depend upon pure debility (*i*). An overproportion of blood, violently distending the vessels, and establishing indirect debility, may sometimes be the primary cause. But, in this case, if no other debilitating, particularly no directly debilitating power, has co-operated with the cause; if the discharge be stopt by a stimulant plan of cure; if the body is strengthened, and the laxity of the vessels taken off; the whole affection will soon disappear, and health be restored. On the contrary, when indirect debility has
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(*i*) These are the several hæmorrhages of systematic and nosological authors. They have hitherto been supposed to depend upon sthenic, what they call phlogistic diathesis, and the particular discharge to be supported by an activity, an effort, what they call a molimen hæmorrhagicum, in the vessels pouring out the blood and the parts of the vessels immediately behind. Their continuance was accounted for upon the supposition of there being an overproportion of blood in the system, or what is commonly called a plethora; but they are all asthenic diseases, depending upon relaxation and atony both of all the rest of the vascular system, and particularly of the bleeding vessels, (see above, CXXXIV. 10.) and, instead of a plethora, there is a penury of blood; all which is proved by the phenomena during the predisposition, when little food is taken in, and less, upon account of the weakness of the digestive organs, is digested; these circumstances are increased after the arrival of the disease. The pulse withal is weak, small, and frequent; and the patient puny and emaciated. The disease is increased by bleeding and other evacuations, and both relieved and removed by wine, spirits, and diffusible stimuli; a method of cure which, till within these fifteen years, would have startled all the physicians upon earth.

not taken place, and directly debilitating powers have been applied ; such as those just described, more especially, if the diseases are treated by bleedings and other evacuations, if abstinence, vegetable food and watry liquids have been employed ; in this case the complaint becomes chronic, troublesome, and at last dangerous or fatal. That these affections depend upon debility, is proved by the failure of the debilitating, and the great success of the stimulant plan. The true cause of discharges of blood is not plethora, which cannot take place in the case of persons ill nourished, from water drinking, or the application of other noxious powers, that equally destroy the tone and density of the vessels (CXXXIV. and 10.) For as food is almost the only material, from which blood is formed ; how, when it is withheld—in the absence of the cause—can the effect remain ? And, if, when the debilitating effect of other noxious powers, the food that is taken is not digested, how can there be an over proportion, and not a manifest deficiency of blood ?—But it may be alleged, that loss of blood, and every debilitating power, diminish perspiration, and that hence the quantity of blood is increased.—But how, I ask, can this effect be produced ?—The matter, from which the blood is made, it may be answered, is taken into the stomach, and a smaller quantity of fluid passes off by perspiration,—But, 1, little food is taken in ; and 2, that little is not digested (k) ; 3. after the serous part has been separated

(k) No idea in medical writings seems ever to have been formed of the body as a whole. On the contrary, nothing has been more common, than to talk of the functions as operating in a great measure, each from a cause existing within itself, or but slightly and arbitrarily connected with some other. This false notion was carried to its most ridiculous pitch in the doctrine of sympathy, and not rendered much more decent, after the word consent of parts came to be substituted in its place. Thus, the common expressions were the sympathy or consent of the stomach with the head, of the stomach with the face, of the stomach with the

ed from the red, will it, if detained and carried back into the circulation, again become blood? Should these questions, to which there is no possibility of replying, seem to leave any room for doubt; are we to believe that one part of the body can be in such a state of vigour, as to produce an over proportion of blood, and another in so languid a state, as not to be able to discharge a substance derived from the blood, and afterwards corrupted by the due outlets? And must we, giving up our fundamental principle after so complete an establishment of it, allow, that the excitability is not the same, uniform, undivided property over all the system; that the powers acting upon it are not the same; finally that matter can be created out of nothing (1)? It is in vain to talk of the fattening of chickens

the external surface, of the latter with the internal, and particularly with the intestines, of the excretions with each other, of the feet with the kidneys, and so forth. It was never dreamed, that there was one over-ruling principle throughout, upon which all the functions depended. The stomach, for instance, cannot be strong while the perspiratory organs are weak, and therefore take in and digest too much while they cannot throw out their fluid.

(1) It has been proved in the IVth chapter of Part I. that the excitability is one uniform, undivided property over all and that, in whatever part of its seat it is acted upon, that action extends instantaneously over all; that though some parts, differently upon different occasions, may be more acted upon than any other, equal in size and nervous importance, that that is only in so insignificant a proportion as to have no effect in constituting an inequality of action in the system. Again the force of the powers that act is a given force, being either weak, in due proportion, or excessive, or weak again from ultimate excess. Their effect then upon the system, which receives their action in every degree in which it is communicated, and that with the utmost exactness, must always be the same, that is, either direct debility, health, sthenic diathesis, or indirect debility. To apply this to the present case, the stomach cannot be healthy, or under a predisposition to sthenic state, and thereby take in and digest, with the help of the other digestive organs, too much of the matter, from which blood is made; while the perspiratory vessels are too weak to perform their function of throwing off the excrementitious matter. On the contrary,

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chickens and cattle by keeping them in a state of rest. The condition of health and disease is very different. In the former there is a certain latitude in the strength of the stomach; in the latter, and especially in diseases of debility, the digestive powers always suffer much. In fine, it is an universal and constant effect of debility, to produce a deficiency of the fluids in the internal parts of the system with a general relaxation of the vessels, especially about their excretory terminations, and a discharge of the fluids by some of the out-lets. When death happens during an entertainment, the event is not to be imputed to an over proportion of blood. That cannot be produced in so short a space of time. The liquor drunk has no effect in filling the vessels. Those only, who are in a state of direct or indirect debility, meet with such an end; never persons, who have an over proportion of blood; which, as the appetite of the former is gone, and the digestive powers destroyed, cannot be produced.—In what diseases was plethora supposed to take place? Not in disorders, in which

the state of the stomach must run through the whole living system. If it can perform its functions properly, or in whatever degree it performs it, all the other organs of digestion, the upper part of the intestines, the biliary vessels, the lacteals, the veins betwixt their common trunk and the heart, the heart through all its cavities, the whole arterial system, and the colourless terminations of that system, whether exhalant or glandular, and the excretory orificies of these, the inhalants, and all the venous blood returned by the arteries, lastly, all the excretories upon the external and internal surface, all these will perform their functions in the same degree as the stomach whether properly or imperfectly. To promote the most perfect health all the exciting powers must be applied, each in its due proportion. And the want of any one or more may make some odds, which is insignificant to this point. If a person has not had his usual exercise a cheerful glass will prepare him for sleep. For want of the same exercise the appetite will be impaired, but so is the function of perspiration. Too much exercise under heat will impair the appetite, but it also impairs the perspiration after a person gets into a state of rest. In short, any slight inequality from want of any one or more stimuli can be made up by others. See above par. XII.

which the digestive organs, and those that produce blood, in fine, in which the whole system, are in a state of vigour ; where the appetite is keen, the digestion perfectly performed, and the digested matter completely converted into blood ; but in diseases, in which upon account of the debility propagated over the whole body, all the functions are in a state of languor, and in which the only matter, suited to make blood, is either not applied, or not assimilated. Thus, the gout, apoplexy, epilepsy, palsy, asthma and hysteria, indigestion in persons, who have been formerly addicted to luxury, those very diseases, which are our present subject, nephorrhages, as they are erroneously called, lastly, the far greater part of asthenic diseases, have been thought, at all times and by all physicians, to depend either upon plethora with vigour, or plethora with mobility. But in fact all these diseases, even those accompanied with discharge of blood, depend upon a penury of blood and upon other debilitating powers ; this appears from the constant failure of the antisthenic plan of cure to the great disgrace of the profession, and from the incredible success of the new stimulant plan. As to discharges of blood, consider whom they affect ; consider also the exciting noxious powers, and the symptoms. During the whole period of predisposition the patients are delicate and weakly ; they have very little appetite, and what food they take, is ill digested, and often rejected by vomiting. In this weak state they are not supported by the stimulant operation of corporeal, or mental exercise ; nor by that of high spirits, for they are quite dejected ; nor by that of pure air, which they are not able to go out to take ; nor by that of agreeable sensation ; nor by that of strong liquors, which from the wrong advice of their physicians, they look upon as poison ; nor by that of the distention of the vessels, for these are not sufficiently filled with blood ; nor by that of the secretory small vessels, upon account of their sluggish motion, and the universal stagnation of
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their degenerated fluids and the direct debility constantly thence arising. What sort of pulse have they? Such, as it is in all diseases of manifest debility; for instance, in fevers, (in which last, which is surprising, their favourite plethora was seldom suspected); small, weak, very quick, and almost empty. What is the state of their intellectual faculties, of their passions, of their bodily functions, of their powers of voluntary and involuntary motion? All are weak, all feeble, all such, as show, that they have not a third part of vital power to support them. What, on the contrary, is the state of those, who abound in blood, and yet never experience such discharges? They are strong and full of vigour in all their functions, have a ruddy countenance, sparkling eyes, strong, hard, and moderately frequent pulse. Their appetite for food is keen, the quantity they take is large and well digested. Such persons may experience droppings of blood of no consequence, and yet not often; but they will have no discharges of blood. And it is in perfect consistency with all that has been said, to add, that the various forms of strong liquor, particularly spirits, are surprisingly efficacious in discharges of blood, in spite of contrary prejudices: But the preparations of opium(*m*) and the other diffusible stimuli

(*m*) Opium, though much used in the cure of certain symptoms of diseases, was never understood by those physicians, who, in books and lectures assumed to themselves the province of directing the profession of physic. Every property they assigned to it was the reverse of the truth. Instead of allowing it to be the strongest stimulant in nature, they made it a sedative; and, though they found great difficulty in finding a single sedative more, to help to make out their catalogue of a class of such bodies in nature, they were confident that it was one (see above, CCXXX. and the notes.) Another property they ascribed to it was that of bringing on sleep: whereas, it is the most powerful body of all others in producing and keeping up the watching state (see above, XXX. XXXI. note (*f*)). They also assigned it the virtue of allaying pain; but there is a kind of pain, that it increases, and, besides that,

stimuli are still more efficacious. This proves to a demonstration, that in discharges of blood there is no excessive activity, no hemorrhagic effort as it is called, but on the contrary, that there is a falling off of the natural moving force. Hemorrhages, then, which have been the subject of so much false explanation and false denomination, should be rejected from the number of sthenic, and transferred to the asthenic diseases, under the title of *Hæmorrhææ*.

CCXXXIII. If any person be seized with a cough at first rather dry and bound, then more moist and free, and afterwards accompanied with large expectoration;

that, aggravates every other symptom of the disease. They never could deny, that opium was exceedingly improper in inflammatory diseases, that is, the several sthenic diseases with affection of a part whether inflammatory or catarrhal. And wherever they found it of service in pain, they might have perceived, that such pain was different from what they called inflammatory, or our general sthenic pain. The truth is; it is not a palliative of pain, but a remover of its cause, as often as that depends upon debility, while it as certainly aggravates every other. The pains, that opium is calculated to remove, are all these, that depend upon general asthenic affection, as those of the gout, of chronic rheumatism, that of the gangrenous, as well as the putrid, sore throat, all spasmodic and convulsive pains, all pains from pure debility, as in the legs, ankles and soles, or in any part of the skin, nineteen head-achs out of twenty, which are in that proportion asthenic; the pain of any deep-seated sore or gunshot wound after every degree of sthenic diathesis is removed from the habit. It is an equal remedy against the asthenic inflammation whether local or general, as preventing their tendency to mortification and sphacelus. Nay, when these latter states have come on, it is a most powerful means of removing them, and of correcting the degeneracy; for the effecting of which the bark had so often failed. All this is the discovery of the author of the *Elementa*, though the credit of the last and smallest part of it, from their ignorance of the high merit of the whole, they have shown a disposition to give another, a gentleman and eminent author in London. But a treatise on the gout, with a full account of all the virtues of opium, will soon be presented to the public, in which all this will be cleared up. Blessed as opium in all these cases is, it is equally bad in all sthenic ones.

tion ; if the hoarseness at first is deep, and afterwards slighter, in proportion as the cough becomes more and more moist ; if the chest all round, over the whole region of the lungs, is distressed with a degree of diffusive pain ; if there is either no vomiting, or vomiting occasioned only by a cough with expectoration, and without any spontaneous tendency to return ; if the strength is otherwise good, and the pulse strong, full, more or less hard, and not much exceeding the frequency of a healthy pulse : his case will be found to be sthenic, and to depend upon heat and stimuli. It is to be cured by cold and debilitating remedies (*n*). The cause of these symptoms is a high degree of sthenic diathesis over the whole body, higher on the external surface of the body, and especially in the throat, which is a part of that surface. These symptoms, in whatever case they occur, are to be explained in the same manner. Consequently, the catarrhal symptoms, which are essential to measles, admit precisely of the same inference ; and, as well as the whole disease, are to be understood to arise from excessive excitement, and to be curable by the debilitating plan. The same judgment is to be formed of the influenza. In all which cases it is easy to ascertain the truth. Give a glass of wine or brandy or a little opium ; the hoarseness will increase, the cough will grow harder and more bound, the expectoration will suffer a temporary suppression. Give a large draught of cold water, and all the symptoms will be relieved. It often happens that a person troubled with a cough shall sit down to drink wine, and be freed from his cough in the course of the circulation

(*n*) See CXVII. CXXVIII. CXXXIV. and all the debilitating powers throughout the whole chapter ; while all the stimulant ones in it will be found to be such as contribute according to their degree of stimulus towards the production of the morbid effect, which makes our present subject.

culatation of the glass (*o*). The reason is, that asthenic diathesis was the cause of the cough; which diathesis the wine removed or changed into a temporary sthenic diathesis. Often at the end of a debauch in drinking, this kind of cough will return with great violence, because the sthenic diathesis by this time has made considerable advances. It may then be cured by drinking a tumbler or two of cold water, and relinquishing wine: that is to say, by checking the excess of excitement.

CCXXXIV. From this account it appears, that certain symptoms, commonly supposed to be the same, are however of a diametrically opposite nature (*p*); as will

(*o*) Whenever his cough is cured he should stop; as the carrying the stimulus too far will endanger the return of the cough from a very opposite cause. The cough at first, suppose, to be from an excitement as 26; its cure to be brought about by an excitement at or above 40; the return to an excitement at or above 60 will bring on a sthenic cough.

(*p*) This mistake of symptoms in consequence of judging of their interior nature from the similarity or dissimilarity of their appearance is the false idea, upon which the whole fabric of a department, lately introduced into the art of medicine, has been reared. It is to be observed, that symptoms the most similar to each other in their appearance are, in reality, the most different, and those, that have the least resemblance in their appearance, have the nearest affinity in their interior nature, and indeed are one and the same, with no other difference, but a difference of degree, and even that often very slight, sometimes next to none at all. The great variety of symptoms that distinguish the whole form of asthenic diseases affords as many proofs of the truth of this proposition, as the instances of dissimilarity or difference in opinion are numerous. What can be seemingly more opposite than diarrhœa and colic, than typhomania and coma, than epilepsy and general dropsy, than the cold and hot fit of agues, than spasmodic and convulsive affections compared with those in which there is no fault in the motions either as to excess or regularity, than the several degrees of morbid diminution of menstruation down to the actual suppression, and the several degrees of the morbid increase of that natural discharge till its flow, at last, attains its ultimate excess both in degree and duration? And, with respect to febrile and non febrile diseases, what can be more similar than

will be further evinced by a fuller explanation. If, therefore, any one has a violent cough, and great expectoration, at first with hoarseness, and afterwards, through the whole course of the disease, without hoarseness; if he is of a very advanced age, or arrived at the last stage of life; if he is of a weak habit; if his pulse is neither strong nor full, but very quick; if this concurrence of symptoms has been preceded either by direct or indirect debility, as usually happens in the case of abstemiousness and water-drinking, on the one hand, or of a long course of ebriety, and a life of luxury, on the other; you may be certain, that all these symptoms are asthenic, and that they may be removed by stimulant remedies.

CCXXXV. The

than a slight synocha or inflammatory fever and a typhus in the same degree, which, yet, are diametrically opposite both in their cause and cure? What can be more dissimilar than the various phenomena of fevers of the intermittent kind, through all their degrees of intermitting and remitting, and those of the more continued kind? And yet they all arise from causes highly debilitating, and are effectually removed by remedies equal in their degree of stimulus. In one word, to show the insignificance of the distinction of diseases into febrile and non-febrile, and, when the degree of debility constituting the cause in both, is considered and compared; is there any reason for separating the high dropsy, the high dysentery, and sinking cholera from their place betwixt intermittent and remittent fevers and the most continued kind? Lastly, what two things can be more like one another, than a crowded distinct and confluent small-pox; or than the common inflammatory sore throat, and that which was lately described (see above, par. CCXII.) Such have been the ideas, that have guided the directors of the art of medicine in their inquiries into the natures, causes and cures of diseases. If botanists and natural historians, by all their artificial methods of arrangement, have made little progress in exploring the true nature of their subject, and on the contrary, with scarce a single exception, have confounded it; if it was ridiculous to unite into one genus a man, a monkey, and a bat, how much more absurd was the attempt to arrange the mere qualities of matter in the same way. Yet upon this hopeful employment has John Bull expended vast sums of money, while he left the most solid and important departments of science neglected and covered by the dirt under his feet. We have too little useful science yet, it is time to improve our scanty store (see the Introduction to Observations, &c.)

CCXXXV. The explanation of the dry cough is easy, and indeed the same as that cough before given (CLX.) The origin of the cough and of the expectoration is just the reverse (CXXVIII. CLXI. and particularly CXXXIV.) For whether the system has been weakened directly or indirectly, as the excitement over the whole body is extremely diminished, and the debility in every part is exquisite; the tone, and in proportion the density, will be every where diminished in the vascular system. The diminution chiefly takes place in the terminations of the arteries, that are most remote from the centre of activity, and above all other parts of the vascular system, in the perspiratory vessels (LIX. LX. LXI.) When all this has happened, the quantity of fluid thrown up by expectoration is incredible. Indeed, though it has never been attended to, it is not inferior to the greatest profusion that ever takes place in consumption, and even exceeds it.

CCXXXVI. The cure, however, in all the cases that depend upon direct debility, is by no means difficult (*q*), unless the disease has proceeded so far that life

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(*q*) I have experienced such a case more than once, and have seen and treated it in great numbers. It is sometimes a part of the concurrence of symptoms, that form that asthenic case of disease, which is commonly called fever. A gentleman, under or about the thirtieth year of his age, had been ten days in a typhus fever, occasioned by extreme cold, succeeding to the debilitating effects left upon his habit by too great moderation in his diet, and, certainly, not a good choice of the different articles of it. To aid the debilitating effects arising from these, he had experienced all the extremes of heat and fatigue, that fall to a soldier's lot, in very warm countries. He was, over and above, of a small size, slender and emaciated. He had also, from his infancy, been affected with a short cough, sometimes dry, and sometimes with a little expectoration. During the treatment, he had been more than once bled, though his disease had ushered itself in by a profuse discharge of blood, which suddenly took him as he was on a journey in a cold day of about 44 miles in a carriage. He was vomited, purged, blistered prodigiously, and clystered. The

whole

is now approaching to its end. The cure, however, is a good deal more difficult in the case of indirect debility, because there is no other expedient but stimulating, to remove a disease occasioned by excess of stimulant operation (CIII.) Nay, the same debility, as shall hereafter be shown, produces the same relaxation both of the bronchia and of the rest of the body, but it does not always produce consumption. With this profusion of expectoration appearing sometimes in the form of fever, sometimes in that of gout, the physician has often a long struggle with his diffusible stimulants; but he, at last, produces a complete restoration of health, and thereby leaves not the least suspicion of local affection in the lungs, which is so much the object both of the faith and fear of physicians (*r*).

I. When

whole force of the old plan of cure was exhausted upon him, and he so exhausted by it, as to be given up for an incurable of two diseases, a bad fever and rotten lungs. His face was hippocratic, he had the dead rattle, and his cough and expectoration were assiduous. By the stimulant new plan of cure he was put out of danger in ten days, and set upon his feet in as many more.

(*r*) A description of this disease, in which the lungs are supposed to be affected with ulcers or tubercles, has been given in the note under this paragraph at (*q*). But, as the subject is both as new and interesting as any in this work, it may be proper to give a further illustration of it by the exposition of another set of facts. Both in persons liable to the gout, and other asthenic diseases, sometimes of direct, and at other times of indirect debility, and especially in those who have been much exposed to cold, without the debilitating effect of the cold being overcome (CXXII.) by an alternation with, or succession of, heat, and in very many old people, especially among the poorer sort, who have been, and naturally are, much exposed to various debilitating powers, there is often, especially in winter, a very great cough and expectoration. This sometimes goes to such a height as to give suspicion of the affection of the lungs just now spoken of. But the completeness of its cure, which, when it arises from indirect debility, is effected by the use of animal food, avoiding vegetable and fish, and by good wine and diluted spirits in moderate proportion at a time, but frequently repeated, avoiding claret and other French wines and all four and all beer-drink, unless
perhaps

I. When the fluids are not sufficiently agitated, they are proportionally more imperfectly mixed, and therefore in a vitiated state. But in the terminations of the vessels, which are at a greater distance from the centre of motion, they often stagnate, and undergo some change. This effect is not produced by heat only (CXV.) but by cold also (XVII.) and by all the powers that debilitate in an equal degree.

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perhaps a little warm porter in cold weather, and a very moderate use of diffusible stimuli, keeping the feet and the body in general moderately warm; shows sufficiently, that there had been no local affection in the lungs. When the debility of the disease is of the indirect kind, in which the cure is more difficult, there is, still, as little reason to be apprehensive of the pulmonary or any other local affection. For the cure of it also proves the contrary. In it the means of cure are to change the forms of stimulus, and to proceed from the use of the stronger to that of the weaker, till at length the patient can do without much of the very strong ones. (See above, par. XCIX. and those that follow.) When the disease cannot be overcome in that way, the excitability must be understood to be worn out, and life come to its end; but still from general debility, not local disease. For, if ever any local affection does appear, it is always the last effect, not the primary cause. In this way I lost two gentlemen, after having been able to support them for many weeks, when the prognosis upon the common practice did not allow them as many hours. The cause of their indirect debility had been hard drinking. But even in those, who die of a confirmed consumption, there is not often reason for the suspicion of the tubercles in the lungs. Their bodies have been opened after death, and the lungs found quite sound. And in the dissections, where the tubercles have been found, still they were only an effect.

C H A P. VII.

Of sleep and wakefulness, salutary and morbid—Sleep from lessened excitement—Ordinary stimuli produce sleep by gradually exhausting the excitability—Morbid sleep from direct and indirect debility—Healthy wakefulness how the effect of stimuli—Instances of morbid sleep—How stimulants cure both morbid sleep and watchfulness—No specific soporific virtue in opium—In what circumstances it induces sleep—Sleepiness attending affections of the alimentary canal—Good sleep, what.

CCXXXVII. AS death closes all the labours of life, so sleep closes those of every day : and, as the former is the consequence of a perfect extinction of the excitement, either from a complete exhaustion or extreme abundance of excitability ; so the latter succeeds a diminution of excitement, during which the excitability is either, 1. only so far diminished that it can be accumulated again ; or, 2. so abundant, that the excess can be wasted ; and, in each case, the excitement restored.

CCXXXVIII. Such is the nature of the excitability of animals, that it can neither be deficient nor over-abundant, without detriment : a deficiency producing indirect, and a super-abundance, direct debility. And, as any exciting power, carried beyond its boundary, (XXVIII.) produces the former, and the withholding of any gives occasion to the latter ; the same proposition holds good of the excessive or too sparing use of any of them, or of all (*a*). Sleep, then, is the effect of
our

(*a*) This is completely illustrated through the whole first chapter of the second part, from par. CXI. to par. CXLVII. inclusive. Nay, the proposition is constantly alluded to through the whole that has yet been said, and will be in what remains to be said.

our actions during the day, at first giving always more and more excitement, afterwards less and less, in proportion to the continuance of their operation, but so as always to afford some excitement, till the person arrives at that state, where the degree of excitement, necessary to the waking state, no longer exists. Of this we have the most certain proof in every day's experience, and in the common effect of all the exciting powers to produce sleep (*b*).

Thus,

(*b*) To illustrate this, let us take the exciting powers one by one, and begin with wine. When a person is insufficiently excited with respect to that stimulus, and rises not, suppose above 30° in his excitement, a glass carries him up 2° , another 2° more, and so forth, till after five glasses, and their effect in carrying him up to 40° , he finds himself well and vigorous in all his functions. But, still, we are not so flimsily made, as not to bear a little of what is either too much or too little. Suppose him then to take five glasses more, and, consequently, to be raised to 50° , or 10° above the standard. As his spirits, his intellectual, and all his other, functions, were low, while his excitement remained below 40° , so they are all proportionally exalted by the time that his excitement is elevated to 50° . Let him still go on, and his intellectual function will rise still higher; he will now display the full extent of his genius; his passions and emotions, of whatever kind, will rise in the same proportion; he will, in one word, be an example of the effects of Alexander's feast. Suppose, to bring him to all this, he has swallowed, besides those he had before, other five glasses. Let him go on, till he has taken five glasses, more, and we shall see the effect: In the course of time, employed in taking these, he gradually falls off in his spirits, in his intellectual, and in his corporeal, functions; his tongue, his feet, his eyes, his memory, his judgment, all fail him; he, at last, becomes drowsy, and then falls fast asleep. The same is the progress of excitement as it arises from labour or exercise through the day, whether of mind or body. The same is the effect of the stimulus of eating, especially nourishing stimulant things, and in great plenty. Before dinner, the occupations of the former part of the day are not yet sufficient to prepare one for sleep; which, however, after a heavy dinner, will, unless the interference of some other stimulus prevent it, very readily happen to most people, especially to those, whose frailty, from age or any other cause, renders them more liable to be fatigued by the past operations of the day than others. The
younger

Thus, a certain degree of heat, food, drink, labour, either of body or mind, and passion and emotion, when their stimulus neither stops short of the proper point, nor goes beyond it, all give a disposition to sleep. This is the most salutary sleep.

33. Premature, unseasonable, or morbid sleep, is produced by either indirect or direct debility.

34. With respect to the former, an excessive operation of any one or more of the stimuli produces it; accordingly, any one or more of those above mentioned, by acting in excess, and wasting the excitability, such as hurried drinking, produce that effect.

35. Of the directly debilitating powers, which produce the same effect, the want, or sparing application, of the powers, which, by a due degree of stimulus, induce sleep, will induce a bad kind of it; accordingly, when a person wants excitement in order to be in health, the defect of light, of sound, and of the bodies that excite the other senses, the defect of both sets of motions, the voluntary and involuntary, as well as of the exercise of the mind, of passion, of heat, acting in
its

younger and more vigorous will be able to hold out to the end of the day; when they too, after having undergone the degree of stimulus necessary to give that waste of excitability that disposes to sleep, will be overcome by it. The very flow of the blood in the vessels, and the exercise of the involuntary motions, that keep it up, tend at last to the same effect. The same thing applies to the motion constantly going on in the stomach and intestines, as well as the motions that occur in all the secretory and excretory small vessels. Light, stimulating the eyes, and sound, the ears, and the several substances that act upon the organs of the other three senses, all tend, by wasting the excitability, to wear down the excitement to that point in the scale where sleep commences. And the process, in every case, is, first a low, then a higher and higher, then the highest, vigour of all the functions; which, again, gradually falls till its termination in sleep. We have, therefore, after viewing their effects singly, to suppose them, in one degree or another, united, and sleep the finishing effect of their united operation.

its stimulant degree, and too long continued sleep itself, all these produce hurtful sleep (*c*).

CCXXXIX. On the contrary, healthy wakefulness is the effect of the suspension of the diurnal actions during the period of sleep, which takes off more and more excitement, most at first, and less and less after; but always adds to the sum of diminution of excitement, and accumulation of excitability; that is, always continues to take off stimulus, till we have the degree of diminished excitement, and increased excitability necessary to the watching state. In this way does sleep prepare the system for the waking state; which is afterwards kept up, for the due length of time, by the several exciting powers, acting through the day, till at last, by a certain failure of their effect, sleep is produced again.

36. Too long or morbid watching is also brought on in two ways; by indirect and direct debility. Thus, intense thinking, violence of passion, excessive labour, unusual and highly relaxing heat, debauch in eating and drinking, great excess in the use of the diffusible stimuli, great abundance and velocity of blood; all, or any of these, bringing on indirect debility by an excess in their operation, are notorious for their effect in repelling sleep. Again, cold, not in that extreme degree which immediately precedes death; abstinence from food, or the use of food not sufficiently nourishing, or not sufficient to produce the requisite indirect stimulus; weak liquids, as tea or coffee, especially when a person has been accustomed to stronger; intermission of the usual exercise, whether of body or mind; shame, fear,
and

(*c*) Coma, or an insuperable disposition to sleep, is most commonly owing to the want of most of the stimuli mentioned in the text, as those of food, of wine, at least in the ordinary practice of cure, of good animal spirits, of the power of thinking in a pleasant exciting train, of a due quantity of blood in the vessels, of pure open air, of corporeal exercise, and of the absence of certain stimuli, that otherwise irritate in the weakened state, and produce watchfulness.

and grief ; all these, by their operation not sufficiently approaching to indirect debility, produce an undue or morbid state of watchfulness.

CCXL. As debility, therefore, whether indirect or direct, or both conjoined, produce sleep, the first sound sleep, the two latter an improper or morbid kind ; so an excess of debility, whether indirect or direct, is also a cause of improper or morbid vigilance. The only healthy sleep is that which is produced by a proper degree of excitement, occasioned by a proper action of the exciting powers upon the excitability ; all the extremes of excessive sleep, or excessive vigilance, are either so many tendencies to disease, or actual disease (*d*).

A person, fatigued with his usual exercise, is immediately composed to sleep ; which, equally, flies from him who has had either less or more, than that middle degree (*e*).

CCLI. As

(*d*) Too much, or too long continued, sleep, is hurtful, because it implies a suspension of that excitement, to which proper health and due vigour is owing : it is, consequently, a state of direct debility. Too little sleep, or of too short duration, is of equal detriment, as implying a degree of excitability, not sufficiently accumulated to receive a sufficient impression from a renewal of the exciting powers. From the former arise most of the complaints of the rich and indolent ; from the latter, many of the diseases of the poor and laborious. As the action of the exciting powers should be adapted to the strength, a little indulgence in sleep is the safest extreme to the weak, as in the case of children, and persons labouring under debility.

(*e*) When a boy, I valued myself much for enduring the fatigue of walking : About the fifteenth year of my age I walked, in a summer day, from Berwick on Tweed to Morpeth, which, with two miles wandering out of the high road, I found to be a journey of fifty miles. But I got not a wink of sleep the whole night, from the excess of the exertion ; and the next day, so pained and enfeebled were all my joints, that it was with the utmost difficulty I made out the single stage from Morpeth to Newcastle, which was only a walk of fourteen miles. Some years after that, when I was now arrived at my full strength, and my joints perfectly knit, I walked and wandered in all sorts of ground, in roads and

out

CCXLI. As the effect of both indirect and direct debility is sometimes sleep, sometimes watching, both of them unhealthy, both hurtful : so the cause of morbid sleep is either sort of debility, when no stimulus acts upon the weakened system so as to throw it into a state of agitation : and debility of either kind, accompanied by such a stimulus, produces morbid watching ; in which case some small stimulus acts as an irritating power (*f*).

37. Instances

out of them, over smooth and plain, and heathy and mountainous tracts, from four o'clock P. M. to two o'clock P. M. next day, with only an hour's rest, and one hearty meal at betwixt ten and eleven o'clock in the forenoon, when I was now within six miles of my destination. The hills over which I wandered in the course of the night are those called Lammer-muir, situated betwixt East Lothian and the Mers : the places I travelled between in this rout were Edinburgh and Duns, the place of the nativity of the celebrated schoolman and metaphysician, John Duns Scotus, and that of my grammar education. In this great exertion I was sustained by a great stimulus, high animal spirits, and love. At the end of my journey, and finding myself among my friends, and with the object of my affection, I had vigour enough to dance with the latter. This time I slept well, and was perfectly recruited next day.

(*f*) Volumes have been filled with the doctrine of irritation as a cause of morbid state, and the indications of cure and remedies to remove it have been equally tedious and laboured. In sthenic diseases, rheogistic diathesis, instead of plethora and vigour (for the belief in which two last there might have been some foundation in that form of diseases, (see above from CXXXI. to CXXXIV.) has been the universal pathology ; and bleeding, other evacuations, and cold, the universal idea, or, as it is called, indication of cure ; and while they thought of no other method or means of cure for the asthenic form of diseases, the pathology, applied to them, was plethora with vigour or with mobility in other cases, and, in the febrile, irritation. By irritation they explained the startings of the tendons, the restlessness, the frequency of the pulse, typhomania or constant working, of so frequent occurrence and so noted a symptom in those diseases. But as we have proved, that the reverse of plethora and vigour is the true state of the system in every disease of debility ; so we assert with the same solidity of argument, and the same weight of proof, that irritation, considered,

37. Instances of morbid sleep occur in the predispositions to diseases, and in the actual diseases; that depend upon sthenic diathesis, and in the ordinary state of intoxication from drinking. But all the exciting powers, when noxious from excessive stimulus, each in proportion to its degree of excess, have the same tendency (*g*). But, when the exciting power proceeds beyond the sleep-inviting point; or when any stimulus, still finding unwaisted excitability to act upon, continues to act; in that case the watching will be continued with bad effect, as in the harrowing watchfulness, which is liable to accompany the phlegmasiæ.

CCXLII. Instances of morbid sleep occur in all the diseases of indirect debility, and in pains that have advanced to the same degree of exhausted excitability in the scale (*h*); as in the several cases of phlegmasia, that arise from the violent progress of the morbid state, or the

ed, either as the cause of morbid watchfulness or of any other symptom, is nothing that requires either evacuant, or any other debilitating remedies, to remove it. It is merely a weakened state of the system, thrown into flutterings from the slightest exertion of the ordinary functions, as when a person falls into tremors from noise, or into a sweat from walking a step or two.

(*g*) A heavy dinner, excessive fatigue from either corporeal or mental labour, a high fit of passion, and heat, are, each of them, noted for giving a disposition to sleep; which is an effect, arising from their high degree of stimulus, hurrying the excitement to that degree of waste in which the sleep-inviting point consists; and it will the more readily take place, that no exciting power, by still finding excitability to act upon, continues, therefore, to act, and prevent the sleep.

(*h*) This happens in the phlegmasiæ, where the effect, not only of the inflammatory pain, but of the whole diathesis, and of every other symptom, as well as that of pain, is to run up into indirect debility. The last part of debility, that ushers in a fit of the gout, is commonly of the direct kind; but the effect of the continuance of the pain is often sleep, the origin of which is indirect debility, its consequence an increase of the disease, and its remedy an interruption of the morbid sleep for the purpose of administering such diffusible, and other, stimuli, as have the effect of removing the debility which occasions both the sleep, and other symptoms of the disease.

the improper administration of stimulants for the cure; which is particularly exemplified in the dropsy of the breast, that often arises from peripneumony under such management. With respect to sleep from direct debility, women, who have had many children, who have often suckled, as well as all lazy persons, and those, of both sexes, who are addicted to luxury, and whose custom it is to sleep too much, are all liable to this sort of morbid sleep.

CCXLIII. When either direct or indirect debility produces sleep without refreshment (*i*), or a turbulent waking state, as the debility exceeds that in which sound sleep consists; the use in both these cases of a stimulus capable of repelling the former, and converting the latter into sleep, will remove the complaints, and serve for an illustration of the nature of both (*k*). In asthenic diseases

(*i*) Which often happens in fevers and many other cases of debility, besides those mentioned in the text (CCXLII.) and ought never to be encouraged, but repelled by every means of exciting the patient.

(*k*) Let the point of indirect debility, in which sleep consists, be as 15 degrees in a particular scale, and the greater debility, than that which either constitutes morbid sleep or morbid watching, be 20 degrees or upwards in the case of its being indirect, or 10 or downward in the case of its being direct debility. It is evident that, to bring on salutary watching on the one hand, or salutary sleep on the other, or to convert both into salutary sleep, if that be required by the circumstances, the deficient degree of stimulus must be administered; that is five degrees to bring up the excitement from 10 to 15 degrees, and as many for the purpose of renewing the worn out excitement by means of a new exciting power which may still find a portion of excitability to act upon, or to remove certain stimuli, which, however slight and mild, are fatiguing and disturbing to the system in its weakened state. Accordingly in fever, when the patient, amidst every sort of directly debilitating powers, had, besides, wanted sleep for ten days, a small portion of an opiate given him every quarter of an hour, in three hours time laid him asleep, which, in spite of an urgent cough and profuse expectoration, lasted for sixteen hours, and was followed by the most surprising relief. The continuance of this practice, with only an increase of the doses in proportion

diseases the watching state for the most part is the consequence of direct debility, with some power acting by a slight stimulant effect; the reason that the disease depends upon more debility than that which constitutes sleep.—Hence every thing that stimulates, every thing that raises the excitement as it were to that point, which

as the abundant excitability was gradually worn off, and alternating them with wine and beef soup, in ten days removed all danger. A child of three months had had no sound sleep for ten days, but had cried night and day from a complaint in his belly, which the ordinary practitioners would have called an obstruction in the mesenteric glands. A large dose of the tinctura thebaica, for the patient's age, was administered, which laid him in a profound sleep, that continued near 36 hours, and at once removed the disease. Numberless are the cases of a kind similar to this, where the morbid watchfulness was partly from direct, partly from indirect debility, that have been constantly removed by the same practice. A child of 7 years of age, in a fever of great direct debility in consequence of a most rapid growth happening during the disease, which was not completely removed till near the end of seven weeks, after having been under the disease near a fortnight, was effected with the most constant disposition to sleep, so sound that no noise or shaking of his body could waken him. The administration of the opiate repeated in small doses till the effect took place, kept him awake. Some time after, in the course of the same lingering disease, when he had not yet acquired any permanent strength, but was only better supported by the diffusible and other stimuli, than he had been till I was called in, his predominant symptom came to be great watchfulness, which was partly the effect of a certain, though not a great degree of excitement that the tincture and other cordial powers had given him. It, however, induced too great a degree of indirectly debilitating exertion for his still very weak state, and it, therefore became necessary to give him an addition of excitement to bring him to the state of salutary and recruiting sleep, and thereby to suspend the action of a number of exciting powers, however slight their operation was, which were too much for the enfeebled state of his system. In the cases of children, whose diseases are almost all sthenic, and in other diseases of high debility, the instances of such effects of the diffusible stimuli, (for more than one was employed upon this as well as many other occasions) are equally numerous and surprising. In a very large practice I am sure I never, in the very worst cases, lost three patients.

which composes the system to sleep, produces that effect by a stimulant, not a sedative, virtue. In a small degree of debility, where the excitement has fallen only a little below the point of sleep, a very small degree of stimulus is sufficient: such as a little animal food where the weakness is owing to vegetable food; wine, or any liquor of equal power, after a water regimen; consolation under affliction of mind; heat, when cold has been the debilitating power; gentle exercise or gestation, or the stimulus of a pleasant train of thought, when the patient has been deprived of the stimulus of corporeal or mental exercise. In a higher degree of debility (for the curative power should always be adapted to the degree of the disease) either a proportionally higher degree of the stimuli which have been mentioned, or some more powerful one, such as those, which are called diffusible, should be employed.

CCXLIV. In both these cases, the virtue of opium is great; its virtue, however, is not peculiar, or any other than what it possesses in common with all the other stimulant powers, from which it differs only in the higher degree of its (1) virtue. Thus in great debility

(1) The notion of some powerful remedies, as opium, mercury, the Jesuit's bark, &c. acting by an operation peculiar to each, and different from every other power in nature, was long prevalent in the schools of medicine. Those they called *specificis*; an idea, which, like many other of their vague conceptions, was altogether contrary to sound philosophy; since the more careful our inquiries into nature's operations are, the more and more reason have we to be convinced, that simplicity and uniformity pervade the whole phenomena of the universe. Accordingly, in the exciting powers that act upon the excitability of our bodies, we find only one action, that of stimulating, varying only in its degree, to take place in all animal as well as vegetable bodies, nay in every thing that we know to possess life in the universe. We also find, to the same extent, only one property in living systems upon which it acts, that is, the excitability; and one effect produced by the mutual relation betwixt them in that respect, to wit, the excitement. Instead of the distracted notion of vortices, or atmospheres in rapid motion, governing the motion of the planets, sir

bility as in fevers, or a violent fit of the gout, where there is much internal commotion, and in other similar diseases of debility, in which the violence of the disease keeps off sleep; opium, after the watchful state has remained many days, will often bring on profound and sound sleep: Here, as the excitability is much accumulated, and as very weak stimulants only are admissible, we should begin with the weakest and gradually increase them, till we arrive at the point of sleep, which will soon happen, as it is placed much within the range of direct debility. With respect to coma, or that sleep which is not refreshing; such is the effect both of other diffusible stimuli and of opium, that it converts morbid sleep into vigilance; vigilance, after a certain space of time, into refreshing sleep, and thus restores the patient safely, gently, and pleasantly, to health. But as the influence of the stimulant operation, that supports excitement, is of such great importance, and as sleep of longer duration than proves refreshing, may arise even from proper remedies, the rule to be observed is, whenever sleep, upon account of too long a suspension of stimulant action, has been of less service than was expected, to shorten its next period, and renew the operation of stimulants.

CCXLV. In asthenic diseases, from indirect debility, in which sleep is also kept off; in order both to restore it, and remove the other symptoms, and bring about the healthy state, other stimuli should be employed according

Isaac Newton found the whole planetary systems of the universe governed in their motions by one single principle. Instead of the infinite difference of habits and temperaments, I have found every individual precisely the same as every other. Whatever produces the gout in one, will produce it in another, prepared to receive its influence. And whatever cures it in any one, cures it also in every other; and so forth with respect to every other disease. The deeper we explore the works of nature, the more shall we be convinced of this wonderful simplicity, so that, to a philosopher, all nature would appear the effect of one single instrument in the hand of the all-wise all-powerful creator.

according to the degree of debility, and, when the degree of debility is very considerable, the diffusible stimuli, and among the rest opium.

CCXLVI. These are the times and circumstances in which opium produces sleep. In all the other states either of health or disease, it excites the functions both of body and mind, as well as of passion and emotion; so as to banish sleep, and produce great activity and vigilance. Thus if any one is sleepy without an evident cause, he will by opium be rendered surprisingly sprightly, lively, and vigilant; it banishes melancholy, begets confidence, converts fear into boldness, makes the silent eloquent, and dastards brave. Nobody, in desperate circumstances, and sinking under a disrelish for life, ever laid violent hands on himself after taking a dose of opium, or ever will. In one word, through all the intermediate degrees of excitement from direct to indirect debility, opium is by far the most powerful of all the agents, and as such must be the most hurtful in sthenic diathesis, because, when added to the other stimulant powers, it not only banishes sleep, but may suddenly induce indirect debility, and even death by exhausting excitability.

CCXLVII. That the debility, upon which coma depends, is less than that which supports morbid vigilance, appears from the former being less dangerous, and more easily removed; yet, when its duration is in any degree considerable, or when it resembles profound sleep, care should be taken to prevent direct debility; in which case recourse should be had to the different forms of wine and opium, in order to raise the excitement to that degree, which repels the sleepy state, produces more strength, and facilitates the return of health (*m*).

CCXLVIII. In

(*m*) Physicians have had a more favourable idea of coma, or the sleeping state in fevers, than it merited. Instead of deserving to be looked upon as a positively good sign, insuring a safe return of the disease, as it was by them, it was at best but a negative mark,

CCXLVIII. In the gout, in indigestion, of which examples have already been adduced, in diarrhœa and the colic, and many other asthenic diseases, particularly those that disturb the alimentary canal, and chiefly affect women exhausted with frequent child bearing, and long and repeated nursing; it often happens, that there is a strong propensity to sleep, contrary to what happens to the same persons in health, and the period of sleep is prolonged, without any alleviation of the disease. The same thing happens to those who have fallen into indirect debility from drunkenness or any other cause. That this propensity to sleep depends either upon direct or indirect debility is evident, for whatever produces further debility increases the disease, and every thing that strengthens, removes it. Strong liquors, and the preparations of opium, are peculiarly effectual, and that in proportion to their greater and more diffusible stimulant power.

CCXLIX. Thus sleep and wakefulness may be either induced or obviated by certain degrees of stimulation. The removal of morbid affection without inordinate motion by a stimulant power equal to that which is required to cure spasms and convulsions or to reduce the quick pulse in fevers, is an analogous circumstance. Upon the whole, it is plain, not only that irregular motions are not increased functions, depending upon increased excitement, but that they are impaired functions, and depend nearly on an equal degree of debility.

CCL. From what has been said, the analogy between wakefulness and life, sleep and death, and their dependence upon the same laws that govern all the other functions, clearly appears; and solid proof has been

mark, implying that the slight stimuli acting upon the system in a state of high debility, and, therefore, by their operation, slight as it was, increasing the direct debility by the addition of the indirect to it, were kept off and hindered from producing that hurtful effect. Their authority in giving that judgment of it is overthrown by their extreme ignorance of its nature.

been adduced, that the most vigorous wakefulness consists in the highest degree of healthy excitement ; that good profound sleep depends on the highest debility that is consistent with the healthy state ; that true sleep depends on a mean degree of indirect debility, and that both morbid sleep and morbid watching are the offspring of great debility, whether of the indirect or direct kind.

C H A P. VIII.

The cure of both the diathesis—Indication either to diminish or increase excitement—Powers that cure, differ only in the degree of their action from those that induce, either diathesis—In the sthenic, when strong, heat to be avoided—When and how admissible—Cold the great remedy in this diathesis—Never injurious from astringency—Heat useful in asthenia—Cold baneful—Produces putrefaction of the fluids—Diet in sthenic—and asthenic diathesis—Bleeding, purging, vomiting to diminish fulness of vessels—How to treat inanition—Of bodily and mental exertion—Of the passions—Of air—Of contagious diseases—Single less effectual than united powers.

CCLI. THE causes of both the diatheses have been formerly (CXLVIII.) assigned : whence it appears that the indication of cure, in the sthenic diathesis, is to diminish excessive excitement over the whole system ; in the asthenic, to increase deficient excitement likewise over all the system, till it be brought to the healthy degree.

CCLII. The remedies that effect the cure of sthenic diathesis, are the powers, which, when their stimulant operation is excessive, produce that very diathesis ; but which, in effecting a cure, act with such diminished force,

force, as to produce less excitement than health requires, or to prove debilitating.

CCLIII. The powers which produce the same effect in the asthenic diathesis, are those that, when their stimulus is too weak, produce that diathesis. In effecting a cure, they must be applied so as to produce higher excitement than is consistent with the state of health, or so as to stimulate.

CCLIV. In the sthenic diathesis that temperature (a) which is called heat, must by all means be avoided; because that degree alone of what we from our feelings name *heat*, which proves debilitating, viz. an exceedingly high temperature, cannot be applied without the risk of pernicious consequences from the previous excess of stimulus (b).

CCLV. But, when the diathesis, and its cause the increased excitement, are moderate, though the disease is

(a) The same order is followed here, that has all along been observed; to wit, that of the enumeration of the powers in par. XI. and XII. and that of the explanation of them, when viewed as the hurtful powers producing either diathesis in Chap. I. Part II. and it will be kept to throughout the whole work. Nothing can be more simple and natural, and better suit the simplicity of the subject, while nothing is more artificial and arbitrary than the arrangements either of systematics or nosologists. Just order could never be expected from an erroneous and confused view of the subject to be treated of; while a clear conception of the subject as a whole, infallibly leads to a distinct distribution of the several parts that compose it; so that, what Horace says of language, equally applies to order, and the same thing applies here as to his *Verba & lucidus ordo. Verbaque provisam rem non invita sequentur.*

(b) See above, par. CXV. Though very intense heat relaxes the muscle and induces atony on the living solids, who, in a peripneumony, would think of using it with that view? That disease, from its own violence, often mounts up so high in the scale of increased stimulus, as nearly to approach the point of indirect debility, and it sometimes actually gains that point. The addition, therefore, of more stimulus from the application of heat, would insure that effect, and thereby occasion the conversion of the disease into a much worse one, such as hydrothorax, or the dropsy of the breast.

is fully formed, there is no occasion for forbidding that degree of heat, which accompanies the operation of sweating and the pediluvium; because the waste of fluids in the former, and the agreeable sensation in the latter, promise somewhat more advantage than such a moderate degree of heat threatens disadvantage.

CCLVI. After the application of intense cold, the application of heat must be studiously avoided, because its operation, from the increase of the excitability by cold, becomes more effective. And the consequence is the more to be dreaded, because, at the same time, other stimuli are usually applied.

CCLVII. Cold is the beneficial temperature in the cure of the sthenic diathesis, but it must not be followed by any considerable degree of heat. The mistake, therefore, in medical practice, of thinking cold hurtful in sthenic diathesis by a stimulant operation, should be corrected: its use in the small-pox is not to be understood to arise so much from its mere debilitating degree, as from avoiding the stimulus of heat after its operation. When the same precaution is employed, cold either alone, or in conjunction with other debilitating powers, has lately been found the most effectual remedy for catarrh, or for a *cold*, as it is vulgarly called.

CCLVIII. From which circumstance, and because a cap of fresh earth put upon the head, has been of service in phrenitis; and because that degree of cold, which attends frost and snow, when applied to the naked body, has removed a synocha accompanied with delirium (*c*); and because cold is so efficacious a
remedy

(*c*) It is called the common inflammatory fever, very improperly, as being no fever, but a general pyrexia, or affection of the whole system, without inflammation or local affection, and producing heat over all and tumultuous effect upon the pulse. Its proper generic name is pyrexia. See above, par. LXVIII. where that appellation is assigned to it; an appellation to avoid mistaking its nature, that should be accurately attended to. Great mischief has been occasioned by this vague term. Thus when a
person

remedy in the small-pox ; it clearly follows, that the use of cold should be extended to the whole range of predisposition and the whole circle of diseases, depending upon sthenic diathesis.

CCLIX. That no hurtful effect arises from the supposed astringent power of cold in the sthenic diathesis (*d*), appears from its remarkable effect, when applied to the surface of the body in the small-pox, in keeping
up

person is said to be affected with a disease ; when it is asked what disease it is, and the answer given, that it is a fever, immediately bleeding is thought of, though that, and every, evacuation is as hurtful in proper fever as it may be serviceable in the pyrexia. To give an example of this pyrexia, the particular appellation for which is synocha, or sthenic pyrexial disease ; many years ago, a person in the old town of Edinburgh, labouring under it, escaped the vigilance of his nurse ; flew naked out of the house in a very keen frost with snow upon the ground, across the streets, passed over into the new town, and from that to the fields beyond it. He soon became sensible of his state, stole into a house next to him, got some clothes thrown about him, and was carried home in a chair, perfectly cured of his disease. From which, and a prodigious number of facts to the same purpose, all concurring in the proof of the debilitating operation of cold, there can hardly arise a doubt in the mind, that in a certain high degree, if it could be conveniently used, or if there were occasion to have recourse to it for want of efficacious remedies, it would at once remove the highest degree of sthenic state that ever occurs in disease, and reduce the excitement from the nearest approach to 70 down to 40. Nay it might run into the opposite extreme and go all the way to death. But we shall, by and by, have occasion to observe, that we are so well provided with effectual remedies as not to be under any temptation of straining this to its height. And we shall also find that a number of remedies in a moderate degree are preferable to any one, or to a smaller number in a higher degree. The discovery of the principle upon which the cure of sthenic diseases turns, has enabled us to render the cure both more complete and exact, than it could have been without principle.

(*d*) I remember, when I was a young student, of hearing the old physicians in Edinburgh very gravely forbid a draught of cold water in an inflammatory pyrexia, and even in a common catarrh, for fear it should produce an inflammation in the stomach.

up freedom of perspiration in proportion to the degree of its application. Its effect in producing atony with proportional laxity of the fibres of the vessels, depends upon the same principle (*e*).

CCLX. For the removal of asthenic diathesis the stimulus of heat is signally useful, and chiefly for the following reason; that it must be as useful in this diathesis, where the excitement is too low, as it is hurtful in the sthenic, by increasing the excitement, already too high. Hence in fevers, in the gout, in dyspepsia, in the colic, in rheumatism, and in all asthenic diseases, the system is very much invigorated by heat, and debilitated by cold: which, by its debilitating effect, is ranked among the powers that produce these diseases (*f*); and in fevers is fatal.

CCLXI. As cold is hurtful in asthenic diathesis in the proportion in which it is serviceable in the sthenic; it is accordingly, for a further reason, to be avoided in diseases of the highest debility, for, like intense heat, it relaxes the extreme vessels, and produces a putrefaction in the fluids. (See CXVII.)

CCLXII. The more certainly to moderate the sthenic diathesis while it remains as yet within the limits of predisposition, a sparing use should be made of flesh and the preparations from it, and vegetable diet be used with greater freedom. But, when this diathesis is increased to the degree, that constitutes disease, abstinence from animal food, especially in a solid form,
and

(*e*) The fibres being relaxed describe a greater cavity, and hence the check given to the perspiration by the contrary effect of the sthenic diathesis in increasing their density and diminishing their diameters, is taken off.

(*f*) No gouty person can bear the operation of much cold, and every one can endure more heat than most other persons. And the reason is evident: So debilitating a power must, in proportion to its degree, be peculiarly hurtful in all diseases, in which the debility constituting their cause, runs high, as it naturally does in the gout, where it is increased by the advance of age and other causes, and much more so in fevers.

and a free, but still not excessive, use of vegetable matter, especially in a fluid form, are the best means of removing it, as far as the effect of diet reaches.

CCLXIII. In the degree of this diathesis, which does not exceed predisposition, it is proper to avoid *seasonings*, which are destructive in sthenic diseases fully formed.

CCLXIV. Weak liquids are very useful ; and all spirits and strong liquors hurtful in proportion to the quantity of alkahol they contain. Such liquors, unless extremely diluted, are fatal in fully formed sthenic diseases. In these diseases pure water, especially with the addition of something to acidulate it, is preferable to small-beer, which a great authority admitted. But the diffusible stimuli in this diathesis are above all others hurtful.

CCLXV. Since the indirect stimulus of food assists the direct, that is, propagates itself over the whole body, bounds should be set to the quantity even of suitable food.

CCLXVI. In every degree of asthenic diathesis, vegetable food should be avoided, and recourse be had as soon as possible to animal matter. But as this can seldom be executed immediately upon account of the weakness of the stomach ; the diffusible stimuli should be used ; such as the different forms of wine when the debility is moderate, and opiates when it is greater. At the same time, from the very first, rich soups should be given in great quantity upon the whole, though not too much at once, and a gradual transition made to the use of more solid matter.

CCLXVII. As animal matter in this case is of service, so the degree of stimulus, that seasoning adds to it, improves its effect.

CCLXVIII. During the predisposition to asthenic diseases, watery, cold, acid, fermenting liquors are hurtful, and that proportion of strong liquor, that the degree of debility requires, is beneficial. But, after the
the

the diseases have actually taken place, and have attained a greater degree of vehemence, strong liquors become so indispensably necessary, that excepting soups, and the still more diffusible stimuli, they are the only support required for a long time. There is no occasion to fear the indirect stimulus of food, when the matter, which chiefly affords this indirect stimulus, viz. vegetable matter, is guarded against. Compare this with paragraph CCLXV.

CCLXIX. For the purpose of diminishing the stimulus, which an over proportion of chyle and blood (*g*), directly applied to a great extent of the body, gives; the over proportion, when it is very great, should be removed by abstinence, bleeding, and purging; when it is more moderate, but yet adequate to the effect of producing diseases, the directions lately given (CCLV.) respecting a moderate diathesis, ought to be observed; that is, we should adhere to the practice of vomiting, and purging from time to time, and to sparingness in diet. But blood should not be let. And, if upon any occasion, the patient shall give way to a little freedom in his use of food, it should consist of vegetables; and he should afterwards observe abstinence, and take gentle and frequent exercise, so as to keep up a full perspiration.

CCLXX. The means of cure for an excess in the velocity of the blood (paragraph CXXXI. to CXXXIV.) in so far as it depends upon an over proportion, are the same: when the velocity depends upon violent motion of the body, the means of lessening it, as long as the diathesis

(*g*) The chyle is the alimentary matter, that has undergone a preparation in the stomach, and an after-one in the upper part of the intestinal canal, and which, so prepared, or in part digested, is taken up by the mouths of a number of small vessels that open into the intestines; these carry it to a great trunk, in which all these vessels called lacteal, unite, and through that trunk it is afterwards mixed, first with the venous, and then with all the other blood in succession. Such is the nourishing matter of animals.

diathesis is confined to predisposition, or to a slight degree of actual disease, are an abatement of exercise, more indulgence in rest, and a reduction of other stimuli. In that high diathesis, which occasions^d severe diseases, in order to retard the motion of the blood, the stimulus of all the exciting powers must be studiously avoided, and blood must be drawn profusely. Here it is superfluous to lay down any rule for the observance of rest, as rest, even in spite of the patients, is unavoidable (*h*).

CCLXXI. Withdrawing the powers that occasion an over proportion of the secreted fluids in the excretory ducts, is the best method of removing the stimulus, which that over proportion, by its distending effect, produces (*i*). The cure, therefore, consists in more frequent coition, drawing off the milk, taking in food of a less nourishing nature, and in restoring the perspiration by removing the sthenic diathesis upon the external surface.

CCLXXII. To remove the debility, or atony and laxity, of the vessels, which is occasioned by a penury of chyle and blood over a very great extent of the system (*k*), first, the strength must be gradually restored
by

(*b*) It would be ridiculous to require of a patient in the rage of peripneumony not to run a race, when his real state is, that he cannot move or turn himself in bed without pain.

(*i*) In par. CXXXVI. you will find, that the secreted fluids, here alluded to, are the milk, the semen, and the perspirable fluid. As the distention occasioned by the over-abundance produces the morbid stimulus, so the subduction of the fluids must, of course, take it off, and give the desired relief.

(*k*) How great the space or extent of the system is, that, in the sthenic diathesis, receives the stimulus of an over-abundance of blood; and which, in the asthenic diathesis, is subjected to the debilitating power of an under-proportion of the same fluid; may easily be conceived from the well known fact, that there is not a soft part in the whole system, into which the insertion of the point of the finest needle will not draw blood; consequently, the stimulus arising from an over-abundance of blood, as well as the debility
arising

by diffusible stimuli (*l*) and soups; next, we should gradually substitute solid food for soups; and lastly, to give the whole system still more strength, it should be fortified by exercise, and the rest of the durable stimuli; but the use of diffusible stimuli should not be extended beyond the period of considerable debility (*m*).

CCLXXIII. In

arising from too small a quantity, must be the most considerable of all others. Every circumstance here concurs to render the one the greatest sthenic, and the other an equal asthenic, noxious power. If the force of every stimulus, of every exciting power, be in proportion, first, to the degree of it applied; secondly, to the sensibility of the part on which it acts; and, thirdly, to the extent of that part; it will be no wonder, that these two powers should prove the most formidable of all others. Hence it is, that, in the curative part, bleeding is the most powerful remedy of sthenic, and filling the vessels an equal one, of asthenic diathesis.

(*l*) Which act by giving vigour to the whole system, and more especially to the stomach, with which they come into actual contact. Hence digestion, and the conversion of the matter taken in into good chyle and blood; and hence, at last, the fulness of the vessels first indicated. The process of emptying the vessels in the cure of sthenic diathesis has the advantage of being the first in order; and hence it is that the cure of sthenic diseases is more quickly effected than that of the asthenic, it being, over all nature, much more easy to take away than replace. See and compare paragraph CXXVI. and CXXX. and subjoined notes, and a little above, par. CCLXVI.

(*m*) The sole use, and a great one, of the diffusible stimuli is, in great weakness, where they are only required, to support the system, while it cannot be supported by the ordinary durable stimuli; and, after the excitement is so far restored, that the ordinary supports are now sufficient, to lay aside the extraordinary, the continuance of which would now be hurtful, and to manage the convalescent, and restored, state of health by the powers employed in health. When the diffusible are continued longer, they are equally hurtful, and a cause of disease, as they are serviceable when disease requires their support; analogous to wine, they bring about the system in a weakened state to be sustained by its natural and ordinary supports; but, analogous to it in another respect, when the strength of the system requires not their additional stimulus, they carry it up into indirect debility, and prove the cause of diseases and death. In one word, whatever has been said against the propriety of the use of excessive, and ultimately
excessive

CCLXXIII. In a weak state both of the vessels and of the rest of the body, every considerable motion of the body, and all other stimuli, which quicken the motion of the blood, and bring on temporary indirect debility, should be avoided. But in slighter debility, such motion as does not prove fatiguing, but acts as an agreeable stimulus, and refreshes, should be enjoined. During convalescence, the patient should be gradually brought back to his usual plan of life; nor should it be forgotten, that, till this is done, health is not completely restored.

CCLXXIV. The debility, which an under-proportion of secreted fluids, or a degenerate, though plentiful state of them, produces in the excretory ducts, is removeable by the stimulant plan of cure (CCLXXII.) not by antiseptics.

CCLXXV. The remedy for that sort of stimulus, which arises from either intense or constant thinking, is either an abatement in the degree of thinking, or else such an exertion of the intellect, as by exhausting the excitability, shall prove indirectly debilitating. This last expedient, however, though it may be adapted to the state of predisposition, is by no means safe, after the disease has once made its appearance, and especially if it be violent; because no benefit can result from it, till a degree of excitement, that would probably prove injurious, has been raised by the stimulus.

CCLXXVI. In

excessive stimulant powers, the former producing sthenic diathesis, and the latter indirect debility, all that applies, with propriety, for the discontinuance of the use of diffusible stimuli, when the durable are now sufficient for the purposes of the system. And another argument that still remains against the superfluous use of both the diffusibles and strong drink, when debility requires not their use, is, that, independent of death, or even diseases, being their immediate consequence, predisposition to diseases must; consequently, as the system must at last be worn by stimuli, all the unnecessary, that is, all that do not contribute to that middle vigour, in which sound health consists, should be avoided.

CCLXXVI. In order to cure a slight sthenic diathesis, such as occurs in predisposition, and to prevent disease, habitual passion should be avoided; but the removal of actual disease requires the first gust of passion to be prevented. Excess of passion, upon account of the intermediate danger of stimulating too much, is by no means to be thought of, as the means of inducing indirect debility.

CCLXXVII. Where debility depends upon excess of mental exertion, or upon a languid state of the intellect, the excess should be diminished, the languor removed, and an agreeable train of thinking promoted; without which latter, however much all the other stimulant powers may have been employed, it may be depended upon, that perfect health, in every respect, will not be restored (*n*).

CCLXXVIII. In

(*n*) The state of the intellectual function has a great influence upon that of excitement; and, often, when all other stimuli have been applied in due proportion, the deficiency of that single stimulus will point out a want in the proper measure of excitement. There is not a finer stimulus than the pleasurable feeling arising from a happy train or flow of thinking; hence the high delight that arises from a flight of wit, or from a pleasant vein of humour; hence all the fine feelings of the belles lettres; hence, in youth, the ardent keenness to be acquainted with the learning, wisdom, and elegant productions of the ancients, as well as of those, who have made a distinguished figure in later times; hence the enthusiasm, so natural to the human feelings, to out-strip others in every mental excellency: The arts, the sciences, every department of human knowledge, are all the effects of that intellectual propensity. How happy would it be for mankind were this noble stimulus duly cherished! What benefits, which society is deprived of, would not accrue from a proper cultivation of it! How fine was that feeling in Julius Cæsar Scaliger, when he declared he would rather be the author of Horace's few stanzas of Lydia and Telephus, than accept of the crown of Arragon! What must have been the delight of Pythagoras, when he found out the XLVIIth proposition of the first book of the mathematical elements, commonly called Euclid's? He jumped about in an ecstasy, crying out *I have found it*, and was so much more substantial than some of his few brother discoverers, as to possess the means of offering

CCLXXVIII. In every degree of debility, such force of passion, as produces indirect debility, must be avoided; nor must it be forgotten, that a very small degree of it is sufficient for this effect: we are not even to indulge agreeable passions too freely (o).

CCLXXIX. When there is a deficiency of passion, as in sadness, grief, fear, terror, and despair, which are only inferior degrees of gladness, confidence, and hope, and imply only a diminution of exciting passions; the deficiency

offering a sacrifice of an hundred fat bullocks to the gods. See Observations on the Principles of the old Systems of Physic, from page ix. to xv. of the Introduction. How delightful must the feelings of Horace have been, in whose works every ode is an effort of the most beautiful, and, frequently, of the most sublime, conceptions of human genius! What must have been the fire and force of Milton's soul, in the description that he gives of the appearance of the Son of God in his celestial panoply, "his countenance too severe to be beheld!" How towering that soul, how exalted that intellect, which the great marquis of Montrose displayed in a stratagem, which converted into a glorious victory a blunder in one of his officers, that might have proved fatal to both his cause and his glory. When it was whispered to him, standing in the centre of his army, that one of his wings was overpowered, he shouts out to the commander in the other: "My Lord Aboyn, shall you and I stand here doing nothing, and M'Donald carry off all the honour of the day!"

(o) See above, par. XLIII. and CXLI. Recollect the method prescribed in the XLIII. paragraph of this work for preventing the fatal catastrophe of the Roman woman, when her son, whom she had counted upon, for certain, in the number of the dead, was, contrary to every expectation, presented to her in perfect health. The danger and fatality of her state was, that her excitability was too accumulated, with respect to the stimulus of exciting passion, to bear such a strong impression as that which the presence of her son, in life and health, had made. She was in the state of a famished person, whose accumulated excitability is overpowered by a single morsel of food, or of a person, who had been long affected with thirst, where the smallest indulgence in drink may prove fatal; or of a person, nearly starved[†] to death by cold, in whom a rash approach to heat might induce the same fatal effect; all which are precisely upon the same footing, and equal instances of an excitability too accumulated to bear any degree of stimulus.

deficiency must be supplied, and the exciting degree of passion recalled ; hope and assurance must be infused, and the patient gradually carried up to the feelings of joy.

38. For there is a sum total of passion, which acts in the same manner as other stimuli, that is, by stimulating either in excess, or in due, or in deficient, proportion ; nay, like the rest, as often as any one is deficient, by accumulating the excitability, it makes the other stimuli act more powerfully (XXXVII. and the note). Take, for instances, the terror of an army before the trumpet sounds for battle, and the courage with which they are afterwards inspired, by the consciousness of their own bravery, the general's speech to animate them, or, perhaps, his commemoration of their former brave deeds.

39. Excessive voluptuousness in the exercise of the senses, as well as disagreeable objects, should equally be avoided in asthenic diathesis ; in sthenic diathesis, they should be guarded against on account of the agitation they produce.

40. Nothing is better accommodated to the asthenic state, than a pure air ; which, either alone, or joined with exercise, must, consequently, be of the greatest benefit to convalescents.

41. Since the matter of contagion, in so far as it has any tendency to produce general disease, produces either sthenic (*p*), or asthenic, diathesis (*q*), and acts by an operation similar to that of the general noxious powers, general remedies should be employed in the cure ; and debilitating ones opposed to sthenic, stimulant ones to asthenic diathesis.

CCLXXX. These powers, the same in kind with those that produce the diatheses, but differing in degree

(*p*) As in the small-pox and measles.

(*q*) As the contagious typhus, the gangrenous sore throat, dysentery, and the plague.

gree and in that respect diametrically opposite, remove the diatheses seldom, and less successfully, when single; oftener, and more effectually, when several co-operate, but, best of all, when taken together, especially if there is occasion for a great curative effect.

END OF VOL. I.

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 309

LECTURE 1

1.1. Kinematics

1.2. Dynamics

1.3. Energy

1.4. Angular Momentum

THE
Elements of Medicine

OF

JOHN BROWN, M. D.

Translated from the Latin, with Comments and Illustrations,

BY THE AUTHOR.

A NEW EDITION, REVISED AND CORRECTED.

WITH

A BIOGRAPHICAL PREFACE,

BY THOMAS BEDDOES, M. D.

“The coincidence of some parts of this work with correspondent
“deductions in the BRUNONIAN ELEMENTA MEDICINAE—a
“work (with some exceptions) of great genius—must be con-
“sidered as a confirmation of the truth of the theory, as they
“were probably arrived at by different trains of reasoning.”

DR. DARWIN, ZOOLOGIA, P. 75.

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THE
ELEMENTS OF MEDICINE.

PART II.

CHAP. IX.

Comparison of the different parts of the sthenic plan of cure with each other—Comparative efficacy of antisthenic remedies—Of bleeding—Of cold—Of vomiting, purging, and sweating—Spare diet—Rest—Conjunction of remedies—No remedies adapted to symptoms—Indirect debility to be obviated.

CCLXXXI. **I**N the sthenic diathesis, bleeding is the most powerful of all remedies ; because it completely carries off a stimulus, so much more powerful than any other, as it is directly applied to a greater extent of the system : consequently, as often as the diathesis is very high, bleeding should be freely used ; but never risked during predisposition ; and sparingly, or not at all ventured upon in diseases of a mild nature ; in these other remedies should be preferred (a).

CCLXXXII. The

(a) See above, par. CCLXIX. With the exception of peripneumony, phrenitis, and violent and mismanaged cases of the small-pox and measles, and rheumatism ; in the last in their mild state, as well as all the other sthenic cases, the lancet should never be unsheathed. That is to say, in seven cases out of ten even of the sthenic diseases, which are the only ones that either require or bear any degree of it, the practice must be laid aside, and never thought of in any asthenic affections whatever. Consequently, the cases, where it is in any degree allowable, are exceedingly few.

CCLXXXII. The next place to bleeding, when heat and other stimuli are guarded against, is claimed by cold. Heat is always hurtful, but still more after the application of cold; it is most hurtful, when it is combined with other excessively stimulant powers. Cold is always of service, in proportion to its degree; provided foreign stimuli, blended with it, and overcoming its debilitating effect, be cautiously shunned.

CCLXXXIII. The third place in rank belongs to vomiting, purging, and sweating. These evacuations have a powerful effect in removing sthenic diathesis, and therefore they, with great advantage, supercede the oftener imaginary than real necessity for profuse bleeding. They are frequently alone sufficient to restore the healthy state.

CCLXXXIV. When these remedies are employed, those articles of diet, the stimulant operation of which prevents the benefits to be received from them, should be sparingly used, in exact proportion to the degree of the diathesis. This precaution alone is adequate to the removal of predisposition, and often to that of diseases, especially those that depend upon a small diathesis.

CCLXXXV. With all these remedies we must conjoin rest, when the diseased state has taken place, and moderation in motion must be observed during the period of predisposition (*b*).

CCLXXXVI. The practice of the common run of physicians is very bad, in trusting too much to any one of the remedies that have been mentioned, and overlooking all the rest, or enjoining them carelessly. We are not to depend upon bleeding alone, even in peripneumony itself; but employ all the rest either in concurrence or succession.

CCLXXXVII. The

(*b*) So considerable a stimulus is exercise, that, in such a degree of sthenic diathesis, as that, which forms only predisposition to the diseases depending on it, exercise may of itself be sufficient to effect the conversion of the predisposition into the actual diseased state. Often has the highest of these diseases, and even peripneumony itself, been brought on by violent exertion in exercise.

CCLXXXVII. The disturbed functions, or those that are impaired (see above, par. CXLVII. CLI. CLXXII.) but not by a debilitating cause, admit of the general plan of cure, and no other.

CCLXXXVIII. The symptoms of debility, which arise in the progress of the disease from the violence of the sthenic diathesis, and threaten death from indirect debility, ought to be prevented by an early application of the remedies.

CCLXXXIX. The same early attention serves to prevent suppuration, effusion, and gangrene, which arise from ultimately excessive excitement, passing into indirect debility.

42. If sthenic diathesis should happen to be conjoined with a local disease, the former, to prevent it from aggravating the latter, should be removed by its own respective remedies.

C H A P. X.

Comparison of the different parts of the asthenic plan of cure with one another—Reproduction of a due quantity of blood—Management of stimuli—Heat—Diffusible stimuli—Diet—Opium—Wine—Spirits—Exercise—Management of the mind.

CCXC. IN asthenic diathesis, and the diseases depending upon it, to reproduce the proper quantity of blood is the most powerful remedy, when we, at last, have access to it, as it is the only means of restoring a stimulus of so much the more power and efficacy as its direct application is made to so great an extent of the system (a). For which reason, as, in every degree of debility,

(a) Compare this with par. CCLXXXI. above, and with all the paragraphs from CXXXI. to CXXXVI.

debility, the quantity of food (from which alone blood is made, that is taken and digested, is always in an inverse proportion to the degree of debility, or in a direct proportion to the degree of excitement. as much, in such a form, as can be taken and digested, should immediately, and without loss of time, be administered ; on which account, if the debility be moderate, solid animal food, sparingly at a time, but often repeated, is proper and suitable. When the debility is greater, and solid animal food can neither be taken, nor, if taken, digested, flesh broth, as rich as possible, and as free from fatty matter, should be carefully administered. With a view to excite the stomach, and render it more fit for receiving and digesting this kind of food ; the diffusible stimuli, such as different kinds of wine, and, more particularly, still, opiates and other remedies of similar efficacy, ought to be constantly employed ; sparingly at first, and afterwards more fully, if the debility be direct : after which, the use of the diffusible should be gradually laid aside, and, in the same gradual way, recourse be had to a larger and larger use of the more durable and natural stimuli. In case of indirect debility, we should also gradually descend from the highest to the lowest stimulus, as has been mentioned formerly, and, in an inverse manner, go on from the smallest force of durable stimulus to the greatest. Lastly, in that moderate debility, which constitutes the predisposition to asthenic diseases, it must always be kept in mind, that abundance of blood is the greatest support of health (*b*), and that we are not to give way to a weakened appetite (*c*).

CCXCI. To

(*b*) How widely different is this maxim from any that have hitherto ever been received in the profession of physic ; in which flying to the use of the lancet, was the first thought that arose in the mind, with respect to the idea of cure of every disease ; and bleeding and evacuations, through the course of each disease, the only remedies !

(*c*) This is equally the reverse of the general practice of inanition in almost every disease, without a single exception.

CCXCI. To the vital fluid, and these several means of increasing its quantity, the next remedy in the cure of asthenic diathesis is heat; as being the power by which animals and vegetables are brought forth into existence, are nourished, and acquire vigour, and afterwards, through the several stages of their decline, are upheld, till their excitement is all extinguished (*d*). By heat, understand that point of external temperature, which intervenes as a mean betwixt cold, as it is called, and high heat, *ardor*; under which our sense of temperature is agreeable and pleasant; under which the body is neither indirectly weakened by that relaxation which produces sweat, nor directly by that torpor or benumbed state which cold begets; under which the functions of the whole body are excited, called forth, and, as it were, cherished in the sun beams; without which all other stimuli are of no effect (*e*).

CCXCII. Such a temperature as this is suited to every state of the body, but still more to different states of debility; because, in the latter case, as the excitement is deficient from other sources, there is so much more occasion for this stimulus, which is much easier come at than many others, to supply the deficiency. Hence, both in other diseases of great and direct debility, and particularly in fevers, heat is found to be of the greatest service, and above all in such febrile complaints as cold has had any share in producing (*f*). In these diseases cold must be most carefully avoided, as it is always of a directly debilitating operation, and never of service but in sthenic diseases, and those that are

(*d*) Compare this with par. CXII. and CCLIV. and CCLX.

(*e*) It is plain, that though all the other powers should be in full action upon our bodies, and that with the effect of keeping up in them a due degree of excitement over all; yet plunging any person naked into a dense medium, suppose that of water, in a degree of cold at or under the freezing point, will most certainly, in an instant, put an end to life.

(*f*) See again par. CCLX.

are in progress to indirect debility (*g*). We must be equally on our guard, in every degree of asthenic diathesis, against excessive heat, which is equally debilitating with cold, and equally productive of atony, laxity, and gangrene of the vessels, as well as stagnation and corruption of the fluids, in consequence of the inactive state of the vessels (*h*).

CCXCIII. As refilling the vessels is the best remedy, because its direct stimulus is applied over such an extent of the system; heat, which is immediately applied to the whole surface of the body, and directly affects the body to that extent, must be next in virtue to it.

CCXCIV. Since vomiting, purging (*i*), and sweating (*k*), are so powerful in debilitating, as to claim the third place of rank in the asthenic cure; they must, for that reason, by the same debilitating operation, be equally hurtful in asthenic diathesis, and the stimuli that stop their operation; and, consequently, both the other stimuli, and particularly the diffusible ones, equally serviceable.

CCXCV. In reviewing the list of stimuli, that answer this purpose, we must begin with the treatment of the slighter loss of fluids that occurs in this set of diseases, and proceed to the more violent affections.

In a slight looseness of belly, such as happens in predisposition to asthenic diseases, or in the slighter degrees of the latter; it will commonly be sufficient to abstain from vegetable food, and from weak, watery fluids, or
such

(*g*) The operation of cold has been so widely mistaken by all physicians, that it comes to be of the greatest consequence to understand the several propositions stated in this work with regard to it. For that purpose consult par. XXXVII. and the note upon it marked 8. as well as par. CCLX. and all that has been said upon the subjects of either heat or cold in Chap. I. of the second Part, from CXII. to CXXIII. as also par. CXX.

(*h*) With this proposition compare par. CXV. CXVII. and CXVIII.

(*i*) See par. CCLXXXIII.

(*k*) See par. CCLV.

such as are apt to ferment in the first passages, as the several liquors made from barley, called beers; to use animal food, as well seasoned and as rich as possible, and free from all fatty matter; to drink pure wine, or spirit, in different degrees of strength; and to take such exercise as is gentle in degree, and often repeated (l).

CCXCVI. When the belly is still looser, and moreover affected with gripes and pains, as in violent diarrhoea, and in dysentery, in which the loose stools are accompanied with vomiting; or when, without these troublesome symptoms affecting the belly, distressing vomiting is an urgent symptom; or, when the vomiting is conjoined with a moisture upon the surface, or macerating sweat; or when sweat is the only urgent symptom, and as such wastes the strength, exhausts the body, and dissipates the fluids: in all these cases, we must have immediate recourse to the most diffusible stimuli, and check such an impoverishment of the system.

CCXCVII. In this case, the use of stimuli will be so much the more necessary, as other symptoms usually accompany these increased excretions. Their great efficacy, and stimulant power, are proved by their singular virtue in removing these and other symptoms in fevers and the other most violent asthenic diseases, nay, in the article of death itself, from ultimate debility.

CCXCVIII. Accordingly, in spasms and convulsions in the internal or external parts (m), in discharges of blood (n), in the raging delirium of fevers and other very violent diseases (o), in asthenic inflammation (p); when

(l) See and compare, for the more clear understanding of this paragraph, the CCLXVI. CCLXVIII. CCLXXIII.

(m) See par. CXCIV. and CXCVI.

(n) See par. CXXXIV. 22. 23. and CCXXXII. and the subjoined notes.

(o) See par. CXCVIII. CC. CCI.

(p) See par. CCIV. to CCXII.

when those stimuli, which have a more permanent influence, fail, the virtue of the diffusible stimulants, the principal of which is opium, is eminent.

CCXCIX. As therefore, the energy of its stimulant virtue serves to check diarrhœa, and vomiting, or even sweating, when these symptoms are gentle, and depend upon a less violent cause ; so that degree of its power, which is fitted to check these affections in the greatest height of their violence, and to re-establish the state of health, is by far the most considerable of all the powers, which are ever applied to the human body ; as may be deduced from this, that when the action of all the other powers by which life is supported, is of no effect, it turns aside the instant stroke of death.

CCC. The weakest of the diffusible stimuli (*q*) are the white wines, except madeira, canary, good sherry ; and the red wines, except port ; and spirits procured by distillation, so diluted, as to equal the strength of the wines, or exceed it a little. Still higher than these are spirits taken pure, and higher still, those that have undergone many rectifications. The strength is in proportion to the quantity of water expelled, and of alcohol retained.

CCCI. A higher place in the scale is claimed by musk, volatile alkali, camphor (though with the last our experiments are not yet so complete, as to ascertain its force exactly) : next comes æther, and, last of all, opium. Unless, however, as they sometimes do, they have lost their effect by a continuance of application, and are, therefore, substituted in place of each other, for the sake of a renewal of the operation of each ; and hence we take them all round, for the sake of repelling extreme debility. The preparations of opium, in every respect, are sufficient for most purposes of high stimulation.

CCCII. Together with these remedies, regard must be had to the articles of diet. And, as in great debility,

(*q*) See above, par. CXXVI. 15. 16. 17. 18.

ty, and the diseases depending upon it, of the only suitable matter, that is, meat, nothing solid can be taken; the matter to be used must be fluid, but strong. Along with the diffusible stimuli, jellies and animal soups should be given, sparingly at a time, but repeatedly, in proportion to the degree of debility. After that, when, chiefly by means of the diffusive stimuli, the strength is in part restored; at first solid meat should be likewise taken in sparing quantities, but often repeated; then more plentifully, and at longer intervals. In which progress the patient should gradually recede from the use of the diffusible stimuli.

CCCIII. When the diffusible stimuli are altogether laid aside, and the convalescent is given up to his usual diet, and his usual course of life, and to that management, which persons in health commonly observe, (only that more care is taken, than in perfect health, to avoid any thing that might prove hurtful); then it is, that every attempt of the physician should be directed to the consideration of the strength of his patient, as returning, but not yet quite established (*r*). In his movements he should first use gestation, and then gentle but frequent exercise, and the latter should always end in some, but not an high, degree of fatigue. His sleep should neither be too long, nor too short, lest the former produce direct, the latter indirect debility (*s*): the most nourishing food should be taken, but not in too large a quantity, lest the excitability of the stomach be worn off, without the attainment of a due degree of vigour; but food should be frequently taken, in order to reduce the excitability gradually to its half wasted state (*t*), in which alone it is capable of giving due vigour; that degree of heat, which stimulates, should be employed (*u*), and both excess of heat, as well as cold, as they

are

(*r*) See above, par. CV. and CIX.

(*s*) See par. CCXLII. and the following.

(*t*) See par. XXIV. XXV. XXVI.

(*u*) See par. CXII.

are equally debilitating, should be avoided ; the patient should breathe pure air, and avoid impure ; he should keep his mind in gentle action, observe moderation in his passions, and court agreeable objects of sense ; he should have no companions around him, but agreeable ones, and be frequently at gay entertainments ; he should travel through a pleasant country, and be moderate in the indulgence of love. Neither is the management of the senses, and the prevention of the return of contagious matter, to be neglected.

C H A P. XI.

How the remedies should be varied—Principle on which they should be combined—Bleeding debilitates the vessels chiefly—Purging, the bowels—Vomiting, the stomach—Cold, not alternating with heat, the skin—How all these powers are to be directed to the equable reduction of excitement—and the opposite powers to an equable increase of excitement, in asthenic diseases.

CCCIV. AS the noxious powers, that produce pre-disposition to diseases or diseases themselves, act some on one part, some on another, with somewhat more force than on any other equal part ; and as this part is commonly that to which they are directly applied (a), so the powers, which are employed as remedies, in order that their general effect may reach the whole body with the more certainty, should be, in the same manner, differently applied to different parts.

CCCV. The cure of any sthenic disease whatever, is improperly entrusted to bleeding alone, though that is one of the most powerful of the debilitating remedies. The reason is, that, though the excitability is sufficiently reduced by that remedy in the greater blood-vessels, perhaps

(a) Par. XLIX.

perhaps too much, yet in the extremities of these, as well as in the rest of the body, it is not sufficiently reduced (*b*). Nor is the alternation of bleeding with purging a perfect mode of cure; because, though the excessive excitement be sufficiently, and more than sufficiently, removed in the greater blood-vessels, and in the innumerable small arteries, whether exhalant or mucous, which discharge their fluid into the intestines; yet, neither on the perspiratory terminations of the arteries, nor on the rest of the body, is an equal debilitating energy exerted: the small vessels, for instance, which open into the stomach, are not sufficiently relieved of their distending load, and therefore stimulating load, the stimulus in any vessel being the quantity of its fluid. And although vomiting (*c*), which has been improperly neglected in the treatment of sthenic diseases, and still more improperly employed in every one of the asthenic, should be conjoined with the two remedies just mentioned, even this would not be enough to produce an equally diminished excitement; as there would still remain in the perspiratory vessels, the same state of excitement, as also in the rest of the body, that is not vascular. In violent sthenic diseases, therefore, after diminishing the diathesis, and in the slighter from the beginning of the disease, the addition of the operation

(*b*) The action of every exciting power, whether salutary or hurtful, or curative, always extends over the whole body, the whole seat of excitability, but still with the inequality mentioned in the fourth chapter of part the first. This is the basis of the distinction with respect to the present subject: which is, that, as every power acts most effectually on the part where its action is immediately exerted, it is better to trust to a number, every one of which possesses that advantage, than rely on any one, however powerful otherwise; as by that means, whatever be the indication, whether it be to increase or diminish excitement, the effect will be more equally produced over all in consequence of there being a number of parts that have had a strong action exerted upon them.

(*c*) See par. CCLXIX.

tion of sweating to the evacuations that have been spoken of, will produce a more equal diminution of excitement, and a more perfect solution of the disease. For by means of this evacuation, not only from the larger blood-vessels, in the interior parts of the body, but from an infinity of outlets both of the external, and internal surface of the body, an immense quantity of fluids, every where distending, and, thereby, producing a very great sum of excitement, is withdrawn. Nor is this all. For, since in slight sthenic affections, the patient can take much nourishing food, and in them all, too much; the consequence must be, that, however the quantity of blood and other fluids has been diminished, if food, which is the only power that can produce blood, continues to be taken, all the vessels, in proportion to the quantity that has been taken, will again go on to be filled, and to be fired with the force of excessive excitement. To prevent this inconvenience, and to diminish excitement, with still greater equality over the system; abstinence, or a certain allowance of vegetable matter in a fluid form, and watery drink, will have a very great effect. Nor is this sufficient. For, if, after taking all the precautions and securities that have been recommended, the degree of heat, that proves hurtful from its stimulus, be allowed to approach the external surface of the body; it will produce another inequality of excitement, however much it may have been properly and equally diminished by the other means of cure. Wherefore, as the sthenic diathesis depends so much upon the stimulus of heat, directly affecting the skin (*d*), and is, on that account, prevalent in the skin in preference to other parts; to make sure of rendering the diminution of excitement as equal as possible, the debilitating effect of cold should be opposed to the high degree of excitement, which the heat has produced. When, at last, all the directions, which have been thus fully pointed out, have been executed,

(*d*) See par. CXIII.

executed, still, to re-produce the equality of excitement, suited to good health ; it remains, that we be on our guard against the stimuli that arise from the intellectual functions and passions. For, as they have great effect in producing sthenic diathesis (*e*), so the prevention of them, must be equally effectual in removing that diathesis, and in re-producing that equality of excitement, upon which health depends (*f*).

CCCVI. If the cure of sthenic diseases hitherto has consisted in bleeding, purging, and in the use of refrigeration in a few cases ; and, if the other objects, which have now been so fully explained, have either been totally neglected, or mentioned in a slight way, by the by, and as if of no consequence, and, in the treatment prescribed in these cases, not reduced to any principle ; it will easily appear, from what has been said above and in other parts of this work, how much the knowledge of these diseases has been improved, both in the practical and reasoning part : and it will now, at last, be found a certain and established fact, that both the nature and true theory of sthenic diseases, as well as the method of treatment, considered either as an art and imitative, or as rational and scientific, has been discovered and demonstrated.

CCCVII. As the debilitating or antisthenic (*g*) remedies are the same with the asthenic noxious powers (*h*) ; so the asthenic remedies (*i*) are also the same as the sthenic noxious powers.

43. And

(*e*) See par. CXXXVIII. CXL.

(*f*) As the most healthy state of man is occasioned not by the operation of any one, or of a few exciting powers, but by the united operation of them all ; so neither is its re-establishment to be effected, but by the same united operation of all the remedies, the last of which come to be the ordinary means of the support of the healthy state.

(*g*) See par. XC.

(*h*) See par. CCCIV. to CCCVII. the present one.

(*i*) See par. XCI.

43. And as the remedies of asthenic diathesis, to whatever part they are applied, also stimulate that part more than any other; some of them one, others another part, and increase the excitement;

CCCVIII. So, in asthenic diseases, if we want to rouse the excitement with more equality, and restore the lost strength, we must not depend upon the most diffusible stimuli alone (*k*). For, while they indeed increase excitement over the whole body, at the same time, they produce this effect in the stomach with greater force than anywhere else. Hence, even from the beginning of the cure, when hardly any food can be taken, and other durable and more natural stimuli (*l*) are most imperfectly applied; yet, together with the diffusible stimuli, soups (*m*) should be given, and as much haste as possible should be made to bring the patient to take solid meat, while care, at the same time, should be taken to apply a proper degree of heat. For, by this method, we most effectually secure both the internal and external surface. Nay, in the same way, we remove that inanition of the vessels which takes place in asthenic diseases in an exact proportion to their degree. For, though in case of that abundance of blood, which is the most powerful means of bringing on sthenic diseases, there is an opportunity of making a quick cure by the immediate taking away of blood; it is only by insensible, gradual, imperceptible, and unperceived successive steps, that we can obviate that penury of blood, which is the most noxious power in asthenic diseases, and replenish the vessels.

CCCIX. After this management of both surfaces of the body, and this partial filling of the vessels; still the excitement is not equally enough increased. To promote this effect, some very diffusible stimulus, suppose

(*k*) See par. CCCI.

(*l*) As that of pure air, exercise, the stimulus of the motion of the blood and other fluids in their respective vessels.

(*m*) See par. CCCII.

pose any preparation of opium, should at the same time be administered, and the little animal food, or meat, that there is any appetite for, and that can be digested, should be added. The method of giving food is evident from the late explanation about soups (see par. CCCVIII.) But, the use of the more durable, and less diffusible, stimulus depends on this, "that when the excitability is worn out by any one stimulus, any new stimulus finds excitability, and draws it forth," and thereby produces a further variation of the effect.

CCCX. Hitherto, for want of the action of those muscles, which, from their situation on the surface of the body, propel the blood along the veins towards the heart, as well as from the inanition of the vessels, the excitement has remained too languid over that whole tract. Therefore, after the strength has been so far recruited, that rich food can be taken, the body may be moved, first by external means, and then by its own organs, of which the former is called gestation, the latter exercise, and also refreshed by air; when all this has been accomplished, the excitement will rise in several points, and become more equal upon the whole.

CCCXI. The last stimuli, which, along with those already mentioned, have a natural tendency to produce an equalization of excitement over the whole system, arise from the action of the mind, the energy of passion or emotion, and a still greater purity of air, than is attainable by persons shut up in a room (*n*). To this state of convalescence, the same management, which was formerly directed during the decline of sthenic diseases, perfectly applies (*o*).

CCCXII. This

(*n*) See and compare with these last mentioned stimuli the following paragraphs CCLXXV. CCLXXVIII. CCLXXIX. 38.

(*o*) The convalescent state from either of the two general forms of diseases, or from local ones the effect of which had drawn the whole system into consent, is much the same; being a state of some remaining debility in all; in the sthenic from the excitement

CCCXII. This stimulant plan of cure, in all its parts, is new, whether the reasoning part, or the merely practical, be regarded ; and, whether the cause and the exciting noxious powers, or the indication of cure and the remedies, be considered. May it not, therefore, be put as a question, whether the whole doctrine, which has here been delivered, has not, at last, brought forward clear proof, that the art of medicine, hitherto conjectural (*p*), inconsistent with itself, and altogether incoherent, is now reduced to an exact science, proved not

excitement either going too low, by the remedies being pushed to some excess, or not equally diffused over all the parts in consequence of the natural supports only beginning to be brought fully into play ; in the asthenic from the perfect point of health being not quite gained, either from the stimulant remedies not having been carried exactly up to 40, or from some of them having been carried further than the wasted excitability could receive them with invigorating effect, and thereby an inequality left upon the whole. The convalescence, from the general effects upon the constitution sometimes arising from local diseases, is to be explained upon the principles laid down, with respect to the two other cases of convalescence.

(*p*) Celsus says, *ars nostra conjecturalis est*. And every man of sense, whether of the profession, or out of it, has held the same sentiments of it. Nothing is more glaring than the contradictions in medical writings and reasoning of every kind, nothing ever could be more incoherent. If a piece of knowledge, that sets out with a fixed principle, which applies to all the parts of the detail, while they reflect on it, both illustration and confirmation, be entitled to be considered as a science, the reader is desired to consider, how far that criterion will apply to this doctrine. The pedantry of mathematicians has contributed as much to bring that science into disgrace, as any other circumstance, particularly in allowing no sort of probation, but that which is made out by lines and diagrams ; while, except the elements of that science, every application of that department of knowledge has led to as many false conclusions as any other. If they will not allow the proof, that arises from our feelings, compared with those of all men, whose organs of sense are not deranged, what will they make of their own axioms ? They must admit of other probation ; while human reason holds its reign, truth and falsehood will be discriminated, without regard to such empty and useless prepossessions.

not by mathematical principles, which is only one kind of evidence, but by physical ones, and established by the certain testimony of our senses, nay, and by the very axioms of the mathematical elements ?

C H A P. XII.

As the action of all the other powers, that act upon living bodies, is the same, that of the remedies is also the same.

CCCXIII. IT is certain and indubitable that the exciting powers have one common effect. They produce the phænomena peculiar to life—perception, motion, intellectual operation, and thinking. For what else, I ask, but to excite and sustain these common animal functions, is the effect of heat, of food, seasoned or unseasoned, of the blood, of the colourless fluids secreted from the blood, and of the air, among external bodies ?—Among the functions themselves, have not muscular contraction, thought, the passions, and sensation, the same effect ?—Now since it is an universal law of nature that the same cause produces the same effect, it is evident that the mode of operation of the several powers above enumerated must be the same (*a*). Moreover, as their operation consists solely in stimulating (*b*), and as stimuli, therefore, produce all the phænomena of life—health, disease, and the intermediate degrees of predisposition (*c*) ; it must be admitted, that the operation of the remedies, both in sthenic and asthenic diseases, is the same. For, if there is no difference betwixt health and sthenic disease, except an excess of excitement in the latter, and none
betwixt

(*a*) See par. XX. with the annexed note.

(*b*) See XIX. and XXII.

(*c*) See XXIII.

betwixt health and asthenic diseases, but deficient excitement in these last, what else can the operation of the remedies, in removing sthenic diseases, be, but to diminish, and of those that remove the asthenic, but to increase the excitement (*d*) ?

CCCXIII. Whatever thing produces the same effect as another, or several other things, must be the same thing as each of them, each of them the same thing as it, and every individual of the whole set the same thing as every other individual.

4.4. In sthenic diseases, bleeding (*e*), vomiting, and purging (*f*), sweating, abstinence (*g*), rest of body and mind (*h*), tranquility with respect to passion, all restore health by nothing else but a diminution of excitement.

CCCXIV. In asthenic diseases, the administration first of diffusible stimulants, for the purposes of gradually bringing back the appetite for the greatest remedy, food, as well as of keeping the food upon the stomach, and of assisting in the digestion of it (*i*), then the application of heat (*k*), then the use of the less diffusible and more durable stimulants, as animal food without and with seasoning, wine, gestation, gentle exercise (*l*), moderate sleep, pure air, exertion of mind, exertion in passion and emotion, an agreeable exercise of the senses, all these reproduce health, by no other operation, but that only of increasing excitement.

CHAP.

- (*d*) See LXXXVIII.
- (*e*) See CCLXXXI.
- (*f*) See CCLXXXIII.
- (*g*) See CCLXXXIV.
- (*h*) See CCLXXXV.
- (*i*) See CCXCIV. to CCCII.
- (*k*) See CCCII.
- (*l*) See CCCII. to CCCIII.

C H A P. XIII.

That all the powers, which support any sort of life, are the same, or the fundamental principle of agriculture.

CCCXV. AGAIN, are not the powers, which produce perfect health, the same as those, which, by excess of operation, produce sthenic diseases; by deficiency of operation, asthenic; as well as the predispositions to both; are they not the same, I say, without any variation but of degree (*a*)?

CCCXVI. Further, as we learn from the whole doctrine delivered above, the noxious exciting powers, which produce sthenic diseases, are the remedies of asthenic; and those which produce asthenic, are the remedies of the sthenic (*b*).

CCCXVII. All the powers, therefore, that support any state of life, are the same in kind, only varying in degree; and the proposition is true, of every sort of life, to its full extent over the animal creation.

Such is the life of animals (*c*). Concerning which all that has been said, applies to the life of vegetables.

CCCXVIII. Accordingly, as animals, in every state of life, have their exciting powers (*d*); in predispositions and diseases their noxious exciting powers (*e*); in the cure of both their indications, and remedies adapted to each (*f*); all this, in every respect, is precisely the same in plants.

CCCXIX. The powers that support plants in every state of life, are heat, air, moisture, light, some motion, and their internal juices.

CCCXX. The

(*a*) See XXIII. LXXIII.

(*b*) See LXXXIX. XC. XCI. XCIII. XCIV.

(*c*) See from X. to XIII. inclusive.

(*d*) See LXII. LXVII. LXVIII. LXIX. LXXIII. CXII. to an CXLVII.

(*e*) See the same.

(*f*) See LXXXVIII. LXXXIX. XC. XCI.

CCCXX. The actions of plants also are produced by stimulus (*g*) ; by means of which, the phænomena peculiar to this sort of life, perception, some motion, and verdure, are excited : and the cause of this state is excitement, an effect in common to all exciting powers (*h*).

CCCXXI. Nay, in this case too the exciting powers, when applied in due proportion, produce health ; but their too great or too sparing action occasions diseases, or predisposition to diseases ; of which one set depends on an excess, another upon a deficiency of stimulus. Accordingly, excess or scantiness of moisture, excessive heat or cold, equally lead to disease and death, indirectly or directly. And, as the rays of the sun or darkness, when their operation is either too great, or too long continued, prove debilitating, the former indirectly, the latter directly ; so the alternate succession of night to day, of darkness to night, seems to be the effect of an intention in nature, to prevent too great an effulgence of the light of day, or too long a continuance of it, from stimulating either in excess or in ultimate excess, and thereby inducing sthenic diseases, or those of indirect debility ; and an excess, or long continuance of darkness from producing direct debility, and the diseases peculiar to it. We have no less proof, than that of the universal feeling of mankind, of the truth of what has been advanced, with respect to the stimulus of light and the debilitating effect of darkness.

CCCXXII. Nor are plants without their excitability, which, equally as in animals, “ is not different in different parts of its seat ; nor is it made up of parts, but one uniform, undivided, property over the whole system (*i*).” Consequently, to whatever part of a plant any exciting power is applied, its operation, whether in excess, in due proportion, or in under-proportion,

(*g*) See XVII. XIX. and notes.

(*h*) See Part I. Chap. II.

(*i*) See Part I. Chap. IV.

portion, immediately affects the excitability over the whole.

CCCXXIII. This effect is also produced with the same inequality as in animals; being, for instance, greater in that part to which its exciting power is directly applied, than in any other equal part. And, as there are two reasons for this effect in animals, the direct impression of the power upon the part more affected, and a greater energy of the excitability of the part to which it is so applied, than of that of any other equal part (*k*); the very same is the fact with respect to plants. Further, as the excitability bears a greater relation or affinity to the exciting powers, in the brain, the stomach, and intestines, than in most of the other parts; so the part in plants, that corresponds to these most excitable parts in animals, is the root, which is affected in the highest degree by the exciting powers. It is the root of plants, in preference to any other part, to which the conflux of moisture tends. The heat there is the most congenial, being neither excessive, and therefore liable to produce sthenic affection, or ultimately excessive, and therefore ready to induce indirect debility (both which disadvantages are prevented by a proper depth of soil); nor deficient, or what is called cold, which would bring on direct debility (*l*).

CCCXXIV. The only use of the soil, through the pores of which the powers that have been mentioned penetrate,

(*k*) See XLIX. and addition L. LI.

(*l*) Hence it would appear, that it should be a general rule in ploughing and harrowing to adapt the depth, where the seed is to be laid, to the state of the surrounding temperature. It would seem, when other circumstances are equal, that the seeds of plants may more safely lie superficially in warm than in cold countries. The same fact seems to be favoured by the difference of perfection that planted and natural woods attain in cold countries; the former, the seeds of which are lodged in a certain depth, turning to better account than the latter, which rise from seeds that have randomly been scattered upon the surface. Might not the hills in the west of Scotland, upon some such principle, be made useful oak forests?

penetrate, is to furnish a proper strainer ; so that the powers may not, from the pores being too patulous, go down in too great quantity, and produce first a sthenic, or too luxuriant a state of the plant, and then indirect debility ; or, from the too great contractedness of the pores, be insufficiently admitted to the root, and occasion indirect debility, or the decaying state of a plant. But that soil is not otherwise necessary to the production of any degree of vegetable life, is proved by plants often living, to a certain degree, in pure water. That, however, it is useful as a filter, is proved by the good effect of ploughing, of breaking the clods, of dividing the tough clay by lime and other absorbent earths, and by these means opening the soil : On the other hand, we have proof of this doctrine in the success of condensing the soil by making ground, naturally too friable, more tenacious with dung, and covering light ground with rags and stones, and thereby keeping in both heat and moisture.

CCCXXV. From this view of the facts, it is evident, why every sandy as well as clayey soil, when the former has not been made more tenacious, or the latter looser, must be barren and unfruitful. Hence very hot summers and countries are unfavourable to clayey grounds, by shutting up their pores ; and serviceable to friable and lean grounds, by diminishing their porosity. Hence, dry seasons are suitable to low-lying rich grounds, to which, from all quarters, a quantity of moisture is brought, and applied around the roots of the plants ; while rainy seasons are those that answer best in grounds lying high and having a thin soil. Declivities facing the north, which have commonly a thin and poor soil, are cherished and protected by hedges and clumps of trees, and by a great number of bare stones, covering the whole surface, which some persons, of more industry than sense, often remove with hurtful effect ; for they are of service in preserving warmth and retaining moisture. But in those grounds, the declivity of which
looks

looks toward the south, there is not equal occasion for such protection from cold and drynets, as they, from their more happy situation, are cherished by the sun, defended from the cold winds, and exposed to those winds which blow from the southern points and are seldom too dry (*m*).

CCCXXVI. To return, from this digression on agriculture, to our proper subject ; from what has been said upon the cultivation and nature of plants, we learn, that their life is similar to that of animals ; that every thing vital in nature is regulated by excitement, which the exciting powers alone produce ; that there is in no living system, whether of the animal or vegetable kind, any inherent power necessary to the preservation of life ; that the same powers which form life at first, and afterwards support it, have at last a tendency to produce its dissolution ; that life, the prolongation of life, its decay, and death, are all states equally natural ; that every living system lives in that which it procreates ; that the generations of animals and vegetables are in this way renewed ; that the system of nature remains, and maintains an eternal vigour ; in one word, that all nature has been fabricated by one single organ (*n*).

There are many circumstances rendering it probable, that this globe has undergone great changes ; that whatever is now sea, has been land ; whatever is land at present, has been sea ; and that the fossil kingdom of nature has not been more retentive than the organic
of

(*m*) While the northern winds, that is, the wind due north, and all intermediate ones in every point of the compass from due east to due west, are cold and dry, and commonly of a tendency to bring snow ; the southern, or the winds that blow from any point of the compass towards the south, from the same points of due east to due west, are as commonly warm and moist, and often productive of mild fertilizing rains.

(*n*) No discovery, of any importance or extent over nature, has yet been made, that does not warrant, as far as the smallness of the number of such discoveries go, the truth of this assertion. See the Introduction to my Observations.

of the respective form of each of its individuals. But whether minerals, like animals and plants, have a sort of life, so as, after their manner, to be produced into living existence, to grow, equally with plants and animals, to pass a certain period without growth or diminution of bulk, to decay, to die, and, in death, lose their proper form ; the long duration of their age, and the shortness of ours, deprive us of any possibility of learning.

CCCXXVII. All the motions of the planets, which were formed to remain and continue their courses for ever, depend upon this principle ; to proceed straight onward, according to the manner in which all projectiles move, and then by the influence of gravity, which affects them all, to be drawn downwards, and, upon the whole, to perform circular motions. In the smaller living bodies, with which those greater bodies are peopled, that is, in animals and plants, of which the species remain, though the individuals of each species die ; whatever is the cause of their functions, whatever gives commencement and perfection to these, the same weakens, and, at last, extinguishes them. It is not, therefore, true, that some powers are contrived by nature for the preservation of life and health, others to bring on diseases and death. The tendency of them all is indeed to support life, but in a forced way, and then to bring on death, but by a spontaneous operation.

PART THE THIRD.

OF GENERAL DISEASES.

The first Form, or Sthenic Diseases.

C H A P. I.

Circumstance common to all sthenic diseases—Peculiarities—Phlegmasiæ and exanthemata—Circumstances they have in common—Their peculiarities—Rationale of the pulse—Shivering—Lassitude—Dry skin—Excretions—Heat—Thirst—Nature of the inflammation in phlegmasiæ—General affection precedes that of a part, and regulates the latter—Opposite general affections arise from the same local accident, as a wound, when the diatheses, previous to the accident, are of an opposite kind—Enumeration of the sthenic phlegmasiæ.

CCCXXVIII. **T**O every sthenia, to all sthenic diseases, to the whole first form of diseases (*a*), increased excitement over the whole system is a common circumstance : it appears, during the predisposition, in an increase of the functions of body and mind (*b*) ; and, after the arrival of disease, in an increase of some of the functions, a disturbance of others, and a diminution of others ; in such sort, that the two latter phænomena are easily perceived to arise from the noxious powers that produce the former, and to depend upon their cause. As by this common bond of union the diseases of this form are connected together ; so

CCCXXIX. There are certain circumstances, by which they are distinguished by a difference of their degree :

(*a*) See above par. LXIX. LXXXVIII. CXLVIII. CCLCCLI. Chap. IX.

(*b*) See par. CLI. throughout.

degree : for, there are some sthenic diseases accompanied with pyrexia (*c*) ; some with inflammation of an external part ; there are others without the latter of these, and others without both.

CCCXXX. The general sthenic diseases with pyrexia and inflammation, are some of them called phlegmasiæ, others exanthemata. But they will all, without any other distinction, be treated here according to their rank in excitement, from the highest to the lowest degree.

CCCXXXI. The phlegmasiæ and exanthematic diseases have the following symptoms in common. That degree of sthenic diathesis, that distinguishes predisposition (*d*). This diathesis upon the formation of the disease, is succeeded by shivering, a sense of cold, languor, and a certain feeling like that which we have in fatigue from labour, called by physicians, lassitude. The pulse at first, in every case, and in mild ones through their whole course, is moderately frequent, and, at the same time, strong and hard : The skin is dry, and there is a retention of the other excretions, as well as of perspiration (*e*) : The urine is red ; there is great heat, and often thirst.

CCCXXXII. The symptoms peculiar to the phlegmasiæ (*f*), are an inflammation of an external part, or an

(*c*) See par. LXVIII. and the subjoined note, for the meaning of pyrexia, which will be just now repeated.

(*d*) From the first deviation from perfect health to the commencement of actual sthenic disease, the sthenic diathesis takes place in an increasing scale from 40° to 55°.

(*e*) Such as that by the belly, and that which pours out the saliva and mucus, and forms the matter of expectoration.

(*f*) The phlegmasiæ are sthenic diseases accompanied with inflammation in an external part, as has been said somewhere before, according to the definition of nosologists. But, as there is no difference betwixt them and synocha or the catarrh, which latter are unaccompanied with inflammation, we therefore pay no regard to the distinction ; and shall regard nothing either in these or any other diseases, but what is constituted by a real difference of excitement. It is the excitement by which we are to be guided through our whole distribution of diseases.

an affection nearly allied to it ; while the general affection, for the most part, precedes this local one, but never succeeds to it (*g*): This general affection, for the greater convenience of distinguishing it from fevers, is to be denominated pyrexia (*h*). In the exanthematic sthenic diseases, an eruption of spots or pustules, more or less crowded, according to the degree of the diathesis, covers and diversifies the skin. The eruption appears in consequence of a foreign, contagious, matter having been taken into the body, and detained below the cuticle.

CCCXXXIII. The

(*g*) Long before any part of this doctrine was discovered, when I was in search of certain facts respecting peripneumony and pleuritis, I discovered one which I was not looking for, of more importance than all the rest put together. It had been asserted, by most systematics and all the nosologists, that the primary symptom in the phlegmasiæ was the inflammation of a part, I saw that was not true with respect to rheumatism, in which the general affection or pyrexia often rages one, two, or three days before the sign of inflammation, pain, is perceived in any of the joints. I could also discern, that from the moment the pain and inflammation appeared in erysipelas, or the rose, there was also the general affection equally conspicuous. In short, in no one of that set of diseases, did the fact appear, that the inflammation was primary, and the pyrexia, or affection of the whole system dependent upon it. But as peripneumony was said in Edinburgh to be an exception, the detection I made equally disproved that. In all the works of Morgagni, where peripneumony and erysipelas are treated, and in all those of Trillerus, a professed writer on that subject, and in a thesis in Sandiforth's Thesaurus, taken from no less than 400 cases of that disease (for they are now by others, as well as me, considered as one), I found that in somewhat more than one-half of the given number, which was very respectable, the general affection appeared from one to three days before the pain came on, and in all the rest of the cases that, though for any thing these authors said to the contrary, they might sometimes have come on together, yet there was not one, in which it could be fairly alleged, that the pain was the first and primary appearance. Hence I found, that all the theories raised upon that hypothesis of course fell to the ground. Indeed the fact is quite consistent with every one here.

(*h*) Of this designation warning has been given more than once. See note at CCCXXIX.

CCCXXXIII. The explanation of all these symptoms easily flows from the doctrine delivered above. The sthenic diathesis, in the manner that has been so fully explained (*i*), precedes. The characteristics of the pulse are never to be referred to the affection of a part, having been demonstrated to arise from the diathesis (*k*).

CCCXXXIV. The frequency of the pulse in sthenic diseases is moderate, because, while the stimulus in the system cannot fail to produce some additional frequency, the quantity of blood, to be thrown into quick motion, sets bounds to it and prevents its rising to quickness (*l*). But, at the same time, it is evident, that a quantity so great cannot be transmitted with the same celerity, as an under proportion (*m*). The strength of the pulse is occasioned by the degree of excitement in the moving fibres of the vessels, which is commonly called their tone, and by that of their density considered as simple solids (LIX. LX. and LXI). The hardness of the sthenic pulse is nothing else than the continuance for some time of each strong contraction, closely embracing
a great

(*i*) See above all the paragraphs, where the operation of the powers producing sthenic diathesis are accounted for.

(*k*) See also par. CLV. and CLVI. and particularly CLXXIV.

(*l*) If this cause ever operates, it is probably not the principal cause. As both the systole and diastole of the vessels are more considerable in sthenic diathesis than in health, we cannot expect them to be performed with such celerity as in some asthenic diseases, though the fibres may contract with more velocity than even in health. EDITOR.

(*m*) In fevers and other asthenic diseases of great debility, from the weakness of the stomach and other digestive organs, and the small quantity of nutrient matter taken in, the quantity of blood which is diminished in every one of these diseases, cannot be more than one third less than that which overfills the vessels in sthenic diseases. Consequently, by a given power, it may be propelled in the same proportion, that is, one-third faster than in the sthenic diseases, which also appears in fact; for while 100 beats in a minute is a frequent pulse in sthenic diseases, till their approach or actual conversion to indirect debility, the common frequency in fevers and the other high asthenic diseases, is 150 beats in the same time.

a great column of blood, and, thereby, as it were, resembling a stretched rope (*n*).

CCCXXXV. That this is the exact state of the arteries is proved by the great quantity of food taken with a good appetite, before the arrival of the disease, during the period of predisposition; it is proved by this plentiful diet and other powers giving an unusually great excitement over the whole system (*o*), and, therefore, among their other effects, increasing the digestive energy; and by evacuant with other debilitating remedies, both preventing and removing the diseases. To confound, therefore, this state with one diametrically opposite (*p*), which has hitherto been an universal practice, was a very capital blunder, and could not fail to

(*n*) See par. CLV. If it should be alleged, that, though in fevers and the other cases mentioned just now in the note (*m*), the deficient quantity of blood to be put in motion will account for the greater celerity of motion, than in the diseases which make the present subject; still the great weakness of the heart, for want of the stimulus of a due quantity of blood, as well as of many others, should overbalance the effect arising from the small quantity to be moved. But the answer to that objection is easy. It arises from the explanation of the strength and hardness of the pulse just now mentioned in the text. The febrile pulse is indeed one-third quicker than the sthenic pyrexial, but it is weak, and small, and soft, while the other is strong, and full, and hard. An equal force then of the heart to that in the sthenic case is not required to account for the difference of the effect. A third less of blood, with an equal force behind, will be driven not only one-third faster, but with strength and hardness. The want of these two last then is to be set to the account of the heart's greater weakness. Though the blood then be driven one-third quicker, yet the impulse communicated upon the whole is one-third less, as the characteristics of both kinds of pulse readily explain to us.

(*o*) See the whole of the first chapter of Part II. upon the powers producing sthenic diathesis.

(*p*) Which authors and too many practitioners have universally done, in jumbling proper fevers with the present diseases, under the vague and false denomination of febrile or feverish diseases. In nosology the synochus is conjoined with typhus, the gangrenous fore-throat, which is a typhus fever, with the common sthenic inflammatory pyrexia.

to produce the worst consequences, by equally perverting the theories and actual practice of medicine.

CCCXXXVI. The shivering and sense of cold depend upon the dryness of the skin. The languor and feeling of lassitude point out a higher degree of excitement in the brain and fibres of the muscles, than can be conveniently borne by the excitability which is confined within certain boundaries (*q*). They are therefore functions impaired from a stimulant, not from a debilitating cause (*r*).

CCCXXXVII. The dryness of the skin is occasioned by the great excitement and density of the fibres, that encircle the extreme vessels, diminishing their diameters to such a degree, that the imperceptible vapour of perspiration cannot be taken into them, or, if taken in, cannot be discharged (*s*). This state is not spasm, or constriction from cold, but a sthenic diathesis, somewhat greater on the surface, than in any other part. The stimulant energy of heat, especially after the application of cold, which is always a powerful exciting cause of sthenic diseases, is applied to this part with more force than to any of the interior parts, and increases the sum total of stimulant operation (*t*).

CCCXXXVIII. The same, in general, is the cause of the temporary retention of the other excretions (*u*); only that the operation of heat, just mentioned (*x*), is foreign to the present explanation; and on that account, the diathesis, that affects the interior vessels, is more gentle. These vessels, both for that reason and
because

(*q*) See above CLIV.

(*r*) See above par. CLXVI.

(*s*) See LXIX. and CXIII.

(*t*) See XXXVII. 8. and CXIII. just now quoted.

(*u*) See CCCXXXI. and note (*d*); and also the par. CLIX. CLX. CLXIII.

(*x*) In the CCCXXXVII. and the reason is, that heat being stationary in the interior parts, has not that force which it has upon the external surface. See above par. CXIII.

because they are naturally of a larger diameter, are sooner relaxed in sthenic diseases, than the pores upon the skin (*y*).

CCCXXXIX. The redness of the urine is owing to the general diathesis affecting the vessels that secrete it, and proving an obstacle to the secretion (*z*). Hence arises an effort in the fluid to be secreted to distend the small vessels (*a*), and a counter effort of the moving fibres, by their contraction to diminish the cavities which the distention increases; and, in so far as they perform the function of simple fibres, to resist the distention. But, as, in this forcible action of the vessels, the cohesive force of all the simple solids yields somewhat, the effect comes to be the transmission of some particles of blood. This transmission happens not at first, because the distention does not suddenly, but after some time, overpower the cohesion of the simple solids.

CCCXL. The cause of the great heat is the interruption of the perspiration, preventing the heat generated in the inner parts of the system from passing off by the skin.

CCCXLI. The thirst is occasioned by the sthenic diathesis, closing up the excretory vessels of the throat, and there opposing the excretion of the peculiar fluid (*b*). And the heat, by dissipating what fluid is excreted, contributes to the effect.

CCCXLII. The inflammation and analogous affection (*c*), whether of a catarrhal or of any other nature, are parts of the sthenic diathesis, greater in the affected, than any other equal, part of the system (*d*): Which is

(*y*) It is reasonable to think, that vessels, which pour out a watery fluid, have a larger diameter than those, which, like the perspiratory, even in their healthy state, only transmit an imperceptible vapour.

(*z*) See par. CLXIII.

(*a*) Or tubuli uriniferi.

(*b*) See par. CLIX.

(*c*) Mentioned above in par. CCCXXXII.

(*d*) CLXVIII. CLXIX. CLXX. CLXXI.

is manifested by the exciting powers, also in this case acting upon the whole system; by the symptoms of the diseases showing an affection common to the whole; and by the remedies driving that affection, not from the inflamed part only, but from the whole system (*e*).

CCCXLIII. The general affection, for the most part, precedes that confined to one part, or is synchronous with it, but never comes after it, because the excessive excitement (*f*) that produces the diathesis, exists before the disease itself (*g*); and, though it forms the rudiments of the local affection during the predisposition (*h*), yet it does not, so early, form that affection itself, and not always even during the disease, but only in cases where we observe a certain high degree both of the disease and of the affection itself (*i*). Hence, when the diathesis is great, the affection of the part is in proportion, as in peripneumony and rheumatism, inflammatory sore throat, and mild erysipelatous sore throat; and slight under a less degree of the diathesis, as in the sthenic; while in a moderate and gentle diathesis it does not happen at all, as in synocha, or the common inflammatory fever and catarrh; because a high degree of diathesis is necessary to the formation of it. Thus in peripneumony, where the diathesis is the greatest, and in rheumatism, where it is next in greatness, the inflammation is found proportionably great (*k*). And even in the measles, where the danger turns entirely

(*e*) LXXXIX. See also part first, chap. IV.

(*f*) See LXII. LXIX.

(*g*) See CLXXIV.

(*h*) See above CLXIX.

(*i*) See above CLXVIII. 31.

(*k*) This proposition does not go so far as to assert, that there may not be a sthenic disease, without any actual inflammation, but with an affection of a part nearly allied to it, which depends upon an equally high diathesis as either peripneumony or rheumatism, and even higher than the latter. Such we find, as I have formerly said (CLVII. and CLVIII.) in phrenitis. But the meaning is, that the inflammation, when it does happen, is always in proportion to the degree of diathesis.

ly upon the degree of sthenic diathesis, the danger of inflammation is equal ; and here the lungs themselves are often highly inflamed. Synocha is never phrenitic, but when a great diathesis occurs, threatening the brain with inflammation. Nor is there any danger to be apprehended in erysipelas, even when its inflammation affects the face, but when the pyrexia is violent. The mildness of the diathesis ensures a favourable termination. Simple synocha is nothing else than a phlegmasia, consisting of a pyrexia and diathesis, inadequate, upon account of their small degree, to the production of inflammation. Yet, as all the noxious powers producing synocha, and all its remedies are precisely the same, with those of any phlegmasia ; to separate it from them, and to unite it with fevers, which are diseases of extreme debility, was an unpardonable blunder (l) ; especially as inflammation, which was falsely supposed essential to the nature of the phlegmasiæ, actually takes place in synocha, as often as the diathesis, necessary to produce it, is present (m). Yet this error, upon account of another, neither of a slighter nature, nor of less hurtful consequence, that of supposing inflammation to be the cause of the phlegmasiæ, necessarily escaped observation. In fine, to remove all doubt of inflammation being compatible with the nature of catarrh, though upon account of the moderate general diathesis, upon which catarrh usually depends, inflammation does not usually take place in it ; even in it, as often as the diathesis

(l) This has been more than once hinted at, and once a little above. The nosologists have excluded synocha from their order of phlegmasiæ, because forsooth, though it was in every other respect the same, it wanted the inflammation of a part, and they united it with proper fevers, though in the powers producing it, in its proper cause, and in the remedies that remove it, it was in every respect diametrically opposite to those diseases. But their rule of judging was different from ours.

(m) What is a peripneumony, a rheumatism, or any phlegmasia, but a synocha, with a diathesis sufficient to produce inflammation ?

diathesis rises high, which sometimes happens, when the proper plan of cure has been neglected, and the effect of the exciting noxious powers has been carried to excess, an inflammation, and a formidable one indeed, arises, often affecting the throat (*n*), and sometimes the lungs, and producing there an affection rising to all the rage of a peripneumony:

CCCXLIV. It is in vain to object that a thorn thrust under the nail, and wounding it, will superinduce inflammation upon the wound, and spread a similar affection along the arm to the shoulder, and a pyrexia over the whole body; and to adduce this as an illustration and proof of the manner, in which the phlegmasiæ arise from inflammation. For nothing like a phlegmasia follows this or any similar affection of a part, unless the sthenic diathesis previously happens to have taken place, and is upon the eve of spontaneously breaking out into some one or other of its respective diseases. Without that diathesis, no general affection takes place, and if an opposite diathesis be present when such an accident happens, an opposite general affection will be the consequence, to wit, a typhus, arising as a symptom of gangrene (*o*), and dangerous to life.

CCCXLV. That the affection of the part depends upon the general affection is proved by the frequent occurrence of inflammation, without being followed by any phlegmasia. This occurs, as in the case just mentioned, as often as the general diathesis is absent, or the

(*n*) When that happens it is still commonly a mild disease, as will be shown by and by.

(*o*) It is with much regret, that I should have had occasion to observe the bad, and too often fatal, consequence of treating such local affections, without discrimination of the habit with which they may coincide. The disease is treated by evacuation and starving, even in habits the most weakened, and strong drink is withheld from persons even the most accustomed to it. The disease increases, and, as if that were for want of more such treatment, the same treatment is persevered in till death closes the scene.

the inflamed part is not an internal one and of high sensibility (*p*). Accordingly, all the examples of phlegmone, and of erythema or erysipelas, without general diathesis (*q*), are quite different in their nature from the phlegmasiæ, though they have been absurdly classed with them, and more absurdly still considered as their prototypes; since they are, in fact, all, only local affections, or symptoms of other diseases. This opinion is not weakened by a certain resemblance of diseases with inflammation in an internal part to the phlegmasiæ; for these diseases are neither preceded by the usual noxious powers, that produce either the phlegmasiæ, or any general disease whatever, nor cured by the usual remedies of the latter. It was, therefore, a mistake of most pernicious consequence to the practice, to enumerate among the phlegmasiæ those diseases, that arise from stimulants, acrids, and compression, and which

(*p*) See above CLXXI.

(*q*) See also par. LXXXI. The nosologists, under their genus of phlegmone, which in one of them is divided into two species, proper phlegmone, and erythema, have raked together a number of local, and most of them insignificant affections, which they have considered as laying the foundation of their phlegmasiæ, or general sthenic diseases with an inflammation in a part. But will any man in his senses see any connexion betwixt chill-blanes, which is one of them, or anthrax which is a local symptom of the plague, or the slight inflammation upon the eye, called a Itie, or the inflammation in the groins of children from their being scalded by their urine, or the bites of insects, the effects of which are confined to the bitten part; will he see any connexion betwixt these and a peripneumony; which arises from hurtful powers affecting the whole system, and no part in particular; and is cured by remedies that affect the whole system, and the inflamed part not more, or even so much as many others? All these, however, have been made the prototypes of inflammation, by which they meant their phlegmasiæ; as if there were nothing to be regarded in them but the inflammation, which, in fact, is their most insignificant part, bearing no higher proportion to the sum of morbid state over the system than that of 6 to 3000, or even less. See above Part I. chap. IV. and particularly par. L.

which are only curable by removing their local cause, which is seldom effected by art (*r*).

CCCXLVI. It is not without good reason, that the appellation of pyrexia has been given to the general affection, which appears in the phlegmasiæ and exanthemata; for thus they are most advantageously distinguished on the one hand from fevers, which are diseases of debility in extreme, and on the other from a simular, but altogether different, affection, which is a symptom of local diseases (*s*), and may be called a symptomatic pyrexia.

CCCXLVII. The true sthenic diseases (*t*), which, except one, are accompanied with pyrexia (*u*) and external

(*r*) See above par. LXXXI. Take for an example gastritis, which the nosologists have made one of their phlegmasiæ, and put upon the same footing with peripneumony and the other diseases that may be admitted as phlegmasiæ. That affection is an inflammation in a portion of the stomach, in consequence of a solution of continuity from the previous swallowing of ground glass, small fish bones, a quantity of Cayenne pepper; or symptomatic of a scirrhus obstruction and tumour. These, not the ordinary hurtful ones that operate upon the whole system, as in the true phlegmasiæ, are the powers that induce that affection. It has no connection with the excitement, the affection of which is only an affect of the locally stimulating power, and of the sensibility of the stomach; its true cause being the solution of continuity or obstruction, keeping up the inflammation; and its remedies such, as are adapted to the removal of that local state. It may happen to a sound habit, where there is no diathesis in any degree; in which case it is purely local; or it may accidentally coincide with either diathesis; in which case it is a combination. When the combination is with sthenic diathesis, debilitating evacuant remedies can only palliate; but they bring life into danger when the asthenic diathesis is present, which is 17 times out of 20 for the other.

(*s*) The general affection arising in the system from the effect of a thorn pushed under the nail (see par. CCCXLIV. and note), and that occurring in the gastritis, mentioned in the last paragraph of the text (see the note on that paragraph) are good examples of cases, to which the term symptomatic pyrexia should be applied.

(*t*) See above CCCXXIX.

(*u*) See par. CCCXXXII.

ternal inflammation (*x*), are peripneumony, phrenitis, the small pox, the measles, as often as these two last are violent, the severe erysipelas, rheumatism, the mild erysipelas, and the cynanche tonsillaris. Those free from inflammation are catarrh, simple synocha, the scarlet fever, the small pox, the measles; when, in the two latter instances, the eruption consists only in a few pustules.

The Description of Peripneumony.

CCCXLVIII. The symptoms peculiar to peripneumony (*y*) (under which term pleurisy, and carditis, as far as it is a general disease, are comprehended), are pain somewhere in the region of the chest, often changing its seat; difficult breathing; cough, for the most part attended with expectoration, and sometimes with a mixture of blood in the matter expectorated.

CCCXLIX. The seat of the disease is the whole body, the whole nervous system (*z*); as appears from the disease being produced by an increase of the diathesis, which took place in the predisposition, and by no new circumstance (*a*); from the inflammation within the chest, for the most part following the pyrexia at a considerable interval of time, and never preceding it (*b*); and from bleeding and other remedies of similar operation, which do not affect the inflamed part, more than any other equally distant from the centre of activity, removing

(*x*) See CLXVIII.

(*y*) The symptoms in common to it and the other diseases of the same form, enumerated in the last paragraph, have been described in par. CCCXXXI. These peculiarly distinguishing the phlegmasiæ and exanthemata, that is the diseases either accompanied with inflammation, or an approach to it, are described in par. CCCXXXII.

(*z*) See par. XLVII. XLVIII. XLIX. LIV. LV. and not the inflamed portion in the lungs, according to the common opinion.

(*a*) See above LXXV. LXXVI.

(*b*) See above CCCXXXII. and the note (*g*).

removing the disease. The proper seat of the inflammation, which is only a part of the general diathesis, is either the substance of the lungs and the production of the pleura, that covers their surface; or some part of that membrane, whether the part lining the ribs, or that containing, within the external surface of it, the thoracic viscera; it is different in different cases, and in the same case at different times.

CCCL. The pain in the chest depends upon an inflammation of the corresponding internal parts just mentioned (*c*), as is proved by dissection; though indeed it is still oftener occasioned by an adhesion of the lungs to the pleura costalis, seldom to an inflammation of that membrane, as we learn from the same evidence.

CCCLI. When the inflammation takes place on the surface of the lungs, it is impossible it can be confined either to the substance of the lungs, or the membrane covering their surface. For how can any person suppose, that the points of the same vessels, whether distributed upon the membrane, or plunging into the substance of the lungs, or emerging from it, can be inflamed without a communication of the affection to the contiguous points (*d*). The distinction, therefore,
of

(*c*) See above par. CLXXIV.

(*d*) Yet one nosologist, upon that very supposition, makes two orders of phlegmasiæ, one seated on the membrane, the other in the interior surface of each viscus. Into this error, he had been led, by observing, that, after death, the interior substance of the liver exhibited signs of previous inflammation. And, as other dissections showed the membrane upon other occasions to have been in a state of inflammation, he thence drew his rash conclusion. But it is to be observed, that the first mentioned state of the liver was not a phlegmasia at all, as it had not during life exhibited any of the symptoms of that disease, or even given any sign of the presence of inflammation. It is a case, then, we have nothing to do with upon this subject, even so far as it applies to the liver. But the extending the application to all the viscera, which he was pleased to make the seats of some phlegmasiæ or other, was looseness of reasoning, and carelessness of matter of
fact,

of the inflammation accompanying the phlegmasiæ into parenchymatose, or that affecting the substance of the viscus, and into membranous, and the notion which makes the latter case universal, are equally remote from the truth. The reason why neither the membrane contiguous to the lungs, nor the substance of the latter, is always inflamed, and why the inflammation is sometimes communicated to some part of the neighbouring membrane, appears from the vicinity of the part inflamed in the last case to that which receives the air, and, therefore, varies in its temperature (*e*).

CCCLII. The pain often shifts its seat (*f*) in the course of the disease, because its immediate cause, the inflammation, is equally liable to change, being disposed to leave its first seat, or in some measure to remain in it, while it becomes more considerable in another. This appears from the comparison of the known change of the pain with the traces of inflammation in the corresponding parts, discovered after death (*g*).

CCCLIII. This fact, added to those already produced, constitutes another solid argument (*h*) in refutation

tion
fact, in the extreme. A gentleman, whose works have lately been buried, without any struggle or signs of life, but that of a feeble unintelligible sound from within the tomb, which no living reason could make any sense of in their life time, took it into his head to maintain (for the sake of seeming to differ with men of name and reputation, his highest ambition), that the inflammation in the phlegmasiæ was always seated in the membrane: The answer to which is given in the text.

(*e*) So far is it from being true, that this sort of inflammation can be confined to a few points of the affected vessels (see the preceding note), that in fact we find it, though not so often as has been supposed, sometimes in the mediastinum, sometimes in the external membrane of the pericardium, sometimes in the superior membrane of the diaphragm. Boerhaave's notion of the translation of inflammation from one viscus to another, was an error in the opposite extreme.

(*f*) See above CCCXLVIII.

(*g*) Many such as are to be found in Morgagni, Bonnetus, and Lieutaud.

(*h*) See all that has been said.

tion of the opinion of those who believe the disease to be produced or kept up by inflammation, or in some shape to depend upon it; it confirms the doctrine here advanced, and proves that the inflammation is regulated by a strong general diathesis, and directed by it sometimes to one part, sometimes to another; and that, as depending on this cause, it increases, and is in a manner multiplied. And the same conclusion is confirmed by the inflammation abating, becoming more simple, and at last receding from every part it had occupied, in proportion to the progress of the treatment in relieving or removing the diathesis. The same idea is confirmed by the nature of rheumatism, in which the pains are severer and more numerous, in proportion as the diathesis runs higher; and milder and fewer in proportion to its gentleness. These pains, which have their dependence upon the general diathesis and are a part of the general disease, ought to be distinguished from local ones, which often occur, and may accidentally precede this disease. Stitches, as they are called, frequently happen from slight accidents, and may appear before the arrival of rheumatism, but they should be distinguished from the pains that arise from the diathesis, constituting that disease; a distinction, that has seldom been attended to, for want of a right principle to lead to such attention.

CCCLIV. The difficult breathing is not owing to any organic defect in the lungs, or to defect of excitement in them, but to the air alone, which in inspiration fills and distends its own, and compresses the inflamed vessels.

CCCLV. The cause of the cough is a large secretion and excretion of the exhalable fluid and mucus, irritating the air vessels and increasing their excitement, as well as that of all the powers that enlarge the cavity of the thorax; then suddenly suspending it, and thus occasioning a full inspiration and a full expiration, partly in conjunction with the operation of the will (*i*).

CCCLVI. The

(*i*) See above CLX. and CLXI.

CCCLVI. The cough is little or none at first ; because, on account of a strong diathesis occupying the extremities of the vessels, the same fluids issue in the form of an insensible vapour, are less irritating in that form, and dismissed with less effort.

CCCLVII. Again, the cough is afterwards followed by expectoration ; because the accumulated fluids are carried forward in the rapid action of the air, which, at the time of the cough, rushes out, as it were, in a torrent (*k*). The mixture of blood points out the effort of secretion formerly explained.

CCCLVIII. The softness of the pulse, commonly taken into the definition of this disease, at least when they called it peripneumony, has been here rejected, because the characteristics of the pulse do not follow the inflammation, but the general diathesis (*l*). With respect to the diathesis, the proper expression is, that the pulse, instead of soft, is less hard ; and when the effect, that the treatment has produced upon the pulse, is considered, it may then be said to be soft (*m*).

CCCLIX. Nor is the varying feeling of pain, which is described as sometimes acute, and pungent, sometimes obtuse, gravitative, and rather to be considered as uneasiness than pain, though immediately dependent upon the inflammation, to be regarded as of any consequence in pointing out the state or seat of the inflammation : because, however great the inflammation is, wherever it is seated, whatever danger it announces, the only means of removing it, and of averting the danger, is to remove the general diathesis. The notion, therefore, of the membrane being inflamed, when the pain is acute, and the interior substance, when the pain is obtuse,

(*k*) See above par. CCXXXIX.

(*l*) See above CLV. CLXXIV.

(*m*) It is an universal effect of sthenic diathesis to render the pulse hard in one degree or another. And peripneumony is not an exception from that fact. But the distinction arose from the mistake of inflammation being the whole, instead of an unimportant part of, the disease.

obtuse, must be regarded as groundless, or rather must be guarded against as pernicious (*n*).—When the disease has arrived at an advanced stage, the sudden abatement of the pain, without a proportional relief of the breathing, to an unskilful person often gives an appearance of real return of health. But the cause, which has nothing to do with the seat or sort of inflammation, is that degree of excitement, which flows, that the excitability is exhausted, the excitement come to an end, and that its vigour, before excessive, is now converted into direct or indirect debility (*o*). Hence in the vessels, especially the inflamed vessels, in place of the excessive excitement, with which they were before affected, we have no excitement at all; and extreme laxity takes the place of their former density. Hence, instead of an excretion increased by violence, an immense discharge takes place without force and without effort, merely from the watery part of the fluids, on account of the inert state of the vessels, parting from the more consistent; and a sudden suffocation, in consequence of an effusion of fluids from all quarters into the air vessels, terminates the scene.

CCCLX. The carditis, or inflammation of the heart, is a disease of rare occurrence, is ill understood, and for the most part a local affection. When the latter is the case, there is no occasion for the interference of a physician. And, if ever it be a general disease, it admits of no other definition or cure but those of peripneumony. From peripneumony then, as it arises from the same antecedent noxious powers, and is removed by the same remedies, it is not to be separated.

The

(*n*) See par. CCCLI. and the note under it at (*d*).

(*o*) The direct debility may be owing to the proper cure, which is directly debilitating, having been carried too far, or to the indirect debility arising in the course of the disease, seldom now to alexipharmic treatment. See above par. XLVII. and the subjoined notes.

The Description of Phrenitis.

CCCLXI. Phrenitis is one of the phlegmasiæ (*p*), with a slight inflammatory or catarrhal affection of some one, or more joints, or of the fauces, with head-ach, redness of the face and eyes, impatience of light and sound, watchfulness, and delirium.

CCCLXII. Inflammation, in its proper form, never appears in this disease. And yet there is an approach to the inflammatory state in the joints, in the muscles, and especially over the spine, or about the chest, or low down the throat; or else there is a catarrhal state, which is, however, an affection depending upon the same cause, as inflammation, and only differing from it in being less violent.

CCCLXIII. The head-ach, and redness of the face and eyes, arise from an excessive quantity of blood in the vessels of the brain and its membranes, distending, stimulating in excess, and producing contraction of the vessels to a degree that gives pain (*q*). To the production of pain, inflammation is not necessary: for, independently of this inflammation, action is painful, because it exceeds that mediocrity at which agreeable sensation takes place (*r*). The redness both points out and explains the overproportion of blood. And that the overproportion gives pain by its distending operation, is shown by the relief that bleeding and every thing that diminishes the quantity, and moderates the impetus of the blood, administers.

CCCLXIV. It is the overabundance of blood also that produces the impatience of light and sound. For, as a certain impulse of the blood is necessary to the exercise of every sense, in order to whet the organ of
sensation

(*p*) See above par. CCCXLVII.

(*q*) See above CLVII. and CLVIII.

(*r*) See par. CLXXXII. CLXXXIII.

fenfation (s); fo when this riles to excefs, an equal increafe of fenfation muft be the confequence. But thefe very fymptoms, along with pain, arife in an oppofite ftate of excitement, to wit, the aſthenic.

CCCLXV. The vigilance and delirium are occaſioned by excefs of excitement, which is produced by the exceſſive ſtimulus of the abundance of blood and of the other powers. Other noxious powers, contributing to the effect, are intenze thinking, and a high commotion of the paſſions. Excited by theſe, no body, when even in health, ſleeps; and, therefore, the wonder is the leſs, that a high degree of them, under the influence of a violent diſeaſe, ſhould repel ſleep. Both increaſed watching and delirium are fymptoms of diſturbance.

An Explanation of the Sthenic Exanthemata.

CCCLXVI. The ſthenic exanthemata, after the application of a contagious matter, and of the uſual noxious powers which produce ſthenic diathēſis, appear firſt in the form of ſthenic pyrexia, or ſynocha, and then, after a ſpace of time, not precisely fixed, are followed with ſmaller or larger ſpots.

CCCLXVII. That the exanthematic ſthenic diſeaſes differ not from other ſthenic diſeaſes, in any circumſtance of confequence, is proved by this ſtrong argument; that, except the eruption and the phænomena peculiar to it, there is nothing in the ſymptoms, and, except the contagion, there is nothing in the noxious exciting powers, but what happens in any ſthenic diſeaſe; and the preventatives, as well as the remedies, are the ſame in all. Such being the fact, it was the height of abſurdity, merely for the ſake of the eruption and its peculiar phænomena, to ſeparate the exanthematic

(s) There is commonly in the organ where any nicety of ſenſe is to be exerciſed an extraordinary apparatus of blood veſſels. Blood flowing into theſe, increaſes, by its heat and the ſtimulus of its motion, the ſenſe, to which the organ is ſubſervient.

matic from their kindred diseases, and to class them with diseases the most opposite both to them and to one another (*t*). For how, when the usual plan of cure removes the effect of the eruption, whatever that be, and thereby shows it to be the same, can any one imagine, that the cause should be different, and not precisely the same? unless we must again have to do with those, who maintain, that the same effect may flow from different causes. Truly, the operation of
contagion,

(*t*) The nosologists have separated the exanthematic diseases, real or imaginary, into a class or order by themselves, which they have filled up with diseases, of which there is not two, but the small-pox and measles, that have any other connection, than their mere eruptive appearance, while they are separated from others, with which, in every respect, they have the most essential connection. Thus the small-pox and measles are taken from the natural place to which they are here restored. And it is unaccountable, that we should have it to say, that even erysipelas, which has surely no right even to the slim distinction of eruptive, has also been placed among them. Again, the plague, which is to all intents and purposes a typhus fever, its eruptive part not always disjoining it from that, is separated from it, though it is so nearly the same, scarcely excepting degree, and conjoined with sthenic diseases of a diametrically opposite nature. And the gangrenous fore-throat, which is also a typhus, has neither been placed among fevers, in its proper place, nor among the exanthemata; to which the efflorescence, that it produces on the external surface, according to their own rules of arrangement, seemed better to entitle it than some others, especially the erysipelas. And it again (for there is no end of the confusion of this pretended order of some physicians,) is conjoined not only as a genus with sthenic diseases, but even as a species of one of those genera. The truth is, that systematics, who were otherwise no nosologists, have made too much work about eruptive and contagious diseases, and have never dived into the interior nature either of them or almost of any other. They have all followed each other from their first leader, and never once deigned to turn a glance of their eye upon the phenomena of nature as these arose before them. Hippocrates misled his followers, they misled theirs from age to age, and they all misled the poor nosologists: who have laid on the cap-stone of the absurdity of the art, and, having finished the fabric of folly, left mankind, if they are not pleased with it, to look out at their leisure for a better and more solid.

contagion, in so far as it gives rise to general disease, is not of an opposite nature to the general sthenic operation, but precisely the same.

CCCLXVIII. Contagion is a certain matter, imperceptible, of an unknown nature, and like most of the phænomena of nature, only in any measure open to inquiry in its evident effects. Taken from the body of one affected with it, or from any gross matter (such as clothes or furniture, where it happens to have been lurking), and received into an healthy body, it ferments without any change of the solids or fluids, fills all the vessels, and then is gradually ejected by the pores (*u*).

CCCLXIX. And, as no effect, except sthenic diathesis, follows it, and as the noxious powers, that otherwise usually produce that diathesis, always precede it, and an asthenic or debilitating plan of cure always and alone succeeds in removing it, and consequently its effect no way differs from the diseases before mentioned; it is, therefore, with justice, that the diseases arising from it, are conjoined with these others, as belonging to the same form.

CCCLXX. There is only this difference betwixt them, that in the exanthematic cases of sthenic disease, the matter requires some time to pass out of the body, but the period is different in different cases; and it passes out more or less freely, the more free or impeded the perspiration is (*x*). But it is impeded by no spasm, by no constriction from cold, and only by the prevalence of sthenic diathesis upon the surface of the body; as is evident from this, that cold, by its debilitating operation, procuring a free issue for the matter, clearly promotes the perspiration (*y*). That it produces this effect,
by

(*u*) There is no reason whatever to suppose contagious matters to ferment in the body. It is only necessary that they produce a certain action of certain parts, of the superficial vessels, for instance. EDITOR.

(*x*) See above par. XXI. and LXXVI.

(*y*) See par. CXVII. CXVIII. CXX. CXXI.

by diminishing the diathesis, not by removing spasm, has been formerly demonstrated. As the issue of the matter is in this way promoted by inducing a free perspiration; so

CCCLXXI. Whatever part of it is detained below the cuticle, acquires a certain acrimony during its continuance there, produces little inflammations, and conducts them, when produced, to suppuration. These, by irritating the affected part, create a symptomatic pyrexia and symptomatic sthenic diathesis, which should be distinguished from the general pyrexia and general sthenic diathesis (z).

CCCLXXII. The period of eruption is more or less determinate, because the operation of fermentation, being in some measure certain and uniform, requires a certain uniform space of time for being finished, diffused over the system, and reaching the surface, as is attested by the effect. Again, it is not exactly determined, because the perspiration, from the varying state of vigour, must, at different times, and under different circumstances, be more vigorous or more languid.

CCCLXXIII. The pyrexia, symptomatic of the eruption, sometimes assumes the form of an actual fever: The reason of which is, that the high degree of stimulus, which the eruption gives to the whole surface, produces ultimately excessive excitement, and afterwards puts an end to it in the establishment of indirect debility (a).

The Description of the Violent Small-Pox.

CCCLXXIV. The violent small-pox is a sthenic exanthema, in which, on the third or fourth day, sometimes later, break out small spots or points, inflamed, and which by and by change into regular pustules; containing a liquor, which, generally on the eighth day after

(z) See above par. CLXXV. and CCCXLVI.

(a) See par. CCXV. CCXVI.

after the eruption, often later, is converted into pus, and dwindles away in the form of crusts. The eruption, of which the degree is always in proportion to that of the sthenic diathesis, in this case is the greatest that ever occurs.

CCCLXXV. All these phænomena are governed by the laws of fermentation (*b*). The number of pustules, being proportioned to the degree of diathesis, shows, that, without the noxious powers, which of themselves, without any co-operation of contagious matter, produce the diathesis, the contagion has not much effect in producing the real morbid state, and that it chiefly regulates the exterior form of the disease; which, without diathesis, is of no consequence, and does not amount to general morbid state.

CCCLXXVI. But the violent small-pox is distinguished by the following symptoms: Before the eruption there is a very severe pyrexia; this is succeeded by an universal crust of pustules over the whole body. The noxious powers antecedent to this are very violent sthenic ones, particularly heat; the remedies that remove it are very asthenic and in preference to any of them cold.

The Description of the violent Measles.

CCCLXXVII. The violent measles is a sthenic exanthematic disease (*c*), beginning with sneezing, watery eyes, dry cough, and hoarseness; on the fourth day, or later, there appears an eruption of small numerous papulæ or little points; these on the third day, or later, terminate in an appearance of branny scales. This disease, when preceded with a high degree of sthenic diathesis, is proportionally violent.

CCCLXXVIII. The sneezing, watery eyes, dry cough and hoarseness, are catarrhal symptoms, and, therefore, depend

(*b*) See above par. CCCLXVIII.

(*c*) See above par. CCCLXVI.

depend upon sthenic diathesis (*d*). And, since they appear, four days or more before the eruption, that is, before the matter might seem to have reached the affected parts, and are constant and universal; here we are to suppose, that the sthenic diathesis is the effect of the noxious powers, that usually produce it, and not entirely of the peculiar contagious matter, and that this diathesis is indispensably necessary to the measles. But though this supposition should be rejected, and it should be contended, that these symptoms arise from the contagious matter; it still must be granted, that this disease differs in nothing from other sthenic diseases, but equally depends upon sthenic diathesis, and yields to antisthenic or debilitating remedies. And it must be allowed, that, since the contagious matter produces the same effect as the usual noxious powers, its operation must be absolutely the same, and so the cause of the disease the same. Consequently, we find nothing in the indication of cure, but what is common to this disease with other sthenic exanthemata; viz. that time must be given to the matter to pass out of the body, and the perspiration be conducted in the same manner, as when we have any other form of sthenic diathesis to treat (*e*).

CCCLXXIX. The eruption admits of the same reasoning that has been employed above (*f*). The circumstance of its being a violent disease when preceded by a violent sthenic diathesis, and mild in a mild degree of that diathesis, is a further instance of the little difference that there is betwixt the operation of contagion, and that of the ordinary powers producing sthenic diathesis.

CCCLXXX. When the diathesis runs so high as to suppress the perspiration, the eruption often disappears for a time, as if it receded into the interior parts of the body.

(*d*) See above par. CLXXV.

(*e*) See above par. XCVI.

(*f*) See above par. CCCLXXV.

body. This dangerous appearance occurs chiefly towards the end of the disease. The fact is, that this matter, in the same manner as the variolous, kindles a symptomatic inflammation over the surface of the body, and then, by a further increase of the diathesis, suppresses the perspiration. Hence the lungs (g) and other viscera are often inflamed.

CCCLXXXI. The

(g) That the lungs should be inflamed in a violent state of the diathesis in the measles is not to be wondered at; as the common catarrh, when its diathesis runs high, is liable to produce the same effect. (See par. CCCXLIII. towards the end.) But, considering how many facts in medical writings I have found false, the effect of that on my mind, is to render the weight of testimony in favour of the various internal viscera being so liable to be inflamed, from this supposed striking in of the measles eruption, very light, and to dispose me to doubt of the fact altogether: Which I am the more inclined to do, from the analogy of a broad fact in direct contradiction to it: Which is, that the inflammation, depending upon the general diathesis in sthenic diseases, never, as I have yet found, affects an interior part. (See par. CXIII. CLXVIII.) Neither is inflammation, from any other source, near so frequent in internal parts as vulgar opinion has taught us. Dissection has shown inflammation in the intestinal canal in dysentery, or what is called in English the bloody flux. But that only happened under the evacuant, debilitating, vegetable plan of cure; and, even in that case, seems to have been an ultimate, not an early, effect, much less a cause. And it has been shown, that what has been considered as a burning inflammation in the first passages, is not an inflammation at all. (See above par. CXCVIII. Nay, even when inflammation does happen internally, it is never of the sthenic, but always of the general, or local, asthenic kind, and, when quickly cured, cannot be inflammation. If there be any truth in the frequency of inflammation towards the end of the measles, it must be of the asthenic kind: Which is the more likely from its late appearance, and from a circumstance that, though no where taken notice of, has great weight with me; which is, that, as the distinct small-pox passes into the confluent, peripneumony into dropsy of the chest, and any sthenic disease with its diathesis, into any asthenic disease, and the diathesis on which it depends; there is nothing in the nature of the animal œconomy and of the powers acting on it, to prevent the same conversion of sthenic into asthenic state in the measles. And if, which is most probable from the alexipharmic practice,

that

CCCLXXXI. The violent state of the small-pox, from the great stimulus of the eruption, often converts both the sthenic diathesis and eruption into asthenic, and thereby produces the confluent small-pox, of which we are afterwards to treat. Whether any thing like this occurs in measles, is not yet ascertained: But, as every excess of excitement, as in the conversion of peripneumony into a dropsy of the chest, is liable to induce indirect debility, it is, therefore, scarce to be doubted, but that the same thing happens in this disease, which is inferior to none in violence.

The Description of the violent Erysipelas.

CCCLXXXII. The violent erysipelas is a phlegmasia, always beginning with pyrexia, and followed by inflammation. The inflammation is seated in some external part of the body, and ofteneft in the face, sometimes in the throat; it is of a red colour, has an unequal edge, is somewhat raised, creeps from one place to another, and is attended with a sense of burning.

CCCLXXXIII. It is peculiar to this inflammation to invade the corpus mucosum, which the other general inflammations never do. To assign a reason for this peculiarity is of no consequence; since this inflammation does not differ from the others either in the operation of the exciting powers producing it, or in that of the remedies which remove it.

CCCLXXXIV. The cause of the redness of the inflammation, in this as well as in every case, is an excessive quantity of blood in the inflamed vessels; for the question about the degree of redness is of no importance. There is less swelling in the inflamed part than in other sthenic

that was then used in this disease, in direct debility can induce such a change, no disease has a fuller chance for it than the measles. But I am sure, were the debilitating plan used from the beginning, no such consequence would happen.

sthenic inflammations, because there is here a free space betwixt the scarf skin and true skin, allowing the effused humour room to spread and diffuse itself. This is also the cause of the slow creeping motion of the inflammation, and of the inequality of its edges. The sense of burning is owing to an acrimony of the contained fluid, acquired by stagnation (*h*).

CCCLXXXV. The attack of the inflammation upon the face is not more dangerous than upon any other place, except when the diathesis, upon which it depends, is great, and renders the inflammation proportionally great (*i*). In which case, whatever part is inflamed, the disease must be held for a severe one; but still severer, if the inflammation seizes the face; for then the disease is always accompanied by great commotion in the system.

CCCLXXXVI. When such a sthenic diathesis and affection of the head depending on it, occur, no disease is more dangerous, none more rapid in its race to death; while in a mild diathesis no disease is milder.

A Description of Rheumatism.

CCCLXXXVII. Rheumatism is a phlegmasia, most frequent in that temperament, which inclines to the sanguine. It is a consequence of heat succeeding to cold, or so alternating with it as to prove on this account the more stimulant: It is accompanied with pain nigh, or between, the joints, chiefly the large joints, and proportioned to the degree of the diathesis (*k*): And the inflammation always succeeds the pyrexia.

CCCLXXXVIII. External temperature is hurtful in this disease in the same way, as has been often explained (*l*).

CCCLXXXIX. The

(*h*) This may safely be questioned, since, if the vessels are excessively full of blood and excessively excited, there is no occasion to suppose any other cause of the heat: and this latter hypothesis is much more agreeable to analogy. EDITOR:

(*i*) See par. LXXXV. CCCXLIII.

(*k*) CCCXLIII.

(*l*) CXIII. et passim.

CCCLXXXIX. The rage of pain is in the parts that have been mentioned (*m*), because it is these parts that the inflammation, or more increased part of the general diathesis (*n*), chiefly affects. The reason of this is, that nearly the most powerful of the exciting noxious causes, the temperature that has been mentioned (*o*), only affects them. There can be no translation of the inflammation to the internal parts, since these parts, which preserve nearly an equal temperature amidst every change of it externally, are not affected by the same hurtful power which annoys the external parts.

CCCXC. Cold is not, according to the common opinion, hurtful in this disease by producing constriction; because the violence of the disease is greatest under the operation of heat, which has an effect quite opposite to that of the constriction (*p*). This fact is confirmed by stimulant diet, in all its articles, proving always hurtful, and by abstinence being always serviceable, and often alone effecting the cure. This affords a sufficient refutation of the mistaken notion, according to which, temperature is alleged to be more hurtful, and sweating more serviceable, than is consistent with the truth; as if there were no other noxious powers but the former, no other remedies but the latter. In this, as well as in all other general sthenic diseases, it is the general sthenic diathesis alone that produces, and the solution of it alone that removes, the disease. The fact is not only well ascertained, but countenanced by the analogy of every part of this doctrine that has yet been delivered. Such pains of parts, as sometimes precede this disease, oftener happen without being followed by it: whether followed by rheumatism or not, they have nothing to do with sthenic diathesis, upon which this disease entirely hinges; they proceed from a local affection, or belong to a very different general disease, rheumatagia, of which more hereafter.

CCCXCI. The

(*m*) CLXVIII. (*n*) Ibid. (*o*) CXIII. (*p*) Ibid.

CCCXCI. The reason why the larger joints are affected in this disease, and the smaller in the gout, is the following : In rheumatism, because the other circumstances of the disease, as well as the pains, depend upon a violent sthenic diathesis ; the greater joints, which, for the reasons assigned, are more subject to the diathesis, have also a greater share of the disease. But, as the gout consists in debility, its violence will be greatest, where there is naturally the greatest debility, and therefore in the extreme parts, and those most remote from the centre of activity (*q*).

A Description of the mild Erysipelas.

CCCXCII. Both the definition and explanation of the violent erysipelas (*r*), delivered before, are applicable to the mild ; the latter, however, both in the antecedent noxious powers, in the symptoms, and in the whole nature of its cause, must be understood to be much milder than the former, and not only so, but a remarkably mild disease.

CCCXCIII. It is often not so much a sequel of the sthenic cynanche, which is commonly called tonsillar or the common inflammatory fore-throat, as a supervention upon it before it has finished its course. It often appears alone and unaccompanied with the cynanche,
arising

(*q*) To make this subject simple to any apprehension. A person has been exposed to intense cold a whole day. He comes home at night, is set by a warm fire, receives hot meat and warm cordial drink. He is next covered up in his bed with an addition of clothes, receives more warm strong drink. He falls asleep, and next morning feels a pain in some part or other of his upper extremities, nigh, or between, the great joints ; and, previous to that, a high state of heat and bouncing pulse, with a certain feeling of uneasiness in different parts of his trunk. The pains increase in the bed next night in proportion to the increase of the general affection ; and cold, evacuation, and abstinence from food, from alternation of temperature, cure him.

(*r*) From CCCLXXXII. to CCCLXXXVII.

arising from a similar lenity of the noxious powers, and manifesting a similar mildness of symptoms through its whole course.

CCCXCIV. Nay, in the same persons, in the same state of the noxious powers, sometimes this erysipelas, sometimes cynanche, sometimes catarrh, arise promiscuously, and are all removed by the same mild method of cure (*s*).

A Description of the Cynanche Sthenica.

CCCXCV. The sthenic cynanche is a phlegmasia, with an inflammation of the throat, and especially of the tonsils, but never preceding the pyrexia: It is accompanied with swelling and redness, and an aggravation of pain in swallowing, especially any thing fluid.

CCCXCVI. The reason for the inflammation occupying the place mentioned here, has been given before (*t*). And, when it has once taken place, it is afterwards liable to frequent recurrence, because its seat is exposed to the operation of the most noxious power, heat and alternation of temperature (see XXXVI. with addition), and is less covered than other parts (*u*): And the vessels first distended by the inflammation, and then afterwards relaxed,

(*s*) I have often experienced them all, sometimes singly, sometimes all three, in the course of the same disease, oftener a combination of inflammatory fore-throat, and the mild erysipelas, and, as far as I could observe, could discern, that the degrees of phlogistic state that produced them, and of remedies that removed them, were both gentle, the former as stimulants, and the latter as debilitating powers; and both so nearly of the same degree, that, in arranging them, I was at a loss which to place over the other in the scale.

(*t*) See CXIII. CCCXLII.

(*u*) See par. CLXVIII. If one is walking in the evening, when a sudden fog comes on, with cold and chilliness, he may cover his throat externally, but it is impossible to defend it internally.

relaxed, take in an overproportion of blood upon every increase of its impetus (*x*).

CCCXCVII. The inflammation here, as in the other phlegmasiæ (*y*), never precedes the pyrexia, for the reason assigned (*z*) ; but if an unskilful person should think it does, the reason he will have been misled is, the gradual degeneracy of the general sthenic inflammation into a local disease, from its frequent recurrence, and from its leaving behind, after each attack, a taint in the affected part. This latter inflammation may happen, without a general sthenic diathesis, and, therefore, without being followed by a sthenic cyanche ; and it may accidentally coincide with the former, or sthenic diathesis, and, therefore, precede the latter, or sthenic cyanche : But, in both cases, it ought to be distinguished from the pure general case, for the sake of guarding against the commission of a hurtful mistake in the treatment (*a*). In an asthenic habit, whether succeeding to the former or not, there is again another general inflammation, to be referred to asthenic diseases.

CCCXCVIII. If any person can explain why the pain is aggravated in swallowing liquids, he may communicate his knowledge ; if he cannot, it is no matter.

CCCXCIX. The cyanche œsophagæa has been here omitted, because it is a rare affection, and admits of the same reasoning and cure as the tonsillar, from which it differs only in the inflammation being lower down, and a little redness only coming within view. But, as there is always a suspicion that it may be local,
from

(*x*) This is so liable to happen, when any person has once experienced this disease, that the increased motion of the blood in walking in a warm day, and then sitting down in a cool place, has sometimes produced ophthalmia, sometimes this fore-throat.

(*y*) See the definitions of them all, &c.

(*z*) See par. CLXVIII. CCCXLIII.

(*a*) This might happen to a person under an asthenic diathesis, which would be increased by the debilitating plan of cure, and would be useless in the absence of diathesis.

from erosion or a burn of the œsophagus, from the application of an hard, corrosive or hot substance ; the above distinctions should be attended to, and made use of for the sake of practice. See above LXXXI. LXXXIII. CLXX.

CCCC. There is likewise a rare disease, sometimes occurring in certain countries, never in others, called the croup (*b*). In this disease the respiration is laborious, the inspiration sonorous, with hoarseness, a ringing cough, and a swelling scarce to be discerned (*c*). It is a disease that infests very young children almost only. And in all other particulars it is of a doubtful nature (*d*).

CCCCI. In forming your judgment concerning this disease, when it happens to occur in practice, attend to the following circumstances. As the sthenic diathesis, in the degree requisite to the formation of actual disease, which depends upon a high degree of diathesis, occurs less frequently, either in the beginning, or towards the end of life ; because the high degree of excitability in the former, and its low degree in the latter, admit a smaller degree of the effect of the exciting power, that is, a smaller force of excitement (*e*), than the long period of human life betwixt these two extremes ; yet it is not altogether foreign from either (*f*). In childhood, the high degree of excitability compensates for the slightness of the stimulus ; while, in old age, the high degree and force of the latter may compensate for the

(*b*) By nosologists cynanche stridula.

(*c*) It is perceived upon dissection of the dead subject.

(*d*) I never saw this disease, but when I was so young a student, that any observations I could make, can be of no use to me now. There have been many battles of words about it, whether it be inflammatory or spasmodic, without any adequate meaning of the differences betwixt these two words, at least so far as to influence the practice ; which remained much the same betwixt the parties, and probably the right one was missed by both.

(*e*) See par. XXV. and XXVI.

(*f*) Though it is seldom that either a child, or very old man, will be so sthenic as to need bleeding and much evacuation, yet they will sometimes.

the deficiency of the former, and suffice to induce some sthenic diathesis, even to that degree which constitutes disease. Thus infants undergo wonderful vicissitudes of excitement, and within the shortest spaces of time. To-day they will show every sign of extreme debility, to-morrow every one of restored vigour; because in them the operation of any stimulus soon rises to its highest pitch, upon account of their high excitability, and sinks as soon to its lowest, upon account of its own small degree (*g*). Hence every sthenic diathesis, that happens to them, is short, acute, and soon removed (*h*); nor is their asthenic state of long continuance, or difficult to be removed; provided there is no local affection, which very seldom, indeed, happens; and a proper method of cure is employed; which, till of late, has been very rare: the antiphlogistic cure having made away with three-fourths of mankind, before they arrived at the seventh year of their age.

CCCCII. The marks of sthenic diathesis at this age are, great frequency of pulse, when compared with that of adults, more frequent than their own in health, distinctly meeting the finger upon feeling it; a state of bowels rather costive at first, which goes off in the progress of the disease; dryness of the skin; burning heat, thirst, watching, strong crying.

CCCCIII. The signs of the asthenic diathesis at the same age are, a pulse not to be numbered from its frequency, small, falling softly like snow upon the finger, so that you are uncertain if you touch it at all; a very loose scouring belly, with green discharge; frequent vomiting; dryness of the skin, heat greater than natural, and greater in some parts than others; interrupted sleep, never refreshing; a feeble cry, calculated to excite compassion.

CCCCIV. The

(*g*) A child of mine was given over for death by his nurse: His mother gave him some of the diffusible stimulus. He slept two hours, and when he waked made signs, for he could not yet speak, to have a little pie, most of which he ate.

(*h*) A single gentle purge will do it.

CCCCIV. The former diathesis, besides other noxious powers, is preceded by the use of good milk, animal food, an abuse of opium or strong liquors; excessive heat after cold and moisture, which latter increases the debilitating effect of the former; a strong set of simple solids.

CCCCV. The latter diathesis, together with the common noxious powers, is preceded by the use of milk from a weak, sickly nurse; that of vegetable food, with sugar in it; watery diet; watery drink; habitual vomiting, habitual purging, both from other means used for the purpose, and particularly magnesia, given with the intention of absorbing an acid; cold not followed by heat; a weak mass of simple solids.

CCCCVI. Consider which of these sets of signs precede or accompany the croup, and whether its pyrexia be sthenic or asthenic. Weigh the different sentiments of authors upon the subject. Suspect their theories, and their facts still more. Be on your guard, that you may not be misled by the vanity, emptiness, and rashness, of young physicians; as well as by the obstinacy and bigotry of the older sort, which increase with their age and practice, and are not to be bent by any force of reasoning, any weight of truth, scarcely by the power of God himself: Regard their minds as bound in the fetters of prejudice: Remember, that a whole generation of physicians were in the wrong, except one man (*i*), and

(*i*) The improvement that Dr. Sydenham made was good for the length it went, which was, to use cool and gentle evacuants for the cure of the small pox, pe ipneumony, and one or two more of the sthenic diseases. The bias, in favour of the alexipharmic practice, for the cure of catarrh and measles, he never got over. His theories were vague, but with respect to the practice in the diseases among which his reformation lay, they were innocent. He attained not any idea of the nature of diseases depending on debility and his practice was hurtful in them: He fell a victim to his gout, which could not have happened had he been acquainted with

and that they persisted obstinately in their error, in the case of the alexipharmic physicians : Reflect within yourself, good reader ! whether the present physicians, who follow the doctrines delivered in the schools, are more judicious than their predecessors, and whether they do not run into the contrary extreme of madness, doing as much mischief in fevers, and diseases of pure debility, as the former did in sthenic diseases, and spreading destruction wide among mankind. Thus secured against mistake, consider the methods for treating this disease that have been proposed. If in these, or in any trial that you may make, you shall find that either bleeding and purging, or antispasmodics, as they are called, that is, stimulants, succeed ; then be assured, that, in the former case, the disease is sthenic, in the latter asthenic ; of which you may be still more certain, if you shall find that the exciting noxious powers and symptoms, which have been enumerated, at the same time agree with the other marks.

A Description of Catarrh.

CCCCVII. Catarrh is a phlegmasia, in which, to the general symptoms mentioned before (*k*), are added cough ; hoarseness ; and at first a suppression, or slight increase

with but one disease of the debility. His practice, even when right, was destitute of principle : He had no sort of comprehension of the doctrine of life as a whole, and as a department of knowledge distinct from all others. It would have been lucky, however, for posterity, had his successors done as much in asthenic, as he did in sthenic diseases. From that beginning, the ingenuity of some, at last under a right direction, might have brought out more information, and, by gradual and sure steps, at last attained a comprehension of their whole subject. But professors of universities ruin every thing : For, while they find out nothing themselves, they throw into false lights the useful hints of others. This was the effect first of the Boerhaavian, then of the Hoffmannian and Stahlian doctrines. See our Observations, Outlines, p. lxxxv. to cxlix.

(*k*) CCCXXXI.

increase of the excretion from the nose, fauces, and bronchia, followed afterwards by a further increase; arising from stimulant powers, often from heat alone, but chiefly after a previous application of cold; and to be removed by debilitating powers, often by cold alone, when the access of heat is prevented (*l*).

CCCCVIII. The explanation of the cough is the same as that given before. But it is more free, than in peripneumony, and not suppressed, because there is no inflammation in the neighbourhood to aggravate it, and occasion pain (*m*).

CCCCIX. The hoarseness is owing to a suppression of the vapour that should be exhaled into the bronchia; for when it has remained long, almost without expectoration and cough, or with a moderate degree of them, as long as the sthenic diathesis continued in full force in the bronchia; upon this diathesis giving way, and the expectoration and cough becoming more free, the hoarseness abates, or goes off. That this can be effected by a stimulus of the kind and degree, that constitutes sthenic diathesis, is shown by the effect of long and loud speaking producing temporary hoarseness, by silence removing the hoarseness, and cold water relieving it.

CCCCX. The excretion suppressed is that of the mucus and exhalable fluid, and it admits of the same explanation that was formerly given.

CCCCXI. That stimulants produce catarrh is evident from this, that heat alone, fulness of diet, strong drink, and moderate exercise, for certain produce it; cold, cold water, spare diet, and rest, as certainly and effectually remove it. It was, therefore, a very unlucky mistake, to think it arose from cold alone, and was to be cured by heat. On the contrary, cold is never hurtful in catarrh, but when its action is succeeded by that
of

(*l*) See par. CXII: CXIV, CXVII. CXXII. and all the stimulant powers, from CXII. to CXLVII.

(*m*) See par. CLX, CCCLV.

of heat, which phenomenon is to be explained as before (*n*). The occurrence of catarrh so often in summer, where its action can be a thousand times traced back to heat, but never to cold; the influenza never needing the assistance of cold to induce it, which catarrh often does; its never succeeding to pure cold, but immediately to heat, facts known to old women, to shoemakers and taylor, to blear-eyed beggars and barbers, unknown to medical authors and professors, are all circumstances that confirm the same fact.

A Description of the simple Synocha.

CCCCXII. The definition of simple synocha is the same with that of phrenitis (*o*), excepting the symptoms affecting the head. It is a slight disease, ending in health often in one day, always in a few days, unless when new noxious powers, either accidentally or from the use of a stimulant plan of cure, have been super-added.

A Description of the Scarlet Pyrexia.

CCCCXIII. The scarlet pyrexia is an exanthema (*p*); about the fourth day, or later, the face swells a little, and at the same time the skin is here and there marked with a red efflorescence, and then chequered with large spots; which afterwards unite, and in three days end in little scales, resembling bran. This eruption does not arise, but in consequence of sthenic diathesis produced by some other cause.—There is another eruption similar to this, which accompanies an opposite disease, afterwards to be mentioned.

CCCCXIV. The eruption, appearing at a fixed time, and remaining for a fixed time, must be imputed to the fermentation requiring a certain time, which is different

(*n*) See CXXII. (*o*) See par. CCCLXI. (*p*) See CCCXXX.

different in different diseases, and is to be explained in a similar manner as before (*q*).

CCCCXV. The swelling of the face depends upon a greater degree of sthenic diathesis there, than any other equal part. And we are to suppose, that, besides the noxious powers that usually produce it, it is increased by the contagious matter, now approaching the surface.

CCCCXVI. This matter of itself produces no morbid state, only giving the exterior and exanthematic form (*r*), and following the nature of the sthenic or asthenic diathesis. Hence, after its application, the disease that arises is sometimes sthenic, as this, of which we have given a definition, sometimes asthenic, as that disease of which we are afterwards to make mention in its proper place. This view of the subject serves to reconcile the contradictory explanations and methods of cure of authors, who have gone into such controversies to settle its nature.

A Description of the mild Small-pox.

CCCCXVII. The definition of the mild and violent small-pox is the same; excepting that in the mild there are often very few pustules, and that they never exceed one or two hundred in number: Sometimes the place only, which was inoculated, is beset with pustules, without any appearing in the rest of the body; or, besides these, there may be only one upon the body.

CCCCXVIII. The crowded eruption is not occasioned by the nature of the contagious matter, or by its quantity, but by the sthenic diathesis, in so far as it is induced by the sthenic noxious powers: the contagious matter has very little share in this effect (*s*). If, therefore, that diathesis be prevented, especially upon the surface,

(*q*) See par. CCCLXVII. and CCCLXXVIII.

(*r*) See par. CCCLXXV.

(*s*) See par. CCCLXX. CCCLXXII. CCCLXXV.

surface, the eruption will never be thick ; and, after this diathesis has appeared, if it be immediately removed, the eruption will never be dangerous.

CCCCXIX. The contagious matter does not, contribute much towards sthenic diathesis for the reasons alleged (*t*) ; it does, however, contribute something, as is proved by a crowded eruption both appearing and increasing, when the diathesis, after the reception of the contagion, is not increased by the ordinary noxious powers (*u*).

CCCCXX. And, therefore, though the excitement should be reduced below that degree which suits perfect health ; there are, however, certain boundaries, beyond which we should not proceed in the debilitating process.

CCCCXXI. For, when the sthenic diathesis is very much abated, and the excitement immoderately diminished, there appears over the whole body, an eruption quite unlike the variolous, of a high scarlet colour, and in its progress proceeding constantly from a spotted appearance into a continued sheet of efflorescence, from the top of the head to the ancles (see above par. CCXX. and two notes) ; which, unless treated upon a stimulant plan, proves fatal.

A Description of the mild Measles.

CCCCXXII. The definition of the mild measles is the same with that of the violent. To this disease all the reasoning that has been employed about the small-pox will apply. If, immediately upon the arrival of the catarrhal symptoms, the sthenic diathesis in a way contrary to every mode of treating this disease hitherto
thought

(*t*) From CCCCXVII. to CCCCXIX.

(*u*) This, indeed, is a clear proof, that the matter contributes something, and that there may be a degree of diathesis, compatible with health, unless when it is increased, and the perspiration diminished, by such contagious matter.

thought of, be removed ; frequently no disease of that kind which affects the whole body, will follow. And the disease always proceeds with the same gentleness as the small-pox treated in the same way (*x*).

CCCCXXIII. The catarrhal symptoms are of the same nature as in catarrh, and admit of the same treatment, that is, the asthenic (*x*).

CCCCXXIV. Catarrh, and simple synocha, are free from all inflammation, whether general or local. The scarlet fever, and the mild small-pox and measles, are free from general, and exhibit upon the surface a local, inflammation of no consequence (*y*).

A Description of the Sthenic Apyrexia.

CCCCXXV. The sthenic apyrexia, which are equally free from pyrexia (*z*), and every degree of inflammation, arise from a sthenic diathesis, that has less effect upon the vascular system, than in the other sthenic diseases (*a*).

A Description of Mania.

CCCCXXVI. Mania is a sthenic apyrexia ; in which the mind is disordered, and forms false ideas of every thing.

CCCCXXVII. In so far as mania does not arise from a defect of the substance of the brain, which is a local case that sometimes happens ; the powers that have the chief share in producing it, are excessive exercise of the mental function, and a high exuberance of passion. These, however, while they act more upon the brain than any other part, at the same time do act
more

(*x*) All this has been well proved by every one of my children, and by an hundred patients at once.

(*y*) See par. CLXX. and CCXI.

(*z*) See par. CCCXXIX.

(*a*) So much so, as never to have been thought in any sort connected with that affection we call pyrexia.

more or less also upon the whole body, though not to the degree of drawing pyrexia after them (*b*). Which is proved by the disease being cured by a debilitating plan, and by other stimuli, as well as those just mentioned, not immediately applied to the brain, but to a distant part of the system.

CCCCXXVIII. The most powerful of those stimuli are, spirituous or vinous liquors, opium, and, perhaps, some other things, taken into the stomach, and first acting there. Of the other sthenic noxious powers, some of themselves, and operating alone, have less effect in inducing mania, and yet, even they, by their stimulant operation, increase the force of those, that have that hurtful effect; as is proved by the effect of removing them in relieving the disease.

CCCCXXIX. If poisons sometimes produce mania, without injuring the substance of any solid part, their operation must be supposed the same, as that of the general stimulants, their effect the same, and the disease a general one, and the same (*c*). But if these very poisons act by destroying the texture of a part, they must be considered as the cause of local disease (*d*).

CCCCXXX. The heart and arteries are less affected in mania, than in any of the pyrexial diseases; because the noxious power, which chiefly affects the vessels—too much food—has less concern here. And yet that food, superadded to the other noxious powers, does prove hurtful even in this disease, is evident from a contrary power, abstinence, being, among other remedies, found of very great efficacy in restoring the healthy state. Which, with what has been said above, proves that mania is not a disease confined to a part, but extended to the whole system.

CCCCXXXI. Although,

(*b*) Compare this with par. XLIX. L. LI. LII. LIII. and indeed with that whole chapter, as the severest trial of the truth of it; nothing being more natural, than the supposition that a mad man is only affected in his head, but we shall find that not true.

(*c*) See par. XX.

(*d*) See par. V. VI. XX.

CCCCXXXI. Although, in the diseases that have just been mentioned (*e*), the pulse is commonly said, and believed, to be not at all affected, this, however, is not exactly the truth ; for in mania, so long as it continues to be a sthenic disease, that is, so long as it is really mania, more or less of sthenic state can be perceived. The characteristic of hardness of the pulse is never wanting, and therefore also fulness. (See CCCXXXIV.)

The Description of morbid Watchfulness.

CCCCXXXII. Pervigilium, or morbid watchfulness, is a sthenic apyrexia (*f*) ; in which there is no sleep, or no healthy sleep, and the mind is agitated with vivid, strong, or uneasy impressions.

CCCCXXXIII. The noxious powers, that produce pervigilium, are the same with those, that produce mania, but inferior in force. It is evidently produced by hard thinking, commotion, or disturbance of mind, more frequently than by other noxious powers. The degree of thought, that has this effect, is not ultimately excessive ; for, if it were, by effecting a temporary waste of the excitability, it would produce sound sleep ; or if it repelled sleep, it would only act so by inducing indirect debility, the consideration of which is foreign to this place (*g*). The same degree of agitation of mind proves hurtful, in so far as it produces this disease : For every ultimate excess either ends in sleep, or induces that vigilance, of which indirect debility is the cause. But it is not a single operation of the intellectual faculty, or of the state of any passion, or of one that happens but rarely, that proves adequate to the effect. For the effect, in that case, would be either too slight, or of too short continuance, to merit the title of disease. It

is

(*e*) From CCCXXV. to CCCXXXII.

(*f*) See par. CCCXXV.

(*g*) See CXLI.

is only an often returning, or deeply affecting, irritation upon the brain, and, therefore, one that leaves a lasting impression, which has any considerable power in producing this disease. In this last way, an eager, inordinate, and vast desire for the attainment of the objects of ambition, the impulse that hurries on to the revenge of a great injury, the horror that arises upon the perpetration of it, and the fear of future punishment for crimes, are exhibited as productive of strong commotion of mind, in the examples of Cataline, Orestes, and Francis Spira. As often, therefore, as the mind is so excited in its ideas and passions, as not to be capable of being composed to rest and sound sleep; after a certain short continuance of these, or other stimuli; so often are we to conclude, that this disease takes place.

CCCCXXXIV. As the noxious powers just mentioned (*k*) produce this disease; so there are other powers, which belong not to this place, but are to be mentioned, that also repel sleep.

CCCCXXXV. To pervigilium belong all the noxious powers that have been mentioned under mania (*k*), whether acting within or without the brain, but here they act with less force, and yield to the asthenic plan of cure.

CCCCXXXVI. As in this way pervigilium is produced by certain strong stimulant powers (*l*), while the sum of other stimuli remains undiminished, it must be inferred, that the cause of this disease is the same with that of the rest of the sthenic form of diseases (*m*), and that the state of body in which every one of those diseases consist is the same: Nor do different noxious powers, but precisely the same, with only a variation in the proportion of their force, as often happens in other sthenic diseases, precede this disease.

CCCCXXXVII. The same fact is also manifest from the functions; of which, though these diseases are

(*b*) See par. CCCCXXX. and CCCCXXXIII.

(*k*) See from CCCCXXXVI. to CCCCXXXII.

(*l*) See CCCCXXXIII: (*m*) From CXXI. to CXLVIII.

are called apyrexia or without pyrexial state, the pulse is not altogether free from disease (*n*). On the contrary, it is as much stronger than in health, or in the predisposition to asthenic diseases or in those diseases themselves, as there is more vigour, and more excitement upholding that vigour, in the system (*o*). And the state of the other functions, except those of the brain, which is the part chiefly affected, is truly the same as in the milder sthenic affections, or in the predisposition to these. But, if the brain in this disease, and in mania, is much more affected than the rest of the body; there is nothing unusual in that circumstance; it being an universal fact, with respect both to diseases and the predisposition to them, that some part is more affected than any other part (*p*).

A Description of Obesity.

CCCCXXXVIII. Obesity is a sthenic apyrexia (*q*); in which, in consequence of an excess of health, rich living, especially in the article of food, and an easy sedentary way of life, the fat increases so much as to incommode the functions.

CCCCXXXIX. That obesity, so defined, is a disease, is understood from the definition of disease (*r*); and that it is a sthenic disease, appears from the certain signs of sthenic diathesis attending it. Of which, the strong action of the stomach, whether the appetite or the digestion be considered (*s*), and the strength of the other digestive organs, are a glaring proof.

CCCCXL. And as in this disease, the stimulus of the exciting powers raises the excitement from the degree

(*n*) See CCCCXXX. and CCCCXXXI. and the note to the latter.

(*o*) For a proof of their vigour maniacs have often four times the strength they used to have in health.

(*p*) See part first, chap. IV. and in it XLIX. and LII. CLIX. CCV.

(*q*) See CCCCXXV. (*r*) See IV. (*s*) See par. CCLXII.

gree consistent with good health, to that which constitutes sthenic diathesis, without which there could not be such force in the action of the stomach, and of the organs that form chyle and blood; so, it is in common to this with the other diseases called sthenic apyrexia, that the sum of all the stimuli is much less than in the other diseases of the same form, that is, in those with pyrexia and inflammation; that it never rises to the extreme height at which indirect debility is produced, and that it is never indeed so great as to be sufficient to have any considerable effect on the heart and vessels.

CCCCXLI. But it happens in all those diseases, that both these and all the other functions get somewhat above the standard of health, and a great deal above asthenic diathesis. And the sthenic apyrexia differ from the other sthenic diseases chiefly in this, that the exciting powers keep far below that degree of force, that wastes the excitability much; as is perceived from the effect; for they are diseases of much longer continuance than any other sthenic diseases.

CCCCXLII. From which circumstance, however much the brain may be affected by its own proper stimuli; however great the quantity of blood in its vessels may be; unless to the excitement arising from these, there be added that excitement which the other stimulant powers produce, it is certain, that the general effect will be much less, and that the united energy of all the powers has far more effect, than the separate force of any.

CCCCXLIII. The diathesis, then, in these diseases, is, upon the whole, less than in the rest of the sthenic diseases; though that of a part, as of the brain in mania and pervigilium, and of the blood-vessels in obesity, is pretty considerable. The whole is in general as great as in predisposition to the other diseases, and exceeds this degree in the most affected part. Hence it appears, that the sthenic apyrexia, compared with the predisposition to sthenic pyrexia, but differ from these
last

last diseases, when they are fully formed, in being usually of long duration. This happens because the sum of stimulant operation is moderate, and never consumes the excitability, though it continually produces too much excitement. The great tumult of symptoms in the brain and blood-vessels does not imply a great sum of excitement, because the affection of a part, however formidable, compared with the affection of all the rest of the body, is infinitely inferior in its degree (*t*). However much, then, any stimulus urges a part, and from that spreads at large over the rest of the body; unless other stimuli, applied to other parts, sustain its operation, so that the sum of their operation may deeply affect the whole body; the effect of the solitary stimulus, though it makes a figure in a part, will be less considerable in the rest of the body: In fine, it must be kept in mind, that every violent disease arises from the excitement which the united force of several stimuli has produced.

CCCCXLIV. In these sthenic apyrexia, as a certain part, viz. the brain in the two first, and the blood-vessels in the last (*u*), is affected in much greater proportion, than in other sthenic diseases, because the affection of the part is much less supported by stimuli acting upon the other parts; so the stimuli, acting with such effect upon the most affected parts, are, however, understood to affect the rest of the body, though less considerably. That this is the case, is proved by the absence of asthenic diathesis, in these instances, and by the evident presence of so much sthenic diathesis, as upholds the predisposition to other diseases of the sthenic form; by the remedies, which affect other parts, as it will by and by appear, aiding in the cure here, and by powers of a contrary nature, always proving hurtful. Whence it is an indisputable consequence, that even here, where it might have been least expected, every stimulus

(*t*) See par. XLIX. to LII.

(*u*) See par. CCCCXLIII.

stimulus that affects a part, affects the whole body, upon account of the excitability being one uniform undivided property, diffused over the whole.

CCCCXLV. With respect to obesity in particular, it appears, that the other noxious powers, as well as food, have more or less effect, from the certain fact of the digestive powers, which depend upon the influence of these powers, being here of such force and vigour, as to perform their functions more perfectly in fat persons, than in others, who are, nevertheless, not by any means weak. Yet these noxious powers are applied in a degree short of that, which being ultimately excessive, or very nearly so, puts an end to excitement by wasting the excitability, or which tends, by a high degree of disturbance, to exhaust the body.

CCCCXLVI. Thus the passions are not in such persons too stimulant; a circumstance known to the generality of mankind, among whom it is an adage, *that fat persons are commonly good-natured* (*x*), while morose persons are for the most part lean. Thus it is observable, that fat persons are averse to thinking, which is a great stimulus (*y*). They are averse to bodily motion,

(*x*) This must be taken with more than grains of allowance; since such is the effect of the different motives to human action received from example and education, that the passions themselves are drawn into a subserviency to every person's predominant pursuit. I have known a person in Edinburgh get great credit for his integrity, though that was not extraordinary, from roughness of manners and an affectation of passionateness, while the dissimulation of that real disposition is the more general engine among men of promoting their interest. At any rate, so much more than mere appearance of temper, which may be so much overruled, is necessary to the establishment of maxims; that I should think my life or property upon an insecure footing, if it depended on the good-nature of a person, for which the only security was his fatness.

(*y*) The most poring persons are the atrabilarians, who, though they are not calculated for the elevation of mind that discovery requires, have, by their assiduity, contributed much to the improvement of many of the arts. They are commonly very meagre, indeed, and indefatigable in any pursuit to which they give themselves up.

motion, by which all the functions, and particularly the action of the vessels, are much excited, and the perspiration proportionally promoted; and they have this motive for their indolence, that all motion is more fatiguing to them than to others. Hence, the quantity of fluids, which during exercise is usually thrown off by the pores on the surface, and thus diverted from the adipose cells, is allowed, during a state of bodily quiescence, to take its course to these cells rather than to the surface of the body.

CCCCXLVII. Having explained the peculiarities of these diseases; I may observe, that, as the affection of a part, in every general disease, depends upon the general affection, as it is of the same kind, arises from the same exciting powers, and is removed by the same remedies (z); it is reasonable to believe, that the affection of a part, whether it be inflammation, or more considerable action of the brain and blood-vessels than of any other part, is not different in different cases, but altogether the same in all; that it only differs in some circumstances of no signification, and by no means requires a different plan of cure, or affords fundamental distinctions; and that this mistake, which has had the most pernicious effect upon the art of medicine, must be done away. It is with propriety, then, that I have avoided reducing all the diseases of which I have treated, first to two genera, and after to species; and that without regard either to genera or species, I have referred them to two forms only.

CCCCXLVIII. Further, as in all these last diseases, the whole morbid state, either in so far as it is universal in the system, or confined to a part, proves hurtful by giving too much excitement; and as the remedies, that remove the general morbid state, also remove the portion of it confined to a part, and are never to be directed to a part (a), with the view of removing, by their

{z} See part first, chap. IV. and particularly par. LIII.

{a} See par. LVI. and XCII.

their action upon it, the disease, as if all locked up there ; by means of this theory we may lay a sure foundation for the establishment of a certain series, or scale, of increasing strength, from perfect health to the most sthenic disease. In that scale peripneumony holds about the highest, and obesity the lowest, degree.

CCCCXLIX. Peripneumony and phrenitis are followed by two diseases, that sometimes equal them ; the violent small-pox and measles. These two are succeeded by a disease, that sometimes vies with them, the erysipelas, when accompanied with a very severe affection of the head. As equal to this, not in danger, but for the most part in the degree of diathesis, rheumatism comes next. Next to rheumatism is marked the mild erysipelas : this is far short of those above it in violence, and claims nearly an equal place with the sthenic cynanche, with which it is much more nearly allied than with any of the former. These are the diseases accompanied with pyrexia and inflammation.

CCCCCL. The two which stand lowest, the mild erysipelas, and the sthenic cynanche or common inflammatory sore throat, are of so doubtful a rank with respect to each other and to catarrh (*b*), a disease which is not accompanied by inflammation ; that it is doubtful which of the three should be set highest. Below them, however, the simple synocha and scarlet fever, in so far as the latter is a sthenic disease, and in so far as the usual state of both is considered, are to be placed without any hesitation (*c*). The lowest part of the scale of

(*b*) See CCCXCIV. and the note to it.

(*c*) The simple synocha is so similar to a gentle typhus, that it requires great judgment to distinguish them at first. The safest way, when the doubt cannot be determined, is to keep the patient in a moderate temperature, and in a state of rest ; as any debilitating power, in case the disease should turn out a typhus, would be dangerous ; and, though it should afterwards manifest itself a synocha, still its mildness renders the omission of any thing that might have been done, innocent ; and it is always easy to take down sthenic diathesis.

of sthenic diseases with pyrexia, is assigned to the small-pox and measles, in their mild state.

CCCCLI. Through this whole scale it is not so much the titles and names, but morbid energy, that is regarded; it being the certainty derived from the cause, not the uncertain and perfectly deceitful consideration of symptoms, that was to be considered (*d*). The investigation of symptoms has hitherto been unattended with any advantage; on the contrary, it has been of the highest detriment to the art; and since it has proved in medicine as productive a source of fundamental errors, as the question about abstract causes proved in the other departments of philosophy (*e*), it must be laid aside, and nosology damned.

CCCCLII. Below the last mentioned diseases are set mania, pervigilium, and obesity. Betwixt which, and the diseases to be mentioned hereafter, the point of perfect health is to be fixed (*f*).

The Cure of the Sthenic Form of Diseases.

CCCCLIII. As to the indication of cure in the sthenic form of diseases, I shall apply that already laid down (*g*), viz. to lower excitement, first to a violent degree of the diathesis, then to a slighter, and to the danger of parts, in such a manner, that regard shall only be had to the degree of force in the remedies (*h*).

CCCCLIV. When, therefore, we have a violent diathesis, as in peripneumony, phrenitis, the violent small-pox, measles, and erysipelas, immediate recourse must be had to the most powerful and quickly effectual
remedy;

(*d*) See par. LVIII.

(*e*) See par. XVIII. and look into Observations on the different systems of physic, and in it the introduction throughout.

(*f*) It will be easy for the reader, with the directions above, to make out the table for himself.

(*g*) See par. LXXXVIII.

(*h*) See also par. XCII.

remedy ; but so much blood should not be taken, as many who entrust nearly the whole cure of the disease to it, think, and commonly practise ; but more, however, than others suppose should be taken (*i*).

CCCCLV. No measure suits all cases ; the quantity to be taken being different in different cases, according to the difference of age, sex and strength, and to the degree of the exciting noxious powers. In childhood, which, excepting the measles and small-pox (*k*), is seldom affected with the disease we have mentioned, and in a very advanced age, where there is also less danger than at the flower of human life, small bleedings succeed ; because, at both those ages, a less degree of excitement upholds the disease ; while in the former the high degree of excitability, in the latter the necessity for more stimulus, or exciting power, than formerly, set bounds to the measure of the remedy.

CCCCLVI. A better rule for limiting the degree of bleeding is the relief, or temporary solution, of the urgent symptoms. If, therefore, after blood has been taken, the great heat, the hardness of the pulse, the affection of the head or of the lungs, and dryness of the surface, shall have gone off, or be much abated ; and if the temperature be much lowered, the pulse more soft and less frequent, and the surface of the body more moist, at least less dry ; if the pain is every where quieted, the breathing relieved, and the delirium removed (*l*) ; then it may be looked upon as certain, that enough of the vital fluid has been shed for the time.

CCCCLVII. To

(*i*) The most early among the alexipharmic practitioners, after once making his escape from peripneumony without bleeding, fell a victim to the folly of his theory in the next attack. The alexipharmics in general were too moderate in their bleedings in the true, though few, sthenic diseases that require it, and all in the wrong in their use of heating stimulant prescriptions in them.

(*k*) See par. CCCCI.

(*l*) The references for facts are CLIX. CLV. CCCXXXIV. CLVII. CLXXIV. CCCXLIX. to CCCLV. CLIV. CLIX. CLXXXIV. CCCXXXIII. to CCCXXXVI. CLV. CCCXLIII. CCCLIV. CLVIII.

CCCCLVII. To obtain this benefit, in the most vigorous adult state 10 or 12 ounces, and much less either before or after that period of life, will for the most part be found sufficient. As this rule will not answer in every case, when it fails, recourse must be had to that, which recommends the abatement of the symptoms as a direction more to be depended upon (*m*).

CCCCLVIII. Since the local affection depends upon the degree of the general (*n*) diathesis, there is no occasion for any particular direction with regard to it, any farther, than to take advantage of its being accessible, in order to help the general remedy by an application of it to the part (*o*).

CCCCLIX. When that has been done, and the first violence of the disease is now broken ; we must have recourse to purging, as a great remedy in point of efficacy (*p*). For this purpose, we should not employ violent means, such as many formerly employed (*q*) ; because the stimulus accompanying this first operation may be hurtful ; but it is the gentle cathartics that should be depended upon, such as Glauber's salt, which is highly debilitating, and carries a great quantity of fluids out of the vessels. Though a man of good sense in the last century used cathartics and bleeding on alternate days ; yet, if the violence of the disease should be urgent, there is nothing to hinder the use of cathartics the same day that the blood has been taken.

CCCCLX. Purging, after a small bleeding, has more effect in overcoming sthenic diathesis, than any bleeding without it ; because, as has been mentioned above, in this way the debilitating power (which has always more debilitating effect in the place to which it is first applied,

(*m*) See CCCVI.

(*n*) See above LVI. and CCCXLII. to CCCXLVI.

(*o*) Ibid. An instance of such assistance may be the local bleedings over the pained part in rheumatism and the gout, and some other sthenic remedies are aided by local stimuli.

(*p*) See CCLXXXIII.

(*q*) The alexipharmics particularly.

applied, than in any other,) is applied to more parts ; and not only to the greater blood-vessels, but also to a prodigious number of their terminations ; and the excitability is more extensively, and therefore more equally, diminished (*r*).

44. Vomiting, which has hitherto been so freely employed in asthenic diseases, where it is pernicious, and in the common practice constantly neglected in sthenic diseases, where it is of the greatest service, comes in here as a proper part of the treatment : it is of the same evacuant nature, acts upon another part of the same canal, and admits of just the reasoning that has been applied to purging.

CCCCLXI. At the same time that the excessive, and therefore hurtful, use of the lancet is superceded by these two evacuants ; its use is not altogether to be laid aside in the diseases of excessive excitement ; because the excitement is often raised by the operation of stimulants so high, as, from the consumption of excitability, which puts an end to its existence, to threaten instant death (*s*).

CCCCLXII. Besides these remedies (*t*), the patient should always be required to abstain from every sort of food but vegetable, which should be taken in a fluid form, as well as from all strong liquors, and indeed from all but watery liquors acidulated (*u*). This direction does not seem to have been so much neglected in words by former writers and authors, as actual application to practice ; it having been delivered slightly, by the by, and as if it had been thought of no consequence, so that it made no impression upon the mind of the reader or hearer. No stimulus is more powerful, and, therefore, in this part of the practice, more hurtful, than that of the articles of diet : Consequently, whatever quantity

(*r*) See par. CCCCLXXXIII. CCCCLXXXVI. also CCCV.

(*s*) See par. CCLXXXI. and CCLXXXIII. CCLXXXIV.

(*t*) From CCCCLIV. to CCCCLXII.

(*u*) See CCLXXXIV.

quantity of blood is taken from the vessels, whatever quantity of ferous fluid is carried off by the mouth and anus, if this stimulus is not effectually guarded against, the effect of all this evacuation may easily be counteracted. Still, however, fluid vegetable matter is not to be forbidden, because such watery matter is not retained in the vessels ; but, easily entering the smallest of them, it flows out in all directions by their various outlets ; and, at the same time, supports the efficacy of sweating remedies (*x*).

CCCCLXIII. Conjointly with the first bleeding, the first vomiting and purging, with abstinence and watery fluids, it must not be forgotten, that particular regard is to be paid to temperature (*y*) : For, if cold always debilitates, and if that is its proper operation (*z*), if it only seemingly acts otherwise, because heat succeeding to its action, or alternating with it (*a*), renders its effect stimulant, if cold alone is adequate to the cure of the small-pox (*b*), or prevents the violence of that disease, if it is the best remedy for catarrh (*c*), and, when heat is avoided, of the greatest efficacy in every sthenic disease ; it is not to be doubted, but that it is of the greatest benefit in diseases of the highest sthenic diathesis.

CCCCLXIV. Its operation in the small-pox, and in other sthenic diseases, is not different, but altogether the same. Nay, in all the diseases of this form, as cold alone is sufficient to effect the cure ; so, whenever the diathesis, as is the case in the diseases that are our present subject, rises to its greatest height, and demands instant relief ;

(*x*) This observation seems to me of that sort which suits an hydraulic machine better than the animated system. These weak liquors, in being absorbed, and in being exhaled, must produce much animal action, which, according to the general tenor of Dr. Brown's reasoning, must do mischief. EDITOR.

(*y*) See par. CCLXXXII.

(*z*) See par. CXVII.

(*a*) See XXXVII. and the addition.

(*b*) See par. CXXI.

(*c*) See CCCCVII.

relief ; because, in that case, every moment's delay brings instant danger ; though the remedies, which we have mentioned, are sufficient for the solution of the disease, of which we have direct proof in practice ; though that degree of cold, which would produce the effect, is neither always within our reach, nor can be properly applied by every person ; and many persons might not be disposed to believe its effects so beneficial : We should not desist from the plan of cure here laid down (*d*), but do our best for the patient, by taking off the blankets, and other clothes, by cooling the room, and, instead of laying him on a couch or bed, putting him into a chair.

CCCCLXV. This indeed should, for the most part, be preferred to the application of very intense cold, on another account ; for the shortness of the time in which any one could possibly remain in intense cold, would oblige him immediately to return to higher temperature, which would produce a greater excitement than he had been under before his exposure, at least too great an excitement (*e*).

CCCCLXVI. The effect, therefore, falsely imputed to cold, of occasioning the striking in of the measles, is not to be imputed to cold alone, but to heat and other stimuli ; giving, as has been explained, more excitement (*f*), than if cold had not preceded. And how can it be otherwise ? If cold does not interrupt the eruption in the small-pox ; but, on the contrary, by an enlargement of the diameters of the perspiratory vessels, which are shut up by sthenic diathesis, much promotes the discharge of the matter (*g*) : Why, in a perfectly similar case, should its operation be supposed different, not to say, diametrically opposite ? Must we again have the trouble to refute the false notion that

a cause

(*d*) From CCCCLIV. to CCCCLXV.

(*e*) See XXVI.

(*f*) See XXVII. and the addition, and CCCLXXX.

(*g*) See CCCLXXVI.

a cause precisely the same may produce contrary effects? Cold diminishes the eruption in the small-pox: It makes the eruption disappear in the measles. What then? Take a nearer view of the fact: Is its effect in both these cases to be supposed the same, or different? How do you know, that the matter, which has disappeared, is driven into the interior parts? What proof will you bring? Confess the truth: and be candid enough to acknowledge, that this is another relic of the alexipharmic doctrine, according to which, the stimulus of heat as well as other stimuli promotes, and cold impedes, perspiration. After a great man had shown the error of that doctrine, both in the small-pox and other diseases (*b*), because he did not carry the application so far as the measles, neither has any one of his followers, who never could step a nail's breadth beyond his words. But it might have been observed, if observation had been any part of their employment, that the measles was a sthenic disease as well as the small-pox. Are not all the successful remedies in both of the debilitating kind? And as it was manifest, that in the small-pox also cold debilitated, or, in the common language, acted as a sedative; might not some suspicion, from that very circumstance, have arisen in their minds, that cold, in the measles, does not stimulate, or act as an astringent, and repel the eruption, but produces the same effect as in the small-pox? Is it, to such a degree, up-hill work, to use one's own understanding, that a great part of mankind, even those who take upon them the business of teaching and taking the lead of others, in no case ever think of exercising a moment's reflection?—But, it may be contended, that the action of cold is in this case peculiar, because, after the eruption, which it is supposed to check, has disappeared,

(*b*) In peripneumony he took his patients out of bed, and set them in a chair, for the sake of cooling them, and avoiding the hurtful effect of heat.

disappeared, all the symptoms increase in violence. Consider what that circumstance makes for your argument, or whether it makes any thing for you, and not absolutely against you? Was the action of cold followed by that of stimulant or debilitating powers? If it was by the former, the cause of the mischief must be imputed to them; which, as has been just said, produce excessive excitement after a previous application of cold, and more than without it; if debilitating powers had been applied, then there would be room for suspicion, that cold had a concern in the effect. But it is not so: And, in every case, in which the action of cold has been followed by sthenic diathesis, the true cause was not sufficiently guarding against the stimulus of heat, as well as that of other noxious powers. This is clearly proved by the application of heat being positively ordered, instead of being forbidden, in the common practice. Nor is that to be wondered at: For if the cause of catarrh (*i*) deceived physicians so much, the catarrhal symptoms in the measles could not fail to deceive them. And, if doctrines, discarded in words, are often observed in practice; what was there to hinder this part of the alexipharmic doctrine from meeting with this fate?

CCCCLXVII. If cold, therefore, can scarce be so managed, that the effect occasioned by the accompaniment, the succession, or the alternation, of stimulants, can be prevented, whether that be the fault of the physician, or owing to the nature of the thing (*k*); it is, notwithstanding, a rule in common to the measles and other exanthemata of the same stamp, to avoid heat, and compensate for the degree by the greater duration of cold, and to guard with all possible care against every stimulant power. It is now then most evident, that the opinion of cold being peculiarly hurtful in the measles, both in that and every other disease of the same form, falls to the ground.

A Repetition

(*i*) See from CCCCVII. to CCCCXII.

(*k*) Turn back to CCCCLXV. and CCCCLXVI.

A Repetition of the Cure.

CCCCLXVIII. After using the remedies which have been directed (1), if the symptoms recur, the same train of medicines must be again gone through : Blood must be again taken, emetics and purgatives again administered ; nor must we desist from the use of the refrigerant and attenuant plan : And all these means must be employed, till the tumult of the symptoms be allayed, and the healthy state, at least for the time, be restored ; and perhaps the repetition may be required a third time or oftener : After which,

CCCCLXIX. If the diathesis seems now nearly removed, if the affection of the head, of the lungs, or any internal one that may be present, seems alleviated or repelled ; and yet there is some apprehension of the return of the disease ; recourse must be had to more moderately debilitating powers. Sweating, the stimulus accompanying the first operation of which, as the diathesis is now rendered mild or removed, the body will be able to bear, should be preferred to bleeding, vomiting, and purging. But before I proceed to speak of it, it seems proper to say a few things concerning the sum total of blood that should be taken during the course of the whole disease.

CCCCLXX. As in single bleedings, so also in the whole quantity of blood to be taken, the sum should be a mean betwixt the quantities, which the common run of physicians approve, while some think it too much, some too little. The reason for this recommendation is strengthened, by the consideration of there being now less occasion for shedding a great deal of the vital fluid, since the cure is more divided among the other remedies that have been inculcated. The age must be regarded, as was formerly recommended (m), the former mode

(1) From CCCCLIV. to CCCCLXVIII.

(m) See CCCCLV.

mode of living must be attended to, the quantity of stimulus, that may have immediately preceded the morbid state, must be considered, and the habit of the body compared with the degree of the symptoms and the effect of the treatment. From these circumstances a judgment should be formed of bleeding and other evacuations ; and it should be estimated, what further treatment of the same sort may seem proper, and what difference of management may be required. Upon the whole, it will be found, that there will be the less occasion for any one medicine, the more freely others have been brought into use ; and it will be understood, that the danger of too great evacuation will be thereby avoided, and health better secured (*n*).

CCCCLXXI. With respect to the manner of bleeding, blood should always be taken from a very large vein ; because the cutting a smaller one, or opening an artery, does not afford a sufficient quantity for the relief of the vessels, and arteriotomy is further attended with inconveniencies (*o*). As far as any certain rule, in an affair admitting of such variety, can be established, two pounds of blood in three or four days, with the assistance of the other remedies, will, for the most part, be sufficient at the middle of life, and less at a more early or later period.

CCCCLXXII. Bleeding should be always followed by vomiting and purging, so long as any considerable part of the sthenic diathesis remains ; nor should the other parts of the treatment, that have been pointed out, be neglected. But cathartics, of which a single dose can at any time bring back a fit of the gout ; which cure the sthenic cyananche or common inflammatory

(*n*) See CCLXXXVI. and CCCV.

(*o*) The blood is ready to break out again after the tying up ; and if, as some advise, the arterial twig should be cut through, it diminishes the number of the few accessions to this mode of bleeding ; neither does there seem to be any use in destroying such vessels, especially as no good reason can be shown for doing so.

tory fore-throat, and the mild erysipelas, when even the face or head is affected ; which are of manifest detriment in fevers ; which, in dyspepsia, in asthma, and every sort of diseases depending upon debility, whether direct or indirect, do great and palpable mischief ; and form a great part of the very bad common method of treatment in the whole form of asthenic diseases ; in proportion as they ought to be avoided in all such diseases, should be as certainly employed in sthenic diseases ; they should never be omitted in any considerable one, such as those that require bleeding, but be managed according to the directions lately given. We should, above all things, be on our guard against that diffidence in the use of this remedy, as well as of vomiting, where they are serviceable, and that confidence in them when of disservice—both errors introduced by the spasmodic doctrine, and both therefore admitted upon a false and absurd principle (*p*).

CCCCLXXIII. As nothing in asthenic diseases has been more used than these two modes of evacuation, nothing with more hurt, and often with instantaneous destruction ; so, for this very reason, nothing is more successful in the cure of sthenic diseases.

CCCCLXXIV. It is scarce credible, how far the aversion to the alexipharmic method of cure has had the effect of branding the very best medicines, what a misapplication of them it has suggested, and to what a degree it has perverted their proper use. Not to repeat what has been formerly said ; sweating, which is of the highest service in every moderate sthenic diathesis, and in every degree except the highest, or where it presses
upon

(*p*) The principle, at least with respect to purging, was, that it diminished perspiration, and, therefore, was understood not to act as an antispasmodic. A balance betwixt the excretion by the belly and that on the surface was talked of, and they were held for opposite operations. In such theoretical nonsense they deserted their only good leader, at least in those diseases, who alternated his bleedings and purgings, and, as I have found, upon the best authority.

upon any organ of importance to life ; that is, in all the diseases of this form, except in the beginning of those of which we are here treating, has, however, of late been completely banished from the cure of them all except one, not only as useless, but as hurtful ; which has chiefly happened since the spasmodic doctrine began to be received into this country, and during the few years it continued to gain ground (*q*).

CCCCLXXV. But, in truth, besides rheumatism (which sweating, at least as produced by one medicine, is allowed to cure), if it most certainly either relieves or removes the sthenic cynanche, erysipelas itself, and catarrh, and the simple synocha, in proportion to the more free or sparing use of it ; if that be known to the very vulgar, and most certainly to physicians of every other (except the spasmodic) school ; what reason, what well-ascertained fact, will any one bring to show, why sweating should not be universally used, after the very violent sthenic diathesis is much diminished by other medicines, and is now reduced to the degree, to which this remedy is adapted ; what eloquence would be requisite to bring any man of sense to such a persuasion ?

CCCCLXXVI. He will say, that the heat, which accompanies the first part of the operation of sweating, may be hurtful ; for, as he never made trial of it, he has it not in his power to say, that for certain it will be hurtful (*r*). This is readily admitted in an high diathesis,

(*q*) Turn back to CCCCLXIX.

(*r*) It is laughable to hear such persons talk of their practice, from which they never can receive information ; it being not the effect of any thing they know themselves, but what they have been told by others. In this way, without any exercise of judgment, without a single observation, that they can call their own, in the course of a long life, do they jog on, like the blind beggar led by his more faithful dog, or, like children in the play of blind Harry, groping about with their eyes tied up, through the whole course of a practice boasted of, God knows, by nobody who knows it but themselves.

diathesis, threatening indirect debility (*s*) ; but it cannot also be granted, that in a moderate degree of the diathesis, either original, or effected by other remedies, and, consequently, after the plan of treatment, that we have laid down, has been executed, such heat will not be compensated by the great profusion of fluids taken away from the whole surface of the body ; or that, when this part of the vascular system has been freed from a violent stimulus, the diminution of excitement will not be more equal in all the vessels, and over the whole nervous system. If the numerous vessels, that open into the intestines and into the stomach, afford such an opportunity to diminish sthenic diathesis, how is it possible that a similar evacuation in the similar perspiratory vessels should have no tendency to produce the same effect ? To which reasoning if the facts just related be added, what can any person have to say against the use of sweating, if a degree of heat, not greater than what cannot be avoided in the operation, can no longer be hurtful, and if the sweating itself is certain to be of great service (*t*) ? Let the spasmodic caviller against the use of that remedy in the cases of sthenic affection where it is admissible, muster up all his

(*s*) If the diathesis should rise within two or three degrees of indirect debility, in that case the heat of the first part of a sweat, by exhausting the little excitement that remains, may have a most hurtful effect. But if the diathesis be any where below that high point, the addition of stimulus can be borne for the short time of its continuance ; and be afterwards much more than compensated by the large and continued flow over all.

(*t*) In an excitement of sixty-seven, within three degrees of indirect debility, the heat in the first part of the sweat, by adding these, might kill the patient, if you will, without leaving any chance of relief from its evacuant effect. But, if the excitement be no higher than 60°, the addition of the three degrees will keep greatly within the point of indirect debility, and, therefore, be safe ; while the succeeding evacuation may reduce the excitement perhaps 10°, and bring it within the range of predisposition ; and a new course, or a little prolongation of this, carry it down to the point of health, and finish the cure.

his facts and all his theories, let him turn himself into all shapes, he will never produce a solid argument against this remedy.—But what, again, is the tendency of all this disputation? Will there never be an end of running from one extreme of error into the opposite? Shall no mean be found betwixt the alexipharmic plan of cure, and one equally bad or worse? If that doctrine hesitated not to prescribe sweating in the rage of a peripneumony, and that too procured by means of the most heating stimulant powers; does it therefore follow, that a plan of treatment must be admitted, which rejects the certain and safe use of this remedy, when excited by the most gentle means? If it was the opinion of Dr. Sydenham, that heat should be avoided in the cure of sthenic diseases, which was quite right, as heat certainly increases the excitement; are we, for that reason, to avoid that tolerable degree of heat, which accompanies a remedy the most powerful in restoring the healthy state, and, thereby, deprive ourselves of great benefit upon the whole? If such persons do not know, that several remedies diminish excitement more powerfully than one; and, if they are to be excused for their ignorance; are they also to be excused for not seeing, what any empiric might have seen, that some things are of service, and others of disservice; is such want—not of genius, for genius is not required of them—but of common sense also, to be pardoned? If to think for themselves, and to make any sort of discovery, was too much to be expected from them; is it not somewhat surprising, that out of a thousand writers, who have treated of every part of medicine, and entertained different sentiments from one another, they could squeeze no information, but always trod in the footsteps of one single man?

CCCCLXXVII. Sweat, therefore, after the management that has been described, is to be excited; especially if there should seem something still wanting to the complete return of health, some degree of sthenic diathesis

thefis still remaining, and a spontaneous tendency to sweating should appear.

CCCCLXXVIII. When the signs of a spontaneous sweat are perceived, nothing more is to be done, but first to lay the clothes about the patient, remove the sheets, put the blankets next to his body, guard against the approach of air, and keep up the discharge for a sufficient length of time, at least ten or twelve hours. If from this management there shall ensue a copious and universal flow of sweat, there will be no occasion for giving medicine for the purpose.—After sweating has increased the relief formerly procured; if it should disappear towards the end, it should at last be supported by Dover's powder, or by laudanum alone; at the same time the body should be covered, so that it may get as quickly as possible to the surface, till the expected benefit be obtained. If a draught of cold water be sometimes given, and then the body be well covered up and properly managed, the effect often succeeds to our wish. But, as in the other cases, that belong to this part of our indication, the sweating must then only be set on foot, when the mediocrity of the diathesis, procured by the other remedies, will permit; so in the small-pox and measles, because there is occasion for a certain time to allow the matter to pass off, we must keep this circumstance in our eye, and never be too early in making trial of this remedy. Lastly, if the heat should happen to prove hurtful, if at any time the flow of sweat should be attended with less relief, or with inconvenience, it should be immediately stopped: For it was not for no purpose, but for that of making the remedies supply the defects of one another; and of reducing the excitement more equally over the whole body, that a number was recommended.

CCCCLXXIX. In all the cases of a violent diathesis, all the remedies that have been mentioned, are, more or less, differently on different occasions, in proportion as the remaining diathesis may require, each in a higher

or

or lower degree, or in a larger or smaller quantity, to be brought into play, and the curative circle enlarged.

CCCCLXXX. Some slight medicines, such as acids and nitre; some of uncertain use, such as leeching, cupping, and blistering, are mentioned in writers, as of the first consequence. Of these, the acids, in so far as they render the drink more agreeable, and, in an affection of the lungs, do not produce cough, but prove, in a certain measure, refrigerant, are to be permitted; especially if there should be a desire for them. Every body ought to know, that the refrigerant power of nitre is less than is commonly thought. In rheumatism, and the sthenic cynanche if this should be unusually severe, blisters, leeches, and cupping-glasses, applied in the neighbourhood of the inflamed parts, may, in some measure, be of service. Nor does there seem to be any reasonable objection to the application of a cap of recent earth to the head in phrenitis.

The other Part of the Indication of Cure.

CCCCLXXXI. To pass on to the other part of the indication of cure (*u*): When there is a gentler diathesis, as in the other phlegmasiæ, and in those sthenic affections, of which the treatment has not yet been considered; as in the mildest state of erysipelas, of the sthenic cynanche, in catarrh, simple synocha, the scarlet fever, and the mild small-pox and measles; a smaller debilitating power is required; and, therefore, neither all the remedies that have been mentioned, nor in general so much of each, as in the other diseases of this form, are requisite.

CCCCLXXXII. In all these cases, not even with the exception of rheumatism, which depends upon an high diathesis, bleeding is unnecessary; and in all, with the exception of rheumatism, bleeding to any extent is hurtful: For, when the excitement is not very
great,

(*u*) CCCCLI.

great, but, on the contrary, is moderate, scarce exceeding that degree that produces the predisposition to other diseases, it is absurd to make use of a very debilitating power, by way of a remedy, as if we had to combat a very violent disease. And, since the intention in bleeding is to prevent an ultimate excess of exciting power from producing a cessation of excitement, an event of which there is not the least danger in a moderate diathesis, such as that which is the cause of the diseases in question, the treatment should be adapted to the cause, and bleeding should be either abstained from altogether, or very sparingly used.

CCCCLXXXIII. It is not, therefore, only in diseases of debility, which belong to the other form (in most of which it has, nevertheless, been, and still is, the custom, to spill more or less of the vital fluid); but also in all the diseases of this form, except the very violent ones, that the lancet is to be proscribed.

CCCCLXXXIV. Though in rheumatism the diathesis often runs considerably high, the usual profuse bleeding is not, however, required. For, as every diathesis is always greater in some parts than in any other equal part, so it is with the sthenic diathesis in this case; which is found much greater upon the surface of the body, than in any other equal space within. The reason is, that the most powerful noxious agent, heat, succeeding to cold, or so alternating with it, that its own stimulus is increased by the cold (*x*), exerts its principal energy on the surface of the body. Hence, after excessive bleeding, the disease often obstinately recurs. The reason of the recurrence, if the principles of this doctrine be well understood, cannot be obscure. Bleeding diminishes the sthenic diathesis chiefly in the red vessels, less in any of their extremities, least of all in the perspiratory vessels, and in those disposed in the tract of the muscles, because the operation of bleeding

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(*x*) See XXXVII. and addition.

is counteracted by that of heat : This explanation is confirmed by the certain testimony of physicians ; who often complain that their favorite remedy fails them.

CCCCLXXXV. Hence sweating is remarkably adapted to the cure of this disease : To sweating, therefore, after a previous bleeding to twelve ounces, and with attention to the rule of temperature and diet before given, we must have immediate recourse, if the diathesis happens to be considerably violent, which appears from the heat of the body, the pains raging most in the night time, and from a strong and hard pulse. In order to render the sweat universal and of sufficient duration, it should be excited by Dover's powder, or laudanum, as before hinted, and kept up for twelve hours in full flow, and then some hours longer, or till the abatement of the symptoms, in the form of moisture or free perspiration, and repeated when the symptoms return. The rest of the cure must be entrusted to low diet and an exact temperature.

CCCCLXXXVI. In this disease, after the sweating, and also in the case of a simple synocha, of the scarlet fever, of the sthenic sore-throat, of catarrh, erysipelas, and the gentle small-pox and measles, when the diathesis is somewhat considerable, but far short of the case first considered ; we should use either a very small bleeding, and then chiefly the evacuations before mentioned (*y*) ; next a slight sweat ought to be kept up, not longer than for eight or ten hours ; and, during the whole time of the cure, we should enjoin abstinence, weak liquors, rest of body and mind, and cold, except at the time of sweating, and even then the heat should be as low as possible, as formerly directed : The united use of these means is perfectly equal to the removal of any of these diseases ; but there will not always be occasion for them all.

CCCCLXXXVII. Often so mild a diathesis occurs, that one or two of them, once or twice employed, is sufficient

(*y*) See CCCV.

sufficient for the cure :—In a slight diathesis, that is, one in which, unless for a little at first, the shivering, languor, and heat, are so inconsiderable as to indicate a proportional slightness of diathesis upon the surface ; in which there is scarce any lassitude, which indicates a similar moderation of diathesis in the organs of voluntary motion ; in which the vigour of the stomach remains so as to manifest a moderate excess of excitement in it ; in which, in fine, the other functions are sufficiently regular, and only suffer conspicuously in the affected part—In such a case, a single purge of Glauber's salt, and, without that, cold, rest, and abstinence, have often reduced the morbid excitement to its salutary degree. A thousand times has the sthenic cynanche, a thousand times catarrh and the simple synocha, nay, erysipelas itself with affection of the face, been so removed. And the scarlet fever is often so mild as to yield to the same management.

CCCCLXXXVIII. In this way must a constant regard be had to the degree of excitement and diathesis in the method of cure, and terms must be often disregarded. It was with a view to the treatment, that the simple synocha was before distinguished from the phrenitic, and the gentle erysipelas from the violent. For the same purpose it may be remarked, that catarrh often rises to such violence as threatens or brings on a peripneumony ; and that peripneumony itself is sometimes much slighter than usual. Under these circumstances, it is the degree of excitement alone, that ought to govern the physician, without regard to names.

CCCCLXXXIX. Another useful caution here is, to judge of the state of the pulse, of the temperature upon the skin, and of the skin in other respects, with due attention to these principles. The frequency of the pulse in all sthenic diseases is moderate : With that there is conjoined some hardness and fulness. Whenever, therefore, the pulse is very quick, it is to be suspected, that the sthenic diathesis has passed into the asthenic,

asthenic, the excessive excitement into a cessation of excitement, or that the disease has been asthenic from the beginning. To remove all doubt, the habit of body, and the age, must be considered, and an inquiry be made, whether the disease has been preceded, or not, by contagion. Heat of the skin is common to these diseases and to fevers, which are diseases of an opposite stamp, and therefore is a doubtful mark. As it depends upon an interruption of perspiration, from whatever source, it is never to be strained into a proof of the state of excitement. And, since dryness of the skin, which is common to diseases so different from each other, in the asthenic diseases depends upon debility; in order to judge of this symptom, the other symptoms, and the exciting noxious powers, should be considered. In fine, the only inquiry should be, whether the excitement is abundant or deficient, and all the signs should be consulted with that view; nor are we to judge rashly from any peculiar form the affection may have assumed.

CCCCXC. When, therefore, the signs, that have been enumerated, are compared with all the others and with the diathesis, we are to set about either the antisthenic or the stimulant plan of cure. The violent sthenic diseases, which we first considered, can scarce be confounded with the asthenic; the more mild are daily confounded with them. But, though it is easy to distinguish these from asthenic diseases resembling them; should any person think the marks of distinction ambiguous, let him be informed, that, upon account of their mildness, though the disease under examination should be sthenic, blood is not to be let, for fear they should turn out asthenic; in which so debilitating a power is destructive, as has often already been said upon former occasions; let him also understand, that his method of cure, conducted in this way, will be secured from all dangerous mistakes. For, if the diathesis, though sthenic, be slight, bleeding will often

often precipitate it into the opposite ; it will at the best be useless (z). If, on the contrary, the disease that passes for sthenic, should, in its progress, show itself evidently asthenic ; in this case, every drop of blood that may have been taken will go to the increase of the disease (a). Yet this pernicious practice daily sends more men out of this world, than all the plagues of human life (b).

CCCCXCI. As abstinence, cold, and the management of the bowels, are sufficient in a gentle state of the small-pox ; so when the proper preparatory plan has been neglected, and the eruption is thick, trial must be made also of the other remedies (c), except sweating. This must be avoided, because the stimulation accompanying it, by increasing the sthenic diathesis on the surface, would tend to check the perspirable fluid, and detain the contagious matter under the scarf-skin, and produce that pyrexia, which is symptomatic of the inflammation, and is called *the secondary fever*. This peculiarity of treatment is taken from the peculiarity of the symptom just mentioned, and forms no objection to the principles of this work. In confirmation of which, it may be remarked, that, though there is all the proof that can be derived from sure practice, the remedies we have mentioned are sufficient ; yet, before the eruption comes on, nothing can be objected either to sweating or bleeding, as remedies applicable to this
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(z) Suppose the diathesis be two degrees above the highest of the points of predisposition, at 57° ; and bleeding to the degree of producing 35° of debilitating influence be employed ; it is evident, the excitement will go down not only the 17° necessary to bring it to the point of health, but sink to 22° , that is, 3° below the range of predisposition to asthenic disease, and therefore complete the conversion of the sthenic into an asthenic disease.

(a) See CCLXIX. CCLXXXI. CCXC.

(b) See par. CCCCVI. towards the end.

(c) CCCCLIII. to CCCCLXVIII.

in common with every other sthenic disease (*d*). In fine, the success of low diet, cold, and purging, is certain; but at the same time, the other remedies, that remove sthenic diathesis, likewise operate to the same effect (*e*). It was proper to say so much for the sake of showing the unexceptional steadiness and universality of the principles of this work. Nor are we to imagine, that the small-pox and measles differ from other sthenic diseases attended with pyrexia, except in the particularity of their eruption, in running a certain course, and not admitting of a speedy cure.

CCCCXCII. We are not to wait for the arrival of the symptoms of debility, that follow violence of diathesis, and threaten certain death by inducing indirect debility, with the view, forsooth, when they have taken place, to cure them. On the contrary, they ought to be prevented by the early administration of the remedies so fully considered. Should that be omitted, the consideration of the diseases that will be the consequence must be referred to the asthenic form, to which it altogether belongs.

CCCCXCIII. As often as sthenic diathesis happens to be conjoined with the pyrexia, which is induced by the operation of stimulants, of acrid substances, of compression, of obstruction, and similar noxious powers acting upon a sensible part, of which we have examples in gastritis, enteritis, nephritis, cystitis, hysteritis, hepatitis, or the inflammations of the stomach, of the intestines, of the kidneys, of the urinary bladder, of the uterus, of the liver (*f*); the diathesis, as it aggravates the pyrexia, should be removed by its respective debilitating

(*d*) The small-pox is, in one word, to be treated as any sthenic disease, according to its degree of morbid state, and the eruption is only to be regarded during the period of its existence, either with respect to the exception of sweating then, or of any thing else.

(*e*) It is not, that low diet, cold, and purging, operate by any peculiarity, but because they debilitate to the degree, and in the manner required, of the other remedies.

(*f*) See LXXXI. LXXXIII. LXXXV, LXXXVII.

bilitating remedies. When neither the sthenic nor the asthenic diathesis is present, nothing should be attempted. But, if the asthenic diathesis should be present, which may very readily happen ; the stimulant plan should be proceeded upon, to prevent a very dangerous disease (*g*). Nor, when this is as much as possibly attended to, are we to forget, that, in so doing, the principal affection is not touched ; that, on the contrary, it is its effect, not its cause, that is tampered with ; and that the full consideration of such cases belongs to the local diseases, afterwards to be taken notice of.

CCCCXCIV. Besides all the remedies now mentioned, it is of advantage in every degree of diathesis to keep the mind easy and unruffled ; a practice that in the very high degrees of the diathesis is indispensably necessary. Our attention should especially be directed to this particular, when we observe, that the stimulus of thinking and of passion, carried to a great height, has had a share in the production of the disease.

CCCCXCV. In mania, therefore, and pervigilium, this direction must be particularly, and as much as possible, attended to. In the latter of which diseases, thinking,

(*g*) As asthenic diseases are to sthenic ones in the proportion of ninety-seven to three of the hundred ; such also must be the frequency of predisposition to them : The inference from which is, that as we are seldom in the most perfect state of health, and consequently, for the most part, under some degree of predisposition, all the chances are greatly in favour of that predisposition being the asthenic one. Hence, the impropriety of treating all local diseases in the same way, and as if they were general sthenic ones. Death has been too often the consequence of that practice, when the local fault, for which it was intended, was no more, perhaps, than a thorn pushed under a nail, a cut, or contusion of a finger. In such circumstances, however fully the person may have lived, wine is withheld, fluid vegetable matter prescribed, and the routine of every species of evacuation gone through. Dismal are the consequences of gun-shot wounds on this plan of cure. Turn back to the paragraphs LXXX. and LXXXI. and the notes subjoined to them.

thinking, and every state of commotion, and more certainly an habitual practice in them, must be shunned, especially before going to bed. When the patient is resting there, he should have stupid books read to him; all inordinate desire, the propensity to revenge, the remembrance of every degree of criminality, of which he may have been guilty, should be diverted from his recollection (*h*).

CCCCXCVI. This fact is of great consequence to give corroboration to this whole doctrine: it is confirmed by this other, that the same things, which are serviceable in pervigilium, or the morbid watchful state, are also serviceable in mania, or madness, only they must be administered in a higher degree, as that is a disease of a higher degree of excitement. Thus, it is not ease and tranquility of mind that are to be prescribed here, both of which are quite gone, but a state opposite to that high commotion of spirits and irregular vigour in the exercise of the intellectual function. And, as an excessive energy of the intellectual powers, or of the animal spirits, or both, are the most noxious powers in this case; the patient should be struck with fear and terror, and driven, in his state of insanity, to despair: As a remedy against the great excitement of the organs of voluntary motion, the labour of draught-cattle should be imposed on him, and assiduously continued; his diet should be the poorest possible, and his drink only water (*i*). The patient should be immersed in water as cold as possible, and kept under it for a long time, till he is nearly killed.

CCCCXCVII. If, in phrenitis the brain, in peripneumony the lungs, in rheumatism the external joints, possess more diathesis, than any other part; why may not mania and pervigilium consist in a stronger affection of the brain, upon which the principal noxious powers

(*h*) See above CCCCXXXIII.

(*i*) See par. CCCXXVIII. CCCCXXX. CCCCXXXV. CCCCXXXVI.

powers act, than of the other parts, over which the influence of those powers is less considerable? Lastly, since remedies, the first action of which falls upon other parts, are of service in those diseases (*k*), it is certain, that not even in them, where you might be most disposed to believe it, the whole morbid affection depends upon the part conspicuously affected; but that the whole body is concerned; that the excitability is one uniform undivided property over all; that the force both of the exciting noxious powers, and of the remedies, is exerted on the whole system, with the inequality so often mentioned (*l*); and that the foundations of this doctrine are sure and stable.

CCCCXCVIII. As these are the principal noxious powers in mania and pervigilium, and as the brain is principally affected; so, in obesity, the most considerable noxious powers are animal food (*m*) and rest, or sedentary life; in consequence of which last, the stimulus of exercise, which, by wearying and fatiguing the body, tends to indirect debility, is obviously wanting. But, since, in consequence of using the same food, both in quality and quantity, and the same indulgence in rest and ease, some persons become fat, others continue lean; it appears, that all the digestive powers have more force in the former, than in the latter, and, consequently, that the other exciting noxious powers have contributed to the effect, and that a proportional excitement follows. Of the noxious powers, that belong to this place, moderate exercise of the intellectual faculty, and tranquility of mind, which are gentle stimuli, favour obesity; over-strained thinking, and habitual indulgence

(*k*) Part I. Chap. II.

(*l*) Part I. Chap. IV.

(*m*) Because no effect can arise without a cause, the exciting powers, therefore, must here have operated with more force, than in the other case; and if it should be objected, that the circumstances in both cases were equal, the difference then must be set to the account of the greater vigour of the excitability in the case of obesity.

indulgence in any passion, such as that of anger, the repetition of which constitutes ill-nature, oppose it. Corporeal motion, which diminishes the quantity of fluids in the system, and, as often as it is considerable, proves fatiguing and debilitating, opposes it. Equally unfavourable to it is hard drinking; which, in a similar manner, wears out the excitement, by constantly wasting the excitability by the high degree or long continuance of its stimulus. On the contrary, the powers that favour obesity, are those that act gently, and with some excess; but never attain the high degree of activity, that inclines to indirect debility: They are powers that go on softly and pleasantly, particularly that keep up moderation in the perspiration, and thereby fill the vessels with blood; but, because motion is avoided, they do not very much increase the excitement of the vessels, and by means of the tranquility of their action, allow a fluid, that would otherwise pass off by the external pores, to turn aside into the cells of fat. Hence, though, as has been said before, abundance of blood is indeed a very great stimulus; yet, without other stimuli, and that most powerful one, which muscular motion affords; it is evident, that a considerable degree of stimulus can be borne, without any considerable disease, and that it always produces a predisposition to sthenic diseases, but does not immediately bring them on. Hence we perceive what place in the scale of excessive excitement, or of sthenic diathesis, obesity holds; what the degree of stimulant power is, and what the stimuli in particular are, that produce it.

CCCCXCIX. As the degree of curative force must be accommodated to the degree of force in the morbid cause (*n*); it may be observed, that for the cure also of this disease the common indication is sufficient (*o*); that is, that the excess of excitement must be reduced to the salutary degree, and a remedy opposed to every noxious power, equal to the removal of it.

D. 12

(*n*) See CIX.

(*o*) XLVIII. CCCCLIII.

D. In this case, therefore, as food is the principal noxious power, the quantity should be reduced, and more exercise taken. These means are sufficient for the cure (p).

DI. But, for the sake of the further confirmation, as well as illustration of this doctrine ; it is to be observed, that all the powers, which affect the excitement in a greater degree than the noxious powers inducing this disease, and that have a tendency, by their stimulant operation, to indirect debility, have the same effect ; that they either prevent or cure obesity, and continue to produce this effect, till they induce that degree of meagreness which is connected with debility.

DII. The best method of lowering the diet, is to combine a quantity of vegetable matter with a moderate portion of animal food. The next rule is, to refrain from the latter, and use the former in greater abundance. The first rule is suitable to all such persons as are liable to diseases of debility, as the gout, the indigestion that after a long time succeeds to luxury, to asthma, epilepsy, and other such diseases. The latter is more accommodated to those, who otherwise enjoy great vigour, have predisposition to sthenic pyrexia, and are in the flower of their age. But, it is not, even in the latter state of the body, to be followed for a long time together ; because, so great is the debilitating influence of such a diet, that, while it is sufficient to remove any degree of obesity, especially with the addition of exercise, it is found to have signal efficacy in producing asthenic diathesis, and all the diseases depending on it.

PART

PART THE FOURTH.

The Second Form of General Diseases

OR

THE ASTHENIC DISEASES.

C H A P. I.

DIII. **T**HE form of asthenic disease, which may be called *asthenia*, for the sake of distinguishing it from the form of sthenic disease, which may be called *sthenia*, is a state of the living body, in which all the functions are more or less weakened and often disturbed: it is almost always attended with a conspicuous affection of some one function. In treating of asthenia, I shall proceed from the slightest disease of this kind to the most violent, through all the intermediate degrees.

DIV. In this part of our subject, there occurs a great variety of symptoms. Of this variety, however, as it affords no certain information, and is even fallacious, no use will be made in marking the scale of diseases. But, for the sake of placing what is about to be delivered in a clearer, if not a more plausible, point of view, we shall begin with a simple enumeration of the principal diseases that are afterwards fully treated of.

a DV. The sthenic diseases are emaciation, inquietude or restlessness without sleep, asthenic amentia, the scabby

scabby eruption, slight diabetes, asthenic scarlet fever, the rickets; the hæmorrhœæ or general bleeding discharges, such as menorrhœa or a morbid excess of the menses, epistaxis or bleeding from the nose, hæmorrhoids or the piles; and also three morbid states seemingly in appearance opposite to these, the loitering, impaired, or suppressed menstruation; next come, thirst, vomiting, indigestion, diarrhœa, and colic without pain; after these, the affections of children, as the worms, the general consumption called tabes, dysentery and cholera in their mild state; angina, the scurvy, the mild hysteria, rheumatism, asthenic cough, cystitis or mucous discharge from the bladder; the gout of strongish persons, asthma, cramp, anasarca, dyspepsia with pain, the violent hysteria, the gout of weak persons, hypochondriasis, dropsy, chin-cough, epilepsy, palsy, the lock-jaw, apoplexy, tetanus; lastly, fevers, as the quartan, tertian, and quotidian, intermittents or remittents, dysentery and cholera in their violent degree, synochus, simple typhus, the gangrenous sore-throat, the confluent small-pox, the pestilential typhus, and the plague.

DVI. Of this scale of asthenic diseases it is to be understood, that those diseases, which in their usual state are slight, and claim a higher place in the scale, are sometimes more severe and sometimes extremely violent; and those, that in their most common state are severe, such as the gout of weakened persons, pestilential fevers, and the plague itself, sometimes proceed with the utmost mildness (a).

DVII. The affections of parts, which often accompany these diseases, such as ulceration, tumour, increased excretion, bleeding, discharge, inflammation, spasm, convulsion, indicate indeed some degree of debility, but the same degree may exist without them. Hence, because it is the influence of debility that is fundamentally regarded in this scale; the diseases, that are often accompanied with local affections, as hysteria and the
cramp,

(a) See par. CCCCL.

cramp, are intermixed with diseases unaccompanied by local affection ; and, with the cases of asthma that are accompanied with spasm and convulsion, dropsy is associated, on the supposition of an equal degree of debility ; so that throughout no regard is paid to remarkable symptoms, but the degree of debility only is kept in view. Neither is the violent cholera excluded from its place among fevers, which are distinguished by failure of intellect and by affections of the head, because this kind of cholera shows a degree of debility equal to the febrile diseases. The idea in this distribution is to show that true morbid energy does not consist in an affection of parts, but of the whole body ; and that the restoration of health is not to be attempted by a change of the state of parts only, but, without neglecting that, by a change in the state of the whole system.

Of Emaciation.

DVIII. Emaciation is an asthma, less discernible in the other functions, but evident in the weakness of the digestive function ; whence, the system, though receiving proper aliment, does not become plump.

DIX. As the cause of this disease is debility, both in the rest of the system, and in the stomach and other organs of digestion ; it follows, that the general indication of cure should be chiefly directed to the most languid part, that is, to the organs of digestion and the perspiratory vessels. More nourishing food, therefore, should be used, less labour undertaken, and too free perspiration should be prevented by more rest of body, by proper gestation, and friction : and a plan, exactly the reverse of that which is suited to the cure of obesity, should be pursued.

Of restless Watching.

DX. In the asthma, called inquietudo or restless watching, the other functions are under some degree
of

of languor, and the patient is affected with a constant propensity to change his posture and toss about his limbs, without being able to fall asleep.

DXI. As the cause in this case, just as in other general diseases, is universal over the system; so it affects the organs of voluntary motion, and the brain in particular, with the inequality so often mentioned already (*b*): Consequently, to remove the disease, ultimate excess in either mental labour, or exertion in any passion, as well as the opposite extreme of deficiency in either, should be avoided; excessive corporeal labour when it has proved hurtful, as well as indolence when it has had any concern in producing the disease, should be guarded against; and the proper medium betwixt the extremes of excessive activity and indolence restored: Or the disease should be repelled by wine; and other stimuli should have each its proportion in the treatment.

Of the scabby Eruption.

DXII. In the scabby eruption, the face is pale, the skin discoloured, dry, lank, and variously disfigured with pustules; there is also a lowness of spirits, and the functions of the body are weak and sluggish.

DXIII. In this case, though the debility is universal, it is most considerable in the perspiratory vessels. And, therefore, the chief circumstances in the treatment are,—together with the remedies directed to the whole system, such as nourishing food and strong drink,—to support the perspiration by its respective remedies; to bathe the surface of the body in tepid water, to render it accessible to air, to order clean linen for the patient, and to have every thing clean about his clothes.

Of

(*b*) See par. XLIX.

Of the mild Diabetes.

DXIV. In that asthma, which is named the mild diabetes, there is an excess in the quantity of urine discharged, but the profusion is not immoderate as it is in the violent case of the same name. The organ of perspiration labours under the same weakness and sluggishness, as in the scabby eruption.

DXV. To remove this affection, which is much more frequent than it has been hitherto supposed, the system should be stimulated by food (*c*), by strong drink (*d*), and by proper exercise (*e*), such as is neither immoderately excessive, and therefore debilitating, nor deficient in degree, and therefore not affording stimulus enough : Above all things, the perspiration should be sustained. The contrivances for checking the flow of urine, which have no existence, are to be omitted.

Of the Rickets.

DXVI. The rickets is an asthma ; in which to the general symptoms are added an unusual bulk of the head, especially the fore part, and likewise of the knees and abdomen, a flatness of the ribs, and ineagreness.

DXVII. The rickets is a disease of children ; it chiefly arises from uncleanness, want of dandling or exercise, cold either without moisture or with it, food not giving sufficient nourishment, or bad air.

DXVIII. For its cure the common asthenic indication must be employed ; remedies, of an opposite nature to the noxious powers that excite the disease, must be looked out for ; the surface of the body should be kept clean (*f*), the perspiration should be carefully restored by the stimulus of pure air and of heat ; the child should be more carefully dandled, and kept much in the open air, animal food should be administered, vegetable withheld, and strong liquors allowed (*g*).

Of

(*c*) See par. CCLXVI. (*d*) See CCLXVIII.
 (*e*) CCLXX. (*f*) See DXIII. (*g*) CCXCV. CCCIII.

Of retarded Menstruation.

DXIX. Retarded menstruation is also an asthma ; in which, besides this discharge not making its appearance at that time of life when it should, other evidences of debility, such as a slender make of body, weakness, laxity of habit, want of appetite, or a craving for things not alimentary, paleness of the skin, and similar symptoms, appear.

Of impaired Menstruation.

DXX. Impaired menstruation is that state of asthma ; in which, after it has appeared, and the flow continued for some time, the discharge is made in too sparing quantity, or at too long intervals, with other signs of weakness accompanying it.

Of the Suppression of Menstruation.

DXXI. Suppression of menstruation is that degree of asthma, in which the discharge is totally stopped at any period betwixt its natural commencement and the natural time for its total cessation.

DXXII. An inquiry must be made concerning the cause of natural menstruation, before it would be proper to enter upon an investigation of the retardation, or deficiency, of the discharge in any of its degrees.

Of the Cause of Menstruation.

DXXIII. The cause of menstruation is a certain conformation of the vessels that pour out the blood in this discharge, which takes place at a certain time of life, that is, about the age of puberty, and a stimulant energy in women, more powerful than in the females of other species of animals.

DXXIV. Of

DXXIV. Of other animals there are very few, the females of which undergo any sort of menstruation except at the time of the venereal orgasm.

DXXV. As all the vessels are gradually unfolded in the course of the growth of the body, so the same thing happens to the genital and uterine vessels, but last of all to these. The ends of the latter, terminating on the sides of the uterus, are so very much expanded about the age of puberty, as to transmit first the ferous part of the blood, and then, after an effort kept up for some time, to pass complete blood.

DXXVI. At this time of life a great change over the whole system takes place. Now the desire for coition, a stimulus never experienced before, produces a commotion over the whole body; and in the genitals of both sexes more than in other parts: In the female this commotion is felt over the whole region of the ovaria, uterus, and vagina. The uterus (its seat) being almost incessantly solicited by this stimulus, is the more powerfully affected; as there is more excitability, hitherto acted upon by no such stimulus, existing in the system. Hence, not to mention other organs, the muscular fibres of the contiguous vessels, as well as the nerves interwoven with them, are thrown into the highest degree of excitement. This excitement, increasing over the whole system, again increases that in the uterus. The mutual contact of the sexes, whether in kissing, in shaking hands, or otherwise, fires both sets of genitals, and the uterus in a remarkable manner; but the actual embrace produces that effect in the highest degree. The remembrance of each embrace remains, renews the idea of the pleasure, and continues more or less to excite the uterus.

DXXVII. This new affection is cherished by every stimulus that is usually applied to the system: Hence, in the absence and in the presence of the beloved object, and at all times scarce with the exception of that which passes in dreaming, a stimulus so steady, and so
much.

much the more powerful, as its novelty implies, that the excitability in this case is entire, rouses the fibres of the vessels, already sufficiently unfolded, to violent contractions. The blood is carried into the region of the uterus with great rapidity, increasing in proportion as the blood, by powerfully distending the vessels, and agitating them by its impetuous flow, stimulates the fibres more and more, and thereby increases the action by which it is impelled. This is the first cause of menstruation: In this way, two circumstances—a sufficient enlargement of the diameters of the vessels, and the stimulus acting more powerfully from its novelty upon the unwaisted excitability (*b*)—are adequate to the whole effect.

DXXVIII. This state is not of a different nature from other states of the body, but bears an analogy to some well-known cases: Thus, different vessels, from the mere difference of their diameters, are subservient to different purposes: The perspiratory vessels are destined to the transmission of a vapour, the excretory vessels of the alimentary canal to that of a thin fluid, the renal vessels to that of a grosser one; these instances, therefore, should take off our surprise at finding vessels fitted, by their wider diameter, for the purpose of transmitting red blood.

DXXIX. The reason why the females of other animals do not menstruate but in their orgasm, is, they are only at certain times exposed to that energy of stimulus which produces menstruation.

DXXX. How much is owing to this stimulus in the production of menstruation, is further evident from the following chain of facts: 1. The less addicted to love women are, the less they menstruate; 2. The more they give way to that passion, the more freely do they experience this discharge within certain boundaries; 3. Before puberty, and after the period when menstruation ceases (when the fitness for effective love

has

(*b*) See DXXIII.

has either not yet commenced, or is now passed), the menstrual discharge is constantly wanting ; 4. The privation of enjoyment, which, by its debilitating effect, produces chlorosis and other similar diseases, is remarkable for bringing on either a menorrhœa, or a retention of menstruation ; 5. Girls who are of a forward growth, have great strength, and large limbs, and consequently are sooner ripe for love, are also more early in menstruation ; while those who are weakly, puny, and of a small size, and, consequently, later in attaining to the period of puberty, are proportionally late in attaining the first menstrual discharge ; Lastly, if, like all the other functions, that of love is limited at the same time in its duration and degree ; and if, as the commencement of the love embraces is more or less early, it is proportionally more early or late in coming to its final termination, and if the duration of menstruation does not usually exceed that period ; these facts also, added to the others, give weight to our conclusion, and show, in a clearer point of view, how much menstruation depends upon the venereal emotion. It may, therefore, be repeated, that, besides the confirmation of the vessels, suited to the function of menstruation, and the stimulus which has been mentioned, there is occasion for no other circumstance to explain either the commencement, establishment, or continuation, of the menstrual discharge.

DXXXI. The cause of full menstruation, and that of a moderate degree within the boundaries of health, is the same, only differing in degree ; the degree of the latter being smaller, and that of the former greater.

DXXXII. And, as the circumstances, mentioned above, explain, why women menstruate more than the females of other animals ; so their immoderate operation upon some women serves to show, why their effect, the

the menstrual discharge, then becomes greater than natural (*i*).

DXXXIII. The stimuli that produce abundant menstruation, short of morbid state, are unchaste ideas, and a high energy of passion. In this way, the influence of books, conversation, or pictures, calculated to kindle up lustful appetite, and the uncovering of parts that modesty conceals, which all produce a lively imagination of the thing so much desired, can be indistinctly felt by none perhaps but eunuchs. Nourishing food, and generous drink, and high-seasoning, produce the same effect; hence the proverb, without meat and drink love starves: Likewise, that degree of exercise, or even labour, that does not prove fatiguing, but keeps within the boundary of stimulant operation; as also an abundance of blood, both from due exercise and from rich diet; lastly, frequent and ardent enjoyment, or *inconcessa hujus imitatio*; all these increase the menstrual discharge, in proportion to the high degree of their stimulus, but still do not carry their effect to morbid excess.

DXXXIV. The same conclusion applies to the effect of these stimuli, which was formerly applied to an over-proportion of blood producing sthenic diathesis: For, if excessive menstruation and an increase of love be the consequence of the excess of the stimuli, one or other of the following must be the effect; it will either be such as remains within the latitude of health, or such as first produces sthenic diathesis, and then, in a higher degree, rapidly brings on indirect debility.

DXXXV. That this is the fact, is proved by the noxious powers that produce excessive and morbid menstruation; and by remedies, that are stimulant and
suited

(*i*) Women menstruate more than other females, because they are subjected to a higher degree of the stimulus, which is its cause; and such women as are exposed to more of the same stimulus than others, will also experience more of the effect, precisely upon that same principle.

sued to fill the vessels, removing the disease, according to our late discovery ; and also by the unfortunate issue of the debilitating evacuant plan of cure in the same diseases.

DXXXVI. As it is stimulant operation that produces both proper menstruation and that which goes to a little excess ; so, when once menstruation is established, the conformation and stimulus remaining are sufficient to support it. The same operation is renewed during every interval of menstruation : The stimulus acts and quickens the motion of the blood in every part, but chiefly in that where it is most powerful and most required for the effect, that is, in the region of the uterus : The blood thrown into quick motion, and rushing with a more rapid flow, increases the stimulus which is the cause of this acceleration : And, as this mutual stimulus continues incessantly to affect women through the whole interval, when they are allowed scope of love ; the uterine vessels are gradually dilated, till at last, within three weeks, or a lunar month, they are opened at their extremities : And, when the fluid, which is first serous for a little, and afterwards sanguine, and afterwards serous again for a little, has flowed one, two, or three days, the vessels at last close.

DXXXVII. During the whole time of this process, the more excitability there is—consequently at the beginning of each menstrual effort—the more violently the stimulus acts, and produces proportionally more excitement : And it has, from this time, always less and less effect to the end, in proportion as the excitability is more wasted ; though, till the excitability, in so far as it has a relation to this stimulus, is altogether exhausted, the stimulus always adds something to the sum of excitement (*k*), though constantly less and less. The same explanation applies to the operation of food, of drink, and of all the exciting powers.

DXXXVIII. What

(*k*) See XXXVI.

DXXXVIII. What has been said of the stimulus, productive of menstruation, is conformable to the effects of all the other stimuli. It is also conformable to the whole sum of menstrual effect from the time it begins till it entirely ceases. Thus, at the beginning of this long period, the force of stimulus is far the greatest, upon account of its novelty, and the unwasted state of the excitability that relates to it. At this period, above all others, love in persons in health is exquisite; and, in consequence of the stimulus which excites it, menstruation, when once established, is most exactly performed; that is, it does not, either from deficiency or excess, deviate into morbid state.

DXXXIX. But when now the office of menstruation is fully established; because in this, as well as every other function, the excitability is gradually diminished in the progress of life, the stimulant power also has gradually less, and, at last, no effect: Consequently, in the same gradual way, the power of love in women, and, in proportion, that of menstruation, is diminished, and at last, altogether extinguished.

DXL. While both the faculties, that of love as well as that of menstruation, in this manner decrease from their beginning to their abolition, menstruation is often interrupted, as in pregnancy, in suckling, in the diminution or suppression of menstruation. This interruption in the two former cases is natural, and consistent with health; but in the diminution or suppression of the menstrual evacuation, it becomes morbid.

DXLI. Since the stimulus, together with the conformation of the vessels, is the cause of menstruation, and the latter depends upon the former; so again the defect of the stimulus, and, therefore, of the conformation, produces both the retardation, diminution, and, at last, the complete suppression of the discharge.

DXLII. Whether ever the defect of menstruation, like that of perspiration, or of an internal excretion, as that in the fauces and alimentary canal, is to be imputed

to sthenic diathesis, is uncertain, for this reason ; that, while the diameters of the small vessels on the skin and in the intestines are more capable of such a contraction for a reason formerly assigned (*l*) ; so great a force of excitement or so high a degree of sthenic diathesis, as would be sufficient to shut up vessels destined to the transmission of blood, is not easy to be conceived. And the doubt is further increased by a certain fact ; which is, that both in the retardation of the menstrua, and in all the degrees of their diminution to their total suppression, when local affection is out of the question, there are evident signs of a debilitating cause.

DXLIII. In order to establish this point, which is of the greatest consequence, as it directly affects the method of cure, and, if not explained, would leave a gap in our principles ; we have to observe, that, though some men, in consequence of the stimulus of excessive love, excited by a most beautiful woman, have, by means of sthenic diathesis, been so inflamed as to fall into a temporary fit of impotence, and been cured by bleeding ; besides the infrequency of the occurrence (*m*), it is not very probable, that the large uterine vessels can be so contracted in their diameters, as to become incapable of transmitting their fluid. Nay, facts contradict the supposition : The symptoms arising from the retardation or deficiency of menstruation receive a temporary alleviation from the debilitating plan of cure ; but the discharge is not usually brought back ; on the contrary, it is more retarded. But, allowing an over-proportion of blood and an excess of stimulus to be the cause of the first deficiency of menstruation, after it has been removed by bleeding and the rest of the debilitating plan of cure, can this over-proportion and excess be the cause of a disease, which resists a degree of evacuant and debilitating operation, that would cure
ten

(*l*) LVII. LXII. CXII. CXIII.

(*m*) I remember one instance in Dr. Whyte, and I think I have only heard of another.

ten peripneumonies? And since any stimulus, as well as that of an over-proportion of blood, may, from its excessive force, induce indirect debility; why may not the same thing happen in a disappointment in love, and on occasion of the first deficiency of menstruation; and, in both cases, atony, ushering in manifest debility, and not excess of tone, be the cause? As peripneumony, where the over-proportion of blood and sthenic diathesis is by far the greatest that ever happens, in consequence of indirect debility passes into hydrothorax; why may not a similar cause in this case produce a similar effect?

DXLIV. The cause, then, of deficient menstruation, whether partial or complete, is a languid excitement over the whole body, especially in the uterus, from a deficiency of the stimulus of love (*n*), and of all those stimuli that support it (*o*), and from a penury or under-proportion of blood.

DXLV. This appears, because the noxious powers mentioned in the retardation of menstruation, and other debilitating powers in every deficiency of that discharge, produce each disease; it further appears, from the restoration of the just quantity, in consequence of the stimulant and replenishing plan of cure, and also from the hurtful effect of the debilitating plan of cure (*p*).

DXLVI. The remedies for the cure of retarded menstruation are, rich food, generous drink, gestation, exercise accommodated to the strength, pediluvium and femicupium, or the warm bath of the lower extremities, and gratification in love (*q*).

DXLVII. The same remedies are required in cases of suppression, and the same, but inferior in their degree of force, for the diminution of menstruation:

When

(*n*) DXXIII. DXXVI. DXXIX.

(*o*) DXXVI. DXXVII. DXXXII. DXXXVII.

(*p*) DXXXV.

(*q*) DXXVI.

When there is an unusual violence of the disease, either in degree or duration, we must have recourse to the assistance of the diffusible stimuli.

Of Menorrhœa, or the excessive Discharge of Menstruation.

DXLVIII. Menorrhœa is an effusion of blood from the uterus, or too copious menstruation, or too long a continuance of it in a more moderate degree of the excess, accompanied by all the symptoms of asthenia.

DXLIX. This disease is occasioned not by an over-proportion of blood, not by a vigorous state of body, but by an under-proportion of the former, and an exhaustion of the latter. The noxious powers, therefore, that produce it, are food not nourishing enough, or in too small proportion, watery liquids, or that over-proportion of pure strong liquors that produces indirect debility, excessive heat, or cold when its debilitating operation is not counteracted by any stimulus, and salacity.

DL. Its remedies are the reverse of the noxious powers; rich food, generous liquors, heat acting within its stimulant range, cold kept from inducing direct debility by the stimulus of heat and other stimuli, and gratification in love.

DLI. The effect of the noxious powers and remedies of which we have spoken, that of the former in producing, and of the latter in removing, the disease, and the failure in success of the debilitating plan of cure, all confirm the doctrine.

Of Epistaxis, or Bleeding from the Nose.

DLII. Epistaxis is an asthenia; which, besides having the general symptoms, is distinguished by bleeding from the nose without any force behind—an affection troublesome at any age, but particularly to young persons in a state of rapid growth, and to enfeebled old age.

Of

Of Hæmorrhoids.

DLIII. The characteristic of hæmorrhoids, or the piles, is a flow of blood from the anus, or the parts around it, added to other signs of asthenia.

DLIV. The same nearly, that has been said of menorrhœa, is to be said of the noxious powers and remedies of this disease.

DLV. The cause of the piles is manifest, from the noxious powers that produce it, the remedies that remove it, and the unhappy effect of the common asthenic plan of cure; that is to say, it is debility of the whole body, from the deficiency of other stimuli, and chiefly that of the blood (*r*). This debility, while it relaxes all the vessels, and impairs their tone, produces that effect, in a special manner, upon the affected vessels. The reason is, that, in consequence of the inequality so often mentioned, the cause chiefly operates in the seat of the urgent symptoms (*s*). Nor is it to be thought wonderful, that the blood should flow through the vessels of the uterus that are patulous and in the habit of pouring out blood, through the pendulous hemorrhoidal vessels, and through those of the nose, which are delicate, and weakly supported, in preference to others. In this case plethora, which has no existence (*t*), is equally unnecessary to our reasoning (*u*).

Of Thirst, Vomiting, and Indigestion, as well as the kindred Diseases of the alimentary Canal.

DLVI. There is a very frequent affection, beginning with thirst and proceeding to vomiting (*x*). It often proceeds no farther than these symptoms; it oftener ushers in the most severe affections, such as sometimes dyspepsia,

(*r*) See par. DXLIX: (*s*) See XLIX. L. LI.

(*t*) See par. CXXXI. CXXXIV. and the addition.

(*u*) CCXXXII.

(*x*) CLIX. CLXXXV. CLXXXVI. and CLXXXVII.

dyspepsia, or indigestion, sometimes colic, sometimes the gout, sometimes proper fevers, and many other asthenic diseases. Its most frequent source by far is weakness, from too long suckling and sometimes from the diarrhœa incident to women wasted both with a long course of suckling and by repeated pregnancies.

DLVII. There are two affections which have only one name between them, viz. thirst: The one is sthenic, the other asthenic (*y*). The former arises from the stimulus of salt, of rich and plentiful meals, of heat and labour, and some others; never ending in vomiting till the sthenic state is over, and this happens but seldom. Its cure, with which we have here no concern, is cold water and the several debilitating powers.

DLVIII. The asthenic thirst, which is our present subject, depends always on pure debility, sometimes indirect, sometimes direct (*z*). Its tendency is always to sickness, and, as that increases, to vomiting (*a*); and when the vomiting becomes any way considerable, the consequence is that most acute pain, which a cramp in the stomach produces (*b*), and the other affection formerly explained (*c*). This progress is spontaneous, direct, and for the most part rapid.

DLIX. The noxious powers here are all debilitating. The indirectly debilitating powers are, debauch in eating and drinking (*d*), drunkenness, extreme fatigue, ultimately excessive heat (*e*), violent passions (*f*), excessive exercise of the intellectual faculty (*g*), debilitating food (*h*), an over-proportion of blood converted into an under-proportion, together with the conversion of the sthenic diathesis that attended the excess into the asthenic, the inseparable attendant on the diminution.

The

- (*y*) CLIX. CLXXXV. CLXXXVI. and CLXXXVII.
 (*z*) CLXXXV. (*a*) See CLXXXVII. CLXXXVIII.
 (*b*) See par. CLXXXIX.
 (*c*) CXC. to CXCIV. and from that to CXCVIII.
 (*d*) CXXVIII. CXXX. (*g*) CXXXIX.
 (*e*) CXV. (*h*) CXXVIII.
 (*f*) CXLI.

The following powers act by a directly debilitating operation ; cold not counteracted by any stimulus (*i*), cold water, vegetable food (*k*), penury of blood (*l*), of other fluids (*m*), want of pure air (*n*), anxiety, grief, fear (*o*), and, in fine, that weakness of the system, which arises from all these. The affection is often of a mixed origin, from a combination of both these sorts of noxious powers : For, as direct debility always increases the indirect, so does the latter the former, both in this and all cases (*p*).

DLX. The corruption of the common mass of fluids, whether it be called acrimony, or putrefaction, has no concern here ; because, while life remains, and the action of the vessels upon their respective fluids continues, such a state of the fluids cannot become general ; it being only the effect of the cessation of motion of the fluids and of heat ; nor can it happen, but in the extreme vessels and excretory ducts, which, by their atony, do allow such a cessation of motion, and likewise in the alimentary canal.

DLXI. The common cause of every asthma, predominant in the throat and stomach, upon account of the atony of the salivary, and other excretory ducts, is the cause of this thirst.

DLXII. Its remedies are also the common remedies of every asthma ; they should be accommodated to the degree of debility. In a slighter degree of this thirst, a glass or two of brandy, or of any similar spirit, or, which is a better rule, given till the complaint is removed, is sufficient. It should be either pure, or diluted with a very little hot water (*q*). It should be followed

(*i*) CXXII.

(*m*) CXXXVII.

(*o*) CXLII.

(*k*) CXXVIII.

(*n*) CXLVI.

(*p*) XLVII. LXXI.

(*l*) CXXXIV.

(*q*) The addition of cold water counteracts, that of hot cooperates with, the effect, which has been ascertained in a thousand trials.

followed by eating some animal food (*r*) ; and the effect should afterwards be supported by other stimulants taken moderately, and in the degree that suits good health. After which the proper practice is, to proceed to the use of the permanent stimuli.

DLXIII. When the thirst is not quenched by these means, and vomiting, as it soon will, comes on ; and when excruciating pain supervenes upon the vomiting ; which, when the pain is not present, is an affection, that, together with the symptoms that have been mentioned (*s*), should receive the appellation

Of Dyspepsanodyne, or Indigestion without Pain :

And when, besides the pain of the stomach, now induced, the affection going downward to the intestines, sometimes produces a loose, sometimes a bound, belly ; at other times only a loose belly, and at others only a bound one ; which is an affection, when unaccompanied by costiveness, that is distinguished by the title

Of Diarrhœa :

DLXIV. And, when accompanied with costiveness, is entitled to the denomination

Of Colicanodyne, or Colic without Pain :

DLXV. In all these cases recourse must be had to a larger dose of the strong liquors : And, when that does not succeed to our wish, we must next fly to opium, and other more diffusible stimuli, if they are to be found : When, by these, relief is procured, rich and pure soups, without fat, should, from time to time, be administered,

(*r*) When the thirst was but just coming on, and not yet established, I have found a hearty breakfast carry it off. But when it is come to a head, the mixture of sickness, that now begins to take place with it, renders eating impracticable.

(*r*) From DLVI. to DLXII.

administered, and the canal carefully bathed all over with them. Afterwards, the other stimulants should be added ; in the use of which, a straight course between direct and indirect debility should be held, without the least deviation towards either : And our efforts must always be continued till the disease is radically removed.

DLXVI. The necessity for this direction in the cure is so much the greater ; as, by neglecting it, or depending upon the common purgative debilitating plan, the consequence is, that a proper general disease often degenerates into a local affection. To proceed to the consideration

Of the Kindred Diseases of the Alimentary Canal.

DLXVII. Among which, besides those that have been mentioned above (*t*), there remain others, which, when compared with them, both as to the nature of the affection and of the treatment, absolutely claim this place in the scale.

Of the Diseases of Children.

DLXVIII. The diseases of children are, dryness of skin ; sudden slobber, or salivation of short continuance ; a similar rejection of milk without effort (*u*) ; green scouring ; at other times costiveness ; both commonly attended with gripes ; of which the usual sign is, a pulling up of the knees towards the stomach, with very severe crying ; unequal heat : A little more severe than these are the two following cases, the one of which has the name

Of Worms.

DLXIX. Which are distinguished by a thickening of the columna nasi ; by a custom of picking the nostrils ;

(*t*) From DLVI. to DLXVI. (*u*) See CCCCIII.

trils ; by a loss of complexion ; by paleness of the face and of the rest of the skin ; by a swelling of the belly ; and, lastly, by the discharge of worms by stool. The most distinct symptoms of the other affection, or

Of Tabes, or the general Wasting of the Body,

DLXX. Are meagerness all over the body, an unusual bulk of the abdomen, almost constant watching, such a weak, distressed, assiduous, and hoarse manner of crying, as is peculiarly calculated to excite tenderness and compassion.

DLXXI. The noxious powers, producing all these affections, are common to them with every asthma ; that is, they are every thing that has an effect of debilitating the whole system, and especially the alimentary canal : Such as, at this age, milk not nourishing enough, and at the same time acescent and flatulent, want of food, or diet of watery matter and bread ; cold, and moisture, the latter increasing the effect of the former ; habitual vomiting and purging ; too little dandling ; unseasonable sleep, and meals, and every part of management ; nastiness ; impure air ; a neglect of natural likings and dislikings.

DLXXII. The remedies are the converse of all these ; nourishing, exciting milk ; three or four meals a day, consisting chiefly of warm milk, pure animal soups, not weak, with a mixture of flower or bread of the same kind ; heat without being carried so far as to produce sweat, or too much redness, and without moisture ; laying aside every sort of evacuation ; a great deal of dandling and gestation ; a proper timing of sleep, of food, and of every part of management of these delicate systems ; cleanliness ; tepid bathing in moderately cold weather, and cold bathing in warm ; pure air ; being out in the fields as often as possible in all but moist weather ; and such a judicious attention to desires and propensities

propensities as not even to neglect gently scratching any part that itches (*x*).

DLXXIII. These directions suit the milder cases, under consideration. They ought not by any means to be neglected; at the same time others are necessary for the more violent cases. In the green scourings, great looseness, or costiveness, recourse must be had to pure wine, to spirits, more or less diluted as the occasion may require, or, if there should be need, not diluted at all: More of the soups above mentioned, and also of a richer kind.

DLXXIV. If these means should not succeed to the physician's mind, which will seldom be the case; in these affections, more certainly in worms, and still more certainly in the tabes, or general consumption, with the remedies that have been spoken of, the more diffusible stimuli of opium and musk should be alternated. Both sorts of remedies, the durable and diffusible, should be so accommodated to the violence of the symptoms, as not to be dropped till the whole morbid tumult is allayed, and the healthy state restored; which will, upon trial, be found more practicable, than has yet been imagined from the employment of the contrary plan of cure, to the great comfort of mankind in their sufferings.

DLXXV. From what has been said it will appear, that these affections of children, all flow from the same cause, are removed all upon the same indication of cure, as any other asthma, or disease of debility, that has either yet been, or is to be, mentioned in this work. The unhappy termination of them, heretofore, is to be imputed not to their cause, but to the ill-advised methods commonly employed for their cure (*y*): Nay, when

(*x*) See above DXVIII.

(*y*) I cannot help repeating again, because the importance of the subject calls upon me to do so; that the practice of the new plan of cure, in all the diseases of children, as well as in the others lately

when they degenerate into local affections, as in the instance of tabes or general consumption, ending in an obstruction of the mesentery ; in that of colic at any age, terminating in an inflammation, tumour, or twisting of the intestines ; and in those of both colic and long-neglected diarrhœa, running into a gangrene in the same part ; this is a misfortune that never happens, when a proper method of cure is early enough used to remove the primary disease : And, on the contrary, it most commonly arises from injudicious treatment, or from the neglect of this, which is the proper one. To the kindred diseases of the alimentary canal (z) further belong the two following ones, under the title

Of the gentle Dysentery and Cholera.

DLXXVI. To these, every thing that has been said of the former, will apply : Or, if there be occasion for any particular observation upon them, it will be given after we come to treat of them in their more severe and violent state : Of a similar nature to all these, but of a degree so much more violent, as to merit the next place in rank below them, and, at the same time, not unconnected with them, as having the seat of its predominant symptom in the alimentary canal, is the disease to which I have given the name

Of Angina.

For the symptoms and method of cure of which turn back to number CCXXII. where it is introduced, in the explanation of asthenic symptoms.

Of

lately spoken of, has ever succeeded in my hands, as well as in those of my pupils, to a miracle. I cannot say that ever I met with an instance where it could be said to have failed. Let then who will compare that account with the known mortality that is every day the result of any other practice yet thought of in the profession.

(z) From DLXVI. to the present paragraph.

Of Scurvy.

DLXXVII. Scurvy is an evident asthma: The principal symptoms are, want of appetite, loathing of food, laxity of the living solids considered as simple solids; an oozing of blood, both from other parts, and particularly from the gums; aversion to labour; low spirits, and a languor in all the functions.

DLXXVIII. The noxious powers producing this disease, are the common asthenic ones, appearing in the following form. It is cold, but conjoined with moisture in the northern seas, and, as we may well suppose, in the parts of the southern ocean of the same temperature, that generally produces the peculiar form of the disease. But all the other debilitating powers contribute their share: Such are, grief for the loss of liberty, relations, kindred, and friends; a horrid dislike to the present state of life; a longing desire for that which they have parted with; the awe which the severity of discipline keeps them in; the effect of a calm, where there is nothing to do, producing direct debility on them; a storm, where they have to labour above their powers, as certain a cause of indirect debility; their not having been allowed, till of late, fresh meat, which is the only nourishing and invigorating (*a*) form of it; their being kept upon salted and spoiled meat, not even corrected by recent vegetable aliment, such as that is (*b*); watery or small drink; the terror which the expectation of a battle at sea inspires.

DLXXIX. All these particulars prove, that scurvy is so far from being the effect of one or two noxious powers, and from resting upon so narrow a basis, as has hitherto been imagined; that it is rooted in a multiplicity of debilitating powers, and is a real asthma, or universal disease of debility.

DLXXX. This inference is confirmed by both the true and false method employed for its cure: For, though

(*a*) See CXXIV.

(*b*) See CXXVIII.

though nearly all the common powers concur in the production of scurvy ; if, however, it be considered, how easily, upon the removal of the noxious powers, and upon the patient's getting a-shore, the disease is subdued, by fresh meat, either with or without greens, by wine, gestation, and exercise ; in fine, by the return of his usual manner of living ; it will be impossible to entertain a doubt of its being an asthenia, but by no means a violent one. The pretence of its cure being effected by greens, roots, sour crout, and similar things, which have been so much commended lately, though, without the remedies just now enumerated, they could not fail, by their debilitating operation, to aggravate the disease, is derived from a noted blunder among physicians, by which they are led to overlook the most certain, simple, and evident facts, and take up, in place of them, the greatest falsehoods, or such facts as have a very narrow foundation in truth.

Of the mild Hysteria.

DLXXXI. The mild hysteria is a form of asthenia, of frequent occurrence among women, but very rarely happening to men ; in which a noise is heard in the belly, and the patient has a sensation of a ball rolling within the bowels, rising up to the throat, and there threatening suffocation.

DLXXXII. The striking symptom in this disease is a spasm, not fixed in a part, but moving along the course just described. The disease attacks in fits, for the most part leaving long intervals between them, and often not recurring more than once or twice.

DLXXXIII. The fits are soon removed by small doses of opium, repeated at short intervals : The intervals should be secured from danger by full diet, and a moderate and naturally stimulant management.

Of Rheumatalgia, or the Chronic Rheumatism.

DLXXXIV. Rheumatalgia is an asthma, not so much a sequel of rheumatism when this disease is left to proceed in its own spontaneous course, as of the profusion of blood and of the other fluids during the treatment, or of too debilitating a plan of cure; by which the sthenic diathesis and the inflammation peculiar to it, are changed into the asthenic diathesis and inflammation. Paleness of the skin takes the place of ruddiness: The appetite is diminished, the involuntary motions are impaired, debility and torpor prevail over all. So far the disease is understood to be chronic. As in rheumatism, the joints are pained and inflamed. But though this is the most frequent cause of rheumatalgia, so it sometimes arises—not from a sthenic origin, and an excess in the means of reducing that—but from pure debility.

DLXXXV. The cause of the disease is the usual one of any asthma, predominant in the moving fibres of the muscles, situated below the skin over the whole surface of the body.

DLXXXVI. Its worst morbid powers are, penury of blood, cold, especially with the addition of moisture, impure air; and, besides these, as many of the other debilitating powers as happen to be applied, contribute, in proportion to the degree in which they are applied, to the morbid effect. Of these, excessive indolence and the reverse are particularly hurtful.

DLXXXVII. As all stimulants contribute to the restoration of the healthy state; so the most powerful of them in this case are nourishing food, friction, gestation, wine, taken in moderation, exercise, rather frequent than violent, and being as much as possible in the open air. Though it is an acknowledged fact, that rheumatalgia is one of the reproaches of physicians; it is more so than has been hitherto yet understood; it being an asthenic disease; while they at all times made use of
the

the same kind of treatment, as if it had been the most sthenic, or, even upon the whole, a more debilitating treatment (*c*).

Of the Asthenic Cough,

DLXXXVIII. The asthenic cough is an asthma, which, with the constant common symptoms, depends upon a frequent expectoration, which the cough excites; affecting every age, which has been under the influence of either direct, or indirect debility, and therefore old age, which is unavoidably the prey of indirect debility.

DLXXXIX. As consisting in indirect debility, it is the effect of an excessive operation of all the stimuli that have been applied either for a short time, or for a great part of life; the effects amounting to the same; that of the former from its degree, and that of the latter from its long continuance (*d*). In so far as its cause is direct debility, a deficiency of all the stimuli, leaving the excitability to be accumulated, induces this form of asthma, from the spontaneous tendency of nature, life being only a forced state (*e*).

DXC. The cough, which depends upon indirect debility, is cured by reducing the stimulus which occasioned it, gradually and cautiously to the proper and natural degree. And when it originates from indirect debility,

(*c*) If they should pretend to say that their bleeding and other evacuations were more moderate than in rheumatism; the answer is, that they were not so profuse at any given time: But, considering the length of time, that rheumatism draws out into, the frequent, and almost constant evacuations, conjoined with every species of inanition, made the debilitating practice upon the whole far exceed that used in the sthenic case. No wonder, then, that much mischief was done.

(*d*) See above XXIX. XXX. and CCCCI.

(*e*) So great is nature's tendency to that particular increase of excretion, which forms the matter of expectoration in this disease, that every case of death from disease is an instance of it. Hence the dead rattle in the throat is universally the expiring symptom. See LXXII. and CCCXXVI.

debility, the increase of the stimulus, the want of which occasioned the disease, till the degree of excitement, which constitutes health, is restored, effects the cure.

DXCI. Such is the nature of direct and indirect debility ; that if the remedies of the former be pushed beyond the proper boundary, the cough appears again ; and the same is the event of the same excess in the use of the remedies of the latter (*f*).

DXCII. Frequent and violent cough with copious expectoration has been always held for a sure mark of a vitiation or faulty state of the lungs. That faulty state was esteemed to be of a sthenic nature, and to give assurance of the presence sometimes of phthisis pneumonia, or consumption from an ulcer in the lungs, sometimes of bastard peripneumony, sometimes of a burning inflammation in the alimentary canal. In the former case an ulcer, or, in their way of speaking and what amounts to the same thing, tubercles were believed the cause of the disease ; in the second case, inflammation, either in the intercostal muscles, or a different one from that, which occurs in true peripneumony, was, in their opinion, its primary cause ; and, in the last case, not one of them would have hesitated a moment to have ascribed the state of the bowels to the only inflammation they were acquainted with, that which requires bleeding and evacuation for its cure. And no other inquiry was made, but whether the matter that was spit up, was mucus or pus. To ascertain this, premiums were proposed.

DXCIII. But, in fact, besides that no phthisis pneumonia, no bastard peripneumony, as they call it, nor any inflammation in the alimentary canal, was ever cured by antisthenic or debilitating remedies ; and, in the several trials that have yet been made, the first of these cases has been evidently relieved, nay, frequently completely removed, and the two latter thoroughly cured

(*f*) See par. XXXIII. XXXIV. and XLIII. XXX. CXXXIV. with the addition, and especially CCXXXIII. to CCXXXVI.

cured in numberless instances, and in all in which the sthenic or stimulant plan of cure has been used; I say, besides these large and comprehensive facts, so little information can be derived either from the quantity or appearance of the expectoration, that in certain fevers, in some other diseases of debility, quite free from local affection, and finally in this very cough of which we are speaking, there is often a more violent cough, and a greater expectoration of matter putting on every form and every appearance, than usually happens in a confirmed consumption, and where every hour is expected to be the last. And yet this whole tumult, heretofore so alarming, can be stopped in a few hours, and quite cured in as many days.

DXCIV. And, who does not know, that there are many persons, who have an immoderate cough, and proportional expectoration, for a long time, while their lungs, however, are sound, and free from any organic taint? How often in phthisis-pneumony itself, after finishing its course, and terminating in death, has the whole fabric of the lungs been found upon dissection as found as ever happens in death from any cause (g)?

DXCV. The

(g) There are several cases upon record, of the lungs, after death from a confirmed consumption, having been found perfectly sound. A most respectable pupil of mine went to Lisbon with a young gentleman of considerable rank in Scotland, under a confirmed consumption, whom he brought back perfectly freed from his disease. He also saved either two or three ladies, I am not just now sure which, equally given up upon the common practice. He happened to assert before the physician of the factory, that a person just dead of the same disease had no local affection in the lungs, and upon dissection it was found to be as he had said. I have restored many phthisis-pneumoniacs, but am obliged to own, that I have lost three, to whom I was called too late. Their loss, however, mortified me, because there were many reasons for my setting my heart upon their cure. I also lost in Edinburgh the most amiable young man of that kingdom, after curing a prodigious hemorrhagy from his lungs. This was he whom my pupil two years before brought home safe from Lisbon. But I was prematurely dismissed in this, and counteracted in the other cases.

DXCV. The cause of coughing has hitherto been unknown. To pass over the sthenic cough, with which we have nothing to do in this part of our subject (*h*); the cause of the asthenic is the same as that of any asthenia, but more vehement in the fountain of expectoration, viz. the exhalant and mucous arteries, the secreted fluids of which, inspissated by stagnation in the bronchia, constitute the matter to be expectorated.

45. The most powerful of the noxious agents in exciting asthenic cough, is cold, just as heat has been demonstrated to be the most noxious agent in catarrh (*i*). Nay, in the asthenic cough, such is the power of cold, that the slightest breath of air reaching the body, excites exceedingly violent coughing, and brings on the whole series of subsequent symptoms; the warmth of the bed as soon allays the cough, prevents the threatening, and cures the urgent, disturbances.

DXCVI. In this as well as the sthenic cough, it is the serous and mucous fluids that chiefly flow to the bronchia. The bronchia bear their pressure for a little, till, distended by the load, they can bear it no longer. The disagreeable sensation excites a commotion in the excitability of the affected part, and, therefore, over its whole seat, and rouses the excitement. A cough follows, and throws off the collected humours by which it is provoked.

DXCVII. This disease is always to be treated, first with stimulant remedies, and then with such as also fill the vessels. If indirect debility has been the morbid power, still we must stimulate,—at first to a degree little less than that which occasioned the disease, and then still less; and, after changing, from time to time, the form of the stimulus, less still; till we come down to the stimuli that are agreeable to nature or those that suit

(*h*) See CLX. CCXXXIII.

(*i*) See par. CCCCVII. to CCCCXII.

suit the most perfect health (*k*). In this way are ebriety and every form of intemperance to be treated. If direct debility has been the cause, the cure will be a good deal more easy : Here we must go on to stimulate more and more, till we ascend to that point of excitement, to which we came down in the case of indirect debility. In this way is the first stage of phthisis pneumonia, as well as its middle course, and also bastard peripneumony, nay, most cases of the debility affecting young people, and the disease to which the name

Of Chincoughs

DXCVIII. Is given, to be encountered in practice. Chincough is attended by a contagious matter ; which varies in its degree, but so, however, that a sthenic plan of cure, adapted to the degree of the disease, for certain cures it. The change of climate or situation is a tale ; the practice of vomiting, death (*l*). Indeed, since the disease is an asthenia, vomiting, which is so very debilitating an agent, cannot fail to be of the highest detriment (*m*).

Of

(*k*) See par. CIII.

(*l*) Still to the old tune "cantilenam eandem canunt." They confessed they knew nothing about this disease, yet they prescribe change of air and place : If they know nothing about the disease, how could they know what would be of service ?—Others told them so. But why do they prescribe vomiting ?—They heard that from their master's desk at school, and found, that the same authority was the reason of others for doing the same thing. Why vomiting ? For the same reason, and because a relique of the doctrine of morbid matter has run through all their systems. Hence, in bleeding diseases, the universal rule has been to bleed, in vomiting to give emetics, in diarrhoea to give cathartics, in imitation, forsooth, of nature. The symptoms of disease have been mistaken for efforts of the constitution to remove the disease. It is now, however, proved, that there are no such efforts. Every symptom, and particularly every morbid evacuation, is to be stopped. The contrary practice is as good sense, as it would be to propose bringing on a dead rattle to cure the morbid one.

(*m*) See par. CXXXVII. and the addition in MS. and CCXCIV.

*Of Cystirrhœa, or the mucous Discharge from the
Bladder of Urine.*

DXCIX. Cystirrhœa is that mode of asthma, in which, to the general symptoms of asthma, and the particular ones of asthenic cough, there is an addition of mucus, rendering the urine turbid, without any previous pain or symptom of internal local affection.

DC. In so far as this is a general affection, the laxity, which is proportioned to the atony, must be removed equally in it, as in other cases of increased excretion; and particularly the stimuli of health must be accurately administered.

Of the Gout of stronger Persons.

DCI. That gout of stronger persons is a form of asthma; in which, after a long habit of luxury and indolence, and especially when to those noxious powers directly debilitating ones have been recently superadded, indigestion, or diarrhœa, or rather both conjoined, with manifest signs of a diminished perspiration, precede; then the lower extremities are affected with languor. One or other of the smaller joints of the foot is almost always seized with an inflammation, which, if not resisted by a practice quite new, will prove most severe and painful, but of short duration, in comparison with subsequent attacks.

DCII. This disease may be called *the indigestion or dyspepsia of the luxurious*, that is, the indigestion depending upon indirect debility; while dyspepsia may be denominated the gout of persons under direct debility, as having every symptom of the gout, except the inflammation (*n*). For, so little is there in names, that
not

(*n*) There are very few persons, who at one time or other in their life have not experienced painful twitches in some part or other of one of their feet, especially when they happened to be in
a state.

not only the diseases, of which we have been just treating, but likewise asthma, hysteria, the colic, and most of the diseases, which have taken their appellations from any remarkable disturbance of the alimentary canal, are equally prevented and cured by the same method of treatment precisely. Which is indeed the reason why the gout has been ranked in the number of the diseases of the alimentary canal.

DCIII. A taint, transmitted from parents to their offspring and celebrated under the appellation of hereditary, is a mere tale, or there is nothing in the fundamental part of this doctrine. The sons of the rich, who succeed to their father's estate, succeed also to his gout : Those who are excluded from the estate, escape the disease also, unless they bring it on by their own conduct. Nay, if there be but two diseases in the strict sense of the word, they must be either all, or none of them hereditary. This supposition makes the noxious powers superfluous, which have been proved to be every thing respecting disease ; and, as it is, therefore, absurd, so the truth of the latter opinion must be admitted. The stamina, or simple solids, are so given in our first conformation, that some persons are distinguished by a rigid, others by a slender state of the whole mass. This variety of the stamina, if the exciting powers, upon which the whole phenomena of life depend, be properly managed, admits each its respective state of health, suited to its respective nature, and sufficiently

a state more languid and sluggish than ordinary. Every which case may be considered as a gout in miniature. But when the whole phenomena, except the inflammation, happen to any person, call it dyspepsia, or what you will ; it is to all intents and purposes a gout. Indeed, from all that has been said through this work, general morbid state appears to be a very simple affair, being nothing but an increase or diminution of the cause of the functions or powers of life, without any other difference, but that of the mere appearance of the symptoms to our senses, an appearance by which, when we look no further for information, we are also constantly deceived.

ciently good, if the excitement, suited to each, be kept up by a proper direction of the stimuli. Though Peter's father may have been affected with the gout, it does not follow that Peter must be affected; because, by a proper way of life, that is, by adapting his excitement to his stamina, he may have learned to evade his father's disease.

46. If the same person, who from his own fault and improper management, has fallen into the disease; afterwards, by a contrary management, and by taking good care of himself, prevents and removes the disease, as it has been lately discovered: What then is become of hereditary taint?

Lastly, if the gout is the same disease as dyspepsy, arises from the same noxious powers, and is removed by the same remedies; if the only symptom, in which it can possibly be thought to differ, the inflammation, is only a slight part of the disease, depending upon the same original cause, and ready to yield to the same remedies; what signify distinctions about either, that do not apply to both, (o)? Nothing further is set forth by them, than, that a certain texture of stamina is favourable to certain forms of diseases (which forms are of no consequence), so that, when the excitement is adapted to the stamina, even those forms can be prevented or cured.

DCIV. The noxious powers producing the gout are, first, indirectly debilitating; they are not effectual all of a sudden, and commonly not before the meridian of life, that is, before the thirty-fifth year of one's age.

Rich

(o) If I have kept off my gout for seven years past, after having been subjected to the most severe rage of the disease, might not I, much more easily, have prevented it before? But, it may be said, perhaps, that excruciating pain makes a great difference in the scale of comparison of any two diseases: The answer to that is, that, since the pain is as easily removed as the other symptoms, the difference is removed, and the weights in the scale equalized.

Rich food, too much ease, have a very great effect, drink has less. Whatever has a tendency to wear out life and to consume the excitability, contributes to the effect. But the first fit seldom comes on till directly debilitating noxious powers have been superadded to the indirect (*p*). The following are particularly hurtful, abstinence, vegetable food, the hurtful effect of which is in proportion to the imbecility of the matter that composes it. The farinaceous substances are by no means safe (*q*), but less hurtful than roots, and these less so than greens (*r*); but fruits are the most hurtful of all (*s*). Cold water, given in the height of the diathesis, to quench thirst, immediately produces nausea, vomiting, and other distressing symptoms of the stomach and of the rest of that canal, and hurries on a formal fit (*t*). The mixture of an acid with pure cold water increases the hurtful effect. Of the strong drinks; those prepared from barley by fermentation, that is, the different ales and beers, all the white wines in common use, except Madeira and Canary; and, among the red wines,

(*p*) My gout came on at the thirty-sixth year, after five or six months low living: It returned not again till betwixt five or six years after, because all the intermediate time I had been well supported: And this second fit was ushered in with low living, immediately previous to it, for near the same length of time, as before the coming on of the first fit. Nay, no gout ever came on but in consequence of direct debility; the indirect has not so quick an effect in that respect; at the same time it has a tendency to be hurtful, and therefore should be avoided.

(*q*) A mess of porridge, a dish used in Scotland, with small beer poured into it, and taken over-night, would bring on a fit of the gout next day.

(*r*) The juice of turnips, of cabbage, and even pease-pudding and pease-soup, which are commonly reckoned substantial dishes, have the same effect: When those substances, after being boiled, are used with a good solid meal of meat, I have always found them innocent. Green pease, eaten with lamb or fowl, are both harmless and grateful.

(*s*) Apples and pears are such: But the cold fruits, as melons, cucumbers, are almost instantaneous in their hurtful effect.

(*t*) See CLXXXIV. to CXC. to CCXXXVII.

wines, claret, indeed all the French wines, and punch with acid, are remarkably hurtful. And as indolence helps on with the first fit, so fatigue, especially that of walking, hurries on all future ones. Want of a sufficient quantity of blood is so hurtful at all times, that, though the theory of physicians led them to the notion that the disease depended on plethora and vigour, yet nobody ever thought of taking blood (*u*). Vomiting is hurtful, and indeed one of the natural symptoms of a very bad state of the disease; but purging is worse (*x*). Every evacuation has a similar bad effect, with this distinction, that the artificial are much more hurtful than the spontaneous.

DCV. One is to be excepted,—excess in venery,—to which, though it be a spontaneous and natural, not an artificial, evacuation, gouty persons are so addicted, and so exceed others in power, that in the very middle of a very bad fit, they are not sparing of it (*y*). The exertion at first is not felt; but in the advance of life, and after many returns of the disease, it is felt at last with a vengeance (*z*). Great heat, by its indirectly debilitating operation, does some hurt (*a*); but great cold, by its directly debilitating, much more (*b*). Impurity of air is injurious (*c*), as well as an interruption in the train of thinking (*d*), but hard thinking is more so.

(*u*) This is one of their many contradictions between theory and theory, and theory and practice.

(*x*) At any time I can bring on a fit by a single dose of Glauber's salt, unless I happen to be very strong, and quite free of all diathesis.

(*y*) It is not quite correct to say that the mere evacuation is the mischievous circumstance here. It is the high degree of pleasurable sensation that principally enervates. EDITOR.

(*z*) At an advanced period of age, in persons who had been vigorous, an unnatural power of execution sometimes, even in actual morbid state, will take place, so as that the person will be able to outdo all his former doings in that way. But it is a false power, it is a symptom of disease: It is like unnatural appetite for food amidst a weakness of the powers of digestion.

(*a*) CXV. (*b*) CXVII. (*c*) CXLVI. (*d*) CXXXIX

fo. A deficiency in the stimulus of passion is a pretty considerable noxious power (*e*); but violence of passion will convert this moderate degree of the gout into that highest degree of it, that attacks the head, lays a snare for life, and brings on certain death (*f*).

DCVI. Indulgence in sleep is bad (*g*), as producing direct debility, by deferring the re-application of the stimuli, which takes place in the waking state; but too little sleep is much more hurtful, as it leaves behind it a degree of fatigue from the effect of the stimuli of the former day (*h*). Often, when the upper parts of the body have been recruited by sleep enough, the podagric, after getting up, feels a state of languor in his lower extremities, and a demand for more sleep on their account, and is obliged to go to bed again, and give the unrecruited limbs their respective share of sleep. When a person is heavy from short sleep, how great is the luxury to cherish again by the heat of the bed-clothes all the parts that have been exposed to cold, that is, the whole surface of the body and thighs, but especially the legs and feet; which last, during the presence of the fit, is the seat of the inflammation; and how delightful, in that way, to make up the necessary compliment of sleep?

DCVII. To prolong the intervals of health, and prevent a fit, the remedies are all the reverse of the noxious powers: They are, rich food taken in plenty (*i*), but remaining within its stimulant range, consequently of the animal kind, with a rejection of all sorts of vegetable matter, or a very sparing use of it; strong drink, not taken cold, unless when there is no danger of the disease (*k*), (at which time cold water after a
good

(*e*) CXLI. (*f*) Ibid. (*g*) CCXLV.

(*h*) See Part II. Chap. VII. CCXXXVII.

(*i*) See par. CCLXVI.

(*k*) I know well when I may take cold drink and use some vegetable matter; it is when, for some time past, I have been well supported, and feel strong and vigorous. I also know, if I
have,

good meal is safe,) not mixed with acid, not aciescent, not turbid from fermentation when it is taken (*l*); gestation (*m*), exercise not so strong as to occasion sweat, or give fatigue (*n*), a full quantity of blood, which is procured by food and the exercise just directed (*o*), no evacuation (*p*), sparing venery, if gouty persons can observe the rule (*q*), a moderate temperature (*r*), equally between the extremes of direct and indirect debility; pure air (*s*), consequently cleanliness, and being much in the open fields; a chearful train of thinking (*t*); such a state of excitement, as to passion, as keeps between fiery excess and stupid apathy, with as great tranquillity of mind as possible (*u*); moderate sleep, rather inclining to be long than short, a rule which should be so much the more carefully observed, as the disease is of longer standing and greater severity: In fine, sleep should be allowed to continue till the most vigorous waking state is procured (*x*).

DCVIII. From what has been said it must appear certain, that the gout of stronger persons is not also itself a disease of strength, or a sthenic one; and that it does

have, either in food or drink, taken any thing improper in kind; how to correct it; which is, by having recourse to a proper stimulus. By eating an exotic fruit, which had a mixture of the qualities of the water melon, the orange and lime, in a quarter of an hour I had an attack in my stomach, in the middle of my lecture, last summer, at the Devil tavern. By some of the diffusible stimulus I repelled it, and went well on with my lecture. At other times I have prevented such an effect, by anticipating the remedy. This doctrine puts much more in our power: But we should not, therefore, play tricks with it. On the contrary, we have great reason to be thankful for the command it gives us over our health, and that also, by the use of means not inelegant, nauseous, and clumsy, but quite the contrary. The old motto of Asclepiades, *tuto, celeriter, et jucunde*, is verified and improved by the important addition of *salubriter*.

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|---------------------------|----------------------|-----------------------------|
| (<i>l</i>) CCLXVIII. | (<i>p</i>) CCXC. | (<i>t</i>) DXIII. DXVIII. |
| (<i>m</i>) CCLXIX. | (<i>q</i>) DCXIX. | (<i>u</i>) CXL. CCCIII. |
| (<i>n</i>) Ibid. | (<i>r</i>) CXII. | (<i>x</i>) DC. |
| (<i>o</i>) CCXC. CCXCV. | (<i>s</i>) CCCIII. | |

does not depend upon vigour of the constitution and plethora, as has been commonly hitherto imagined ; but that it is manifestly asthenic, like all the rest of the cases belonging to asthenia, and proved to be so by the strongest evidence ; and that it is not to be treated by an antisthenic, as it has hitherto been the notion, but by a sthenic plan of cure ; and that there is every encouragement for treating it in that point of view.

DCIX. What has hitherto deceived physicians, and passed for the cause of the gout, is the appearance of vigour and an over-proportion of blood, in most podagrics, from the bulk of simple solids in consequence of their way of life, and often from their great strength. But, good men ; they never recollected, that vigour and a great quantity of blood are not properties inherent in animals, but that they depend every day and every hour upon foreign circumstances (*y*). If any one, according to that idea, who has happened to acquire a great bulk of simple solids, and who has enjoyed abundance of proper diet, to the thirty-fifth or fortieth year of his age, should all at once be deprived of all the articles of diet for ten days ; and if a dwarf two foot high, who has lived poorly, and is, therefore, meager and slender, should equally suddenly be put upon rich living ; will there be the least probability, that the former shall, notwithstanding his present absolute privation, continue plethoric and vigorous ; and that the latter, from being crammed with unusual plenty, shall continue empty, as before ? Is the fundamental proposition of this doctrine, in which it has been demonstrated, that we are nothing of ourselves, and that we are altogether regulated by external powers, to be forgotten ? Is a gouty person, who has for twenty years undergone an excess of stimulant operation, about the fortieth year of his age, or even afterwards to be reckoned fuller of blood and more vigorous, than another person who has lived lower, or than he himself was
twenty

(y) X. XI, XII, XIII.

twenty years before? Where, pray, was the necessity of comparing gouty persons with others free from all bias to that disease, and why not compare them with themselves (z)?

Of

(z) Such is the effect of the powers operating upon us, that a certain degree of that operation produces an effect that would not arise under another. If the accustomed operation has been moderate, habit will render the excitement arising from it, in some measure, sufficient for the demands of the system: Hence, day-labourers are supported upon less stimulus than gentlemen. Again, which is a circumstance liable to happen to the latter, if the accustomed operation has been excessive, there will be a necessity for a continuation of some degree of the excess. A podagric may be stronger than a labourer, and yet fall into the gout. For though compared with the other person, he is strong; compared with himself at another time, he is weak: And the reason is, that, though he is still better supported than the labourer, he is worse supported than the usual state of his system requires. Further, the labourer, though he falls not into the gout, may, by carrying his moderation too far, fall into indigestion, or some other disease, in every essential respect the same as the gout. A double inference arises here; which is, that, though both excess and deficiency can be borne to a certain degree, so as to require a continuance of them, or a gradual correction, yet they should both be avoided as entailing that sort of necessity for their continuance while their effect makes no sort of compensation, being, at best, not the best state, that of perfect health, but a state of predisposition to disease; the one to sthenic, and at last indirect debility; the other to asthenic, as depending on direct debility. The perfect rule for insuring the healthy state, is to keep within the extremes of excess and defect, and thereby produce the due degree of excitement; and to apply all the exciting powers equally, each in its due proportion. The due degree may be secured by one or a few, but the equality of it over the system can only be secured by their equal application. This proposition goes to the bottom of two extensive doctrines, that of life, and that of morals; the last of which has as yet not attained to any thing like a fundamental principle. I intend to prosecute the idea upon some future occasion. I know a book filled with the valuable ethic facts, but have not yet had time to consider, whether they all point to a general one, in which they all agree, and which reflects proof and confirmation upon them; without which it would fall short of scientific exactness.

Of the gentle Asthma.

DCX. Asthma is an asthenia ; in which, to the symptoms common to all astheniæ, there is superadded a difficult respiration, returning at uncertain and often unequal intervals, without any unusual expectoration accompanying the fits.

DCXI. The noxious and curative powers here are the same as in the gout : In the same manner the fits are both prevented and removed (a).

Of Cramp.

DCXII. Cramp is also one of the cases of asthenia ; in which, often from pain, often from drunkenness, and not seldom from sweat, and disagreeable soaking heat, sometimes the wrists, sometimes one of the calves of the leg, in fine, any external part, are affected : Of the internal parts, it is sometimes the stomach, sometimes some part in the intestinal canal, sometimes the urinary bladder, that suffers : The disease is not produced only by indirectly debilitating powers ; it also arises from directly debilitating ones, such as abstinence, vomiting, diarrhœa, and drinking water contrary to custom.

DCXIII. To remove this disease, when it does not exceed the degree that is here understood, the whole body must be invigorated by moderate stimuli, every violent exciting power should be taken out of the way ; gestation, and such exercise as does not exceed the strength, should be used. A more severe degree of this disease will by and by be treated under the title of tetanus.

Of

(a) This has been proved, both upon other occasions, and particularly in the case of a young gentleman, who lived with me during my first management of my gout. See Preface to the *Elementa*.

Of Anasarca.

DCXIV. Anasarca is a form of asthenia, distinguished by water betwixt the skin and the flesh, occasioning an external swelling of the body, without the signs of any suffusion of the same fluid into the interior parts.

DCXV. In the treatment, the body must be invigorated, and in that part of it chiefly, where the greatest laxity and atony prevail, that is, the skin. This indication is answered by stimulating heat, by friction, by pure and dry air, by nourishing stimulant diet, and the peruvian bark. No internal local affection gives occasion to it, which may be known from the symptoms yielding to this plan of cure.

Of Colic with Pain.

DCXVI. Colic with pain is a form of asthenia, and a higher degree of the colic without pain; in which, to the signs of debility in common to all the asthenic cases, are superadded a greater violence of the same symptoms, twisting pain about the navel, with pain in some part of the belly, often enormous, and sometimes with a tumor, that can be felt externally, immediately above the brim of the pelvis, on the right side, at the place of the blind head of the colon.

Of the Dyspepsodynia, or Indigestion with Pain.

DCXVII. Indigestion with pain is an asthenia, which adds to the symptoms of indigestion without pain, a pain and gnawing feeling in the region of the stomach, and is a very severe disease.

Of the violent Hysteria.

DCXVIII. The violent hysteria is a higher degree of the mild hysteria; in which, besides the symptoms described

described under that head, mobility and changeableness of mind, disposition to sleep, convulsive state, and a great resemblance to epilepsy, are conspicuous. The temperament, that favours hypochondriasis, is of an opposite nature to this, which is commonly called the sanguine. Both the temperament and predisposition in this case are produced by a moist, lax, set of simple solids.

Of the Gout of weakened Persons.

DCXIX. The gout of weakened persons, which is an increased degree of the gout of strong persons, is that asthenia, in which the inflammation runs to greater length, and, at last, does not form at all; while the general affection increases in violence and obstinacy, and, at last, attains its highest degree; exhibiting, towards the end of the disease, almost all the symptoms of debility, every form of asthenia, and sometimes counterfeiting synocha.

DCXX. As the diseases affecting the alimentary canal, formerly mentioned (*b*), have, in great measure, a common nature; so these also, that is, the colicodynia (*c*), the dyspeplodynia (*d*), the violent hysteria (*e*), and the gout (*f*), equally participate of the same, differing only from the former in their higher degree of violence. Their most distinguishing symptoms are either spasm, which takes place in colic and indigestion with pain, or a spasmodic convulsive affection, which accompanies the others. But they do not differ from each other in any thing essential; since they all, without distinction, depend not only on debility, but also nearly upon an equal degree, as the similarity of their morbid powers and remedies proves. For a very full explanation

(*b*) From DLVI. to DLXXVI.

(*e*) DCXVIII.

(*c*) DCXVI.

(*f*) DCXIX.

(*d*) DCXVII.

explanation of spasm and convulsion go back to the following numbers, CLXXXVIII. to CXCIV. and from the latter to CCI.

DCXXI. In the treatment of them all (*g*), abstinence, fatigue, evacuations, acids and acerbities, cold, directly and indirectly debilitating passions, the debility arising from exertion of the intellectual function, and impurity of air, must be avoided. The mode of cure of every one of them must be stimulant. When each is but slight, beef soup and other rich soups, which act partly by dilution, partly by a nourishing and stimulant operation in the weak state of the stomach when solid food cannot be taken, and by supporting the system; afterwards, when the strength is in some measure restored, solid animal food, and moderately diluted drink, which, at last, establish the health, are sufficient. In a higher degree of disease, while the soups should still be continued, at the same time pure strong liquors should be administered. And when the violence of any case baffles this whole set of stimuli, recourse must be had to musk, volatile alkali, camphor, æther, and opium. These must be administered in large doses; and all acid and fermenting things, every thing cold, though accompanied with stimulus, must be guarded against.

DCXXII. As to the management of the patient in the intervals, all debilitating powers must be avoided, such as fatigue, abstinence, cold, and excessive heat (*h*); it is a certain and demonstrated fact, that the fits of recurrent diseases do not return from any inherent power of nature, but from human folly. You may accept of this as a joyous and unexpected piece of news. The recurrence of fits of the gout itself is not unavoidable (*i*); but, by guarding against the noxious powers, may

(*g*) Peruse the whole of Chap. IX. Part II. from number CCLXXXI.

(*h*) See again the same Chapter, which compare with the preceding, the VIIIth of the II^d Part.

(*i*) See par. DXCVII.

may be repelled for any length of time ; and, when it happens at any time to come on from the fault of the patient, it can often be removed in two hours, and almost always in as many days, and the state of health secured in every respect. In all diseases of similar vehemence, whenever any stimulus, from a long continuation of its use, has begun to have less effect, we should lay it aside, and proceed to the use of another, from that still pass to another, and in that way go over the whole circle (*k*).

Of Hypochondriasis.

DCXXIII. The hypochondriasis is an asthenia, in which, with the symptoms of dyspepsy, there is a noise in the belly, flatulency, and uneasiness, and a rooted opinion in the patient, of the disease being always worse than it is. The way to the disease is paved by a dry set of simple solids, and that temperament, in which there is a natural slowness to passion ; which, however, once excited, rises to extreme violence, and continues long with obstinacy. It is further distinguished by a fixed attention of mind, whereby the patient is liable to dwell to excess upon any pursuit or study, and is not to be easily diverted to another, as also by a dry state of the surface of the body, a rough skin, with black hair, and black eyes, and always a dark complexion and serious aspect.

DCXXIV. From this definition, hypochondriasis is beyond doubt an asthenia, as it is accompanied with a noise in the belly and flatulency, and as the course of the disease is distinguished by slowness to passion, earnestness in thinking, and by that state of the simple solids, which requires a high force of stimulant operation to procure and keep up a sufficient degree of excitement.

DCXXV. Since the state of the simple solids is a state given by nature, and not to be changed by art.

and

(*k*) XLI.

and the only indication of cure left in the physician's power, is to fit a certain degree of excitement to that given state, which is exactly the case in this disease; the stimulus of food, drink, and others, should be employed in the cure of hypochondriasis. The patient should be kept cheerful, by agreeable company and gay entertainments, by a journey, and by the various scenes of nature and art through which he passes. During his journey he should ride, that, in guiding the horse, his mind may be more occupied. His studies and every subject of his ordinary contemplation should be often changed and varied. He should have generous wine given him, to relieve the symptoms of his stomach and intestines, and to raise his animal spirits. And if these should fail of success, the diffusible stimuli, as opiates, should have their turn for a time, for the purpose of striking a stroke at once. And their use again should be gradually laid aside in proportion as the strength can be supported by the more natural and accustomed stimulants. Darkness and bad air should be shunned; bright light, and all lively objects, should be sought after. No hypochondriac, even in a fit of delirium, should be provoked, but by every contrivance soothed (1).

Of

(1) I have heard of an hypochondriac so provoked at his physicians, who maintained that nothing ailed him, that he, on the contrary, to carry his opinion of his disease to the utmost, at last took it into his head, that it had attained its utmost height, by depriving him of his life. He continued obstinately in the notion of his being dead, till a more sensible practitioner was called in to see him. This gentleman agreed that he was dead; but, as he could not discern the particular cause of his death, he, therefore, proposed to open the body: In setting about which, he made such a clashing with a great apparatus of instruments, provided for the purpose he intended, that the patient was roused from his obstinate sullenness, and allowed, that this gentleman had come nearer to his case than any of the rest; but acknowledged, that he now found he had some remains of life.

Of Dropsy.

DCXXVI. Dropsy is an asthma, commonly in the form of an anasarca, with a swelling of some viscus, which, for the most part, at least in the beginning, attacks some part in preference to others.

DCXXVII. The cause of dropsy, in so far as it respects the collection of water, is easily explicable upon this doctrine, but altogether inexplicable upon any other. For the universal debility, that is, laxity and atony, is chiefly predominant in the extreme red arteries, and the exhalants immediately continued from these, as well as in the commencements of the absorbent veins; and it is often urgent in a particular set of these vessels only.

DCXXVIII. As all the debilitating noxious powers concur in producing this, as well as every other asthma; so those powers have the greatest influence in this case, that press most upon the vascular system. Hence, as we see in the conversion of peripneumony into the dropsy of the chest, profuse bleeding, and a large draught of cold water, when the body is fatigued, overheated, and burned up with thirst, are the most powerful agents in bringing on this disease. The hurtful effect of the latter, in every case of debility, when its operation is not followed by some stimulus, has been more than sufficiently explained above (*m*). Besides, in this case, when all the vessels are dilated, the water flows to their terminations, which are their weakest part, passes out at these, and, as it cannot all be taken up by the absorbents, it collects in every neighbouring cavity (*n*). Hence the urgent symptom in this disease.

DCXXIX. To this asthma belong all the watery effusions, which do not arise from local affection, but depend on pure debility. And, therefore, if at any
time

(*m*) See par CXVII. to CXXIV.

(*n*) LIX. LX. LXI.

time any other form of asthma, whether from wrong treatment, or other noxious powers, terminates in this effusion; every such case should be held as a proper dropsy (*o*); and it should be ever present to our recollection, that there are only two general diseases, and that the distinctions hitherto received are devoid of all solid foundation. Accordingly, both from other improprieties in the treatment, and particularly from bleeding, epilepsy, palsy, and gout, terminate in real dropsy. Nay, such is the termination of peripneumony itself, when it is either converted into direct debility, from the debilitating plan of cure having been pushed to excess, or into indirect debility, from having been left to itself, and the body not sufficiently debilitated. The affections, confined to parts, which are considered as the remote causes of dropsy, will be treated among the local diseases, to which they belong.

DCXXX. After this explanation of the nature of dropsy, its cure, provided the treatment be proper, and early enough set about, ought by no means to be so much despaired of, as it should be when local affection with a similar effusion, and the general disease are blended together without distinction, and considered as one and the same (*p*). If long before the effusion there was no internal complaint, if the disease rather came on suddenly, and in consequence of evident noxious powers, and yields to the first part of the curative means, there is no reason to doubt of a cure.

DCXXXI. Besides the general indication of cure for asthma, that suited to this case must be particularly directed to the whole vascular system, and especially to the termination of the arteries, and the commencement of the absorbent veins. The remedies are also the usual ones; that is, diet as nourishing and stimulant

(*o*) See LXXXI.

(*p*) Sometimes the predominant symptom rises to the degree of being above the power of the excitement, as in the tumour of scirrhus, and the effusion here.

lant as possible ; first in a fluid form, when the solid cannot be admitted upon account of the debility of the stomach ; then, also in a solid form ; and together with both, strong drink, such as the best wine that can be gotten, fermented spirit, sometimes pure, sometimes diluted. If the disease does not yield to these, after their use has been continued for a proper length of time ; recourse must be had to the diffusible forms : By this means, when the effusion has not yet attained to that high degree that constitutes a local affection, and is not to be altered by any state of the excitement, this asthenia can be as easily cured as any other.

·DCXXXII. But, when a great quantity of water has now gotten into some large cavity, it should immediately be removed by the catheter ; when that has been done and the emptied cavity secured with as much care as possible, the strength should be supported by wine, strong drink, and any stimulus more diffusible, as directed a little above. And if this should likewise fail, we must conclude, either that the general disease has degenerated into a local, or that the affection has been local from the beginning.

Of Epilepsy.

DCXXXIII. Epilepsy is an asthenia ; its distinguishing symptoms are, some heaviness of intellect, dulness in the exercise of the senses ; afterwards a very impaired state or temporary extinction of the latter, accompanied with various convulsions over the body : Fits, consisting of such a concurrence of symptoms usually, at length return at uncertain spaces of time, and each of them terminates in a foaming at the mouth.

DCXXXIV. As all the debilitating noxious agents are productive of this disease ; so the loss of the blood and other fluids, excess in venery, such passions as fear, terror, assiduous and intense thinking in persons of great genius, a deficiency of intellectual exertion in
stupid

stupid persons, are particularly so (*q*). The powers that produce the first fit, more easily bring on subsequent fits: Besides, certain unusual impressions upon the senses, some of them disagreeable, some highly agreeable; such as the flavour of some foods, the smell of a rose, have the same tendency; and certain poisons (*r*) are said to have the same effect.

DCXXXV. But the appearance of symptoms is full of fallacy, and, unless the nature of the noxious powers producing and of the remedies removing them, be thoroughly understood, it is incomprehensible. To solve the present difficulty about poisons, and to settle the question, whether the symptoms belong to universal, or local disease; we must consider, whether the latter, consisting in the vitiated state of a part, suppose either of the stomach or brain, or in some point of the lower extremities, proves the cause of the aura epileptica; and whether this vitiated state resists the virtues of the remedies, that act by changing the excitement; or whether all the symptoms are either relieved or removed by the change of excitement. If the former is the cause, the affection must be considered as local (*s*); if the latter, the disease must be held for a general one, and a true, but a great asthenia. Nor must we forget, that a great many symptoms of general diseases, though from the same origin, are dissimilar; and many from different, nay, opposite causes, are similar; that many local symptoms have a great resemblance to those of general diseases, and that they sometimes, by a fallacious appearance, counterfeit epilepsy, sometimes apoplexy, sometimes certain other general diseases.

DCXXXVI. For the purpose of preventing this disease, we must avoid other debilitating powers, and especially those that have the greatest power in producing it. The vessels should be filled, by giving food
as

(*q*) See above par. CXXXIV. CXXXVII. and the addition; CXLII. and CXXXIX.

(*r*) See XX.

(*s*) See above CCXXIV.

as nourishing and as effectual in producing blood as possible ; indulgence in venery must be moderated, cheerfulness and tranquility of mind must be promoted, an agreeable train of thinking must be induced, and all objects disagreeable to the senses, which give them disturbance, guarded against ; the strength must be fortified by proper exercise, by the peruvian bark, if the approach of the fits can be perceived, and by wine and the more diffusible stimuli. A medium betwixt too long and too short a continuance of sleep should be observed. Stimulant heat should be applied ; but all excess of heat, as well as cold, avoided (*t*). The purest air, such as that in the fields, when it is free from moisture, should be sought after. The surface of the body should be excited by friction, and cleanliness, for the purpose of cherishing the organs of voluntary motion, which are very closely connected with the animal power in the brain.

DCXXXVII. The same remedies, which radically cure the gout, also cure epilepsy, and precisely in the same manner (*u*).

Of

(*t*) See CXXIV. CXXVII. CCXXVIII. CCLXXVII. CXXXVII. CXXX. CCXXXVIII. CCXXXIX. CCLX.

(*u*) This paragraph is the answer to the question proposed in that which stands in the *Elementa*, answering to the same number. That paragraph therefore is erased, and this put in its place. I had heard from some of my pupils, that they had been able, by their diffusible stimuli, to remove epileptic fits. But in case of any mistake I would not venture to mark the fact for certain, which I have now done from my own perfect conviction. A young man lately married had the most alarming fit of epilepsy that ever was : His case was thought beyond remedy ; as an extreme one, however, he got from some person the full of a tea-cup of tinctura Thebaica up to a blue ring a little below the brim. He got out of his fit some how or other : But was perfectly stupid and senseless for a fortnight. Upon his falling into another, I was sent for, and brought him about in twenty minutes, as I am told, (for I did not wait,) so completely, that he got out of bed, and ate a hearty meal of beef steaks. Many weeks after, by mismanaging himself, and neglecting directions given him, he fell into a lighter one, and was cured in the same way.

Of Palsy.

DCXXXVIII. Palsy is an asthma, in which, with the other usual marks of debility, often with some degree of apoplectic attack, commonly on a sudden, the motion of some part of the body, and sometimes the sense of feeling, is impaired. When the fit is slight and of short continuance, it terminates in health ; but the consequence of a higher degree and longer duration is death.

DCXXXIX. The noxious powers, that usually produce epilepsy and apoplexy, also tend to produce palsy : Besides these, all the common debilitating powers that produce any asthma, directly or indirectly ; great commotion of the nervous system by means of too diffusible stimuli ; which affect the circumference of the body, where the organs of voluntary motion are chiefly seated, more than the internal parts and the brain ; as is evident in ebriety, gluttony, and every sort of intemperance ; likewise an indolent way of life, which is commonly connected with these noxious powers ; have all the same tendency.

DCXL. When the disease has once taken place, it is kept up equally by directly and indirectly debilitating powers ;

DCXLI. For the indication of cure, which is precisely the same as in epilepsy, as the energy of the cause operates more immediately upon the surface of the body ; consequently, according to what was said upon the subject of epilepsy, the principal remedies are those, that have the greatest power in invigorating the surface of the body : Such are friction, gestation, that degree of exercise which the strength admits, for the purpose of rousing by their powerful operation the languid excitement in the fibres of the muscles ; likewise a proper degree of heat, of pure air, and therefore, as much as possible, the open air ; lastly, as none of the powers
 endued

endued with stimulant virtue should be by any means omitted, in order that the excitement, which is of great consequence in the treatment of all diseases, be more equal and vigorous ; so in that extreme debility which produces such an impotency of voluntary motion, as it is of the greatest consequence to make an impression upon the principal symptom ; we should employ a great deal of opium (CXXX. and CCXXX.) ; the influence of opium upon the surface is more considerable than that of all the other powers. We should continue this plan of treatment with vigour till some commencement of returning motion be procured ; and then, without neglecting the assistance of any of the other stimuli, but using them all in concurrence or succession, for the sake of rendering their common effect more powerful and more equal, we should try to eradicate the disease.

DCXLII. Debilitating and evacuant powers are to be avoided for this reason, that it is not vigour, it is not an over-proportion but a scantiness of blood, and a deficiency of vigour, that is the cause.

Of Apoplexy.

DCXLIII. Apoplexy is an asthenia, resembling the two just mentioned in its cause and cure, differing in the appearance of the symptoms, which makes no difference in the nature of the thing (*x*) : In this disease, besides the symptoms in common to it with palsy, epilepsy, and other astheniæ, sense, intellectual energy, and the voluntary motions, are suddenly impaired, the respiration remains, but with snoring, the pulse is weak, and the whole fit is finished with the appearance of a profound sleep (*y*).

DCXLIV. The heads of persons, subject to this disease, are large and not well formed, their necks short and thick. It is produced by both direct and indirect debility,

(*x*) LXXXI. DXXIX.

(*y*) CLIII. CC.

debility, but chiefly by the latter. Of the indirectly debilitating powers, the most powerful is the luxury of food, drink, and sloth, which, after its course of stimulating and filling the vessels is run, proves truly debilitating and productive of a penury of fluids: And, as each sort of debility is increased by the other, and consequently the indirect by the direct, it is remarkably the case in this disease. Hence the effect of the debilitating plan of cure is so pernicious in apoplexy, that it is received as a rule, that the third fit is not often, the fourth never, gotten the better of.

DCXLV. The cause of epilepsy, palsy, and apoplexy, is the same with that of every asthenia; affecting the head less in palsy, excepting in the beginning and end, but greatly in the two others; and in all the three producing a disturbance in the organs of voluntary motion. This disturbance, whether the motion be destroyed or diminished, or as in convulsion seemingly increased, amounts to the same thing, and, as was formerly explained, depends upon debility (z).

DCXLVI. The indication of cure is the same here, too, as that which runs through this whole form of diseases; and the force of the remedies is especially, and as much as possible, to be directed to the parts most affected. To prevent, therefore, the fits, which are in every respect alarming and full of danger, we ought to bear in mind, how far indirect debility has a share in producing this disease, and how far the direct concurs with it; also we ought to consider the operation of a greatly advanced age. All excessive stimulus, therefore, must be avoided in such a manner, that the body may be invigorated and direct debility guarded against; the stimulant plan of cure should be set on foot with moderation and accuracy; and, in the place of the forms of stimuli, that have, either from long or excessive use, lost their stimulant operation, others, according

(z) LVIII. CCXXX.

ording to the rule of nature, which the excitability, yet not worn out with respect to them, admits, should be substituted; that is to say, the kinds of food, of drink, and of diffusible stimuli, should be changed all round, and upon the failure of each lately used, we should return to those that have been long ago laid aside (*a*).

DCXLVII. The three diseases we are treating of, are commonly supposed to arise from a plethora, attacking the head, and proving hurtful by compression upon the brain. But, besides that plethora has no existence in any case where it has been supposed (*b*), how can the blood be in over-proportion either at that extreme age at which these diseases happen; or in epilepsy, when it affects weak and starved children? Can penury of food (which alone is the matter that forms blood) in the latter, and in the former the loss of vigour, create an over-proportion, and not, on the contrary, occasion a penury of blood?

DCXLVIII. As plethora then has no share in inducing these diseases, so neither are they to be imputed to an effusion of blood or of serum (*c*) upon the brain. Nay, a similar effusion happens in every case of great debility of the vessels.

Of the Lock-jaw.

DCXLIX. The lock-jaw is a less degree of tetanus, the spasm being confined to the lower jaw and the neighbouring parts. This by itself is a rare affection; it is a formidable symptom in fevers and wounds. When it is the former, it will be treated of under fever; when the latter, it will give occasion to an inquiry, whether it belongs to local or general disease.

DCL. Since it never arises immediately after a wound is inflicted, but usually happens, either when
the

(*a*) CCCI.

(*b*) CXXXI. CXXXIV. DXLIX. DLV.

(*c*) CXXXVII. and the addition.

the wound is healed up, or after a considerable interval of time ; we must infer, that it either arises from the violence and duration of the pain, which is always the cause of much debility, or from the debility which the usual antispasmodic plan of cure produces, or from an unknown taint in the substance of the nervous system.

DCLI. That it depends upon debility we have reason to believe, from every sort of spasm always depending on debility (*d*) ; from tetanus, which is precisely the same affection, only differing in degree (*e*), having no other origin ; and, in fine, from the success of the stimulant plan of cure in this as well as all other spasms ; and the want of success of the antispasmodic, or debilitating evacuant plan. All the other particulars respecting this subject will be taken notice of under the next head.

Of Tetanus.

DCLII. Tetanus is an asthenia, and, therefore, always affects persons in a state of debility, whether direct or indirect ; in which, sometimes with consciousness, sometimes without, sometimes with difficulty, sometimes with freedom, of respiration, the whole body, or the neck and its neighbourhood only, are bent sometimes forward, sometimes backward, and held fast by a rigid spasm.

DCLIII. Tetanus is rarely seen in cold countries, as the northern parts of Europe ; more frequently in the warm southern regions of that division of the globe ; but most frequently in the torrid zone. When it appears among us, it is the sequel of a debility uncommon in general diseases : On the contrary, it almost always arises from that unusual debility, which is occasioned by a lacerating wound, through which fractured bones are forced, increasing the sum of that debility that existed before, or that happened to be induced in the course

(*d*) CLXXXIX. CXI.

(*e*) CCXXVIII.

course of the treatment. To produce the more frequent case, or that most frequent one of all, which is quite common in the torrid zone, the most powerful of the debilitating powers, and a great many, if not all of them, concur. The most powerful of these is, that intolerable degree of heat, to which persons engaged in labour, or exercise are there exposed; such persons, and consequently slaves, are almost the only victims of tetanus. Hence, even under the slightest motion, fatigue, and sweat, are produced (*g*), and from the sweat arises a scantiness of blood and other fluids. From all these arises a languor over the whole body, and, therefore, in the stomach (*h*): From the languor of the stomach there is a puny appetite, and food—which is another cause of penury of the fluids—is either not taken in, or thrown up again. All these affections, as well as that indolence both in mind and body, which is inseparable from such circumstances, are followed by the highest degree of debility over the whole body: And, as the most noxious power, intense heat, distresses the head more than any other part, as well as the organs of voluntary motion, whether in the neighbourhood of the head, or more distant from it; that is the cause of the urgent symptom, the spasm, occupying the parts that have been mentioned.

DCLIV. As tetanus is occasioned by all the debilitating powers, according to the different degrees in which they possess that property, and, consequently, like every other asthenia, depends upon debility; and, as all the asthenæ are removed by remedies, exciting the whole system in such a manner, as to exert the greatest possible influence upon the affected part; the same, accordingly, is the nature of tetanus, however little that disease has been understood, and the same simplicity of nature is found in it. If it requires the very highest remedies, this shows, that the whole disease

(*g*) CXV. CXXXVII. and addition.

(*h*) CLXXXVI. CXCIV. to CXCVIII.

ease does not consist in spasm, and that the affected muscles are not its whole seat, but that there is extreme debility in every part, but greater in the muscles than in any other equal part, according to the law we have mentioned (*i*).

DCLV. After tetanus has taken place, as the teeth are closed by the lock-jaw, there is neither access to the weaker and less powerful stimuli of food and drink, which are often sufficient for the cure of diseases of less debility, nor any sense in using them; we must, therefore, immediately have recourse to the most powerful and the most diffusible stimuli possible, and continue their use without regard to quantity, not even to that of opium itself, till the whole tumult of the disease is allayed (*k*).

Of intermittent Fevers.

DCLVI. Paroxysms, consisting of a cold, hot, and sweating fit, are phenomena that occur in every intermittent; and, in a certain degree, in every remittent fever. They often come on in consequence of a certain taint received from contiguous morasses, or from the marshy state of the contiguous soil; but they also frequently occur after an application of cold only (*l*); at other

(*i*) XLIX.

(*k*) CCXCV. to CCCII.

(*l*) As in the vernal intermittents in Scotland. In the Mers. or county of Berwick, where I laboured three months under a tertian, that is, from the beginning of March to the beginning of June, in the Carse of Gowrie, and some other places in that country, nothing is more common than the tertian ague happening at the time at which I was affected; and nothing is more certain, than that cold and moisture are the chief powers inducing it. It is somewhat strange, that a man born in that country, if he would patch up a system of fevers, should have overlooked a form of them, that occurred to his eye-sight every day, and borrowed his hypothetical cause from a marsh miasma, supposed to be the produce of great heat and moisture, though he had only heard or read of the intermittents of warm countries.

other times after that of heat only (*m*), when the common asthenic noxious powers accompany either : They return with a remarkable exacerbation, after a temporary solution or an abatement of the disease ; in the cold fit, exhibiting manifest debility ; in the hot, counterfeiting vigour ; and scarce ever observing any strict exactness in the time of their return (*n*) ; but returning sooner in a higher, and later in a lower, degree of the disease ; and not unfrequently, besides the remittent, also gradually assuming a continued form ; and, on the contrary, sometimes without interference, oftener in consequence of an improper method of cure, before the disease is ended, changed into quintans (*o*), septans (*p*), nonans (*q*), or into sextans, octans, and decans (*r*).

DCLVII. The intermitent fever, which returns every fourth day, and is therefore called a quartan, is milder than that which receives the name of tertian, from its recurrence being on the third day, and the latter is milder than that which, from its return every day, is denominated quotidian. The disease that degenerates into a remittent or continued form, is of a worse nature than that which is regular in its returns, or that which the intervals betwixt fits are protracted : and, the form and type of each case being given, the whole set is both of more frequent recurrence, and of a more severe kind in hot, than cold, climates.

DCLVIII. That this sort of fever depends upon debility throughout the cold fit, is proved by the symptoms,

(*m*) In the warm countries agues often occur, when it is easy to discern heat to be an hurtful power ; but when moisture is much less prevalent, for that very reason that the heat is prevalent, than at other seasons when the disease does not occur.

(*n*) Dr. Sydenham was content to count the periods by the day, which was even too particular, but Nosology has refined the matter into the wonder of exactness to an hour.

(*o*) Where the fit does not return till the fifth.

(*p*) Where its return is not till the seventh day.

(*q*) Where the intermission continues till the ninth day.

(*r*) That is, prolonging their intermission till the sixth, eighth, or tenth day.

toms, by the exciting noxious powers, and by the method of cure, whether successful, or the contrary.

DCLIX. The whole disease, as well as every paroxysm, begins with a sense of cold, the greatest desire for a warm situation (*s*), with trembling, and a shaking motion in which the whole body is lifted up from the bed (*t*), with paleness, dryness, and shriveling of the skin, with the diminution of tumours, and drying up of ulcers, which the patient may happen to have had before the arrival of the disease, with an impaired state of the intellectual faculty, a want of steadiness in its exertions, and sometimes delirium, with a dulness of sensation, languor of spirits, torpor of the voluntary motions, a listlessness of mind and body in all the functions, in fine, with manifest debility.

DCLX. If terror, horror, cucumbers, cold melons, famine, debauch in eating and drinking, food of difficult digestion, have been found for certain, to have a great effect in bringing back paroxysms, after a long intermission; if in situations, where cold is the principal noxious power, it is the poor people who are ill clothed, starved in their diet, and enfeebled by labour, who in general are affected with this disease; if in warm regions of the globe, it is those who have been most exposed to debilitating noxious powers of all kinds, who, in preference to others, are seized with it (*u*); if in moist places, those who use a plentiful diet, and cheer themselves with their bottle, escape the disease (*x*), and water
drinkers

(*s*) I yet remember, that it was the highest luxury for me, when the cold fit came on, to be put in bed, and covered under such a load of blankets (for the cold of sheets was intolerable) as would, at any other time, have oppressed me. I was then about eleven years of age.

(*t*) By authors and lecturers in Latin absurdly called rigor.

(*u*) See DCLIII.

(*x*) As in Holland; where the Dutch students who live not near so well as the English, are very liable to the disease, while the jolly living English, who do not like the weak rhenish wines,
and

drinkers and persons in a state of inanition from low living, are peculiarly subject to it ; all these facts show, how far this disease is from depending upon heat and moisture alone ; and that it also arises from cold, and not from these alone, but also from all the usual noxious powers, like every other asthma.

DCLXI. Further, if every kind of evacuation, as often as it has been tried, is found, without the possibility of a doubt, to be hurtful ; if no person in his senses has scarcely ever attempted bleeding (*y*) ; if, before the Peruvian and some other barks of similar operation were found to act as remedies, a variety of strong drinks (*z*) were used with sufficient success ; and if it now also is found and demonstrated in fact, that the diffusible stimuli are by far more effectual than any bark ; nay, that the bark often fails, while they are perfectly effectual in the re-establishment of health ; from these considerations, we derive the most solid conviction,

and the weak ill managed vin de Bourdeaux, which is a cheap dirty claret, almost never fall into the disease at Leyden, while the Dutch are perpetual victims to it as often as it is epidemic.

(*y*) They have talked of taking a little blood in the spring intermittents, but that was a theory of Dr. Sydenham's, who divided the diseases of the whole year, into inflammatory and putrid ; and I do not find, that that idea has ever been followed in practice. For though they follow him most servilely in most respects, especially where he is wrong, their vanity, that they may now and then seem to strike out something from themselves, disposes them to differ from him in others, especially where he is right, as in the rejection of purging in some sthenic diseases (CXXXVII).

(*z*) As ale, wort, wine, spirits, strong punch, Riverius followed this plan ; and I remember it was a custom among the common people to cure themselves by getting tipsy. But I was allowed neither the one method of cure, nor the other. The authority of Dr. Stahlian and Boerhaave, had thrown the bark into disrepute in Britain : And my mother, "who trusted in God, and not in physicians," left me to the course of desires and aversions, which were chiefly to avoid cold, and anxiously seek for heat. She kept me upon a vegetable diet in the intermissions, which I even then did not much like. It was the kindly warmth of summer, which then set in early, that had the chief effect in gradually finishing that cure.

viction, that there is nothing in this disease different from other astheniæ, but that it perfectly agrees with them in the exciting noxious powers, in the cause, and in the cure. And, if it differs in the appearance of the symptoms, this indicates no difference of nature, and not even any thing unusual; for all the astheniæ that have been mentioned, clearly as they have been proved to be the same (*a*), differ notwithstanding, in a similar manner, from each other; and symptoms neither lead to truth, nor do they give any real information. For, though precisely the same functions flow from the same state of perfect health; yet when the latter is changed, the excitement is either increased or diminished, the functions are changed from the healthy standard into every sort of appearance; in such sort, however, that these changes argue no difference in the cause, as has been commonly believed, and not always even a difference of degree in its operation (*b*).

DCLXII. Accordingly, the following certain facts—that spasm, convulsion, tremor, inflammation from weakness, deficiency of menstruation (*c*); bleeding discharges (*d*), loss of appetite, thirst, nausea, vomiting, diarrhæa with pain, diarrhæa without pain, and all the other asthenic affections (*e*), arise from one and the same cause, that they are removed by one and the same operation of the remedies (*f*), and they do not even in the succession of morbid states, indicate degrees of debility in such a manner, that it can be proper to establish any arrangement upon that *mark*—they all serve to confirm the observation just made, and, by *their* analogy,

(*a*) See par. LXXI. and the addition. LXXXI. DCXXX.

(*b*) DIV. DVII.

(*c*) DXLV. and the following paragraph.

(*d*) DXLVIII.

(*e*) CLXXVI. to CXCV. and to CXCVII.

(*f*) CCXXII. DLVI. DLXI. DLXXI. DLXXIII. DLXXIV. to DCCI. and from that to DCCIV. Look also carefully over the whole IVth Chapter of the second part.

analogy, to demonstrate, that fevers also are distinguished by intervals of freedom from febrile state sometimes greater, sometimes scarcely perceivable, in common with what happens to many other diseases, not from any peculiarity in the cause, but from a variation in its force. If fevers sometimes intermit in violence, sometimes exert it more remissly, and sometimes imperceptibly go on almost in a continued career (*g*); do they, in that respect, differ from the gout (*h*), which never goes on with an equal force; but abates from time to time; and even, when an interval of health is interposed, returns with more severity than ever? Or do they differ from asthma, or from several other diseases, in all which the same thing precisely happens? And what is more usual, in indigestion, and violent vomiting (*i*), accompanied

(*g*) DCLVI.

(*h*) When the gout in the old way, is left to patience and scanty and low diet and watery drink, it shows both remissions and considerable intermissions. I have been often mortified, at finding, in consequence of walking a little too freely, when I thought the fit was gone, a more violent return than the first part had been; when I had not yet attained to the full knowledge of the nature and management of that disease. Which is a circumstance, that every podagric, who is still treated in the old way, can bear witness to. Dr. Sydenham fell a victim to his ignorance of its nature.

(*i*) A gentleman in Scotland came to dine with his brother, who lived with me and my family, in a house in the neighbourhood of Edinburgh. He ate and drank so sparingly, that I predicted, from a knowledge I had of his manner of living, which was an excess of temperance and abstemiousness to a faulty degree, that if he did not indulge a little more in these respects, he would soon fall into a disease of debility. The prediction was verified in a few days; when his brother having occasion to go to town, found him, in the intervals of a violence of vomiting, making his testament. By a good dose of the diffusible stimulus, he removed the whole disease at once, and enabled him, with the additional help of some good sound port and genuine Madeira, in a few minutes to eat heartily of beef steaks. Before his brother's arrival he had been treated in the usual evacuant, and, as they call it, the antiphlogistic way. Upon the return of his medical friends

panied with other violent symptoms, than the intervention of intervals of the greatest relief? The same is the nature of the chin cough (*k*), and that of the asthenic cough (*l*). In fine, where is there one of all the sthenic, or all the asthenic diseases, of which the morbid career continues the same from beginning to end? There is not one (*m*). For, as life in all its states (*n*) is always in proportion to the action of the exciting powers upon the excitability, and as both predisposition to diseases, and diseases themselves supervene in proportion as the excitement is greater or less than the proper degree; so the

friends a glister was prescribed, which threw him back into his disease, from which, with the same ease and in the same short space of time, he was extricated upon his brother's return to his post. This young gentleman from that beginning, like many other of my pupils, is now a most respectable man in his profession. Some time after that, he performed the greatest cure, that ever happened since the first annals of medicine. In a very dirty ship, the Dutton, which was going to the East Indies, he stemmed, in the latitude of Rio Janeiro, a fever that was carrying off numbers every day, losing not one; as can be attested by the ship's books, for no less than five weeks—his name is Dr. Campbell.

(*k*) See DLXXIX.

(*l*) And from DLXXXVII. to DXCVII.

(*m*) All this confirms, not only the point at present meant to be settled, which is that the distinctions, that physicians have made about the differences of fevers, are without all foundation, and that they are all the same with no other difference but in degree, and that, unless in that respect, they do not differ from other diseases of the same form; but it likewise adds additional weight to our fundamental proposition, that we are nothing in ourselves, but according to the powers acting on us. Many circumstances in the course of diseases, that escape the observation both of patients and physicians, are of hourly and momentary occurrence, and sufficient, when their importance is weighed according to the principles of this doctrine, to account for the variations in the progress of diseases. We shall, by and by, see that the circumstance of heat, from the gratification of indulging in which the patient is not to be turned aside by any advice, is, with its consequences upon the whole system, sufficient to account for the gradual conversion of the cold into the hot, and the hot, into the sweating, stages.

(*n*) See par. IX.

the course of diseases follows the same rule ; and, according to the variation of the degree of that action, is one while increased, another while diminished, another while exhibits a temporary exacerbation ; just like what happens in this sort of fevers.

DCLXIII. The cause of intermittent fevers, then, is the same as in all astheniæ, whether febrile or not ; but it is under such direction and application *to the system*, that, after an interval of some hours, all their morbid energy departs entirely, or in some degree. The reason is, that the exciting noxious powers are either removed in the same proportion, or more gentle in their operation ; in one word, the excitement is increased for the time. The variation of types is not owing to any *matter*, subject to the same variation : For how, upon this supposition, could the same case run through all the forms, sometimes of intermission, sometimes of remission, and at other times nearly go on with a continued movement, and the contrary ? Is the matter, which is supposed to produce any form, in order to produce another form, changed into that matter, which is supposed necessary to the latter (o) ? Is the vapour, or, as they call it, the effluvium, proceeding from animals, which is supposed to produce any typhus or continued fever, and, therefore, the Ægyptian typhus, when this is changed into an intermittent or remittent nature, also, together with the change of type, changed into a marsh miasma, or impurity arising from morasses, which is supposed to produce that form of fever ? Or rather does the matter, which at first produced each type, still continue the same, and become the cause of another form ? If any person should fix upon the latter as the true supposition, how should the
same

(o) The ancients supposed, that every type arose from a matter suited to produce it. Now, suppose a quotidian type to depend upon any given matter, and a tertian upon any other, different from that ; when either type is changed into the other, are we to suppose that the matter is also changed, and so forth of the rest ?

same cause produce different effects? But, if he inclines to adopt the former supposition, what proof is there, that can be admitted upon any principle of reasoning, that as often as the form of the fever changes, so often its cause, the matter, is also changed? It has been already proved, that marsh miasmata are not the cause (*p*). And it shall be by and by evinced, that the animal effluvium, or vapour arising from the body, when affected with a continued fever, is not: Nay, it has been proved by the most solid arguments, that it is not any matter taken into the body, which produces disease, either in this or any case, and that the change of excitement alone is the universal source of all general diseases (*q*).

DCLXIV. As to the return of fits; it is not peculiar to this form of fevers, to have a return of the general affection after its temporary solution; the same thing happens in the gout, as often as a return of the disease succeeds a return of health (*r*), and for the same reason (*s*): For, as these diseases are repelled by invigorating means, so they are brought back by the debilitating powers, which were their first cause. Accordingly, when the disease is left to itself, or when it is treated by a debilitating plan of cure, it perseveres in returning; when it is treated with Peruvian bark, and still more certainly by wine and diffusible stimuli, and when that mode of cure is persisted in, till the strength is quite confirmed, it never returns.

DCLXV. The tertian vernal fevers of Scotland go off, in process of time, without medicines, first in consequence of the heat of the bed, and then, as the summer sets in, from basking in the rays of the sun, and by a moderate use of food and strong drink, their duration commonly not exceeding the space of three months.

In

(*p*) DCLIX. DCLX. DCLXI.

(*q*) See the paragraphs XXII. XXIII. LXII. and addition LXIX. LXX. LXXII. LXXIII. and LXXXVIII,

(*r*) DCLVI.

(*s*) DCLVII.

In all the southern regions, and even in England, the Peruvian bark, when the whole cure is entrusted to it, often fails, and they are not removed but by very diffusible stimuli (*t*).

DCLXVI. The debility during the cold stage is the greatest, that of the hot less, and that of the sweating stage, which ends in health for the time, is the least of all. Hence, in a mild degree of the disease, as cold is the most hurtful power, its effect is gradually taken off by the agreeable heat of the bed or of the sun, and the strength thereby gradually drawn forth. The heart and arteries, gradually excited by the heat, acquire vigour, and at last, having their perspiratory terminations excited

(*t*) Dr. Wainman, as it was said before, found that to be the case in the fens of Lincolnshire. From which we may learn how little dependence is to be had on the facts in medicine, as they are delivered from desks or in books; from both which we have always been taught to believe, that the Peruvian bark was a catholicon in intermittent fevers. But, if it fails in the cure of the mild state of that disease in this country, what must we think of its efficacy in the malignant intermittents and remittents of the warm countries? And, if that medicine, with its universal high character, shall turn out next to an imposition, what are we to think of testimonies in favour of any thing? One of the ways of administering the bark is in strong wine or spirit, and it can hardly be doubted, but in that compound form it may have been of service. But where shall we find a panegyrist on the bark, who will make any allowance for the powerful medicine conjoined with it? They talk of it as a vehicle, without allowing it any other credit. In the same manner, at all times, have many powers of great operation been overlooked in the accounts given us of remedies, and the merit of the cure imputed to the most inert. I have most generally found an analogy betwixt the remedies, that are, in reality, powerful, and our ordinary supports of health. The wines and strong drinks are certainly a part of diet with most people, and so is opium among the Turks. But what analogy can be found betwixt the same ordinary supports of life, the same durable and natural stimuli, and the bark of a tree, whether brought from South America, or growing among ourselves? I will not pretend to say, that the bark is devoid of all virtue; but I must have greater proofs of its power over disease than I have yet met with, before I can retract much of what I have said.

cited by the same stimulus, the most hurtful symptom is thereby removed, the hot fit produced, and afterwards the same process carried on to the breaking out of sweat.

DCLXVII. When the force of the disease is greater, these powers are ineffectual; and, unless the most efficacious remedies are applied, the disease, instead of having intermissions, appears in the remittent state only, or even in those very obscure remissions, which give the appearance of a continued disease.

DCLXVIII. And, since in every case of considerable violence, the disease returns, because either the less force, by which it is kept up, is not stopt by a proportionate force of remedies, or a greater force of disease by a greater force of remedies (*u*); the remedies should be given both before the cold fit, and during it, as also through the whole course of the intermission to the next paroxysm, and they should be continued even through this, and after it is over. Lastly, like the practice in every other cure of asthenic diseases, we should gradually recede from the use of the highest stimuli, in proportion as the body can be supported by the less and more natural (*x*).

Of the severe Dysentery.

DCLXIX. The severe dysentery, or bloody flux, is an asthenia; in which, besides the symptoms in common to that whole form of diseases, so often repeated, there are griping pains in the intestines, innumerable dejections, chiefly mucous, sometimes bloody, for the most part without the matter that naturally passes that way; all which symptoms often occur after contagion has been applied.

Of

(*u*) For the curative force must be always accommodated to the morbid, or cause of the disease. See above XCII. CIX,

(*x*) CV. and CVII.

Of the severe Cholera.

DCLXX. The severe cholera adds to the common symptoms of every asthma, those of vomiting and purging alternately with great violence; which discharges for the most part consist of bilious matter.

Of Synochus.

DCLXXI. Synochus is a very mild typhus, such as chiefly occurs in cold countries and cold seasons; in the beginning deceiving physicians by a certain but a false resemblance to synocha.

Of the simple Typhus or Nervous Fevers.

DCLXXII. The simple typhus, or nervous fever, is such a synochus, as appears in warm countries or seasons, but somewhat more severe, and yet sufficiently simple.

Of the Cyanche Gangrenosa.

DCLXXIII. The gangrenous cyanche is a typhus, a little more severe than the simple typhus or nervous fever, with an eruption upon the skin, and a red tumid inflammation of the throat, and with mucous crusts of a whitish colour, concealing ulcers below them. The angina, formerly mentioned (y), in its termination equals or exceeds the violence of this disease.

Of the confluent Small-pox.

DCLXXIV. The confluent small-pox is a typhus chiefly depending upon indirect debility. It is preceded by a great eruption of the distinct kind, and an universal crust of local inflammation over the whole body; these, by their local and violent stimulus, convert

(y) CCXII. CCXIV.

vert the sthenic into the asthenic diathesis, and the inflammatory affection into a gangrenous one. Its cure is to be conducted upon the stimulant or antisthenic plan, but in such a way, however, as is suitable to indirect debility.

Of the pestilential Typhus, the jail, putrid, or petechial Fever, and the Plague.

DCLXXV. The pestilential typhus, or the jail, putrid, and petechial fever, is an asthenic disease of the highest debility, scarce excepting the plague itself; the surface of the body is first dry, pale, hot, shrivelled; then, chiefly towards the end, moist, diversified with spots and vibices or long strokes like those laid on by a whip, and the body itself is wasted with colliquative diarrhoea; the stomach is affected with want of appetite, loathing of food, nausea, often with vomiting; the belly is first rather bound, and then, as it has been said, subject to colliquative evacuation; the intellectual function is first impaired, then becomes incoherent, afterwards delirious, and that often in the highest degree; the spirits are dejected and wasted with sadness and melancholy; the voluntary motions are early impaired, and then so destroyed, that the patient cannot support himself in posture in bed by his own muscles, or prevent himself from slipping down, from time to time, from the upper to the lower part, while the senses are either blunted, or preternaturally acute. In fine, the urine, the fæces, the breath, and all the excrementitious discharges, have a singular fœtid smell.

DCLXXVI. The plague begins, holds on in its course, and ends with similar symptoms: To which, however, carbuncles, buboes, and anthraxes, or fiery sores, are added. These are most frequent in the plague, but not so confined to it, as to be excluded from the pestilential fever(z).

DCLXXVII. Contagious

(z) CCXIX.

DCLXXVII. Contagious matter sometimes accompanies typhus, always the plague : The former is of a common nature, or such as is liable to happen in any part of the globe ; the latter is thought peculiar to the eastern part of Europe, and the western of Asia, possessed by the Turks, called the Levant.

DCLXXVIII. With respect to the contagious matter of typhus ; the corruption of the fluids is by no means to be imputed to it (*a*), nor is heat so much to be blamed ; for cold has an equal power in producing this effect as heat (*b*), as has also every thing, as well as heat, that either directly, like cold, or indirectly like heat, debilitates (*c*). Nay, the emptiness of the vessels, from want of food, or from the incapability of the digestive organs to take it in and assimilate it, as also that debility which is induced by melancholy and grief, though, in these cases, no matter at all is present, admit of the same application. On account of the debility in the extreme vessels, internally, as well as externally, and, therefore, in those of the alimentary canal especially, and in the perspiratory vessels, the fluids stagnate ; and by stagnating in the heat of the body, degenerate into that quality, which, in a more extensive sense, is called corruption, but in a more uncertain one, putrefaction (*d*).

DCLXXIX. The

(*a*) See above CXV. CXXII. CCXXXVI. and the addition I.

(*b*) Ibid. and CCLXI.

(*c*) See again CCXXXVI. and the addition at I.

(*d*) There are three states or qualities produced in fluids by as many different fermentations, the saccharine, acid and putrefactive. To one or other of these we are apt to refer every state of corruption in our fluids ; but they are liable to degeneracies, which do not exactly correspond to any of them : And, as we are not yet acquainted with any of these deviations from the natural state, it is safer to use the general term corruption. Even the word acrimony is too general, as we can by no means pretend to say, that perfect blandness is the natural and healthy state of our fluids : Nay, the different uses and subserviency to the functions seem to require a considerable deviation from blandness ; the
urine,

DCLXXIX. The cause of all these diseases is the same with that of diseases not febrile, to wit, debility; differing only in this, that it is the greatest debility compatible with life, and not long compatible with it.

DCLXXX. The indication also of cure is the same as in the other astheniæ, but it must be conducted with a good deal more attention than is necessary in them, upon account of their much greater mildness (*e*). It is, then, debility alone, that is to be regarded in the cure; and stimulant or antisthenic remedies alone, that are to be administered. Nor is there occasion for any distinction in the method of cure, but what direct or indirect debility requires (*f*).

DCLXXXI. The indirectly debilitating powers, are the violent and local stimulus of the eruption in the confluent small-pox (*g*) so often inducing prostration of strength, drunkenness (*h*), heat (*i*), or long continued luxury (*k*). To these noxious powers, thus indirectly debilitating, all the others may more or less be added (*l*).

DCLXXXII. And as it never happens, that either direct or indirect debility alone proves hurtful, hence
we

urine, the perspirable fluid, the bile, and others, being intended, by a certain poignancy, to answer certain purposes. These, compared to certain blander fluids, may be said to be acrid; while compared to themselves in a state of morbid degeneracy, they may be called bland in the natural state, and in the latter acrid.

(*e*) Fevers will require many more visits from the physician than are commonly either bestowed or required, and often a good deal of watching. While this is more generally the case in fevers, at least in the high degree in which these fevers exist, at the same time they are not the only ones that require such strict attention; as every disease, when it has attained to the same degree of debility, endangering life, will claim the same circumspection and vigilance from the judicious and conscientious physician.

(*f*) See par. CIII. CVII.

(*g*) See CLXXV. CCXV. CCXVI. CCXVII. CCXVIII.

(*h*) CXXX. and addition.

(*i*) See CXV.

(*k*) See above par. CXXVII. and addition.

(*l*) Look for them in Part I. Chap. I.

we have a third case given, where we have to combat both sorts of debility (*m*).

DCLXXXIII. The directly debilitating powers are known ; to wit, cold (*m*), low diet (*n*), bleeding, and other

(*m*) Suppose any direct debility has occasioned a disease, when that is established, the excitability is so morbidly accumulated, that the slightest exertion of any exciting power becomes too much for it ; which immediately constitutes an admixture of indirect debility. The stimulus of corporeal motion, which is a great and rough indirectly debilitating power, is often too long continued, after a typhus fever has begun its insidious attack upon the habit ; and hence the after-part of the disease becomes more severe and dangerous. It is also to the same cause that we owe the propriety of excluding light and sound, when they prove causes of irritation ; their stimulus, though slight, being too strong for the accumulated excitability. The guarding against gusts of passion and emotion, as well as mental exertion, is all upon the same principle. When a person falls into a fever from excessive labour and low diet at the same time, that is an instance of a mixture of debility from the beginning. Again, when any disease, chiefly of indirect debility, is treated by bleeding, other evacuations, and starving, that is an instance of a superinducement of direct upon indirect debility. A judicious practitioner, and who prescribes according to the rules that arise from a near acquaintance with the operations of the inanimate part of matter upon living systems, will find plenty of scope for the exercise of his judgment in these and many other niceties : And he will find, that the Brunonian doctrine, as it is now nick-named by those who know it not, is not a doctrine to be practised without knowledge, without judgment, and without sense ; but that it requires every part of knowledge requisite to throw light upon so extensive a subject, as that of the science of life over all nature, and all the judgment and good sense of the soundest understanding to carry it into application upon many occasions of nicety and difficulty. The trash that has hitherto too often passed for knowledge, is to be acknowledged not only useless, but hurtful. But the true knowledge of nature must be always elegant, always satisfactory, always useful. It is to be hoped that the day is not far distant, when this doctrine will change its present appellation, into that of the doctrine of Nature, over the living part of her productions ; comprehending not only the morbid but healthy phenomena, and the distinctions between the living and dead state.

(*m*) See par. CXVII.

(*n*) CXXVIII.

other evacuations (*o*), rest of body and mind, want of passion and emotion (*p*), and impure air (*q*).

DCLXXXIV. As both those sets of powers act by debilitating; be, at the same time, on your guard against believing, that some of them are septic, and prove hurtful by fermentation, and are to be cured by antiseptics, or powers that resist putrefaction; and that, among the former, heat is to be reckoned; among the latter, cold, wine, the Peruvian bark, and acids (*r*).

DCLXXXV. In the mild cases, as in the agues of cold places, and especially the vernal agues (*s*), and likewise in synochus, in the simple typhus, and in the plague itself, when mild; scarce any stronger stimulus than wine is required; and the rest of the treatment is to be conducted according to the directions so often laid down for the mild asthenic diseases.

DCLXXXVI. In the most severe fevers, such as the remittent, which is frequent in the warmer regions of the earth and in the torrid zone, in the severe typhus, when it is pestilential, in the very violent dysentery and cholera of the same places, and in the most violent plague itself (*t*), the cause of all which affections is in general direct debility; or in milder cases of the same disease at first, and that have acquired a great deal of virulence in their progress from the neglect of the proper, or the use of an improper plan of cure; we ought immediately to begin with the highest diffusible stimuli, such as opium, volatile alkali, musk, and æther, in small doses, but often repeated (*u*); and afterwards, when the strength is restored, and the force of the stomach

(*o*) CXXXIV. CXXXVII. and the addition.

(*p*) CXXXVII. and addition, and CXXXIX. and CXLII.

(*q*) CXLVI. Compare the whole with Part II. Chap. X. all from CCXC. to CCCXII. and from that to par. CCCXV.

(*r*) See par. DCLXXVIII.

(*s*) See DCLVI. DCLX. DCLXV.

(*t*) DCLVI. DCLXVI. DCLXIX. DCLXX.

(*u*) XLI. XLIII. CXIII. DCLXVI. to DCLXIX.

stomach confirmed by their use, to proceed to food, drink, gestation, pure air, cheerfulness, and, last of all, to the usual offices and occupations of life.

DCLXXXVII. When indirect debility has had more concern in the case, as in agues, or more continued fevers, occasioned by drunkenness, and in the confluent small-pox; the same remedies are to be employed, but in an inverted proportion of dose. We should, consequently, set out here in the cure with the largest doses, such as are next in effect to that degree of stimulus, which produced the disease (*x*); then recourse should

(*) This may be exemplified by the treatment of a person the next and second day after he has been hurt by drinking. His excitability has been worn out by an unusually strong stimulus, the effect of the first night's sleep is to allow it to accumulate again: In this state much exercise fatigues, for want of excitement to enable it to be borne: Fluid nourishment is commonly used, but it is not strong enough to waste the redundance of excitability, and bring the patient back to his healthy excitement. The dram drinkers know the remedy, but they know not its bounds. They have recourse to a glass of strong spirit, and they would be right if they stopped at one, two, or a very few, according to the quantity that their former habit may render necessary, and take no more than what gave them an appetite for solid nourishing animal food; which, whatever the quantity that is required to produce it be, is the best general rule: But they go on, and every day till that of their death, which soon arrives, renew the disease. The rule is to take a little of what proved hurtful, till a return of appetite comes on: After eating a little, a walk or a ride will add more stimulus: The air, in which the exercise or gestation is performed, will furnish another. In that way, more strength will be acquired in proportion as a greater number of stimuli have wasted more excitability, and with more equality. A second day's management, by applying the stimuli in a still less degree, will commonly remove all the complaints. When an habit of hard drinking has brought on, as it always will sooner or later, a very bad and confirmed disease; if the excitability is nearly worn out, and what remains is very unequal, as having been produced chiefly by an alternation betwixt one stimulus acting with partial excess and sleep, either imperfectly removing the excess, or by its length superadding direct to the indirect debility, which the drink occasions; the patient should have a somewhat

should be had to less stimuli, and a greater number of them, till, as was said just now (*y*), the strength can be supported by the accustomed and natural stimuli (*z*).

DCLXXXVIII. To give some estimate of the dose in both cases (*a*); in direct debility, where the redundancy of excitability does not admit of much stimulus at a time (*a*), ten or twelve drops of laudanum every quarter

somewhat less quantity, than that which at any time hurts him; then the next day still less; and so on, till very little will serve him; and he should add all the other stimuli in proportion as he diminishes the morbid one.

(*y*) DCLXXXVI.

(*z*) CCCVIII. to CCCXII.

(*a*) DCLXXXI. and DCLXXXII.

(*a*) The abundant excitability of an infant cannot be reduced at once to that wasted degree, in which the strength of an adult consists; it must be by the gradual application of what it can bear always for the present time that that can be brought about; and, therefore, not sooner than a space of time equal to half the individual's given period of existence. In a similar manner, an excitability that has been accumulated from deficiency of stimuli for a number of weeks or months, will require a space of time, somewhat proportioned to that, to wear it out in the manner most suitable, to restore the lost vigour. Some health will be sooner brought about, but the effectuating of perfect health must be a work of time. Again, the direct debility of a few days will be easily removed in a few days. In fevers, and every case of high debility, the accumulation of excitability for want of stimulant power to produce excitement, must be estimated by the number of stimuli that have been withheld, as well as the degree of force of each of them. In a fever, then, the stimulus of exercise, of the open air, of conversation, of diversion of every kind, of an agreeable flow of spirits, of a pleasant train of thinking, of light and sound in a great measure, as well as of the exercise of all the other senses, and particularly the stimulus of a due quantity of blood, and other fluids, and most especially that of nourishing food, and, at least upon the common plan of practice, that of wine and exhilarating drink, all these are withheld; and, therefore, for want of them, the diminution of excitement must both be great and unequal. What then is required as to the idea of the cure? Since most of those, which are the ordinary stimuli, by which the ordinary health is supported, cannot be applied; the proper idea is to look out for a power in nature, that can, as nearly as possible, supply

quarter of an hour, till the patient, if, as is usually the case, in such a high degree of debility, he has wanted sleep

supply both the degree and quality of stimulant operation that is wanted. Such a power we find in the few diffusible stimuli, and particularly in opium (see par. CXXX. and the additions). Any of these act powerfully on the stomach, and diffuse proportional excitement over the system. So soon and effectually do they pervade it, and act with the most powerful effect upon the surface, that it is often an object of attention in the practice to think of means to prevent it from going too far. By the blessed use of these remedies, the excitement of the stomach is restored, so that, with a return of appetite, food can be taken in, and digested, in so far as the powers of that organ go; which are confined chiefly to the first part of digestion, or what is called the first concoction. Next the excitement is restored in the other digestive organs, in the duodenum, in the biliary vessels, the pancreatic duct, in the lacteal vessels, through their whole course from the intestines to their common receptacle, as all the vessels that return lymph from every part of the body, in the veins betwixt the thoracic duct and the heart, in all the cavities of the latter, in all the red arteries, in the colourless terminations of all these, whether exhalant or glandular, and whether only simply separating, or also changing, the property of the fluid they secrete, in all the internal cavities of the body, in the commencing extremities of the absorbent vessels, and in their progress through their lymphatic trunks to the receptacle in common to them with the lacteals, which are a part of their number, in the thoracic duct again; as also from that to the heart, and from the heart to the extremities of the arteries: Lastly, the influence of excitement is extended to those terminations of the arterial system, whether exhalant or glandular, which perform the several functions of excrementitious secretion and excretion, by which every portion of fluids, now become useless, or, if they were retained, hurtful to the system, are thrown out by their several emunctories. When, by the use of the diffusible stimuli, the stomach and all the organs can perform their respective functions, the natural stimuli begin to be restored; the stomach, the intestines, the lacteals and blood vessels, and all the other vessels, are gradually filled with their respective fluids; the muscles on the surface, and the muscular fibres, recover their tone and density; the brain recovers its vigour; heat and air can be now restored to the surface; exercise can now add its useful stimulus; and all the functions return to their usual capability of being acted upon by the usual and ordinary exciting powers.

sleep long (*b*), falls asleep : Afterwards, when some vigour is produced both by that and the medicine, and some of the excessive excitability is worn off, a double quantity of the diffusible stimulus should be added, and, in that way, gradually increased, till the healthy state can be supported by stimuli less in degree, more in number, and more natural (*c*).

DCLXXXIX. In indirect debility an hundred and fifty drops of laudanum should forthwith be thrown in ; and then less and less, till we arrive at the boundary just mentioned (*d*). Both the measures recommended (*e*) are in general applicable to adults ; but less will suffice at an early or late age. Nay, the rule further varies according to the habit, the way of life, the nature of the place, and the peculiarities of the patient (*f*).

DCXC. And

(*b*) Want of sleep is an indirectly debilitating power ; and, in this weakened state of the system, in this redundancy of excitability, where every exciting power is liable to be too much for the excitability, the want of sleep, by not allowing this partial waste of excitability to be repaired, is the occasion of so much more indirect debility being added to the direct ; and hence the sum total of debility is increased. The effect of sleep in removing this partial indirect debility becomes so far an invigorating power.

(*c*) See above par. CIII. and CVII.

(*d*) DCLXXXVIII.

(*e*) In par. DCLXXXVIII. and this.

(*f*) When the habit is delicate, the patient's way of life moderate as to the use of the stimuli, the place cold, or both cold and moist, and the patient easily affected with stimuli of all kinds ; in all these cases the rule, which common sense prescribes, is to diminish the dose of the diffusible. A lady in Edinburgh, who had borne and nursed many children, had lived exceedingly moderately, had been and still was very assiduous in the management of her family affairs, and usually stimulated with little air out of her own house, fell into a colic, and, by the evacuant and starving plan, had been kept in it for a full month, till the urgent symptom of vomiting required further assistance : When I came, I first retarded the vomiting by a glass of whisky : And, by two more, with no other help but that of a mixture containing thirty drops

DCXC. And since the use of the diffusible stimuli only succeeds, when life cannot be preserved by the usual stimuli and those more congruous to nature, and a due quantity of blood and other stimuli soon become sufficient to complete the healthy state; we should, on that account, even from the beginning immediately give animal food, if not in a solid form, in which it can neither be taken nor digested, at least in a fluid form, as soups; which should be alternated with every dose of the diffusible stimulus: Then, in a gradual way, according to the return of vigour, first a very little of something solid, and afterwards more and more, should be thrown in, and the other stimuli, each at its proper time, brought into play; till the whole treatment terminate in the way of life commonly observed in good health, where there is less occasion for medical injunctions.

DCXCI. When the affection is more a mixture of both sorts of debility, these proportions of the doses must be blended together.

DCXCII. Contagion, which either adds nothing to the effect of the usual noxious powers, or proves hurtful by the same operation by which they act, is not otherwise to be regarded, than that time be allowed for its passing out by the pores, together with the perspiratory fluid; on which account the perspiration must be properly supported; which, as it is effected by stimulating, is no addition to the general indication (*g*).

DCXCIII. Lastly, the corruption of the fluids in the extreme vessels must be obviated (*b*), not by means that may be supposed to have a direct tendency to remove

drops of the thebaic tincture, which the surgeon had been administering in miserably small portions, in three hours removed the whole disease. As I have said somewhere before, the disease, from her neglect in following directions, had very nigh returned next day; but another glass repelled it.

(*g*) See LXXXVIII. XCVIII.

(*b*) CCXXXVI. addition at I. and CCLXXIV;

move it, but by powers that act upon the excitement of the solids, and that increase excitement over the whole body, and, therefore, among other parts, in the affected vessels.

DCXCIV. Having now gone over the whole scale of decreasing exciting power from peripneumony to the plague, and from death by indirect, to death by direct, debility ; and having so executed the work, as to present the public with a new science, if not finished in an elaborate, elegant, and highly polished manner, at least distinct in its outlines, and, like a rough statue, to be polished afterwards, but in some measure fashioned in all its limbs, and embracing a plan, connected in all its parts ; we must next pass to the consideration of local diseases.

THE FIFTH AND LAST PART.

LOCAL DISEASES.

CHAP. I.

Of Local Diseases.

DCXCV. **L**OCAL diseases (*a*) are divided, according to the order of nature, into five parts ; of which the first consists of organic affections, where no disease over the whole system arises, none but in the hurt part. This is a sort of affection, that happens in parts less sensible, according to common language, or more devoid of excitability.

DCXCVI. The second part, likewise consisting of organic affections, occurs in parts of the system, whether internal, or external, that are very sensible or endued with a great deal of excitability (*b*) ; where the effect
of

(*a*) V. VI. VI.

(*b*) The excitability is here not talked of in its comparative states of abundance or deficiency, but in the degree in which any part possesses it in preference to other parts. It is used in the sense of the greater or less vitality of parts : Accordingly we can say, that some parts possess an exquisite sensibility, as the stomach, the brain, and intestines, and, I believe, most of the interior, soft, fleshy parts, and the shut cavities ; and externally, the parts immediately under the nails ; that others possess less, as the bones, ligaments, and cartilages and ligaments ; and externally, the cuticle, or scarf-skin. It is, with respect to the difference of sensibility, or excitability, or capability, to be acted upon by exciting powers, that we use the expression of more or less excitability. See above par. XLIX. and the addition, and LIII: and addition:

of the local affection is propagated over the whole body, over the whole nervous system, and where a great many symptoms arise, similar to those which occur in universal diseases.

DCXCVII. The third sort of local diseases takes place when a symptom of general disease, that at first arose from increased or diminished excitement (*c*), arrives at that height, at which, being no longer under the influence of excitement, it cannot be affected by remedies that correct the excitement.

DCXCVIII. The fourth division of local diseases consists of those, in which a contagion, externally applied to the body, is diffused over all, without affecting the excitement (*d*).

DCXCIX. The fifth sort of local diseases arises from poisons that have been applied to the body, and flow through all the vessels in such a manner, that they are understood not immediately, nor at first, to have any tendency either to increase or diminish the excitement, but falling upon parts, some on one, some on another, injure the texture of these in different ways; and afterwards, by means of this local injury, produce disturbance over the rest of the body.

C H A P. II.

The first Part of Organic Local Diseases, or those where no Effect, but in the hurt Part, arises.

DCC. WITH regard to the first division of local, organic diseases; the noxious powers, that produce them, are such as produce a solution of the continuity of a part, by wounding, eroding, or poisoning; or that derange a part by contusion, compression, or spraining.

DCCI. The

(*c*) Like all the other symptoms, of which it was one.

(*d*) If it affected the excitement, its effect would be general disease, which sometimes happens, as in the small-pox, measles, contagious typhus, and the plague.

DCCI. The powers, producing a solution of continuity, are all cutting, pricking, or missive, weapons : Acid bodies and poisons produce solution of continuity in another manner.

DCCII. When any of these powers slightly divide the surface, and scarcely, if at all, reach the bottom of the skin ; for the cure of so trifling an affection, there is occasion for nothing but shutting out the air, and avoiding cold, excessive heat, and every irritating substance. For the only use of the cuticle is, by means of its insensibility (*a*), (it being a simple not a living solid, and devoid of all excitability), to keep off the air, and all excess of temperature, and every rough or rude matter which are all inimical to living solids (*b*), whether external or internal.

DCCIII. When the surface, therefore, is injured in its texture, either by being cut, or bit, or stung by venomous animals, or by being burned, or by a very high degree of cold ; in that case a thin, mild, oily plaster is sufficient for the cure.

DCCIV. The division, therefore, of phlegmasiæ, into phlegmone and erythema, is without foundation, and misleads, both as to the cause and cure (*c*) : For, however

(*a*) See DCXCVI. and the notes.

(*b*) So hurtful is the air and temperature to all parts below the cuticle, that nothing is a more certain cause of gangrene than their exposure, even for a very short space of time : Nor is there any other way for accounting for the fatal effect of slight, superficial, but extensive burning. Death has been the consequence of a burn, that extended no further than the fore part of the thorax, or the breast, and was not of longer continuance than the time taken to tear off the burning clothes that occasioned it.

(*c*) See the seventh Genus in Genera Morborum Cullenii, where you will find Linnæus's prototype of inflammation, that is, of inflammatory diseases, or what is in this work called phlegmasiæ, or sthenic diseases with inflammation, or an approach to it, also adopted by this author. It is nothing else but a collection of local affections, or, in a few cases, symptoms of disease, and they almost all come under this head of local diseases, and every one of them under one of these heads.

ever much they differ in their remote cause, as they call it, in their seat, and in their appearance; since the exclusion of the air and of other stimuli is an effectual cure; it follows, that their cause is the same; that is, that the nature of all these affections is the same.

DCCV. In the cure of contusion, compression, and sprains (*d*), the remedies are the same in general; there is occasion for rest of body besides, and bland tepid fomentations.

DCCVI. Through this whole division of local affections, there is a certain energy of nature, that tends to the restoration of the healthy state; but it is not the celebrated *vis medicatrix naturæ* of physicians: For in this case nothing else happens, but what equally happens in the cure of general diseases. If proper remedies are applied, the sound state in both sorts of diseases follows: If the remedies be neglected, the solution of continuity degenerates into a worse and worse nature, and then into gangrene, or the death of the part (*e*). It is the excitability, or that property of life, by which the functions are produced (*f*), that, wherever life, whether in a part, or over the whole body, is injured

(*d*) See par. DCC.

(*e*) Of this we are presented with examples in every day's experience; where we find the slightest sores, from the neglect of the simple rule of cure laid down here, degenerate into very troublesome affections.

(*f*) See above par. X. to XIV. If I cure a peripneumony by bleeding, other evacuations, and other debilitating powers, that are not evacuant, it is by diminishing the force of exciting power; if I cure a fever by opiates and other stimulant powers, whether stimulating by filling the vessels, or without that, it is by increasing the same force; and if I cure a sore on the surface, by the method just now mentioned, I thereby prevent the force of exciting power from rising too high, from an excess of stimuli, or from running either into direct or indirect debility, from too little stimulus, or an ultimate excess. If either these general or local cures are neglected, or mismanaged, the cure will not be supplied by any effort of the system; and if the cure is made out by regulating the excitement such effort is superfluous. The *vis medicatrix*, then, is as little real in local as general diseases. See above par. LXII. and the addition.

ed, procures the return of the healthy state by means of the external powers acting upon it. It is, then, the excitability, affected by the action of those powers, that is to say, the excitement, that governs the state of the solids, both in parts, and over the whole body.

C H A P. III.

The second Division of Local Diseases.

DCCVII. THE local organic diseases of the second division are the inflammation of the stomach (*a*), and of the intestines (*b*); as also discharge of blood, with an inflammation subsequent to it; and, in fine, an inflammation in any very sensible part, in consequence of a wound, producing commotion over the whole body.

Of the Inflammation in the Stomach.

DCCVIII. The principal symptoms in gastritis are, pain in the region of the stomach, a burning heat, deep seated, increased by every thing that is either eaten or drunk, or in any shape taken into the stomach; hiccup, an inclination to vomiting, and the sudden rejection of what is taken in; and the pulse soon becoming weak, quick, and rather hard.

DCCIX. The exciting noxious powers, which produce the solution of continuity in this case, are such as act by cutting, pricking, or erosion. Such are the small bones of fishes, ground glass, or Cayenne pepper and such things.

DCCX. Inflammation is a consequence of the wound or erosion made by these exciting powers: The effect of inflammation in that very sensible organ, the stomach, is to diffuse the disturbance before mentioned (*c*) over the whole system. The burning heat and pain, inseparable

(*a*) or gastritis. (*b*) or enteritis. (*c*) DCXCVI,

separable from inflammation, and the anxiety (*d*), are the offspring of the inflammation (*e*): Of these, the anxiety is more peculiar to the stomach, its accustomed seat (*f*), and the pulse becomes such as has been described, because it is peculiar to every rude, fixed, and permanent local stimulus (*g*), to weaken so much the more, the greater the excitability of the part is. Hence, in the external parts of the body, that are less endued with excitability, a pretty considerable inflammation by no means affects the pulse or the body generally; though even there, when a part is sensible, as in the case of a burn of any extent, or of a thorn thrust under the nail, an equal disturbance arises over the whole body (*h*), which confirms a former proposition, in which it is asserted, that the more abundant the excitability (*i*), the less stimulus can be borne.

DCCXI. The disease is easily known, both from the symptoms above described, but still more certainly from the known deglutition of the noxious power; and, over and above, by this particular sign, that, as it has been said before, without such an accident, inflammation scarcely seizes upon an internal and close part (*k*).

DCCXII. As this is a local disease, and does not, like general diseases, depend upon the increase or diminution

(*d*) CLXXI. CCCXLV.

(*e*) CLXXI.

(*f*) CCCXLV.

(*g*) XVII. and the addition.

(*h*) CCCXLIV. CCCXLV.

(*i*) XXXVI.

(*k*) CXIII. and CLXVIII. The stomach is sometimes inflamed from a scirrhus tumour occupying the pylorus; and that case also is taken in by the systematic and nosological writers, as belonging to their gastritis: But the consideration of it does not belong to this head of local diseases, but to the third division of them. At the same time, both it and the present case are local diseases, and not phlegmasiæ, differing from the phlegmasiæ so fully treated of in the third part of this work. It, as well as enteritis, of which we are next to speak, has every mark of difference from the general diseases mentioned in the VIth paragraph. See also Chap. I. of the fifth Part.

minution of excitement ; the indication suited to the latter, to wit, *to diminish increased, or increase diminished, excitement over all*, will not apply. On the contrary, unless a general disease happen to be combined with it, nothing else is to be done, but, by throwing in bland, demulcent liquors, to defend the tender part from the rude contact of the stomach's contents, and give the inflammation time to finish its course ; and, if the physician is called soon enough, to wash off the hurtful matter with diluent liquids.

Of Inflammation in the Intestines.

DCCXIII. The inflammation in the intestines is a local affection ; in which there is an acute pain in the belly, and distention, and sometimes a sort of pain twisting around the navel, with vomiting, and obstinate costiveness, and such a pulse as in the inflammation of the stomach.

DCCXIV. The noxious powers, exciting this disease, are precisely the same as those that have been said to excite the inflammation of the stomach.

DCCXV. The inflammation arises in a similar manner, as in the inflammation of the stomach, and the more readily, as the intestines are more sensible than the stomach (1). Hence, also, a state of disturbance is, in a similar manner, diffused over the whole body.

DCCXVI. The acute pain of the belly depends upon the inflammation : The distention and costiveness are the offspring of the detained fæces. The cause of the vomiting is the same ; for the peristaltic motion being prevented, upon account of the obstruction, from proceeding downward in its usual way, from its restless nature proceeds upwards ; it indeed affects neither direction,

(1) Baron de Haller, from some experiments that he made, found the intestines more sensible than most parts of the body, more than the stomach, and equal in sensibility to the brain.

direction, unless in so far as the stimulus, by the impulse of which it is regulated, either commences from above, as health requires, or from below, as happens in other diseases and in this disease in particular (*m*). The twisting pain about the navel is produced by the inflammation; for the principal, and by far the greatest part of the intestines, are thrown in a convoluted state about the navel.

DCCXVII. The diagnosis is the same as in the gastritis; excepting, that seeds, hairs, and similar foreign bodies, sometimes upon account of the torpor of the peristaltic motion, adhere to the sides of the intestinal canal, and gradually, by their irritation, kindle up an inflammation: A fact that, if examined attentively and once rightly considered, will not render our diagnosis doubtful.

DCCXVIII. The cure is precisely the same as in the inflammation of the stomach.

DCCXIX. None of the rest of the pretended phlegmasiæ, distinguished by the appellation of *itides*, as the splenitis or inflammation of the spleen, hepatitis or the inflammation of the liver, the true nephritis or inflammation of the kidneys, the cystitis or inflammation of the bladder of urine without a stone, or the hysteritis not arising from scirrhus or inflammation of the uterus, or the peritonitis or inflammation of the peritonæum, belong to this place; as, besides the doubt of these parts ever being inflamed, no inflammation at least arises from stimulants and acids, neither of which have access to the shut viscera, for these substances are not carried in the vessels, nor can they be carried in them. All local affection here must come from the relics of other diseases—of these we are to speak afterwards—with the following exception.

DCCXX. The exception is, if any one falls from a height, if he is run through any part of his bowels with
a sword,

(*m*) See par. CLXXXVIII. CLXXXIX.

a sword, if a poisoned arrow, thrown by any savage, has pierced any of his inward parts, he will, in

DCCXXI. The case of the inflammation affecting the liver, be affected with a pain in his right hypochondrium, with vomiting and hiccup : If

DCCXXII. The inflammation affect his spleen, the pain will be in his left hypochondrium ; in

DCCXXIII. The case of the true nephritis, or inflammation of one of the kidneys, he will feel pain in the region of the kidney, and be seized with vomiting, and a numbness of his leg ; in

DCCXXIV. The case of the inflammation happening in his bladder, he will have a tumour and pain in the lower part of the belly.

DCCXXV. Discharge of blood, followed by inflammation (*n*), such as happens in the inflammation of the uterus, or of any neighbouring part, in abortion, and from a wound of any internal part, is easily distinguished by the pain of the affected part, and by the accident that precedes.

DCCXXVI. In the inflammation of the uterus, or any neighbouring part, the lower belly is affected with heat, tension, tumour, pain, and these symptoms are accompanied with vomiting (*o*).

DCCXXVII. The noxious powers, that excite the hysteritis, or inflammation of the uterus and parts in its neighbourhood, all amount to violence done to the uterus. Thus, using violence during labour, hurrying the birth, often produce a solution of continuity, and wound the uterus.

DCCXXVIII. And, since a great deal of blood is often lost in this way, and the local affection is followed
by

(*n*) DCCVII.

(*o*) The inflammation is frequently not in the uterus, but in a neighbouring portion of the intestines, or mesocolon, or in the peritoneum itself, as dissection has frequently shown. This is a disease, than which none has been more inquired into, and none yet less understood.

by debility of the whole system (*p*) ; neither bleeding, according to the common practice, nor any mode of evacuation is to be practised, nor is the patient to be forbidden to eat ; but, in the first place, regard is to be had to the affected part, the body must be laid in a horizontal posture, the patient must be kept from motion, and be allowed rich soups and wine : By and by more solid animal food should be used, morsel by morsel, but frequently repeated, and the belly should be bathed : And, if the debility should increase, recourse must be had to more wine, liquors still stronger, and opiates : The use of which last should not be neglected, even at first.

Of Abortion.

DCCXXIX. In abortion, the back, the loins, the belly, are pained in labour ; and there is either an unusual flow of the menses, or an extraordinary discharge from the vagina.

DCCXXX. The powers, that force abortion, are falling from a height, slipping, a rash step, intense walking, running, going up and down hill. This disease seldom, however, happens but to persons previously weak ; and the most powerful agent in bringing it on, is some taint left since a former abortion, which increases in proportion to the number of abortions. When the disease happens in consequence of the local noxious powers, just mentioned, it is perfectly local : But when debility is blended with the effect of those powers, it is a case of combination of general with local affection.

DCCXXXI. The indication for preventing the disease is, to guard against all the noxious powers that induce the disease ; to ride out, when the patient has any degree of strength ; but, in case of any apprehension

(*p*) Pain and loss of blood are in one degree or another inevitable causes of debility.

sion of danger from weakness, to go in a carriage, which will be more safe ; to be cautious from the third month of pregnancy till the seventh is passed ; to invigorate the system, and keep up the patient's spirits, and intellectual amusements.

DCCXXXII. The indication of cure is, to keep the body in an horizontal position, with the buttocks higher than the head ; to be studious to keep the patient easy in body and mind ; to repair the loss of blood with soups ; to secure the vessels, for the purpose of contracting their large diameters, with wine and opiates, and, in that way, take off, at the same time, the atony and laxity, which are the principal causes of the discharge.

The difficult Labour.

DCCXXXIII. In difficult labour, the most common cause of which by far is weakness, and which always produces weakness when it proves lingering ; the patient should be supported with wine ; and when the labour proves more difficult, and threatens to be tedious, opium should be administered.

DCCXXXIV. When some part of the uterus is injured by the powers that have been mentioned (1), and the child and placenta are now both delivered, the patient should be kept in an horizontal posture, as was recommended in abortion ; she should be invigorated by soups, chicken, wine, and the still higher stimuli ; every thing of a contrary nature should be avoided ; and the healing up of the wound waited for.

Of deep-seated Wounds.

DCCXXXV. In deep-seated, or gun-shot wounds, when the ball, if a ball occasioned the wound, is extracted, or though it still remains in the body, if it be in a
place

(1) See par. DCCXXX.

place not necessary to life ; first of all the whole system is very much irritated, heated, pained, chafed, and distressed with restlessness and tossing ; the pulse is strong, full, and more frequent than in health. The cause of all these symptoms is the commotion, which, as we have said, the local stimulus, either of the ball or of the inflammation supervening upon the wound, by its constant irritation of a sensible part, gives to the whole system.

DCCXXXVI. Because in this case a sthenic diathesis is commonly supposed to arise over the whole body, upon account of the irritation from the wound ; the antisthenic plan of cure is, therefore, always employed through the whole course of the disease ; and the use of opium, which, in this case is conjoined with the antisthenic, or stimulant remedies, is admitted only for the purpose of acting as a sedative and duller of pain : From the dread of fever, though a great quantity of blood is often lost by the wound ; still large bleeding is practised, the belly is purged, nourishment is withheld, abstinence enjoined : The most frequent consequence of which treatment is death ; indeed recovery must be owing to accident.

DCCXXXVII. But all this is a method of cure conducted upon an erroneous theory, as is proved by all the principles of this doctrine, and by the very unfortunate issue of the practice. In a person, who has lost a great deal of blood, an over-proportion of blood can never be the cause of sthenic diathesis : Neither can any tolerable reason be assigned for the profuse evacuation of the serous fluid, or for not rather supplying new fluids by the use of food. It is in vain to appeal to frequency of the pulse, as a sign of an excess in the quantity of blood, and of too much vigour, or of any irritation that requires an antisthenic plan of cure : For, besides its hardness, if the pulse is not, at the same time, strong and full ; it has been often above demonstrated, that all its celerity depends upon debility
and

and penury of blood (*r*). Finally, as the sthenic diathesis depends upon the general sthenic noxious powers, and as the pain from local affection, and particularly inflammation, has no tendency to induce that diathesis, but the contrary one of debilitating (*s*); this is another reason for the supposition of the habit, either remaining such as it was before the wound was received (*t*), or, which is more probable, of degenerating into the asthenic diathesis. The true explanation of the distinction betwixt irritation and sthenic diathesis is a confirmation of the same conclusion; the sthenic diathesis being that state of the system, which is produced by all the powers, the common operation of which is stimulant, over the whole system, and by fulness in the vessels among the rest, and which is to be removed by powers that weaken the whole system, and by evacuant remedies which act by the same general operation; whereas, on the contrary, irritation is that state, in which the whole body is often, without any stimulus, debilitated (*u*); or often where a local stimulus, such

as

(*r*) See par. CLXXIX. to CLXXXI.

(*s*) DCCX.

(*t*) Which can hardly happen if blood has been lost, which must diminish the excitement, and in proportion to its degree.

(*u*) When the body is debilitated, the ordinary stimuli, that in its healthy state invigorate it, and even a much less degree of stimulus, will produce the irregular motions, which are supposed owing to irritation; not that any thing irritating is applied, but that the excessive abundance, or defect of excitability, admits not, without such effects, the degree of stimulus, which, applied to it in its healthy half-wasted state, would produce healthy and vigorous motions. (See XXV. and XXVI. and the addition.) The tremours that are occasioned by the turning of a door upon its hinge, the sweat occasioned by slight exertions in walking, are so many instances of that, and the irregularities of the pulse are owing to the same cause. As the weakness upon which fevers depends increases, so also do the supposed symptoms of irritation, such as colliquative sweats, colliquative diarrhœa, subsultus tendinum, &c. But they are all the effect of the general weakened state being ~~suffered~~ by very slight stimuli. At other times irritating powers, in the same weakened state, do occur; such as those mentioned in the text.

as distention exciting spasm, or a concentrated acid inducing convulsion, or the pain of a wound, produces general commotion (*x*), and effects enormous motions in the weakened system. But, whether the debility be independent of stimulus, or excited by it, there is never occasion for debilitating evacuant remedies, but always for moderately stimulant ones : And we have only to take care, that the sthenic diathesis be not produced by the method employed for the cure, and thereby a general disease—at least, a predisposition to general disease—be superadded to the local, which could not fail to aggravate the latter.

DCCXXXVIII. As, therefore, the antisthenic plan of cure is not to be practised, from an apprehension of a fever being about to come on, and with a view to allay the disturbance arising from it ; for it has the contrary tendency, that of inducing fever, and of exciting the disturbance apprehended ; so, neither is the stimulant plan to be attempted, till the wound is healed, or the disease has arrived at an advanced stage, and a great deal of debility is induced by the continuance of the pain, lest, if that method should be sooner employed, the blood should be carried with more rapidity than the case would admit of, and with an increased momentum, into the still open terminations of the vessels : For it is understood, that neither diathesis takes place in this case, and that the only affection present is a commotion over the system, depending upon local affection ; and that, consequently, there is no occasion for the remedies of either ; excepting upon this single consideration, that, as the loss of blood, in proportion to its degree, has a tendency to produce
more

(*x*) But even in that case, the real state is debility, and the indication of cure is to remove it, as well as the irritating powers : Which, while they increase it, are at the same time its offspring, and require stimulants to enable the system to resist the effect.
(DCXCIII.)

more or less of asthenic diathesis ; there will, therefore, in that proportion, be occasion for some sthenic remedies.

DCCXXXIX. During the first days of the disease, because the patient, all at once, ceases from gestation, exercise, and the other functions both of body and mind, and of passion or emotion, to which he has been accustomed, and, of course, less nourishment and recruit is now required ; there should be such an abatement in his allowance of the usual stimuli, as to accommodate what is used to the present condition of the system and the state of the wound just described (*y*). Therefore, to prevent too great an impetus in the vessels, silence should be kept around the patient, he should not speak himself, he should lie quiet, and his posture should not be changed but to avoid the disagreeable feeling of too long continuance in it, and even then it should be done as warily as possible. He should make his water lying, in an urinal ; he should rather use soups, than solid meat ; his wound should be examined every day, for the sake of keeping it clean ; its progress should be observed ; it should be dressed with fresh, soft, and bland matter ; and if, even at this early period, any faintishness appears, a glass of wine should not be withheld.

DCCXL. After some days, which may be more, or fewer, according to the strength of the patient, when the habit is falling into debility, from the severity or long continuance of the pain ; besides the soups formerly allowed, meat as rich and delicate as possible should be given ; wine should be administered a little at a time, but often, and upon the whole in large quantity ; and then, at last, recourse should be had to opium, which, in the common practice, is usually given from the beginning of the disease, and to the other diffusible stimuli ; and the disease should be treated precisely in the same way as a typhus.

DCCXLI. When

(*y*) See last paragraph.

DCCXLI. When very tender external parts are violated by any rude matter, as where a thorn is pushed under any of the nails, and an inflammation spreads from the affected part to a considerable extent, and then, upon account of the great sensibility of the part, the whole body is drawn into consent; the injured part should be fomented with warm water, and dressed with lint, and soft and bland ointment: And as long as the disturbance of the system remains, the patient should be kept quiet, and free from motion, and nothing more attempted.

C H A P. IV.

Of a Part of a general Disease degenerating into a Local.

DCCXLII. TO set about the treatment of that division of local, organic diseases; in which a part, or symptom, of general disease degenerates into a local one; we next proceed to

Suppuration.

DCCXLIII. Suppuration, with which we begin, is for the most part a consequence of general inflammation, whether sthenic, or asthenic, or of that inflammation, which is a symptom of general diseases, or it is a consequence of local inflammation, whether sthenic, or asthenic. During suppuration, the pulse is softer, fuller, and a little slower, than in sthenic disease, when that precedes it; but a great deal slower than in asthenic disease, if this happen to intervene; and it is accompanied with an undulatory, and, as it were, a pulsatory, motion of the affected part; these symptoms are commonly preceded by a shivering: If the affection is internal, the patient should be kept quiet, and free from motion,

motion, and be stimulated ; if it be external, the affected part should, over and above, be fomented, dressed, and covered, and the pus, when ripe, let out.

Of Pustule.

DCCXLIV. A pustule is a purulent vesicle, gradually growing turgid, and at last of its own accord opening in consequence of having become soft and full of pus.

DCCXLV. It follows the small-pox, arising from the contagion peculiar to that disease : In the small-pox the number of the pustules is greater or less, as more or less sthenic diathesis, occasioned by improper treatment, or a neglect of the proper, has preceded (*a*).

DCCXLVI. The indication of cure is, first to remove sthenic diathesis, and then, if that has passed into the asthenic, to remove it, each by its respective remedies ; and to besprinkle the pustules with strong spirit, or with laudanum, and in the former case to guard against cold, in the latter against heat, and to open the pustules and foment them.

Of Anthrax.

DCCXLVII. Anthrax is a glandular tumour under the skin, gangrenous at the top, and inflamed at its edges all round.

Of Bubo.

DCCXLVIII. Bubo is a glandular tumour, especially affecting the groin ; it has a tendency to suppuration.

DCCXLIX. These two affections, the anthrax and bubo, as well as carbuncle, are almost always combined with a general disease, to wit, sometimes with typhus, much

(*a*) XXI. LXXVI. XCVI. XCVII. XCVIII.

much oftener with the plague. They depend upon a contagious matter, and, in fo far as they do not fufficiently yield to the general remedies, they muft be treated with a very ftrong fpirit poured upon them, with laudanum, and the lancet.

Of Gangrene.

DCCL. Gangrene is an imperfect inflammation of a part, not terminating in fuppuration, difcoloured, fcarce painful, confifting of puftules of a bad matter, and at laft inducing the death of the part.

DCCLI. The noxious power, that precedes gangrene, is often inflammation, often ultimately violent in a fenfible part, oftener languid, and occupying a part lefs fenfible or lefs fupported by the powers of life (*b*) ; it is fometimes a fymptom of the phlegmafia, fometimes of fevers, fometimes of local phlegmone (*c*).

DCCLII. The method of cure, when the gangrene is feated in the alimentary canal, is to pour in fpirit and laudanum ; when the viscera fecluded from the air are affected, to place fome, but much lefs hope, in thefe and other ftimuli. And, as the fame remedies alfo fuit gangrene, when it is external, confequently liquid opium fhould be rubbed in upon the dying part, fpirits fhould be poured upon it, the parts already dead fhould be cut out, the edge of the living part all round fhould be ftimulated, and an inflammation excited in it.

Of Sphacelus.

DCCLIII. Sphacelus is a more perfect and more extended gangrene, with an extinction of fenfe, motion, and heat ; in which the part becomes foft, blackifh, completely

(*b*) The inflammation, out of which gangrene arifes, is always unfupported, and the gangrene always a ftate of either direct or indireft debility ; the high excitement in the phlegmafia, and the low in fevers, caufing that:

(*c*) CCCXLVII. DCLVII. to DCXCIV.

completely black, and at last thoroughly putrid to the very bone, thoroughly cadaverous, and shifts rapidly to the neighbouring parts, and quickly extinguishes life.

DCCLIV. The remedies are in general the same as in gangrene, but they should be stronger, and administered in greater quantity, and with greater nicety, and in less expectation of a cure. When any limb is greatly affected, it should be immediately cut off, to prevent the sound parts from being infected.

Of Scrofulous Tumour and Ulcer.

DCCLV. When a scrofulous tumour and ulcer ^{have} ~~has~~ been of long standing, has disfigured the parotid gland and neighbouring parts, and all the remedies, that have any effect in removing scrofula, have been employed; no more is to be done, but to keep the ailing part clean, foment it often, and defend it from the injury of the air; unless, as local debility also takes place here, spirit and laudanum, applied to the part, may be of service.

Of Scirrhus Tumour.

DCCLVI. When the tumour, which, while it was moderate, was a part or symptom of the general disease, called scirrhus, has now attained a certain bulk; if it be external, or situated in the exterior or convex part of the liver, it should be cut off, and the system invigorated: If it be internal, nothing can be attempted, but to prevent its increase by stimulant remedies, and in that way keep the patient as long alive as possible, and in as good health as his circumstances will admit.

DCCLVII. The two heads of division that remain (d) are of so obscure and abstract a nature, that, if ever they are to be attempted, they must be passed over at present

(d) DCXCVIII. and DCXCIX.

present. The third head (*e*) is here only imperfectly sketched and scarce begun : But, because it both admits of a complete execution, and, when so executed, will make an important addition to the work ; it shall be prepared for the public perusal, as soon as I shall be happy enough to find as much leisure and scope for thinking as are requisite to rescue the subject from its present intricacy, disorder, and obscurity.

(*e*) DCXCVII. DCCXLII. to DCCLVII.



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