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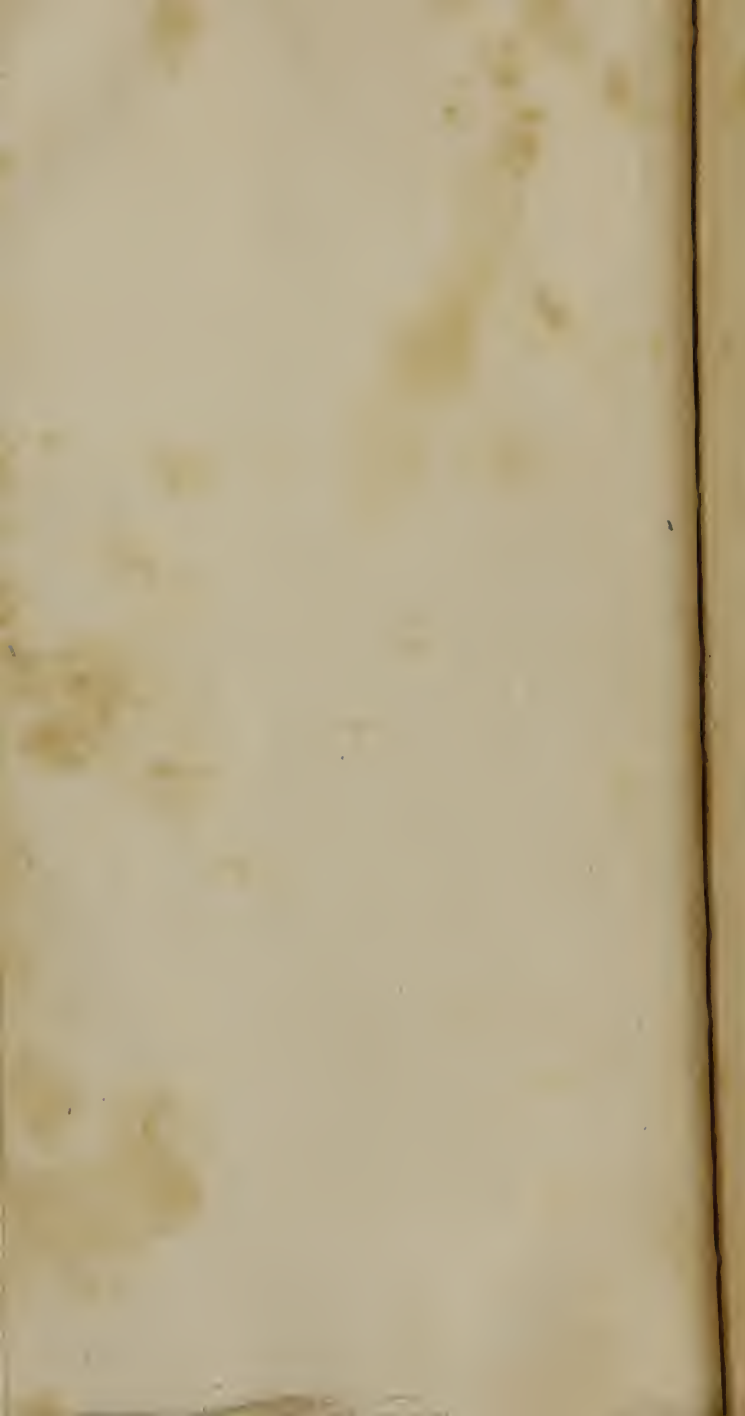
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THE
ELEMENTS OF MEDICINE;

OR,

A TRANSLATION

OF THE

ELEMENTA MEDICINÆ BRUNONIS.

WITH LARGE

NOTES, ILLUSTRATIONS, AND COMMENTS.

BY THE AUTHOR OF THE ORIGINAL WORK.

IN TWO VOLUMES.

LIBRARY VOL. I.
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176830.

PHILADELPHIA:

PRINTED BY WILLIAM SPOTSWOOD,

FOR

ISAIAH THOMAS, OF WORCESTER, MASSACHUSETTS,

MDCXCXI.

P R E F A C E

TO THE

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

BY the Author of this work, more than twenty years were wasted in learning, teaching, and diligently scrutinizing every part of medicine. The first five passed away in hearing others, studying what he had heard, implicitly believing it, and entering upon the possession as a rich and valuable inheritance. *His mode of employment* the next five years, was to explain more clearly the several particulars, to refine and give them a nicer polish. During the next equal space of time, because no part of it had succeeded to his mind, he became cold upon the subject, and, with many eminent men, *even* with the vulgar themselves, to deplore the healing art as altogether uncertain and incomprehensible. *All this time passed away without the acquisition of any advantage, and of that, which of all things is the most agreeable to the mind, the light of truth; and so great, so precious, a portion of the fading and short-lived age of man, was lost. It was only betwixt the fifteenth and twentieth year of his studies, that, like a traveller in an unknown country, wandering in the shade of night, after losing every trace of his road, a very obscure gleam of light, like that of the first break of day, dawned upon him.*

Thirteen years ago (*a*), when he was going in the thirty-sixth year of his age, he fell into his first fit of the gout. For many years before he had lived well, with the exception of having confined himself to a diet more sparing than usual a few months before the arrival of the disease (*b*). In about six weeks the disease finished its course, and did not return till six years after, and not even then, but in consequence of unusual low living for several months (*d*). He was in the vigour of his age, and, excepting the taint of the gout, and some debility, brought on by his unusual abstinence, his habit was good. The disease, according to an old theory among physicians, was said to depend upon plethora and excessive vigour; vegetable aliment was enjoined, wine was forbidden, and the careful execution of *that plan of cure* was promised to be rewarded with no return of the disease. A whole year past in a strict adherence to this regimen. In the course of that space of time, *instead of never having a return of the disease*, he experienced no less than four fits, most violent, most painful, and of a very great duration: *in short*, the whole year, except fourteen days, was divided between limping and excruciating pain.

(*a*) Four years must be added now, it being that time since the second volume of the *Elementa* was published, that is, seventeen years since the author's first fit of the gout. At this very time from hard walking in very hot weather, to inspect the beauties and majesty of Hampton-Court, he had a slight attack, which gave him no sort of trouble, never hindered him from business, and which he repelled in less than thirty-six hours.

(*b*) It was about six months.

(*d*) between five and six.

If an over-proportion of blood and excess of vigour was the cause of the disease, *according to the general theory just now mentioned*, it became next with him a subject of enquiry, how such distressing symptoms were to be explained; his reflections were, why the disease had not made its *first* appearance twelve or fifteen years before, *at a time* when there was *in reality* more blood and vigour in the system (*e*), and why it only came on after an abatement of diet both considerable in degree and duration; why so great an interval of time, during which he had returned to his usual full diet, had intervened betwixt the first fit, and these recent ones, and, why the disease had twice, almost instantaneously, come on after the change of *full nourishing* diet into a sparing one. At last the solution of this question was made out by the interposition of one of greater magnitude, in the following interrogatories: What is the effect of food, drink, and similar supports of life? They produce strength, What is their effect afterwards? Always less and less. What is it towards the end of life? They are so far from giving any more strength, that 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.

(*e*) The blood is made from the food and is in proportion to the quantity, quality, and 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.

As diseases first, and death after, in general happen in the way *that has been just now* explained, not from want, but an over-abundance of the supports of life, he found, however, that the cause was debility, and saw that it was not debilitating (*f*), but strengthening, powers that were to be thought upon as remedies. To this sort of debility he thought proper to give the name of indirect. Such for two years was the success of his invigorating plan (*g*), that at the end of that *space of time* he only underwent a very slight fit, which did not amount to a fourth part of any of the former ones (*b*). 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 than in that proportion the next two years, had the same method of cure been continued; nor will any one think the addition of two fits every year too much. The mild fit was four times less in degree than the more violent ones. Multiply, therefore, twelve by four, and, according to that computation, the proportion of alleviation of the disease will amount to a reduction of eight and forty to one. As, during the first year, he had made use of vegetable food alone, so, during these two years, his only food was of the land animal kind, and of the most nutrient quality. *Of the latter*, his choice

(*f*) according to the common practice of evacuation and starving,

(*g*) which he immediately after the last mentioned reflections and queries carried into execution,

(*b*) the fit that happened at the thirty-sixth year of his age, and the four severe ones, that attacked him about six years after, all within the course of the same year.

was directed to the best in kind, *without any other precaution than* being sparing in the quantity he used (*i*). A young gentleman, who lived with him, and had laboured under a very severe asthma, in consequence of *submitting to the same* treatment, suffered only one fit at the end of the *same* two years, instead of *experiencing* one every day, *as he had done upon the common treatment*.

Afterwards, to remove an opinion, that had been often insisted on, of the gout not depending upon debility, because inflammation accompanied it; little doubting that the inflammation itself depended on debility, he subjected the question to experiment. He invited some friends to dinner, and by the use of certain stimulants used in their presence (*k*), recovered the most perfect use of that foot, with which, before dinner, he could not touch the floor for pain. By this *fact* he saw, that *not only the gout itself*, but the inflammation accompanying it, was asthenic (*l*). And he found, afterwards, such inflammations affecting the throat in the putrid, in the gangrenous sore throat, and the joints in rheumatism, or that rheumatism which depends upon debility, and is improperly denominated chronic rheumatism (*m*), and sup-

(*i*) He found most kinds of fish, whether from the sea or fresh water, nearly as debilitating as vegetable matter, when solely or chiefly relied upon for a meal.

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

(*l*) that is, depending on debility.

(*m*) The word rheumatism, as implying a similarity of the disease to the true acute rheumatism, should be rejected, and this term taken, from Sauvage, substituted in its place.

posed, if there be any truth in that supposition, to attack the brain in the end of typhus, to be also asthenic.

As the gout affects the alimentary canal, and especially the stomach, and proceeds in its course with distressing circumstances similar to those *that happen* in dyspepsia (*n*); being desirous to know if there was any affinity betwixt it and them, he observed that they, as well as it, depended on debility, and yielded to stimulant remedies. Nay, he afterwards found for certain, that all the spasmodic, all the convulsive, diseases of the same canal (*o*), and nearly all the diseases of children, were of the same stamp.

Continuing his investigation of the same 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 (*p*), and in tetanus themselves. And by that means 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 vigour, or any other such cause*, depended

(*n*) or indigestion,

(*o*) or, first passages, comprehending the passage to the stomach, that organ itself, and the intestines below it,

(*p*) or the falling sickness,

upon an under-proportion of *that fluid*, and other causes of debility, and were to be cured, not by bleeding nor any other evacuations (*q*), 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 drink, of *a similar operation*, and nourishing food, that is seasoned meat, and kept the use of the more powerful remedies in reserve. But, of late (*r*), his surprising success in the use of the latter, has enabled him to find in opium, and certain other stimuli, the secret of repelling the fits of the gout as often as they returned, and, at the same time, re-establishing the sound 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 going the third year, and near the end of it (*s*), since he has *always* been able to prevent all return of the disease.

Taught by similar instances of actual practice, he found for certain that bleeding discharges, which are called hæmorrhages, do not depend upon plethora and vigour, but upon penury of blood and debility arising from any other source, and therefore did he reject them from the number of sthenic

(*q*) such as vomiting, purging, sweating, blistering, glistering, &c.

(*r*) that is, now, for many years past.

(*s*) now the seventh.

diseases (*t*), among which they had been arranged in the first edition of the text book, reserving a place for them among the asthenic diseases in the second volume of that work. For he saw, that bleeding, various *other* evacuations, abstinence, cold, and sedatives, as they are called, proved hurtful; and that the stimulant plan of cure alone was salutary. Even wine and brandy, which had been thought so hurtful *in those diseases*, he found the most powerful of all other remedies in removing them. Upon finding that a certain fact; he learned, that in all the diseases, in which others had thought there was abundance of blood, there was a deficiency of it, and that from the defect of that and of other stimulants the *real* cause of *the diseases* was debility; and stimulants, given in proportion to the degree of the cause, the *proper* remedies.

In consequence of the light that thus beamed in from the practice, he found, that the cause and cure of fevers, both intermittent and continued, was the same as those already mentioned.

Gradually led, as it were by the hand of nature, around the whole circle of asthenic diseases (*u*), he thoroughly perceived, that they all depended upon the same cause, that is, debility, that they were all to be removed by the same kind of

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

(*u*) diseases of debility.

remedies, to wit, stimulants (*x*), and that neither their cause nor their cure differed but in degree.

With respect to sthenic diseases, the nature of either the cause or cure of which no body had observed; he had long ago understood that inflammation in them, as well as the other symptoms, were not, as had been universally believed by Systematics, the cause, but the effect: and that the inflammation arose from the cause, i. e. the diathesis (*y*) and not even from it, unless very violent. In fine, he experienced in his own person, that catarrh was not produced by cold according to the common opinion, but by heat, and the other known stimuli, and was removed by cold and other debilitating powers. By which discovery he was led to form a proper judgment of the catarrhal symptoms in the measles: in which he found, that a very great man who had improved the cure of sthenic diseases, but never attained to any knowledge of the asthenic, had been 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 cure of them very much interested that of the whole disease. The consequence of which was that it came out a demonstrated fact, that the refrigerating antiphlogistic plan of cure was of equal service in the measles and small-pox.

(*x*) 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.

(*y*) or habit,

In sthenic diseases he illustrated the cause, enlarged the plan of cure, enriched the knowledge of both, explained and reduced the whole to a certain principle; he distributed all general diseases into two forms, a sthenic and an asthenic one (z). 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 hurtful powers which excited either were the remedies of the other, and the contrary; and that they acted by the same operation with the powers which produce the most perfect health, differing from them only in degree. He extended the same doctrine to plants. He laid down a principle which is illustrated and confirmed by all the parts of the detail, and *itself* reflects illustration and confirmation upon every one of them. *Lastly*, he put the question whether the medical art, thitherto conjectural, incoherent, and in the great body of it false, was not at last, reduced to a demonstrated science, which might be called the science of life (a).

(z) Sthenic signifies an excess, asthenic a defect, of invigorating power.

(a) That question has been answered in the affirmative by every one who had been at due pains to understand the doctrine.

P R E F A C E

TO THE

T R A N S L A T I O N.

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 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 others. 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.

T H E
E L E M E N T S
O F
M E D I C I N E.

THE FIRST AND REASONING PART.

C H A P. I.

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

II. The application of the same profession, to vegetables, should be named Agriculture.

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

IV. Bad health consists in an uneasy, difficult, or disturbed exercise of all or any of the functions. The latter respects diseases.

V. Diseases are either extended over the whole system, or confined to a part. The former merit the appellation of Universal, the latter that of Local.

VI. The former are always universal from their first commencement; the latter in their course, and that but seldom. The former are always, the latter never, preceded by predisposition. The originality of the former proceeds from an affection of the principle of life, of 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 the universal, and as many of the local, as first affect a part, and, in

consequence of that, at last injure the rest of the body, with some resemblance to the universal ones.

VIII. Predisposition to disease is that state of the body, that recedes from health, and approaches to disease, in such a manner, as to seem still within the boundaries of the former, of which, however, it is only an insidious and deceiving resemblance.

IX. These three states (*a*) constitute the life (*b*) of animals; to which that of vegetables is not dissimilar, but more imperfect.

C H A P. II.

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, that they can be affected by external agents, as well as by certain functions peculiar to themselves, in such a manner, that the phænomena peculiar to their living state, that is, their own functions, can be produced. This proposition comprehends every thing that is vital in nature, and therefore, at least, applies to vegetables.

XI. The external agents, in general, are reducible to heat, diet (**a*), other matters 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 mentioned (*†b*).

XII. The functions of the system itself, producing the same effect, are muscular contraction, sense, and the energy of the brain, in thinking, and in exciting passion and emotion. "While these affect the system in the same manner as the other agents; so, with respect to their origin, they arise both from the other and from themselves (*c*)."

XIII. The result of withholding either the property distinguishing living from dead matter, or the operation of either of the two sets of powers, is the non-existence of life (*d*). Nothing else is necessary to life (*e*).

(*a*) Of health, disease, and predisposition.

(*b*) Or living state.

(**a*) Consisting of food, drink, and condiment.

(*†b*) There is a correction of the original here, 'the words of which are, "Quo modo venena & contagiones eodem spectent, postmodo dicetur."

(*c*) This also is a correction on the margin of the original, the Latin words are "Hæ, dum, sic, ut reliquæ, corpus adficiunt, ita tam a cæteris, quam a se ipsis, exoriuntur."

(*d*) Here occurs another correction of the text in MS. which is as follows. "Earum rerum & actionum, sive dempto opere, sive dempta proprietate, vita nulla."

(*e*) "Fere" is expelled.

XIV. The property, by which both sets of powers act, should 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 to the soul; the appellation commonly given to it in medical writings is system (*f*).

XV. The common effect, produced by the exciting powers, is sense, motion, mental action, and the passions. Which effect being one and the same, it must, therefore, be granted, that the operation of all the powers is also one and the same (*g*).

XVI. The effect of the exciting powers, acting upon the excitability, is to be denominated excitement.

XVII. Since, of the same exciting powers, some act by evident impulses, and the identity of the effect of others infers the same mode (*h*) of operation; and since they have all a certain activity in them, they ought to be denominated stimulant, or stimuli.

α. Stimuli are either universal or local.

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

γ. 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 (*i*).

C H A P. III.

XVIII. WE know not, what excitability is, or in what manner it is affected by the exciting powers. But, whatever it be, either a certain quantity, or a certain energy of it, is

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

(*g*) That is, since sense, motion, mental functions, and the passions, are the only, and a constant, effect of the exciting powers, acting upon the excitability; and since that happens, whether one, or more, or all the powers, or which soever 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.

(*h*) Or ratio. (*i*) The three paragraphs that follow, *α. β. γ.* are an addition. The words of them are "Stimuli sunt vel communes, vel locales. Stimuli communes sunt potestates incitantes, ita in incitabilitatem agentes, ut incitationis toto corpore semper aliquid efficiant; com-

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 common language, and likewise to the novelty of this doctrine, that the phrases of the excitability being abundant, encreased, accumulated, superfluous—or weak, not well enough sustained, not well enough exercised, or deficient in energy, when enough of stimulus has not been applied—sometimes tired, fatigued, worn out, languid, exhausted or consumed, when the stimulus has operated in a violent degree—or being at other times in vigor, or reduced to one half, when the stimulus has neither been applied in excess nor defect—will be employed in different parts of this ensuing work (a). Both upon this, and every other subject, we must abide by facts; and carefully avoid the slippery question about causes, as being in general incomprehensible, and as having ever proved a venomous snake to philosophy.

XIX. As there is always some excitability, however small, while life remains, and the action of the exciting powers in one degree or another is never wanting; the conclusion, from that *fact*, is, that they are all endowed with more or less of stimulant power, and that this must be either excessive, in due proportion, or deficient. 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 debility as their cause, must still be understood to be stimulant; but only so much more weakly stimulant, as the penury is more considerable. The same conclusion applies to all the other exciting powers, unless that poisons, contagions, and some few other powers, might, to some, seem exceptions. But

XX. Poisons either do not produce the universal diseases, which make our present subject; or, if they do, by operating

“ munes, quo commodius a localibus internoscantur, appellandi. Locales
 “ stimuli in partem tantum, cui admoventur, agunt; nec, nisi parto jam
 “ illic affectu, reliquum corpus, ac sæpe ne sic quidem, afficiunt.”

(a) In this paragraph, line 6, in place of “ tributis sive vis sive copia,” read, “ tributis sive copia sive vis. In line 10, after “ incitabilitas modo,” read abundare, augeri, cumulari, superesse, vel imbecilla esse, parum sustentari, exerceri parum, vi deficere. And in the line 12, after “ modo,” read, lassari, fatigari, defatigari, languere vel. In line 13, after “ incubuit,” read, modo vigere, vel ad dimidium redigi, cum neque abundavit, neque defecit, stimulus.

the same effect as the ordinary exciting powers, their mode of operation must also be allowed to be the same (*b*).

XXI. Some contagions accompany diseases depending on too much stimulus (*c*); others those that consist in debility (*d*). If both these are the product, not of contagion alone, but, by a conjoint operation, also of the hurtful powers that usually depend upon stimulus, which is a fact ascertained; the effect, therefore, in this case being the same, the conclusion is unavoidable, that their 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 (*e*). It makes for the same conclusion, that no remedies, but those that cure diseases, depending upon the operation of the usual hurtful powers, remove those that have been supposed to be induced by contagions. Finally, the great debilitating energy, *observable* in certain contagions, does not more prove a diversity of action *in them*, than *it does in the case of* an equal or greater degree of debility, arising from cold (*f*).

δ. It might appear to some, that a certain matter of food, not sufficiently nourishing, and, therefore, of hurtful tendency; as also that emetics, and purgatives, and sedative passions, as they are called, might be thought to belong to the number of powers, the operation of which might seem so many exceptions from the ordinary stimulant operation.

ε. In general all vegetable matter, when depended upon alone for nourishment, is hurtful, at least, to those who have been accustomed to better, and that by a debilitating operation; and yet even it, since it supports life, however incommodiously, longer than a total want of food, must of course, be stimulant. But, if asthenic diseases arise from vegetable food, and not, to a certain degree, from want, that circumstance 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 such is the case, is proved by the most stimulant matter

(*b*) This proposition of frequent occurrence in this work, that identity of known effect always produces 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.

() As the small pox and measles.

(*d*) As the petechial typhus fever, the plague.

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

(*f*) 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.

of food losing part of its stimulus by continued use, and requiring the substitution of another in its place.

§. In the same manner is the operation of emetics and purgatives to be explained, as diminishing the sum total of excitement; which depends partly on an agreeable relation *that the exciting power bears* to the excitability, or on an agreeable sensation. That it is sometimes the relation, sometimes the sensation, that acts *in this case*, is evident from the hurtful effect of things most grateful to the sense, as in the examples of the legumina, and other articles of vegetable food; and by 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 (*g*).

¶. The sedative affections, as they are called, are only a lesser degree of the exciting ones. Thus fear and grief are only diminutions (*b*), or lower degrees, of confidence and joy. The news of money gained produces joy, and grief arises from the loss of it. Here then no operation of a nature con-

(*g*) 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 bearing an agreeable relation to the excitability, or producing an agreeable sensation on it; the inference, to be drawn from that fact, is, that a certain suitableness in the mixture of the whole to the excitability, as well as the degree of stimulus, produces the effect. Again, suppose certain ingredients, which cannot be denied to be stimulant, added to this given 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 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 sound state, and disagree with that of the first passages just now mentioned. 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.

(*b*) Not passions different in kind.

trary 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 (*i*); and in the same manner all the bodies *in nature*, that seem to be sedative, are debilitating, that is, weakly stimulant; owing their debility to a degree of stimulus greatly inferior to the proper one.

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

XXIII. Excitement, the effect of the exciting powers, the true cause of life, is, within certain boundaries (*k*), produced in a degree proportioned to the degree of stimulus. The degree of stimulus, when moderate (*l*), produces health; in a higher degree, it gives occasion to diseases of excessive stimulus; in a lower degree, or ultimately low (*m*), it induces those that depend upon a deficiency of stimulus, or debility. And, as what has been mentioned, 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 *the case of* diseases of excessive stimulus, and an encrease *of the same excitement* for the removal of diseases of debility. Both which *intentions* are called Indications of Cure (*n*).

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

(*k*) “*Quibus mox perire dicitur,*” is erased in the original.

(*l*) Of a middle kind.

(*m*) Aut ad extremum magnus, in MS.

(*n*) Betwixt the XXIst. and XXIIId. paragraph, comes the following addition in the MS. of the *El. Med. d.* “*Ad excipiendorum numerum, quædam cibi materia, parum alens nocensque, item supra & infra purgatrix, affectusque sedantes qui dicuntur, pertinere credi possunt. ε. Sed omnis fere e plantarum genere cibi materia, si quis soli ei pro alimento fedit, saltem meliore ali solitis materia, nocet, idque debilitatingo. Quæ tamen, quoniam diutius quam nulla, vitam, utut incommode sustentat, stimulet quoque necesse est. Quod si inde morbi asthenici, & non quodam tenus ab inedia, nascuntur; id eo fit, quod aliqua in tus mutatio, qua minus adversus incitabilitatem efficax stimulatorum summa redditur, usuvenit. Quod ita esse, vel validissima cibi materia, stimuli aliquantum, morando, disperdens, &, ut alia ei forma sufficiatur, exigens, ostendit. ζ. Simili modo supra & infra purgantium opus, ut incitationis, quæ partim, in grata incitabilitati affinitate, gratove sensu, consistit, summam sic imminuens, explicabile est. Interdum affinitatem, interdum sensum, agere, hoc patet: quod vel gratissima sensui, ut legumina & alia e plantis petita, nocent; ingrata, sicuti opii*

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 of the agents has been, the excitability becomes the more exhausted (*o*).

XXV. A mean stimulus, affecting also a mean or half-consumed excitability, produces the highest excitement. And the excitement becomes less and less, in proportion as either the stimulus is applied in a higher degree, or the excitability more accumulated. Hence the vigor of youth, and the weakness of childhood and old age. Hence, within a more moderate space of time, a middle diet *gives* vigor, and debility is the effect of its being either too full or too sparing.

XXVI. While that is the case, every age, every habit, if the excitement be properly directed, has its *due degree* of vigor *accommodated to it*. Childhood, and that weakness, which an abundant excitability produces, admits of little stimulus, *but*, upon less than the middle proportion, becomes languid, upon more, is oppressed. Old age, and that frailty which is occasioned by a deficiency of excitability, requires a great deal of stimulus, becomes enfeebled by less, and overfet by more (*p*). The reason for the latter is, that the excitability, without which no vital action is produced, does not exist in that degree, by which vigor of the functions is produced; while the former is to be explained from the exciting or stimulant power, without which the excitability is of no effect, not being applied in that degree, which is requisite to the vigor that it should give. The impotency of stimulus may rise to such a degree, as to produce death from its extreme under proportion. On the contrary, the exhaustion of excitability may go so far, as to extinguish life by the extreme excess of stimulus.

“formæ, juvant, idque utrumque, illa debilitando, id est, non satis stimulando; hæ valide stimulando, faciunt.

“Affectus sedantes, qui vulgo dicuntur, excitantium tantummodo vis minor sunt. Sic metus & animi dolor tantummodo fiducia & gaudii sunt detractiones. Lucrifactæ pecuniæ nuncius gaudio, perditæ dolori, est, pro magnitudine uterque summæ crescens. Utque in pecuniæ accessione stimulus accedit, sic in illius decessione hic decedit. Nullum igitur stimulantium contrarium opus hic suboritur, tantumque stimulantis operis imminutio. Idemque hic ubique, quod de calore dicendum. Eodemque modo quæcunque sedare videri poterant, ea omnia ita debilitant quidem, id est imbecilliter stimulant, ut e minore justo stimulo ea debilitas oriatur.”

(*o*) All that follows in the original, to the words “ratio reperitur,” is erased.

(*p*) What follows, to the end of this No. is an addition in MS. to the original.

XXVII. The circumstances, under which excitement is produced, have two confining boundaries (*q*).

XXVIII. The one (*r*) of these circumstances is, exhaustion of the excitability from violence of stimulus. For all the stimulant powers may carry (*s*) their stimulant energy to that degree, under which no excitement will arise. The reason for which is, that the body becomes no longer fit to receive the operation of stimulus; another expression for which is, that the excitability is consumed.

XXIX. The termination (*t*) of excitement, from the exhaustion of the excitability by stimulus, may be either temporary or irreparable, and may arise either from a short continuance of a high degree of stimulus, or a long application of one, the excess of which is more moderate. Both circumstances come to the same thing; the high degree of stimulus compensating for the shortness of its application, and the shortness of its application for its greater moderation in degree (*u*). 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 were kept up, yet death at last, however late, supervenes.

XXX. Ebriety, debauch in eating and drinking, sweat, languor, heat, either *operating* alone, or overcoming the effect of cold, dulness in mental exertion from excessive thinking, or sinking of the spirits in consequence of violence of passion, finally, sleep; all these are the consequences of a short application of a high degree of stimulus, operating an exhaustion of excitability. The long continuance of a more moderate excess in the force of stimulus, is followed by the frailty of old age, predisposition to diseases of debility, as well as those diseases themselves. The ultimate termination of both is death.

XXXI. When the excitability is wasted by any one stimulus, there is still a reserve of it, capable of being *acted upon* by any other. Thus a person, who has dined fully, or is either fatigued in body, or tired with intellectual exertion, and therefore under a great disposition to sleep, will be recruited by strong drink; and, when the last has produced the same sleepi-

(*q*) The Latin text is altered in MS. thus, "conditiones, quibus incitatio nascitur, intra duo fines continentur."

(*r*) "Quarum" is erased in this paragraph.

(*s*) Hic, in the Latin text, is erased, and after "esse," potest is inserted.

(*t*) Or cessation, or extinction.

(*u*) 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.

ness, the more diffusible stimulus of opium *will arouse him* (*w*). Even after opium fails, and leaves him heavy and oppressed by the same propensity, 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 her flight encourages him with the hope of overtaking her.

XXXII. The waste of excitability, first exhausted by stimuli, and then recruited by new ones, is most difficultly repaired; because the more a stimulant operation has been employed, that is, the more the stimuli have been applied; there remains the less access to fresh stimuli, by the operation of which the failure of excitement may be removed (*x*).

XXXIII. The reason of the difficulty is, that no means of reproducing the healthy state, that is, the proper *degree* of excitement, is left, but the very circumstance that occasioned the waste, that is, already an excess of stimulant operation, not admitting of more stimulus (*y*).

XXXIV. Such, in fine, is the nature of the same loss of excitement, that it rushes to instant death, unless proper measures be taken to preserve life by a great stimulus, but less than that which occasioned it, and then by a still less, till by means of the moderate stimulus, that is suitable to nature, or a somewhat greater, life may at last be preserved (*z*). The difficult cure of drunkards and gluttons, already affected with diseases, sufficiently evinces, that the same consideration applies to all the exciting powers that stimulate in excess (*a*).

(*w*) 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 alacrity, 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.

(*x*) What follows in the El. is erased, and all of the next number to "evaluit, cum."

(*y*) What follows in this par. is also left out.

(*z*) In the El. for "succurri vita," read servari vita.

(*a*) This proposition applies to the most difficult part of the practice for the cure of diseases, that is, those that depend upon a certain species of debility, which in the very next paragraph will be denominated *inane*.

XXXV. The excitability, thus exhausted by stimulus, is debility, which should be denominated indirect, because it does not arise from defect, but excess of stimulus (*b*).

XXXVI. Through the whole progress to indirect debility, the second impression of every stimulus has less effect than the first, the third less than the second, and so forth to the last, which gives no more excitement; and the effect takes place in proportion to the degree or duration of *the several impressions*, though every one always adds some excitement. The inference from this proposition is, that, before the establishment of indirect debility, and, when it is now upon the eve of being established, the stimulus which produces 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, and applying refrigeration to a person who has been exposed to an excessive degree of heat (*c*).

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

θ. If cold sometimes seems to stimulate, it produces that effect, not as actual cold, but either by diminishing excessive heat and reducing it to its proper stimulant temperature (*d*), or by rendering the body accessible to air, or by accumulating

(*b*) Like another debility, by and by to be spoken of.

(*c*) 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.

(*d*) 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.

the excitability diminished by excessive stimulus, and communicating energy to the stimulus of the exciting powers, now 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 a scrotum previously relaxed by heat. Nay, the effect goes so far, that sthenic diseases may arise more certainly from cold, alternating with heat, and either preceding or following it, than from pure heat.

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

XXXIX. In this case, the excitability is 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, and, therefore, the sum of all the stimuli, is deficient; and the excitability, as being less exhausted by stimulus, is increased (*e*). The same conclusion applies

(*e*) 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 70, constituting only one degree of life, take off one degree of

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, and given themselves up to indolence, to those who have neglected the use of that stimulus, which exercise of the mind affords, and to persons in low spirits. The effect of withdrawing any stimulus is the more liable to produce direct debility, the more any person has been accustomed to a higher operation of it (*f*). Take, for an example, the gout, and many other diseases, under the same circumstances, affecting some, and sparing others (*g*).

XL. As, during the encrease of excitability, the excitement decreases, and in proportion to the encrease of the former; so that that process may go all the way to death, is a fact, from which nature exhibits no exception. It 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 death (*h*).

XLI. The defect of any one stimulus, and the proportional abundance of excitability, is, for the time, compensated by any other, and often with great advantage to the system. So a person, who has dined insufficiently, and therefore not well enough stimulated, is recruited 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 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 ban-

exciting power, and 2 degrees of excitability will arise. As 80 degrees of exciting power leave no excitability, so 70 degrees of exciting power leave 10; 60 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.

(*f*) 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.

(*g*) 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. All form dicendum, in the Latin text. to the end of this paragraph, is an addition.

(*h*) All that follows of this paragraph, was brought in XXXVII.9. as more properly belonging to that place.

ishing the languor, occasioned by the want of the other. The same conclusion applies to the use of stimuli, for which we have an artificial, rather than a natural, craving. The longing for snuff, when it cannot be got, is gratified by the practice of chewing tobacco; and when any one is languid, for want of tobacco, smoking supplies the place of it. Nay when the functions, as they often are, have undergone a temporary lesion, and on account of that, there is no access to the use of certain accustomed and natural stimuli; the substitution of others, less accustomed, and less natural, supports life, till the desire for the natural stimuli is restored, and these are now in a condition to support the natural vigor as usual, and the health *finally* established (*i*).

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 awarded, till the sum of it be brought down to that, which is suitable to health; so the more abundant the *same* excitability is, that is, the more stimuli are withdrawn, or the greater the penury of the most powerful stimuli is; the less recourse can be had to that mediocrity of excitability, on which the vigor of life depends; and the weakness may go to that pitch, the excitability arrive at that degree of abundance, that the *loss* of excitement may at last become irreparable. This proposition is both illustrated and confirmed by the use of every debilitating power; as is exemplified by cold, famine, thirst, and *the progress* of fevers.

XLIII. This superabundant excitability proceeds with such rapidity to 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 (*k*) portion of stimulus, that occasioned it; then, after wasting a part of the superabundance, to proceed to somewhat a stronger *dose* of the *stimulus*; and in that manner to 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

(*i*) 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 nineteen twentieths of all febrile diseases, and includes our artificial as well as our natural desires and appetites.

(*k*) Or under-proportioned.

arises from a worn-out excitability (*l*), and the danger of death occasioned by it. *To give examples*, a famished person is not immediately to be gratified with a full meal; a person, afflicted with a long duration or high degree of thirst, is not immediately to be indulged with a large draught: but the former should be given, bit by bit; the latter, drop by drop; then both of them gradually more plentifully. A person, benumbed with cold, should gradually receive the cherishment of heat. Every person, thoroughly penetrated with grief, sorrow, or any high dejection of mind, 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 the 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 having still a greater appearance of certainty, finally, as not admitting a shadow of doubt: and last of all, before her son was introduced to her, the woman should have been at the same time fortified (*m*) both by other stimuli, and a glass of Falernian wine (*n*).

XLIV. Since all life consists in stimulus, and both the overabundance and deficiency of it is productive of diseases, and in *exact* proportion to the overabundance or deficiency; it follows, that the remedies of both these deviations from the *proper* standard should be accommodated to their degree; and that a high sum total of stimulus, through the course of the disease, should be applied to a high degree of debility, or, what comes to the same thing, to a very abundant excitability; but that the quantity, to be applied at any *particular* time, should be in the same proportion small, that the excitability is abundant.

XLV. The debility, arising from defect of stimulus, merits the appellation of DIRECT; because it happens in consequence of no positive hurtful power, but from a subduction of the necessary supports of 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. This last, therefore,

(*l*) 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.

(*m*) Had a part of her very abundant excitability taken off.

(*n*) The remainder of this paragraph in the original is struck off, as being nonsense.

is never to be lessened, and the debility encreased, with the view, forsooth, that, in consequence of encreasing the excitability, the addition of a new stimulus may act more strongly. For, as often as that is put in practice, the morbid state is encreased; and, if the debility should happen to be great, any *further* encrease of it may induce death, but *never* encrease the strength. For, while great debility, and indeed at pleasure, may, *in that way*, be produced; any excitement, to be obtained from a stimulus to come 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 undergone refrigeration, and in every sort of debility. And who would treat *the cases of* famine, of deep sorrow, of weakness of the mental function, of languor from inactivity, of penury of blood, *which are all cases of direct debility*; who would treat them, by superinducing *more direct* debility, with a view to his gaining some advantage from the very scanty stimulus, *that can be admitted*? The accumulation of excitability applies only to the predisposition to indirect debility, or sthenic diathesis.

XLVII. With respect to every sort of debility, *it is to be observed, from all that has been said upon both forms of debility*, that, as indirect debility is never to be cured by direct, so neither is the latter by the former, nor either by the other, in

(*o*) Suppose, that in place of an excitement of 40 degrees, the excitement is gone down to XXX, 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 XXV, and accumulating the excitability to LV,—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 vigor 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 vigor 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 part, as in the throat, lungs, and various parts of the external surface.

the vain hope of obtaining benefit from the after employment of any stimulus (*q*).

C H A P. IV.

Of the Seat and Effects of Excitability.

XLVIII. THE seat of excitability in the living body (*a*), is medullary nervous matter, and muscular solid; to which the appellation of nervous system may be given. The excitability is inherent in it, but not different in different parts of its seat. This fact is proved by the production of sense, motion, the mental function, and passion (*b*), immediately, instantaneously, and not in a series of successive operation (*c*).

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

XLIX. Every one of the same powers always affects some part more than any other, *in which respect* one power affects one part *more than any other*, another another, *with the same*

(*q*) 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.

(*a*) Called system by medical writers.

(*b*) That is, all the functions which distinguish living animal systems.

(*c*) If a small quantity of an opiate, 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.

(*d*) A \times here is inserted, to correct an error in the numbers of the original, the No. XLVII. being twice repeated.

inequality. The affected part is generally that to which any of the powers is directly applied.

2. And besides that, the more excitability has been assigned to any part from the beginning of the living state, that is, the more vivid and sensible it is, the operation upon it of each exciting power, whether acting with due force, or in excess, or in defect, and through all the intermediate degrees of its action, becomes more powerful (e). Thus the brain and alimentary canal possesses more vivid excitability, that is, more propensity to life, than other internal parts; and the parts below the nails, than other external parts (f). Again, while the fact just now related is such, as it has been stated, 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 more affected than any other, and of that which is diffused over the whole body, by comparing the affection of the former with as many lesser affections, taken together, as equal the number of parts in all the rest of the body. Suppose the greater affection of a part (g) to be as 6, and the lesser affection of every other part to be 3, and the number of the parts less affected to amount to 1000 (h); then it will follow, that the ratio of affection, confined to the part, to the affection of all the rest of the body, will be as 6 to 3000. This estimate, or something very like to it, is proved by the effect of the exciting hurtful powers, which always act upon the whole body (i); and

(e) 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.

(f) This paragraph is an addition.

(g) 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 dropfy.

(h) Which is keeping greatly within the truth.

(i) 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 labor, &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 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 inmost 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.

by *that of* the remedies, which always remove the effect of the hurtful powers from the whole body (*k*), in every general disease (*l*).

LI. In this way temperature affects the surface of the body; diet the stomach, and the rest of the same canal; the blood and other fluids their respective vessels; labor and rest the vessels again, and fibres of the muscles; passion and exertion in thinking, the brain; all these affect the parts mentioned, each that upon which its action is exerted, more than any other equal part.

LII. Instances of the greater excitement of a part than *of the rest of the body*, are found in sweat in a person in health, flowing first from the brow under exercise, in checked perspiration, in inflammation or an affection analogous to it in diseases, in head-ach (*n*) and delirium. Proofs of a lesser excitement in a part, are excessive perspiration and sweat not occasioned by labor or heat (*n*), especially when it is cold and clammy, profusion of the other excretions, spasm, convulsion, partial palsy, weakness or confusion of intellect, *and again* delirium.

LIII. 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; *it is next to be observed*, that it 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 one of degree; nor can different effects flow from one and the same cause.

λ. For though, on account of the great sensibility of cer-

(*k*) 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.

(*l*) A wound in the lungs, among other effects of it, 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 bleeding 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.

(*m*) Capitis dolor, in the original, is an addition.

(*n*) Vel calore, is another.

tain parts, for instance, the stomach (*o*), and the forcible energy of the exciting powers, either in stimulating or debilitating, exerted on them, these parts run sooner than most others either into direct or indirect debility, or into a great encrease of excitement; that however is only a *matter* of short duration, and it is not long before the rest of the functions are hurried into the same state. Thus, nausea, vomiting, diarrhoea, and other similar symptoms, produced by strong drink 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 the turbulent symptoms of the stomach and intestines, which we have mentioned, taking place 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* to the second, and health over all is the termination of the last.

LIV. A part, therefore, is the seat of no general affection; the whole body is the seat of them all; because, with the inequality *above* related, the whole excitability is affected in them all.

LV. Neither is the affection of the more suffering part the first, and afterwards propagated over the system; for this good reason, that, 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 as in any part, and for the most part sooner (*p*). Therefore

LVI. Every affection of a part, however formidable, *occurring* in general diseases, 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,

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

(*p*) 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.

and was thence to be taken off only, but to the whole body, to all which it belongs (g).

C H A P. V.

Of Contraction and its Effects.

LVII. THE entire and vigorous contraction, with which muscular fibres are endowed, is in proportion to the degree of excitement upon which it depends (a). This is proved by all the phænomena 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 as their cause. The hurtful exciting power is a stimulus uncommonly irritating to the part.

LVIII. The degree of contraction, that constitutes spasm, is not an exception from this *proposition*. It is a continued and deficient function, rather than a great and exact one; and in so far as it is a great contraction, it depends upon the local stimulus of distention, it consists in diminished excitement, is devoid of force, and removed by stimulant remedies. The appearance of symptoms, which is ever misleading, is never to be trusted in forming any judgment. Take now both the fact and the explanation of it.

LIX. As the degree of contraction, in so far as it is a sound function, is connected with force; from that we are to hold it as a certain and demonstrated fact, 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 the degree of the latter: which it is easy to perceive through all the intermediate 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 discerned in the article of death, in death itself, and after death, with a laxity corres-

(g) 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.

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

ponding to it. That this is the fact, is proved by the weakness of the same fibres in their dead, and their strength in their living, state; the only cause of which difference, we know for certain, is excitement (*b*).

LXI. Hence the cavities of the vessels, through their whole tracts, over the whole body, are diminished in a *state of strength*, and increased in weakness. This is the true cause of diminished perspiration (*c*).

CHAP. VI.

The forms of Diseases and Predisposition.

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, and of predisposition previous to the arrival of disease. The state both of the simple solids and fluids follows that of health as constituted by the excitement, and a given state (*a*).

μ . The first cause of the formation of simple solids, and the sole one of their preservation after, is the excitement. Under the direction of the excitement, the living solids produce 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, diseases, or the return of the sound state. 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. The cure of neither is to be directed to the state of the solids or fluids, and only to the diminution or the increase of excitement. But

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

(*b*) 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 lesser 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 the dead.

(*c*) And not any of the hypothetical ones, as constriction from cold, or spasm, which are to be considered afterwards.

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

LXIV. That the excitement governs all life, is proved by the exciting powers acting always by stimulating, and thereby producing excitement; it is proved by the greater or smaller activity of the functions being proportioned to the force of the exciting powers; it is proved by the effect of the remedies, which always oppose deficient to excessive, and excessive to deficient, excitement, in *effecting* the cure of diseases.

LXV. The notion of health and disease being different states, is disproved by the operation of the powers which produce them, and of those that remove them, being one and the same.

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

LXVII. That the origin of diseases and predispositions, *just now* mentioned (*d*), is the only one and true, is proved by the same powers which produce any disease, any predisposition, also producing the whole form 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 (*e*). Betwixt these opposite sets of disease and predisposition, perfect health is the mean, leaning to neither extreme.

LXVIII. The exciting powers, which produce predisposition to diseases, or those diseases themselves, should be denominated sthenic, or strictly stimulant. Those, that pave the

(*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; for these reasons it has been thought proper to reject it, and substitute the other in its place.

(*c*) Phlogistici and antiphlogistici are thrown out.

(*d*) In the last paragraph.

(*e*) The same hurtful powers produce, and the same remedies remove, both Catarrh and Peripneumony, 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 hurtful 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; evacuants 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?

way to asthenic diseases, or produce the latter, should be called asthenic, or debilitating. The state of the body, producing the former, or the predisposition to them, is to be called Sthenic Diathesis; that, which occasions the latter, with the predisposition peculiar to it, receives the new term of Asthenic Diathesis. Each of these diatheses is a state of the body, the same with predisposition and disease, varying only in degree. Distinguish the powers, that raise both the diatheses to the degree (*f*) of disease, by the term, exciting hurtful powers. The sthenic diseases, in which the pulse is turbulently affected, should not be denominated fevers or febrile diseases, but, for the sake of distinguishing them from the asthenic diseases, that disturb the pulse, to which Fever is a proper name, they should be called Pyrexics.

C H A P. VII.

The effect of both the Diatheses, and of the most perfect Health itself.

LXIX. THE common effect of the sthenic hurtful powers, upon the functions, is, first to encrease the functions, then partly to impair them, but never by a debilitating operation (*a*). The effect, in common to the asthenic hurtful powers, upon the same *functions*, is to diminish them, in such a manner, as sometimes to exhibit an appearance, but a false one (*b*), of encreasing 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 shortening life, often by the interposition of diseases, sooner or later induces death. Which is one cause of mortality.

LXXI. The asthenic diathesis is hurtful, by not supplying that degree of excitement, which is necessary to life, and thereby allowing the state of life to approach more nearly to

(*f*) Or full measure.

(*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.

that, in which death consists. Which opens another gate of death to mankind.

v. Further diseases and death are the consequences of the change of either diathesis into the other. Either diathesis, by means of the hurtful powers producing the other, when these are employed as remedies (*c*), may, either from accident, inadvertence, or design, be completely converted into the other; and when that has been done, and opposite remedies *to those, that in this manner* proved hurtful, are employed; it may, *by a contrary excess*, be turned back to the same state from which it set out (*d*). This observation will be found of the greatest consequence in the cure of both predispositions and diseases (*e*). What is wanting to a further illustration of it shall be given afterwards. An illustration of the change of sthenic diathesis into asthenic is *found in* hydrothorax succeeding peripneumony. Again, the immoderate use of stimulants may convert any asthenic affection into a sthenic one; as when a violent cough,

(*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 evacuants 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 excruciability 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 farther; 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 forgot, 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.

a catarrh, or an inflammatory sore throat, are induced in consequence of the cure of the gout, though proper in kind, being carried to excess in degree.

ξ. Though excitement governs all the phænomena 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 deceiving appearance has proved a source of infinite error (*f*).

LXXII. From all that has hitherto been said, it is a certain and demonstrated fact, that life is (*g*) a forced state, that the tendency of animals every moment is to dissolution; that they are kept from it (*h*), by foreign powers, *and even by these* with difficulty and only for a little; and then, from the necessity of their fate, give way to death.

C H A P. VIII.

Of Predisposition.

LXXIII. Predisposition is a middle state betwixt perfect health and disease. The powers, producing it, are the same with those which produce disease (*a*).

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

LXXV. That predisposition necessarily precedes diseases, is evident from the fact of its arising from the same exciting powers, acting upon the same excitability, from which both health and disease arise, and of its being an intermediate state betwixt them both. And, as the excitement of health differs much from that of disease; it is not, therefore, to 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 are not an exception from 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, its

(*f*) This paragraph is from an addition in MS. to the original.

(*g*) not a natural, but, (*h*) not by any powers in themselves, but,

(*a*) The rest of this paragraph is erased.

cause is the same (b). If, as it sometimes happens, no general affection follows the application of contagion, if no undue excess or defect of excitement is the consequence; in that case, the affection is altogether local, and foreign from this place.

LXXVII. If poisons communicate any sort of morbid affection without predisposition, such an affection, for that very reason, is not to be considered as a general disease, as also for this additional reason, that *the affection* is neither removed nor relieved by the usual cure of general diseases; and the diversity of the effect proves, that both the cause and exciting hurtful power are different from the general ones. In one word, since predisposition and disease are the same, varying only in degree, the unavoidable conclusion is, that whatever, with a given force, produces the latter, *the same*, with a lesser force,

(b) 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 that 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 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 poison may have been concerned.

will produce the former. The only cure of most poisons is their early discharge from *the system*. And if, as often happens, others, by wounding an organ necessary to life, are not curable, but fatal; the effect of both is foreign from our present subject, and to be referred to local diseases.

LXXVIII. The only thing to be regarded in the powers, producing either predisposition to general diseases, or those diseases *in their full force*, is the degree of the former (*c*), compared with *that of* the latter (*d*), or of the individual powers, compared with one another, for the purpose of discerning the degree of hurtful power that each possesses, and the degree of curative means, to be employed, in order to remove the hurtful effect (*e*).

LXXIX. The knowledge of predisposition is of great importance; as enabling the physician to prevent diseases (*f*), to comprehend the true cause of them founded in predisposition, and to distinguish them from local affections, which are widely different from them (*g*).

LXXX. As the predisposition to diseases, and the diseases themselves, are the same state; a great criterion, by which general diseases may be distinguished from local ones, will be

(*c*) Those that produce the predisposition.

(*d*) Those that produce the disease.

(*e*) The distinctions of the powers producing predisposition, and of those that excite disease, under the general appellation of predisponent or occasional causes, have been multiplied and refined upon without end. But the whole system of remote causes, as they have been called, is false in its first idea. The hurtful powers, whatever they be called, that produce diseases, also produce the predisposition of them. Which being once admitted, as it henceforth must, the whole fabric of Aitiology, 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 propiores*, proximate causes, of which not only one, but often several, are assigned to every disease, must cease in medical language, and the student's attention 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 his contemplation in great abundance, when once his eyes are fairly opened to behold them.

(*f*) From his acquaintance with the powers that lead to them.

(*g*) Such is the simplicity to which medicine is now 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.

found in this single circumstance, that general diseases are always, local never, preceded by predisposition (*h*).

LXXXI. As the affection of a part is always the original source of local diseases, and as the distinctions, we have related, are established upon the solid basis of truth; it follows, that the following disorders must be rejected from the number of general diseases, how great soever their resemblance to them may be, and however much they may conceal their own nature. Whatever affections, then, arise from any state of a part, from stimuli, from debilitating circumstances (neither of which last produce any commotion in the whole body, or only do so in consequence of the force of the local cause), from compression of a part, from obstruction, from other diseases (*i*), and not from the exciting powers which produce general diseases (*k*);

(*h*) An inflammation in some 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, it, as well as 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 hurtful powers, it is not preceded by predisposition. So when I come to the bedside 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, that the substances which he had swallowed were such as would naturally divide a sound part, or, in the language of our profession, produce a solution of continuity in it. 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, so peripneumony as well as every other sthenic, every asthenic, disease must, from the proofs of the universality of the fact, be allowed to be, it must be local. And here again we throw the gauntlet.

(*i*) whether general or local,

(*k*) In the original the words are, "a communibus noxis excitantibus:" that is, general exciting hurtful powers. But I have rendered it in the text otherwise, for the sake of making the sense plain, not only to my gentlemen readers, but such medical ones, as have not heard the lectures on this work. For the sake of all, then, (except my own pupils, who either have heard or shall hereafter hear my lectures), 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.

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 hurtful powers that produce them, in their *true cause* (*l*), in their cure (*m*), and in every *essential* respect, agreeing with them in nothing, but in a deceitful and deceiving *superficial* appearance.

C H A P. IX.

The general Diagnosis.

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

LXXXIII. The only diagnosis (*c*) of any importance is

(*l*) 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 encrease of excitement, and the inflammation accompanying those diseases arises from that encrease.

(*m*) 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 encrease 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, starving ; that arising from the stimulus of heat and other excessive stimuli, by cold, &c.

(*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 superseded ; and much labor, not only irksome to the artist, but worse than useless, often pernicious to patients, is proved to be superfluous.

that, by which general diseases are distinguished from local, or symptomatic affections, throwing the whole system into disorder, with a certain resemblance to universal diseases. To execute which, *the following marks* are to be understood to suffice for the detection of every general disease; first, its being preceded by a diathesis, and this followed by one similar to it, and removed by an operation of the remedies of an opposite nature to that which occasioned the disease; while, on the contrary, local affection is distinguished, first, by the affection of a part, and the disorder of the system (*d*) 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 in it; peruse the works of the illustrious Morgagni; dissect subjects: distinguish remaining effects from causes that have passed away; examine diligently very many bodies of persons who have been hanged, or have died of wounds, and are otherwise sound; compare these diligently with the bodies of those who have died by lingering and often repeated disease; compare every particular with every other, the whole with the whole; guard against the rashness of forming opinions, and, if you can, you will be among a very few, who have ever been able to do so; never expect to discover the cause of disease *in dead bodies*; be circumspect in forming a judgment.

LXXXV. As internal local affections are often a certain taint that remains after general diseases have passed away, it is therefore a matter of sound judgment *to understand*, that there is less or more reason to suspect the former, in proportion as the latter have seldomer or oftener preceded them.

C H A P. X.

The general Prognosis, or general Judgment of the event.

LXXXVI. SINCE the powers producing sthenic and asthenic diathesis, always act upon a part with more force than any other equal part; it follows, therefore, that the danger of disease during the predisposition, and of death during the disease, arises in proportion to the degree of diathesis, or to the importance of the part especially affected. But, its degree

(d) Not arising from any change in the excitement, but

being given, the more equal the diathesis is, the more safe it is. Nor does it ever fall heavy upon an organ necessary to life, without instant danger. And hence it is, that peripneumony, apoplexy, phrenitis, erysipelas, and the gout, when the two latter affect the head with violence, are chiefly formidable.

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

C H A P. XI.

LXXXVIII. THE indication for the cure of sthenic diathesis is to diminish, that for the cure of the asthenic diathesis, is to encrease the excitement, and to continue to encrease it, till that degree of it, which constitutes the mean betwixt its extremes, and which is suited to good health, be replaced. This is the only indication of cure that universal diseases admit of.

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 their cause, so is also their plan of cure, confirmed by an induction of proof (*a*), drawn from the whole course of facts and phænomena (*b*). The same debilitating remedies, which remove any one sthenic disease, remove that whole *form of diseases*: and the same stimulant means, which cure any one asthenic disease, remove all the rest (*c*). Are not

(*a*) not one or two, but

(*b*) 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.

(*c*) 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 this force of stimulus and that of the other, is only a difference of 40 de-

palsy, in so far as it is curable (*d*), and dropsy, in so far as it is a general affection (*e*), as well as the gout, and fevers, both relieved and removed by the same remedies? And are not peripneumony; the small-pox, the measles, rheumatism, and catarrh, removed by the same remedies (*f*)? But all these remedies in the asthenic case increase, in the sthenic diminish, the energy of life. In both cases the operation is a common one *over all*, nor is there any diversity but in degree.

XC. The remedies, therefore, of sthenic diathesis are powers, exciting by a weaker stimulus, than that which is suited to health; and are in this work to be denominated, for the sake of brevity, Debilitating or Anti-sthenic Remedies.

XCI. The remedies of asthenic diathesis are powers, exciting with more force, than suits the best health; to be named here in the practice stimulants or sthenic; for the more convenient distinction of them from the other remedies.

XCII. These are to be employed with more or less freedom in proportion to the higher or lower degree of *each* diathesis, and of the local affection depending upon it. And such a choice of each should be made in such a way as that the most powerful may be adapted to the most violent case. But the cure of any disease of considerable violence, and scarce of any at all, is never to be entrusted to any one remedy (*g*). The use of several remedies is preferable to that of one; because, thereby, their direct energy is applied to the system to a greater

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.

(*d*) When the prevalence of debility, and that to such a degree, as to destroy the connexion that subsists betwixt the fibres of muscles, and that function of the brain which we call will, takes place in parts of the system, not only remote from the centre of activity, but beyond the circulation, it must be of difficult cure; because the most powerful means of effecting that operation, act most powerfully when taken internally, and much more feebly when applied to the skin.

(*e*) What is called dropsy consists of a case which is a general disease, and a number of others, which are only symptoms of local internal diseases, and to be treated in the last part of this work. These arise from ossifications in the large vessels next the heart, from tumors, whether schirrous or steatomatous, impeding by their pressure the return of the blood by the veins to the heart. It is the general case that is here alluded to, and the public may depend upon it, that it is to be cured, but not by the evacuant means, and, on the contrary, by the high diffusible stimuli, necessary to the cure of diseases of high debility, such as the extremity of typhus fever; and an expiring gout. All these are cured by high stimulants.

(*f*) to wit, evacuants, cold and starving

(*g*) What here follows to "Plura" in the beginning of the next is erased, as neither quite exact in sense, nor well expressed.

extent, and the excitability is more completely and more equally affected. The person, who means that his remedies should go to a particular part (*b*), is equally wise, as *any one would* be, who, by cropping a twig, expects to eradicate a tree. What remedies are of general, what of local operation, shall next be mentioned.

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; for that reason, in order both to prevent and cure diseases, we must always use the indication proposed, and stimulate or debilitate; never lay by, nor 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 all other exciting powers, sometimes by a stimulating (*i*), sometimes by a debilitating operation (*k*), or whether its action consist in only giving the peculiar form of its respective disease, and, thereby, adding a local affection to a general one; in either case there is no room for a new indication.

XCVII. For if the disease, as a general one, be properly managed, 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 a contrary event takes place in consequence of a bad method of cure, the local symptoms are proportionally aggravated. This is proved in the small-pox, long ago, and in the measles lately (*l*), but, with equal certainty; it is proved by the plague,

(*b*) and there, from a local operation, and not by an affection of the excitability, serve the purpose.

(*i*) As in the small-pox and measles,

(*k*) As in contagious fevers and the plague,

(*l*) After the discovery of the nature of the catarrh, the catarrhal symptoms in the measles came naturally to be enquired into. A full trial was given to the refrigerant debilitating plan, in the author's own family, as well as among several patients, and lastly 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 Alexipharmaco-temporaries, many died, and all had a bad recovery. The author's own

at least, as often as it has been treated with any judgment, and by remedies proper in kind and administered in due proportion; it is proved by the malignant, or gangrenous sore throat (*m*), and by other cases of typhus, with a similar affection of a part. In the the two last, the danger to life depends upon the degree of the 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 hurtful powers preceding, no true general disease arises, the danger increases in proportion to their violence, and the whole cure depends upon the general remedies. These are *so many* facts, that show, that no matter, whether of a contagious nature or not, contributes towards the cause of the general disease, which it accompanies or distinguishes, or, if it contributes any thing, that in that it differs not from the usual hurtful powers.

XCVIII. As, both in over-abundant and deficient excitement, the sound 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 afterwards); it is, therefore, proper that it should be carefully supported and kept up, for the purpose of discharging every hurtful matter from the body. But neither does that suggest a new indication of cure; since the only means of effecting it are those, which otherwise remove both the diatheses in pro-

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, afterward. But, what has been said, was in illustration of the hint in the text.

(*m*) 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 sthenic, 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, 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 Knightsbridge meet; as soon will London place itself on the Calton-hill, and become an elevated suburb of Edinburgh.

portion to their force, and which are not serviceable as local, but as general remedies (*n*).

XCIX. When any one, who during the former part of his life had lived luxuriously, has now, at an advanced age, either from intention or compulsion, abated a good deal of his usual indulgence, and yet preserves some appearance of an abundance of fluids and of vigour; he must not therefore, as is commonly done, be supposed to labour under plethora (*o*) 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 more, if, to hurtful powers already too invigorating, in the number of which are all those which fill the vessels, directly debilitating powers have succeeded. And it is not a debilitating or asthenic plan of cure, which would increase the direct debility, nor one too sthenic (*p*), which would increase the indirect debility, the principal part of the cause, and consequently increase the force of the disease: but it is a middle method, which is commonly called tonic, that should be pursued (*q*).

(*n*) The discovery of the support of perspiration upon a principal, which extends to all the phenomena of the subject was reserved for this work. The heating remedies of the Alexipharmac 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, was to check it still more. But those diseases are only three out of the hundred of general diseases: whereas the followers of a great man, who corrected that abuse through a fiery persecution, *ως δια πυρος*, 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 those 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.

(*o*) or an over proportion of blood.

(*p*) or stimulant,

(*q*) 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 unde.

C. Since to the degree of disease (under which, to make few words, let predisposition also be (*r*) comprehended) the degree of curative force should be accommodated; in the indication, therefore, of cure, regard should be had to age, sex, habit, constitution, climate, soil—in fine, to the operations of all the exciting powers in general, of all the hurtful ones in particular, of all the remedies, whether they have previously been administered properly, or improperly.

CI. The subjects of direct debility are women, persons under inanition (*s*), those who have had an insufficient share of stimulus, 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, without a preceding vigorous one, either from the powers that produced their diseases, or from the mode of cure employed to remove these.

CII. On the contrary, the persons, in whom indirect debility is prevalent, are adult males; those who are full and overstimulated, and so much the more, the longer the latter has been the case; those who have formerly had vigorous habits; those who have been overheated, whether with moisture, without it, or from whatever source; in one word, all whose former vigour, either from the ordinary hurtful powers, or improper methods of cure, is now converted into a *state of languor*.

CIII. In the cure of indirect debility, whatever be its degree, from whatever sort of excessive stimulus it has arisen; of the stimulus, which is to be employed as the chief remedy, not much less, 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 now can use the more permanent and natural stimuli, he should gradually be confined to them, and drop the

what circumstances, is an over-proportion 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 are 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 will.

(*r*) For comprehenditur in the original, now read comprehendatur.

(*s*) or an empty state of the vessels,

use of the more diffusible ; with this distinction, that, if he has been in the habit of using a considerable deal of stimulus, he may be indulged in something extraordinary, in that way, for some time (*t*).

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

CVI. In the case of indirect debility, when 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, nor any degree of it by any degree of another. It is only in the progress to indirect debility (*x*), that directly debilitating powers are suitable for the purpose of supporting the vigour, in that case, in danger of being worn out (*y*) ; such as cold bathing,

(*t*) 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 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 sort 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 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 then become an excellent remedy, and even supersede the use of the 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.

(*u*) 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 patients 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.

(*x*) Betwixt 40 and 70.

(*y*) 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

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 the 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 abstained from; 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 (*z*) into the asthenic (*a*), and the latter into death (*b*). For which reason, while, on the one hand the debilitating powers, mentioned before, are to be avoided, it must, on the other, not be forgot, that the force, employed in the cure, should be accommodated to the degree of morbid state. The thirst, which is occasioned by debility, is increased by draughts of cold water, is hurried on to (*c*) nausea and vomiting; is quenched by pure wine, or spirit, which prevent the troublesome symptoms, that would otherwise follow. Pure wine (*d*) increases the thirst, which proceeds from a sthenic cause, and excites the same troublesome symptoms, which cold water does in the other case: cold water sates it, and prevents the future tumult.

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 life, 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 therefore be an univer-

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 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!

(*z*) that between 40 and 70,

(*a*) between 70 and 80,

(*b*) at 80.

(*c*) the higher symptoms of

(*d*) which is one of its principal causes,

sal 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 that may furnish the proper means of caution against mistake.

THE

SECOND PART.

CHAP. I.

Of the hurtful Powers, which produce either Diathesis, Sthenic, and Asthenic.

CXI. THE powers producing the state of the body, upon which the predispositions to sthenic or asthenic diseases, or those diseases themselves, depend, that is, that produce the sthenic or asthenic diathesis, are those which were mentioned before (a).

The hurtful powers producing both Diatheses.

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. From this action of heat there is no exception when it keeps within a certain range of scale; but when it is either deficient, where it takes the name of cold, or excessive, its effect varies (b). This stimulus, in a moderate degree, produces its effect in due proportion, in a degree above that the excess of its action is such as to produce more or less of sthenic diathesis.

CXIII. Because the action of heat is increased somewhat

(a) XI. XII.

(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.

(b) as shall be shown by and by.

more upon the surface than in the internal parts, where the temperature is nearly stationary, it, therefore, stimulates more in the former than in the latter. Hence, in the phlegmasiæ (*c*), the inflammation is always external. The same *agent* increases the tone of the muscular fibres every where, and consequently their density (*d*). Hence, as the diameters of all the vessels are diminished, so those of the extreme vessels every where, and especially, in the skin, where a greater force of the cause is exerted, are often entirely effaced. But actual suppression of the perspiration is incompatible with predisposition, and arises only from the diathesis, when it arises to the just measure of disease (*e*).

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

CXV. Heat, in extreme excess, whether it acts hurtfully by its duration or intensity, constantly debilitates, by diminishing the tone, and producing laxity instead of density. Which 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 belly. Hence, also, corruption of the fluids, and not from a state of them directly produced by corrupting powers (*g*).

(*c*) diseases with inflammation of a part,

(*d*) See Chap. V. Which produces a suppression of perspiration by some imputed to constriction from cold, by others to constriction from spasms; both erroneously.

(*e*) 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.

(*f*) Calefacients, or heating things, were one of the means that the Alexipharmac physicians employed to force perspiration; but the principal 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 sthenic diseases, the harm and good he did wore in the proportion of 97 of the former to 3 of the latter.

(*g*) The idea of certain powers of a tendency to corrupt our fluids, and of certain others to correct that effect, and take off the degeneracy, long prevail-

CXVI. The same power, in the violent measles, in the confluent small pox, in fevers, and in every kind of asthenic (*b*) disease, in which the perspiration is deficient, does not lessen the deficiency (*i*), though it expands and enlarges the vessels, but, on the contrary, increases it (*k*).

CXVII. Cold, inimical to animals, vegetables, and the elements, weakens the rest of the system, and still more the surface, the temperature of which it almost only diminishes, and it produces that effect always by a direct operation, always in proportion to its degree. Cold, equally as excessive heat, produces atony and laxity, of the vessels, gangrene, and the other effects of excessive heat (*l*).

CXVIII. That these effects of the extremes of temperature arise from debilitating, not generating putrefaction, from an affection of the excitement, not of the fluids, plainly appears from this; that other exciting hurtful powers, such as famine, an over abundance of blood, as in the case of those who die of peripneumony, and similar hurtful powers, which neither have been, nor can be, believed to affect the fluids by any direct operation upon them (*m*), produce both the symptom of corruption, and all the rest of the 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, are either entirely destitute of that operation, or they neither are given, nor can be given, in that quantity, by which they can have any tendency to affect the mixture of the fluids: in fine the effects of inanimate mat-

ed 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,

(*h*) or disease of debility,

(*i*) that is, does not increase the perspiration,

(*k*) *i. e.* diminishes perspiration.

(*l*) In Siberia the phenomena of cold on the human body very much resemble those of heat.

(*m*) Famine, 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. 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.

ters upon one another are never, with any propriety, transferred to living systems. Though, then, the fluids are frequently corrupted, the corruption is the effect of weak vessels not giving a sufficient mixture or diffusion to them, but is never the cause.

CXIX. The disagreeable sensation both of cold and of 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 (*n*).

CXX. As cold is naturally so debilitating, and all debilitating powers diminish excitement, it is, therefore, never of service but in sthenic diseases, that is, in those which are in their progress towards indirect debility (*o*); because the excitability, already too abundant, can never be rendered more abundant, nor when too much wasted, rendered more accumulated, without an aggravation of the disease (*p*); excitability admitting of less stimulus in proportion as it is either more abundant, or more ultimately wasted. When 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 (*q*).

CXXI. As cold as well as excessive heat relaxes, a fact that is seen in the cure of the small pox, and of every sthenic disease, from that we are to understand, that the property of cold in constricting (*r*) inanimate matter does not extend to living matter. (*s*). The diminution of the bulk of the sur-

(*n*) See note (*g*) in par. XXI.

(*o*) See CVI.

(*p*) XLVI. XLVII.

(*q*) When the debility of the direct kind is very moderate, that is, the excitement has not sunk much below XL. 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 abstains 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.

(*r*) or condensing.

(*s*) It has been alledged, 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 conductor of dead matter.

face (*t*) arises from debility of the vessels, not sufficiently propelling the fluids, and filling the vessels. In this way does cold produce asthenic diathesis.

CXXII. But, as always less and less excitement arises in proportion as stimulant operation has been applied, till at last no more at all is added; cold (*u*), as well as any other directly debilitating power, may, according to various degrees of it, produce health and all the degrees of sthenic diathesis (*x*); *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 effects that by checking the career of heat and other stimuli, which accelerate indirect debility, and by keeping the excitement within the boundaries of vigour. And 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 consist in invigorating the vessels, not 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 in the internal parts.

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 flesh and land-animal food, used in great quantity. Meat too salt, and hardened, especially when it has now begun to spoil, is an exception.

CXXV. The same thing is to be said of condiment, of which a very small portion, upon account of its high degree of stimulus, is sufficient.

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

o. But there are stimuli, which possess an operation, as much quicker and more powerful (*y*), than these just now mentioned, and which are the agreeable *and proper ones* in health, as

(*t*) or shrivelling of the skin,

(*u*) on that footing of action,

(*x*) 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.

(*y*) than that of the articles of diet,

their operation is of shorter duration. To these the name of diffusible is to be given. They rank above strong drink, in the following order :

π. Next to strong drink, and immediately above it, *stands* musk ; above it, volatile alkali ; higher than this, æther ; and the highest of all, as far as experiments have yet reflected light upon the subject, is opium (z).

ρ. These, according to their degree, possess the property of converting the asthenic diathesis into a cessation of all diathesis in health ; this into sthenic diathesis, the sthenic diathesis, into indirect debility, and the last into death ; all which they accomplish with as much more ease and promptitude as they are more powerful than all the rest of the stimuli (a).

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. The direct stimulus, at least in so far as it regards the food, is assisted by another, depending upon a distention of muscular fibres, on which account for the sake of distinction, the latter should be called indirect. As the latter is afforded by the bulk of animal and vegetable food, so the former is produced by a relation 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 (b).

(z) 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.

(a) 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. All from the end of the CXXVI. is an addition in the MS. this most valuable part of the exciting powers, whether considered as a part of diet, as the chief of them are among the Turks, or as used for the prevention of diseases, to which there may be a strong bias in the habit, or as remedies of these diseases when they have come on, or as hurtful powers when improperly employed, having been left out in both the editions of the Latin work that have yet been presented to the public.

(b) 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

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

CXXVIII. All vegetable food (*c*), and too sparing an use of animal, as also meat too salt, and deprived of its native juices by keeping, when better nourishing matter is withheld, constantly weaken, 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 Brahminian ceremonial of religion. Hence the diseases of the poor every where (*d*); hence scrofula (*e*), fevers (*f*), epilepsy, cough with profuse expectoration and hemorrhage, and the whole band of asthenic diseases. The direct debility, *flowing* from this hurtful power, affects the stomach somewhat more than any other equal part (*g*); *the consequences of which affection* are loss of appetite, stomach sickness, vomiting, very loose belly, and similar disturbances of the first passages.

τ. But *while improper aliment, produces such effects,* these will also be induced by an ultimate excess in *the use of food consisting* of the proper material; which must be inferred from the universal effect of all the other stimulant powers, *when their operation has been pushed to the same excess* (*h*). The mean

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.

(*c*) taken in any quantity,

(*d*) 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 thro' the work that one Yorkshire man, nourished by bolting fat pork, can easily execute. And among the Gentooservants 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 (vide 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.

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

(*f*) 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.

(*g*) Chap. IV.

(*h*) 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, re-

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

CXXIX. The withholding also of the use of condiments, which, without animal food (*k*), are not sufficient to give strength, gives an additional weakness.

CXXX. Strong drink, and the diffusible stimuli are never necessary to young and strong people, upon account of their rapid tendency to indirect debility, from their high stimulant power; nor are they even safe. But, in persons who have been accustomed to them, in the *case of those who are* advanced in age, and of those who are weak from that or any other circumstance, cold, watery, acid, or fermenting drink, has a great influence directly, and excess in the use of strong drink indirectly, in producing asthenic diathesis.

v. If the diffusible stimuli, after they have been employed, are too quickly withdrawn, they, in the same manner as the more durable, allow the excitability to accumulate, and direct debility to come on, and consequently may be said to produce asthenic diathesis. But asthenic diathesis is never the consequence of withdrawing their operation, at least worth speaking of, but when that has been habitual. 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 as this operation of diffusible stimulus ought to be supported by that of a durable; at the same time, it must not be confounded with debilitating powers. What disturbances, during the operation of opium, will not a breath of cold *air*, affecting the body, create? And how easily, as well as quickly, are they all removed, by carefully covering up the body (*l*)?

probatng 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.

(*i*) 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 indirect debilitating powers, as being next so, which, by the way, is the rank that nature seems to point out for both.

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

(*l*) 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 stimulus, 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 what effects that is, that, from this observation, we

φ. Both the other diffusible stimuli, as well as opium, and the more durable one of strong drink, by an indirectly debilitating operation, produce asthenic diathesis.

CXXXI. A further stimulus is an abundance of chyle and blood; by this the excitement is increased every where, and particularly in the blood-vessels, and *increased* in degrees proportioned to its degree of 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 *its action* of distending the muscular fibres of the vessels, acts with a constant impulse (*m*). The doctrine of plethora, so noted *in the* medical schools, is only applicable to sthenic diathesis, and takes place in proportion to its degree (*n*).

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.

(*m*) The blood by its quantity distends the muscular fibres of the vessels; that distention 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 vessel, 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 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.

(*n*) 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.

CXXXII. The effect of distention (*o*) is increased by the velocity of the blood, both as arising from other sources, and especially from that motion of the body which its own muscles perform, 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. Those 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 of the arteries; it is also proved by the great efficacy of bleeding, purging, abstinence from food, and rest, in the cure of the disease (*p*).

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.

x. 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 such a manner, and chiefly affects 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

(*o*) that we have been describing,

(*p*) 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.

debility, but not an establishment of it, and that the matter still remains within the operation of excessive stimulus (*g*).

†. Thus it is not an excess in the quantity of blood, but laxity and atony from its deficiency, that upholds the affair of bleeding discharges; which proceed *in their course*, not with *any* effort (*r*), but a diminution of tone: they are all asthenic, and the asthenic diathesis, as far as it depends upon them, consists in direct debility.

ω. But, as every other exciting hurtful power may be converted into indirect debility, so, also, may an over-proportion of blood. For the vessels, ultimately distended, and beyond all bounds, may (*s*), by the excess of *that* stimulus, exhaust their own excitability, and, thereby, put

(*g*) Who ever heard of a flood of blood coming from the lungs in a pleurisy? Or, who has not heard of it in consumptive cases? which are the diseases depending upon the laxity of vessels of which we are speaking. What vigorous woman, sound 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 eating 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, and 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 full of water, open at both ends, 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.

(*r*) or active impulse,

(*s*) under the high sthenic diathesis,

an end to their excitement. Upon which the forcible contractions are converted into languid ones, or *such as could scarce be called* contractions at all; the diameters formerly effaced, are converted into an extremely patulous state. 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 (*t*).

In the asthenic diathesis, *as well as the sthenic*, it is not the quality of the blood, but its quantity, which is to be found fault with, *and the fault in quantity here is deficiency*. The deficient quantity produces the symptoms of the pulse, that have been mentioned 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 spoken of.

CXXXV. This state (*u*) is the chief origin of asthenic diseases, of which the so very hurtful effects of evacuation, especially bleeding, as well vomiting, purging the belly, 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 in different ways, are, by the distention which they give to their respective vessels, also understood to stimulate. In that respect the milk and seed, by the abundance of each in its respective vessels, and likewise the perspirable fluid, have the chief effect. The commotion of the secretory organ (*y*), by means of the

(*t*) All from "penuria sit, imminuter" in the original, is an addition in MS.

(*u*) of the blood and vessels, that we have been describing, 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.

(*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 medicinarum (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. IV. that the excitability is one uniform undivided property over the whole living system; and that, wherever it is acted

excitability, which is one and the same undivided property over all, is easily diffused over the whole body, and, when it rises to excess, is capable, with other powers that communicate an excess of excitement, to produce 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.

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

B. Sometimes the secretory vessels seem so crammed with a colluvies of fluids, that indirect debility may possibly arise from that source, as is exemplified in that overflowing of bile, which distinguishes the yellow fever (*b*). Here too the debilitating effect, by means of the excitability, tends to diffuse the diathesis over all (*c*).

From this source arise a languid action of the extreme vessels (*d*), a slow, then no, motion of the fluids, a stagnation

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 care explains many things, that were confessedly inexplicable upon every other medical doctrine; and, among the rest, the several affections of the secretory system.

(*a*) Nothing is more effectual in hastening of death than a love of 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.

(*b*) of the Torrid Zone. I have been so often, and by persons of good enough sense 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.

(*c*) All from "par sunt" to this reference, is an addition to the original text.

(*d*) 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

and corruption of them. A diminution, or temporary destruction of excitement, over this large space in the system (*e*), by means of the same excitability, communicates debility to the rest of the body; and, in conjunction with the other hurtful powers, that give not enough of excitement, produces asthenic diathesis.

Γ. The various sorts of gestation (*f*), and of exercise and labour, by rousing the muscles into contraction, and thereby accelerating the motion of the blood in the veins towards 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.

Δ. As nothing contributes more to health, than moderate and frequently repeated exercise, and its excess acts in the manner, that has *just now* been described; *at the same time* a degree of it, *either* greater or less, than the salutary degree, by its weakening effect, the former in wasting the excitability, the latter in with-holding a necessary stimulus; that is, the one by debilitating indirectly, the other directly, produces asthenic diathesis (*g*).

CXXXVIII. Thinking, which acts more upon the brain, to which it is immediately applied, than upon any other equal part of the system (*b*), increases excitement over 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 cholidochus, 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 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 none more to be returned into the circulation; are the vessels that suffer the course of symptoms described in the text.

(*e*) 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.

(*f*) as riding on horseback, going in a carriage, using an hobby, sailing.

(*g*) All from the end of the CXXXVIIth paragraph is an addition to the Latin text. Such omissions were the consequence of the hurry with which the demand for the second edition, from his pupils, obliged the author to proceed in finishing that work. It was, therefore, proper to supply all such material defects, and thereby prepare the work for a third edition; which will soon be offered to the public.

(*h*) Vide Chap. IV. Part I.

whole body (*i*). Straining in thinking, whether in a high degree for once, or often repeated in a lesser degree, or habitual, may alone prove hurtful; *but*, in conjunction with other powers also hurtful from their excess of stimulus, may become more so, and amount to a degree, equivalent to the production of 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, which produces the same hurtful effect by direct debility. This faulty state of the mind contributes greatly to weaken *the system* (*k*).

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

CXLI. A force of passion rising to the height of exhausting the excitability, induces that asthenic diathesis, which is occasioned by indirect debility, and diseases of that stamp. Hence epilepsy (*l*), hence apoplexy, and that, when the mind has been screwed up to the height of passion, often fatal.

CXLII. On the contrary, when there is a deficiency of passion, as in melancholy, grief, fear, terror, despair, which are only lower degrees of joy, assurance, and hope, and im-

(*i*) 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 got 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 strait 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 now got 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. A 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 me, done by him, as a present, is reckoned the greatest master-piece in these respects, that ever came from the hands of a painter.

(*k*) 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.

(*l*) or the falling sickness,

ply no more than a diminution of exciting passions, not emotions of a nature opposite to those, and positive; their tendency is to produce the asthenic diathesis, which depends upon direct debility. The immediate production of this is loss of appetite, loathing of food, sickness at stomach, vomiting, pain of the stomach, (*m*), loose belly without pain, the same with pain, indigestion (*n*), colic, the gout, and fevers.

CXLIII. The *exercise of the senses*, when it is agreeable, has a very great effect in exciting the whole body, and in producing emotions, which, together with the hurtful powers mentioned above, may easily contribute to the production of sthenic diathesis. Those emotions are exemplified 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 energy of the same *exercise of the senses*, when it is excessive, and carries the effects, just now mentioned, too far, produces indirect debility. On the contrary, when the senses are either in part destroyed, or in part dulled, or disagreeably affected (*o*), the mind is dejected, and the whole body thrown into a *state* of languor and direct debility. And, in both cases, especially when there is a concurrence of other debilitating hurtful powers, the asthenic diathesis arises.

CXLV The effect of the air (*p*), independent of its qualities, as they are called, or its properties, and its use in supporting respiration, is less obvious to observation (*q*); at the same time it cannot be doubted, that its application to the whole surface of the body is a stimulus not to be dispensed with. The air is seldom applied in a pure state: it is commonly blended with foreign matters that diminish its force of stimulus; and, while its salutary stimulus depends upon its purity, at the same time it is uncertain whether ever its purity goes so far as to stimulate in excess, and thereby produce sthenic diathesis. The balloons, lately invented, by which men get above the clouds, would serve excellently to throw light upon that matter, if it were not for the cold *that* accompanies this progress. Be that as it may; since we never live in the purest air, and yet live commodiously enough, it is, therefore, credible, that

(*m*) called cardialgia by systematics

(*n*) called dyspepsia,

(*o*) 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.

(*p*) upon the human body,

(*q*) than the other powers that have been spoken of,

too pure an air has a tendency to stimulate in excess, and, therefore, produce sthenic diathesis.

CXLVI. But, as nothing is more usual than impurity of air, and every impurity diminishes its stimulus, a very impure air, or air blended with impure matters, 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. Whether ever the air, from an excess of purity, produces asthenic diathesis, is the more doubtful, that, as has been said, it is as yet undecided whether it produces sthenic diathesis or not.

E. 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 hurtful powers of either sort, and admits of all the same reasoning. But, in so far as it only occasions the eruption, without making any change in the excitement, it is to be referred to the local diseases.

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

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

CHAPTER II.

The Cause of each Diathesis.

CXLVIII. The cause of sthenic diathesis, produced in the way that has now been explained, is, in consequence of the operation of the powers that have been mentioned, too great an excitement of the living system every where, *with the effect of* first increasing all the functions, then of producing a disturbance in some, and impairing others, but never by a debilitating operation.

CXLIX. The cause of the asthenic diathesis arising from the same source, is, in consequence of the debilitating hurtful powers, too little excitement of the living system every where, *with the effect of* impairing all the functions, disturbing some,

giving a false appearance of increasing others, but always debilitating (*a*).

C H A P. III.

The Sthenic Diathesis.

CLI. PREVIOUS to the disturbance (*a**) which never happens till after the arrival of the disease (*b*), and even then only in a violent attack of it, all the senses are acute, the motions both voluntary and involuntary (*c*), are vigorous, there

(*a*) It must now appear to the reader, to what simplicity the hitherto conjectural, incoherent, erroneous, mysterious, and enigmatical art of physic, is now reduced. It has been demonstrated, that there are only two firm 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 them producing a reaction, as it is called, of the heart and interior vessels, or any thing that any person has yet thought of 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.

(*a**) of the functions, which, it has just now been said, the hurtful effects of both sets of powers produce,

(*b*) During the predisposition to peripneumony, as well as to every other disease, neither the symptoms of disturbance, nor 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.

(*c*) 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

is an acuteness of genius, and a great force of sensibility as well as of passion and emotion. *The several parts of the body are perceived to be in a state of vigour from the following marks of it*; the heart and arteries from the pulse: the extreme vessels on the surface of the body from the complexion; all the muscles from the strength that they exert; the internal secretions from the great quantity of milk and semen; the digestive organs from the appetite, the digestion, the vigour of the body, and the manifest abundance of blood.

CLII. How far the intellectual faculty, and the force of passion, are increased, will be learned from a comparison of them in this diathesis, in good health, in the second form of diseases and predisposition to it. In this way it is that the functions are first increased.

C H A P. IV.

The Sthenic Diathesis illustrated by an explanation of its Symptoms.

CLIII. 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, among other actions, quickening the motion of the blood *through them*.

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

CLV. In the same diseases the pulse is stronger, harder, and fuller, and somewhat more frequent, than *in its sound state*. Its fullness and hardness is owing to the taking animal food plentifully during the predisposition. The force and frequency is occasioned by the same and any other stimulus, as that of strong drink; that of the diffusible kind, and that of exercise, whether corporeal or mental: nay all the stimulant hurtful powers are participant of the same effect.

CLVI. If, in the progress of the disease, the pulse sometimes becomes weaker, softer, emptier, and quicker, that is a

interior parts of the system, such as those of the heart and vessels connected with it; the peristaltic motion in the first passages, which are the passages 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.

bad sign, and occasioned either by the debilitating plan of cure being pushed beyond the proper bounds; or, in consequence of a neglect of that sort of cure, it may be owing to some debility induced by the excess of excitement. The former of these is direct, the latter indirect debility; both to be avoided.

CLVII. The complexion in the vessels, which is often a consequence of a previous appearance of paleness, and great quantity of secreted fluids, 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, therefore, 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 always affects an external part, as far as that fact has been enquired into (a).

CLVIII. 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 much to bleeding and other evacuations, that there is no reason for suspecting inflammation within the head. That abundance of blood in the vessels, distending these to excess, is the cause of the whole affair, is proved on the one hand by the redness of the face, implying such 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; 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 neighbourhood 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. Thus, in the throat, from an affection of the ends of the vessels, 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 confined (b), and thereby produce thirst.

CLX. Hoarseness, cough, and expectoration, which are sometimes observed in sthenic diseases, commonly proceed, and succeed to each other in the following order. There is first

(a) Vide above, CXIII.

(b) and prevented to flow out,

often a 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, still occasioned by a violent sthenic diathesis, and prevented from transmitting their contents to lubricate the air-vessels (*c*), so as that hoarseness may be removed, and the expectoration proceed with freedom. Again, the expectoration is *next* freely made, 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, is the occasion of the fluids, producing a commotion of the excitability over this whole organ, and by the convulsive motion, which is called cough, of being themselves thrown out.

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 now rushing into the asthenic *state*, either 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 the bounds.

CLXII. Those same symptoms (*d*), while they stop short of the range 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, shrivelling 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 urine, only escapes. The cure of the affection of the urine, of the obstructed perspiration, and costiveness, shows, that the diathesis is now gradually abating, the disease becoming mild, and now upon the eve of being thoroughly removed by emetics, purgatives, and sudorifics, and the use of other debilitating remedies.

(*c*) 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 they flow.

(*d*) mentioned just now,

CLXIV. In sthenic diseases, when they are gentle, the appetite is often not much diminished, and oftener more food can be taken, than is serviceable. But, unless the lightest vegetable matter only, and that in the form of watery potion, or in a fluid form, be given, every morsel of it will do harm.

CLXV. But, when either from indulgence in food, of a rich nature, or from employing a stimulant plan of cure, or from the disease having, from the beginning, arisen from very violent hurtful powers, and now attained its highest degree of violence; in any, or all these circumstances, both 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 drink; with the latter the patient is by all means to be gratified; but the former should be avoided, as producing loathing, sickness at stomach, and vomiting. Those symptoms are not usually of long duration, unless when the diathesis is now going, or actually gone, into the asthenic state, by the means that have been mentioned above (*f*), and by removing the other symptoms by the proper debilitating plan of cure, they go off: but when the stomach-sickness and vomiting are urgent, and begin now to be a little more obstinate, and of a little more duration, one may know, that they still remain short of the change into indirect debility, *by the following marks*: if the pulse still maintains moderation in its frequency, and does not much abate of its fulness and force; if artificial vomiting and purging diminish the morbid vomiting; and, in one word, if the debilitating plan of cure still succeeds. But it will then at last be understood, that the disease is altogether changed, and its cause converted into the opposite, when those symptoms every day increase; when the pulse becomes weaker and weaker; when gripes in the intestines, 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 (*g*).

CLXVII. While the same symptoms (*b*) still stop short of indirect debility, the excessive excitement in the stomach being of quicker tendency to indirect debility there than any where else, upon account of the stomach's great sensibility, and the force of the more powerful stimuli being chiefly exerted upon

(*f*) Vide last paragraph and a few immediately preceding it.

(*g*) See above, CIX.

(*b*) of the stomach and intestines,

it, produces symptoms of disturbance (*i*); for the most powerful stimuli, and those that are signally powerful in producing sthenic diathesis (*k*) are first applied there, and exert a greater force upon the excitability in that than *any other part*. Those *stimuli* are the several preparations of animal food, the several concentrated strong drinks, the several condiments with which they are seasoned, the various diffusible stimuli, as the different preparations of opium, volatile alkali, camphor, musk, and æther; and they all act upon the stomach with that force which they exert not upon any other part; they do not upon the intestines *below*, because they undergo a change from the first digestion before they pass over into the first portion of the intestinal canal; not upon the lacteal vessels, because they are not received into them till they are further diluted, and undergo another change from the digestive operation, and when so changed, they are next carried to be mixed with the blood; not upon the heart and arteries, upon account of the same dilution *meeting them also in those vessels*, and of a constant change of mixture occurring through the whole course of the circulation; not 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; not 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; not upon the other blood-vessels, upon account of the great change that a repetition of the circulation produces: not upon the muscular fibres, whether voluntary or involuntary, because the stimuli by no means come in contact with these; not upon the brain or medullary substance for the same reason (l), as well as for the great distance of these parts from the part that received the first contact of the stimuli.*

(i) See above, LIV.

(k) 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 second, and by their application to it support their own internal use. Thus, to prevent or remove the gout, anasarca, sprains, and so forth, the application of any of those high 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,

(l) to wit, that they do not come into contact with them,

In one word, as all the exciting powers, whether salutary or hurtful, or curative, act somewhat more powerfully upon certain parts than upon others, as these parts are generally those which they first affect, and with which they come into direct contact; those, therefore, in preference to others, are most liable to pass either from sthenic diathesis into asthenic, or from the latter to the former: *which, however, happens* in such a manner, that, because the excitability is one *uniform*, undivided property over the whole body; whether the excitement has been increased in a peculiar part, or diminished; and, whether its diminution has been owing to direct or indirect debility, and *in either way* the asthenic diathesis produced; all the rest of the body soon follows the kind of change *that has taken place*; and, since the powers that have acted, have been, and are the same, that is, either excessively (*m*) or insufficiently stimulant (*n*), or so to an ultimate excess; and as the excitability upon which they have acted, and still act, is the same, that is, 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 (*o*), must be established over the whole body.

CLXVIII. The inflammation, which accompanies the phlegmasiæ (*p*), occupies an external part, as far as its nature has been yet ascertained. And the reason of that is, that heat, which is the most powerful hurtful agent in those diseases, either alone, or alternating with cold, or succeeding to it, has much more power externally, where it is directly applied, than internally, where the temperature is nearly stationary, in stimulating, and, therefore, raising the general diathesis, to the degree of actual inflammation in a part. Hence the throat, hence the different joints, hence the face, where the form of inflammation is different (*q*), hence the lungs, which are to be considered as an external part, because the air has direct access to them, *all these* are affected with inflammation in preference to other parts. And, besides the energy of the exciting hurtful power, just now mentioned, there is in the part, that is to undergo the inflammation, a greater sensibility (*r*)

(*m*) in so far as they produced sthenic diathesis.

(*n*) that is, debilitating, in so far as they produce the asthenic diathesis. that depends on direct debility, or in so far as they produce the asthenic diathesis that depends upon indirect debility,

(*o*) whether sthenic or asthenic,

(*p*) diseases that are sthenic and accompanied with an inflammation of a part, as a portion of the lungs, the throat, some of the joints, and in which, as has been formerly said, the inflammation is like any other symptom, an effect of the cause of the disease, not itself the cause.

(*q*) as when the inflammation of erysipelas appears there;

(*r*) See above, LIII. λ.

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 (*s*). To this *consideration of the cause*, it is to be added, that which ever of the parts we have mentioned has been injured, in whatever manner it may have undergone the inflammation peculiar to the phlegmasiæ, that part, in every after attack of a new phlegmasiæ, is in no more danger of being inflamed than the rest. This is the true cause of the recurrence of some of the phlegmasiæ, as the inflammatory sore throat, and rheumatism (*t*). Peripneumony is a disease less

(*s*) 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 coolæss, cold water, low vegetable fluid diet, and a slight purge. It was once greatly aggravated by wine, spirituous drink, and the high diffusible stimuli. In rheumatism, the inflammation attacks a large joint, sometimes shifting from one to another, sometimes several at a time, and, in contradistinction 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, accompanied with an inflammation of a part, 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 phlegmasiæ.

(*t*) Those 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 cheerful 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.

frequent than any of the rest of this form, because "the seat of its inflammation" (*u*) is exempted from many stimuli, liable to produce sthenic diathesis with its accompanying inflammation (*x*).

H. As the inflammatory fever, catarrh, the gentle 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 other cases of great violence, is found the highest in degree; for that reason, the conclusion is, that the degree of inflammation, which is a symptom of general sthenic diseases, is proportioned to the degree of the sthenic diathesis (*y*).

CLXIX. The inflammation, in this case, is nothing else, but a state of the inflamed part, of a common nature with *that in* 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 (*z*).

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

(*u*) This is an addition in MS. to the Latin text.

(*x*) All to the end of this paragraph is erased as obscure and incorrect; and, in place of it, the following portion of a paragraph is inserted. "Cum synocha, catarrhus, variola lenis, inflammationis, (nisi quantum in variola localis, a locali causa, ab ea de qua agitur, diversa, suboritur), expertes sint & eadem in peripneumonia, erysipelate gravi, & similibus vehementibus aliis, summa; in cynanche tonsillari plerumque perquam mitis, reperitur; ob eam causam inflammationis, quæ communium morborum sthenicorum symptoma est, magnitudo magnitudini diatheseos sthenicæ respondere, dicenda est."

(*y*) 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 any other part, but far short of the degree constituted by the whole general affection.

(*z*) 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 a part will be understood to have gone to 69; keeping up still the same proportion. But this 9 degrees of greater excitement in a part, comes 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.

(*a*) Solution of continuity in all its forms whether as being the effect of punc-

CLXXI. To this the term of sthenic local inflammation applies. The general always depends upon sthenic diathesis, is a symptom or a part of it, never precedes it, always succeeds to it sooner or later, arises from the same hurtful powers (*b*), and is reduced by the same remedies. In contradistinction to to which, the local affection, as it arises from local injury, producing a solution of continuity, or deranging the texture of the part; so, if the labouring part is not very sensible, the affection extends no further. In the case of a part being 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 (*c*). Let it suffice to have said so much at present upon these inflammations, for the sake of *establishing necessary* distinctions, as more is afterwards to be said upon the local, in its proper place. There are as many inflammations still remaining, universal, and 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 (*d*). And it is more probable, that the commotion of the head, and other disturbing symptoms of phrenitis, do not depend upon inflammation, as the following phenomena seem to show. *The first of those is*, the ease, by which the cure is effected, the whole tumult of *symptoms* readily yielding to bleeding, purging, and other asthenic (*e*) 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. *Then another argument, against the*

turing, 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.

(*b*) which produce the other symptoms,

(*c*) or reparation of united substance,

(*d*) 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.

(*e*) what are commonly called antiphlogistic, we call debilitating,

same opinion, is, that there is no certain proof, after recovery, of the exillence of inflammation during the disease. Next, analogy makes for the same conclusion, *which we are disposed to draw*; for, as it has been said above, general inflammation does not arise internally in any general sthenic diseases (*f*); on the contrary, as often as it occurs, it is always in an external part (*g*). Nay, all the symptoms are such as arise from the general sthenic hurtful powers, and that also yield to the general antisthenic remedies, and in proportion to their degree.

CLXXIII. The same (*b*) is the cause of head-ach, redness of the eye, as well as of delirium.

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 proportioned to the degree of general sthenic diathesis, and never happens, but in a high degree of that diathesis; so that the pain is proportioned to the degree of inflammation (*i*); and 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 farther 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, is less, the pain is less acute,

(*f*) See above, par. CXIII.

(*g*) 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 analogous disease of debility.

(*h*) that we have assigned as the cause of phrenitic affection also.

(*i*) 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 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 lesser 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. Those, 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.

more dull, and easier to be borne; the pulse is (*k*) *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, now, which formerly was only less hard, 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 increase of pain, is never to be imputed to the inflammation being seated in the membrane; nor is the softness of the former, and dullness of the latter, to be attributed to its occupying the soft parenchymatous substance (*l*), it being impossible that an inflammation, if it occupied either of those parts, should not affect the next points of the vessels in the other. The cause, therefore, of those symptoms that has here been assigned, must be admitted.

CLXXV. The pustles, which accompany certain sthenic diseases, arise from a contagion, taken into the body, diffused over the whole, and, in passing out of it, detained along with the perspirable fluid, under the scarf-skin. The cause of the distention, and, therefore, of the great number of pustles, 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 (*m*) assigned. 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 (*n*), 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 of them. The same is the cause of costiveness.

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

(*k*) not soft and yielding, according to the common notion, but

(*l*) 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.

(*m*) See above, par. CXIII. and CXIV.

(*n*) See Chap. V.

(*o*) This paragraph is an addition to the original in MS. The words of

C H A P. V.

The Asthenic Diathesis.

CLXXVI. Before the *symptoms of disturbance appear*, which only supervene upon a violent degree of morbid state, all the senses are dull; the motions, both voluntary and involuntary, are torpid; the acuteness of genius is impaired; the sensibility and passions become languid. *The following functions are all in a state of languor*, which is discoverable by the annexed marks: the languor of the heart and arteries is discernible in the pulse; as is also that of the extreme vessels on the surface, which is evident from the paleness, the dryness of the skin, and the shrinking of tumors, and drying up of ulcers (*a*), and the manifest absence of sthenic diathesis, to produce any resemblance to those symptoms. That the muscles are in a state of torpor is demonstrable 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 of stomach, vomiting, weakness of the system, and evident penury of the blood.

CLXXVII. In the same diathesis, whether as not having attained to the height of disease, and only remaining within *the latitude of predisposition*, or as raised to the measure of actual disease, the intellectual faculties and the passions are impaired. In this way are the functions impaired.

C H A P. VI.

The Asthenic Diathesis illustrated by an Explanation of its Symptoms.

CLXXVIII. SHIVERING is not unusual at the commencement of asthenic diseases of any considerable severity; and that, as often as its cause, a very deficient perspiration, takes place. In this case the cause of the deficiency is, from the weakness of the whole system, that weakness of the heart

it are, “*Sæpe sthenicos morbos debilitas, nunc recta, nunc indirecta, sequitur; ut e peripneumonia in hydrothoracem transeunte, discitur; cuius rei ratio ex ante dictis patet.*”

(*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.

and arteries, in consequence of which they propel their fluids every where with difficulty, *and* in their extremities with *still* more difficulty, or scarce at all. Hence the perspiration ceases. The same is the explanation 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 perceived for the smallness, as well 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 vegetable; or from a deficiency of aliment upon the whole, whether from the one or other source. 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, such as that of strong drink, that of mental or corporeal exercise, and an under-proportion of blood.

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

CLXXXI. The same is the cause of the paleness and dryness of the skin, as that of a checked perspiration; that is, 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 of 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 distension, 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, (*e*), pain. But, we are much less in this case, than in that of sthenic pain (*f*), to suspect inflammation for the cause of the pain; 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 to life, laboured under an affection so liable to destroy the texture of the affected part.

(*a*) See above, par. XXVI. XLIII.

(*b*) otherwise the proper one,

(*c*) See above, par. XLIX.

(*d*) See above, par. CLVI.

(*e*) when it rises to a certain degree,

(*f*) See above, par. CLVII.

CLXXXIII. Neither in general, is delirium, and for the same reason, (g) 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 is that by any means to be doubted; since stimulant remedies, which have no effect in filling the vessels, successfully and quickly cure every delirium depending on debility (h).

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 function receives a complete and solid re-establishment.

CLXXXIV. Thirst and heat, which do not less distinguish asthenic, than sthenic diseases, and are not less frequent symptoms, arise from the asthenic diathesis in the throat, and on the surface of the body, checking, in the latter case, the perspiration; in the former, the excretion of the saliva, the exhalable fluid, and the mucus, *and that* from the atony and relaxation of the extreme vessels. In consequence of the former, the throat being not 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, together with it the heat, which in a free perspiration usually goes off in waste into the air, and remains nearly of the same degree, is accumulated and increases. But the increase of heat depends not on the state of excitement, or, as it is commonly called, 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, is 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 affection than the sthenic, is preceded by loss of appetite; the loss of appetite by loathing of

(g) that has been just now mentioned,

(h) This is a fact 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.

food ; it is succeeded by sickness at stomach, vomiting, often an acute pain of the stomach, and other troublesome symptoms : the explanation of which we next proceed to.

CLXXXVI. Want of appetite, loathing of food (*i*), depend upon a debility of the whole body ; as is proved by all the debilitating antecedent powers that produce them, always acting by debilitating : and by all the remedies, which both prevent and cure them, always acting by a stimulant and strengthening operation. The cause of appetite is a strong and sound contraction of the fibres of the stomach, by which digestion is supported (*k*), and the excretion of a fluid, such as the gastric (*l*) liquor, such as the saliva (*m*) : and to the

(*i*) 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 the CXC.V. and from that to the CXC.VIII. 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.

(*k*) 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 unfixt, 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.

(*l*) or fluid peculiarly secreted and excreted in the stomach.

(*m*) 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

effect of both 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 matter of food formerly taken in, is not dissolved, and properly mixed, and in that state thrown out of the stomach; but continues in a great measure unchanged and indissolved. Hence it is, that there is no appetite for food, and in a higher degree of it, that a loathing takes place.

CLXXXVII. In the same manner has thirst been explained (*n*); and in the same manner is the sickness at stomach, which is a higher degree of *affection* from the same cause; 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 chief of all these affections, that we have been speaking of: 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 nasty matters proceeded, and the distension of the stomach from these last, and air let loose *is become so exquisite*, 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 from the stimulus in an opposite direction; downward when the stimulus proceeds from the mouth, and upwards when it comes from the stomach; in that way it is that the crudities, and air let loose, of which mention has been made, 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, stomach-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 a sthenic diathesis, is spasm. Spasm in any internal cavity, that is, in the organs of involuntary motion, is, by means of the debili-

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.

(n) See par. CLXXXIV.

ty in common *to its seat* with the whole body, a relaxation and atony of the fibres, and together with that a distending matter; what constitutes that matter in the stomach is the *fordes* or foul crudities, in the intestines; hardened excrement; in both air let loose. The effect of this matter in the distention that it gives, does not so much depend upon itself as upon the lax state of the fibres distended by it; 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, *and that* in proportion to the urgent force exerted on them, till losing all power of resiliion or contraction, all power of relaxation, they continue immoveably contracted. All which happens according to the nature of that property in muscular fibres, by which, when they are stretched, they do not, like common elastic matter, only contract when the distending power is removed, but even while it remains. During such action and suffering, the sensible fibres undergo a certain violence; and hence the pain. 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; by which means contracting in the manner of sound fibres, and powerfully reacting, they, without any assistance, as has lately been ascertained, restore the peristaltic motion, and drive downward before them the matter, still remaining, and still continuing to distend (*o*). In this way wine, aromatics, and volatile alkali, and, above all the rest, the various forms of opium, dislodge from its seat *all* such *hurtful* matter without either vomiting or purging, and that without any difficulty, and in a very short space of time.

CXC. The pain, which is so often troublesome in the external parts of the body, also depends upon spasm, but not with the conjunction of a distending matter. And a power takes the place of it, which is not to be referred to any matter, but to a certain effort of the will in moving a limb (*p*). By means of that the spasm is excited in the same manner as in the other case, by distention, and often with the most exquisite pain, where, as the effect is the same, that is, a spasm,

(*o*) 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.

(*p*) See LVIII.

arising from debility, and to be removed by restoring the strength; for that reason the cause also must be the same, and be reducible to debility, together with something that altogether resembles debility, and possesses a power equal to it. In this way of reasoning (*q*) we may often safely rise from the contemplation of known effect to that of unknown cause. The pain we speak of at present, is that which respects the spasms of the muscles.

CXCI. There is another pain, less confined to the same part, more diffused, and equally troublesome, which is not supported by distention (*r*), but by another local stimulus, equally arising from debility, of equal tendency to increase the debility, and, by its debilitating operation, together with the other symptoms of debility, hastening on death. This pain arises from a concentrated acid, which is sometimes predominant in the alimentary canal, when under the influence of great debility, of which cholera chiefly is a clear example; but, besides that, all the affections of the alimentary canal, that are accompanied with vomiting and a loose belly, are more or less examples of it.

CXCII. This acid is not the primary cause, but only a symptom supervening upon the disease, already formed in consequence of the debility, its proper cause, and now fully established, arising from the same source as the other symptoms, and to be removed by the same remedies. When the same acid has arisen, it continues to increase all debility that happens to be predominant, either in the first passages, or in the rest of the body: and, while it exerts that operation over the whole body, its chief influence is in the part where it exists, and where the diminution of the force of the disease is most wanted.

CXCIII. But, though it be itself, in that way, the offspring of debility, and of a tendency to create further debility, in the same manner as spasm has been said to be; still there is not, either for the sake of changing, or throwing it out of the body,

(*q*) 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 phenomena of nature, has been the cause of all the false phenomena 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 phenomena 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 several erroneous old Systems of Physic"

(*r*) correct the word *spasmus* in the original, by substituting "distentio" in the place of it.

occasion for any other indication of cure: for as it has its rise at first from a general cause, so upon that it all along depends; whatever has the effect of overcoming the other symptoms, has also that of overcoming this. For that purpose it is, that, as in the case of spasm, stimulants, not emetics, not purgatives, nor any other debilitating powers, are required.

CXCIV. As the acid, which has been mentioned, produces the pain in the internal parts, or in the organs of involuntary motion; so in the external parts, or organs of voluntary motion, it is occasioned by something, that produces the same effect as the acid, that depends upon the will, and acts in conjunction with the convulsive *state*; and, as in the case of spasm, there is no matter that corresponds with the distending, 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 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 (*s*).

CXCV. The simple course of *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, that it begins with loss of appetite, and is brought on by want of the supports 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 soups, a loathing of it follows. By-and-by, if still nothing is used to produce the stimulant effect, thirst will come on; there will be the most keen desire for the most debilitating power, cold water,

(*s*) 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 athletic 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 yields to it.

which will be preferred to the greatest dainties, and will be greedily swallowed (*t*). To this, stomach sickness immediately succeeds, which, unless prevented by a diffusible stimulus, such as a glass of the most pure and strong spirit, or, failing that, another, perhaps, *in some cases*, a third, rushes instantly on to vomiting. When the affection rises a little higher, during the vomiting a violent pain arises in the stomach, *giving a sensation*, as if there were a bar of iron in it, forcibly stretching and tearing it across (*u*). When the affection becomes still more severe, and the cause of the disease still higher in degree, every kind of torture is undergone; an head ach comes on, with a feeling of strokes, like those given by an hammer. These symptoms of disturbance are communicated to the alimentary canal, for the most part not immediately, but in consequence of the disease remaining, and lurking, with an intervention of intervals of deceitful respite. The belly is often affected with gripes and great pains, and exceedingly loose; but, which 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, called, *in common English*, indigestion, the gout, diarrœha, or *loose-belly*, dysentery, or the bloody flux, cholera (*x*),

(*t*) 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.

(*u*) 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 bursted from her eyes upon hearing the sudden order for the weaning of the infant. He fell asleep; but in an hour's time was wakened 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.

(*x*) or that disease, the urgent symptom of which is 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 happens in the warm countries, as the southern parts of Europe, and especially in the torrid zone, whether in Asia, Africa, or America,

the cholic (*y*), the iliac (*z*) passion, the green purging of infants, the worms, *that wasting of the body, called Tabes, or Consumption, and atrophica (a)*, both of them diseases chiefly of children, and by far the greatest part of the diseases of that age.

(*y*) 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 colic, as well as the diarrhœa (which has been supposed a disease of an opposite nature, from the seeming contrariety of looseness of the belly, and costiveness 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 diffusible stimulants.

(*z*) which is that higher degree of colic where vomiting comes on, and the peristaltic 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 foul matter from his firelock; for it should have been remembered, that whatever effect such substances, as quicksilver, 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.

(*a*) 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 cleaned, like the soldier's firelock, no limits were set to the use of gentle aperients, and particularly the use of mineral waters. And they used gravely

CXCVI. As the cause of the disease proceeds, and the exciting hurtful powers prove more urgent, the external parts are drawn into consent, and 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 (*b*), variously all round; sometimes the shoulders, sometimes the sides, sometimes the back, sometimes the neck, are affected with pain, from which pains no part of the human body is exempted; *and* the region of the lungs, of the liver, and of the stomach, are especially liable to them. The smart pains, that affect those parts, and are supposed to proceed from internal inflammation, are, in reality, owing to spasmodic or convulsive affection (*c*). That this is

("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 too 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 supersede, 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 this vermin nestled; a practice not so judicious as that of some foolish boys, 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 feculent 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 atrophia 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.

(*b*) read thorax, in the original, for pectus, the latter signifying only the fore part of the chest, which is not the complete meaning here, the former the whole chest.

(*c*) Enclitics 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 stimulus, particularly laudanum, to the pained parts. By that practice I know not one cure, of some hun-

their true origin, is proved by the renewal of stimuli removing the affections, often immediately, always in a short time, and reproducing the healthy state. It is proved by the unsuccessfulness of the contrary method of cure, *which proceeds* upon bleeding, the various modes of purgation, 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 diet also alone has been sufficient to remove them (*d*).

CXCVII. The same pains, sometimes combined with enormous motion *e*, sometimes without it *f*), are absolutely free from inflammation. To distinguish them, then, from the pains that flow from inflammation or a similar origin, the concurrence of *accompanying* symptoms must be attended to. Sthenic diathesis points out, *that whatever pains occur*, are sthenic; and the information, received from the asthenic diathesis, is, that the pains, *appearing in it*, are participant of its nature, and as certainly asthenic. This remark is of deep application to dis-

orders, 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 tlagsript in laudumini 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 exigence 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 town of Lincoln, where an eminent physician, an adherer 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.

(*d*) 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 dine. But after having made that meal heartily, and taken a glass or two of wine, have returned with a perfect firm step, and free from all feeling of pain and uneasiness.

(*e*) 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.

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

eases of daily occurrence, and overturns the common practice. Even head-ach, which is so frequent an affection, is ten times to be removed by the stimulant plan, for once that the contrary answers (*g*).

CXCVIII. Symptoms of disturbance occur also in asthenic diseases, as well as the sthenic. Such a state of disturbance (*h*) takes place in the alimentary canal, in 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 by-standers, and which beget a suspicion of their proceeding from inflammation as their cause. But that those affections have nothing to do with inflammation as their cause, and that they depend upon a state of the part quite the reverse, has been proved by the stimulant method of curing them turning out successful in every instance in which it has been tried (*i*). The same fact is confirmed by the use of wine, opium, and other

(*g*) 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 cotemporaries, the Alexipharmacs, 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.

(*h*) All in the original from "Talem" in the last line to "febris" 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.

(*i*) 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 concurrence, 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

dissoluble stimuli. After that, and still in conjunction with their use, animal soups, and next solid meat, and the usual diet, the usual way of living, and guarding against debility, effectually re-establish the healthy state (*k*). This plan of cure proves, to a demonstration, that those affections are most foreign both from sthenic inflammation, and every degree of sthenic diathesis; and, besides the general sthenic inflammation not appearing to affect internal parts, it affords another argument against inflammation, in this case, being the cause (*l*).

CXCIX. The asthenic pulmonary disturbance distresses the patient with so intolerable a fixed pain, that no bounds have been set to bleedings for the cure of it. But all such bleedings have not only been useless, but detrimental, and often fatal; whereas, on the contrary, the stimulant plan of cure has always succeeded (*m*). By it the respiration is interrupted; and

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.

(*k*) 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 66, 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 soon 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.

(*l*) See CLXXXII. and CLXXXIII. par. above.

(*m*) 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 re-

nearly all the symptoms, that accompany an actual peripneumony, distress *the patient*, and to such a degree, that it has been suspected, there was an inflammation in the case, or rather it has confidently been believed, *that there was*. Or, if any difference was discerned betwixt this affection and that phlegmasia, or *sthenic general affection with inflammation*; that was only a shadow of distinction, and led not to the rejection of *the notion* of inflammation *being the cause*, but only gave occasion to a question about its seat. But truly, that there is no inflammation at all here, at least as a cause, and that the disease *depends upon* pure debility, is sufficiently proved by the arguments, that have been brought before. The disease is increased by the antiphlogistic, and diminished and removed by the stimulant plan of cure.

CC. The formidable symptoms of disturbance, that accompany epilepsy, apoplexy, and fevers, such as stupor, a disposition to sleep, in them all; in fevers often that false watching, that is called typhomania, and sometimes coma (*n*); in the latter (or fevers) starting of the tendons; in the former (or epilepsy and apoplexy) convulsion, or a diminution of the voluntary motions; which, by most physicians, have been partly imputed to irritation (*o*), as typhomania, and the starting of the tendons; partly to plethora, either alone and pure, or to-

turn 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. That was among the most early cures taken from this doctrine.

(*n*) or an insuperable proneness to sleep,

(*o*) No diseases are more opposite to each other than high sthenic 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 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 of 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.

gether with it mobility. All these, without distinction, are evidently owing to the same cause, upon which all asthenic diseases depend, that is, debility. Which is proved by the debilitating hurtful powers, whether acting directly or indirectly, alone producing those diseases; and by the remedies, the whole action of which depends on stimulus, alone relieving or removing them. But it is in vain to impute apoplexy to plethora (*p*); as if, at that time of life, when the body is nearly worn out, and almost bloodless, that is, 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, in consequence of indirect debility, induced by old age and excessive excitement in the mode of living, the solids are languid, the quantity of fluids deficient, as also their fountain, the blood. Epilepsy depends upon the same debility, and the same scantiness of fluids, only that its debility is of a different kind. Fevers may depend upon indirect debility, as in the confluent small-pox (*q*), or where drunkenness has been the principal hurtful power producing them; but, at the same time, their most frequent cause is direct debility. And in all the cases, that have been just now mentioned, debility is the primary cause, and final termination, both of all the rest of the symptoms, and of those of disturbance.

CCI. To the symptoms of disturbance, sometimes also belong the following, that affect the head; great head-ach in fevers, imbecillity of the intellectual function, confusion of thought, and delirium, *the last* often sufficiently fierce, though occurring in the highest degrees of debility, and leading to efforts beyond the strength. This state often happens towards the end of a nervous fever, even when violent. Inflammation is apprehended, blood is let, but directly from the head; blisters, which are extreme unctio in the art, are clapped on; silence and darkness are prescribed; even the most gentle stimulants are forbid. In consequence of the emptiness of the stomach, as well as of the vessels of the whole body, and of the

(*p*) or an over-proportion of blood, see above, CXXXI.

(*q*) 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 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 assorted.

highest 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 after fills the vessels, afford certain proof: and that it is not any other inflammation, is evinced by the so 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 or a general inanition of the vessels, *and that too* even in those, who are otherwise sound; where is the wonder, if, in the highest degree of inanition, compatible with life, in the highest degree of diminution of excitement, scarcely leaving a shadow of life, also the highest degree of failure in the intellectual function, that is, delirium, among other instances of impaired function, should take place. Nay this very fact is certain, and proved to a demonstration. Thus famine, thus drinking water contrary to custom, after a course of drinking to excess, or both eating and drinking with intemperance, a gloomy state of the animal spirits, grief, terror, despair, not only induce a temporary delirium, but frequently bring on downright madness. The same conclusion applies to any considerable loss of blood. For how many persons, after being wounded either in line of battle or on the high way, have never after, and often during a long life time, come to the right use of their senses. To say nothing of contusions, wounds 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 induce death? Is it not, amidst a diminution of all the other functions, by a delirium preceding death? From these facts of such weight, both from their number and validity, and that bring forward all the powers in support of the argument, it must be admitted, that both head-ach, and every failure of the intellectual function, in every degree, and that highest degree of such failure, delirium, depend not at all upon general sthenic inflammation, the only *inflammation* hitherto known; but arise from the highest deficiency, both of other stimuli, and of that, which depends upon a proper fulness in the vessels, that, is debility. Debility then is the most frequent cause of the symptoms, that have been mentioned, as is proved by the restoration of health so quickly upon the new plan of cure.

CCIII. But if ever the asthenic inflammation, mentioned (*r*) before, excited 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 general asthenic inflammation is nothing else but asthenic diathesis, somewhat more violent in a part than in any other equal part (*s*) and upon this footing, that the degree of asthenic diathesis *constituting* the inflammation is by no means to be compared with the degree of diathesis in all the rest of the system; because the affection diffused over the whole body is far greater than that confined to a part (*t*).

CCV. Inflammation, in this case, is nothing else, but 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 lesser excitement in a part, than in any other equal part; so, before the arrival of the disease (*u*), of which the inflammation is a part, a symptom, or sequel, the excitement of that part is understood to be proportionally less, than that of any other part.

CCVI. This inflammation (*x*) should be distinguished from another, which is local: it *is* general, and depends upon a general diathesis, and only happens when the diathesis has attained to a certain degree; while the local arises from some hurtful power, that produces a solution or vitiation of the texture of the part, without regard either to diathesis or degree: the general *inflammation* is brought on by the same hurtful 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 de-

(*r*) See above, paragraph CLXXI. and CCII. It is to be defined in the next paragraph.

(*s*) See above, paragraph XLIX.

(*t*) See above, XLVIII. XLIX. L. LI.

(*u*) See above, par. CLXIX. and compared 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, (vid. par. XXIII. and LXV.) Health, therefore, is also comprehended under this same proposition.

(*x*) mentioned in the two last paragraphs, CCIV. and CCV.

pends upon hurtful powers, that only harm a part, and is removed by remedies that change the state of the part; *but* is not affected either by general hurtful powers, or general remedies. Examples of the universal are these inflammations which accompany the gout, the purid sore throat, the gangrenous sore throat, and that inflammation which produces sore eyes: the local inflammation will be illustrated by examples, to be produced in their proper places (*y*): the general inflammation is attended by debility over the whole system; which debility is only a sequel of the local, and not always. To remove the former the general method of cure (*z*) is adapted; but the cure of the latter turns upon healing up the part. In this way, *then*, there are four *sets* 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, often in solution; the latter in gangrene, and sometimes sphacelus, sometimes at last in death. If, in the end of a typhus fever (*a*) inflammation affects the brain or its membranes, which (*b*) is neither yet proved, nor a very likely *fact*, it will serve for an *instance* of an asthenic general inflammation.

CCVII. As the general sthenic inflammation is occasioned by a quantity of blood, excessively distending the vessels *which are* its seat, by *that* distention stimulating them, by stimulating increasing their excitement, by the last producing more forcible and more frequent contractions, by these increasing the tone of the fibres as living, and

(*y*) 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.

(*z*) See par. LXXXVIII.

(*a*) 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.

(*b*) 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 extraor-

their density, as simple, *solids*, and thereby diminishing their diameters (*c*); and consequently making the blood flow with great effort through the contracted vessels, and, during its flow, produce pain from the high force of the contractions, and the narrowness of the space through which it has to pass; and as the same, though in a lesser 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 of the 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, than in the others, distending them and producing the phenomena peculiar to any inflammation (*d*).

CCIX. As the indication of cure for the former is, to diminish the quantity of blood, which is the first cause of the struggle, and, thereby, to reduce the excessive excitement to the degree that suits the healthy state, and the excessive contractions, which constitute the struggle, to the moderate ones, which are pleasant and agreeable to health (*f*): So

CCX. The indication of cure for the latter is, first, by powerful stimuli, to drive on the quantity of blood which there is in every part of the system, that *the portion which* loiters in the languid vessels of the inflamed part, may be thereby propelled, and the vessels relieved of their burthen; and then by

ordinary 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.

(*c*) See LXI. above, and CXXXI.

(*d*) 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 diatheses to which they respectively belong, and the local only the remedies suited to heal up the part.

(*f*) See above, CXXXIV.

the gradual administration of seasoned animal food, in the form of soups, and soon after, and when now the strength is recruited, in a solid form, to fill the whole system of vessels.

CCXI. The two other inflammations, both local, will be treated of afterwards, each in its proper place.

CCXII. That inflammation of the throat, which ends in what they call a putrid (*g*), sore throat, is singularly 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 tranquility, excepting, that a constant rejection by spitting of a tough mucous matter is troublesome. At last, when head is not made against it by means of the most powerful stimuli, a period arrives, when all the symptoms are suddenly precipitated into a bad state; *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, not before administered, that will stop the much to be lamented death of the greatest ornament of human nature (*h*). The best plan of curing this disease, 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 drink, undiluted, as wine, and spirits, or the latter 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. And the same remedies, as have been mentioned before, are of equal efficacy in removing the general symptoms (*i*).

(*g*) 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, 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, will end fatally.

(*h*) 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.

(*i*) 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. 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,

CCXIV. The inflammation of the throat, 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 a certain high degree.

This inflammation has nothing in common with the sthenic general inflammation, which distinguishes the sthenic inflammatory sore throat, (*k*) or with the two local inflammations.

CCXV. The crowded pustles, in the small-pox, when it is now converted into the confluent disease of that name, that is, into an asthenic general disease, become partakers of the new diathesis, and, instead of sthenic *which was their first state*, become asthenic; and, as by their local stimulus before, they quickly changed the sthenic into the asthenic diathesis, by means of indirect debility; so they, now, by the debilitating influence of their asthenic nature, confirm asthenia, or a state of debility, over the whole system; they increase it, and carry it quickly on to death (*l*).

CCXVI. To throw light and illustration upon them, by comparing their respective methods of cure; it is to be observed that the cure in the one case is quite different from that of the other (*m*). The remedies of the distinct small-pox, and of

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.

(*k*) Yet in their systems of nology, which are laboured volumes of distinction 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 compartments, 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.

(*l*) There cannot be a more exquisite stimulus in living nature, than that universal cake of inflamed pustles, which covers the whole surface in a crowded 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.

(*m*) The cure of the distinct small-pox is the debilitating; that of the con-

its accompanying eruption, are cold, and whatever, by evacuation or otherwise, debilitates. The remedies of the confluent disease, as well as of its accompanying eruption, are heat, remaining within 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 case are sthenic; all in the confluent asthenic. And this difference equally applies to both diseases, and both eruptions.

CCXVIII. And as the sthenic or distinct pustles have a direct tendency to produce a sthenic inflammation, and sthenic eruption; 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 the typhus fever (*n*) arise from a contagious matter, taken into the body, and then 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. That this is the case, is proved by there being no eruption during the period of predisposition, when some vigour still remains, and, therefore, the perspiration goes on in a certain degree; none in *the cases of sudden death* from the violence of the disease; neither eruption nor disease in all the cases, where these are early prevented by the use of the more powerful stimulants; by the disease being always gentle, 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 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, is, together with it, detained, and so detained below the cuticle by stagnating, and acquiring a more acrid nature, it produces local inflammation, either of sthenic or ast-

fluent, 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 pustles flat, and signs of mortification coming on, the covering the patient with a single sheet is as common as in the distinct small-pox.

(*n*) See above, the note (*c*) under par. CCVII.

henic nature, in proportion to the different nature of each, or rather of the habit of the body.

CCXX. In the same manner is that eruption which diversifies the skin in the gangrenous sore throat to be explained; as well as another, which supervenes upon that state of the small-pox, which by reason of the debility of the system, would otherwise turn out well; but if the new eruption be not opposed by the most powerful stimuli, is sure to end in death. Both these eruptions (*o*) are spotted, both of them red; but the former (*p*) is marked by smaller, the latter by larger spots; in the latter the colour is a fine scarlet, far exceeding all art, and almost the power of nature herself in other respects (*q*). Both of them are owing to a suppression of the perspiration by the debility that has been mentioned: the former is removed, in practice by the stimulant plan of cure, which removes all the other symptoms; in the latter, or *uncommon eruption*, the debility produced of purpose in the preparatory plan of management, 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 pustles, which are both few, and of no consequence, and do not even attain to the measure of actual general disease, and are, therefore, free from all danger, are not to be regarded. If this practice is executed, the recovery is both certain and quick; but, if it be neglected, or if a contrary plan of cure be set on foot, death is inevitable (*r*).

(*o*) 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.

(*p*) or that in the gangrenous sore-throat,

(*q*) The beautiful colours sometimes painted in the clouds are often not to be copied by art.

(*r*) 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 alteration 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 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 de-

CCXXI. Heat is not peculiar to sthenic pyrexia (*s*), but belongs also to other diseases of the same stamp. Nor is it so confined to those, as not also to arise in all the degrees of predisposition to those diseases, and in proportion to each degree (*t*). But the matter does not end here. The same heat distinguishes all asthenic diseases, whether febrile, which is a distinction without any good meaning, or not *febrile*, and also the predispositions to them all, and *that* in proportion to the degree of debility. There is not a more certain mark of a departing 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 certain boundaries, which are fixed by a cause by-and-by to be explained, and *increases* in proportion to the degree of decreasing excitement, though the latter all along renders the perspiratory vessels more patulous; and thereby among other effects, diminishes the motion, both of all the vessels, and particularly of the perspiratory.

ided, 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.

(*s*) 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 pyrexia.

(*t*) 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.

CCXXIII. When the heat has now been the greatest it can be, and the debility increased in proportion, at last in the extremities, and afterwards gradually in the rest of the body, cold, which is always a bad sign, succeeds to it. In the progress of the debility motion begins to be very languid, first in the extreme vessels of the extremities of the limbs, and then to be destroyed altogether. Hence, as heat, whether in due proportion, or in excess, depends upon the motion of the blood and other fluids, being performed in due proportion, in excess, or to a certain extent, in a deficient degree; if, therefore, the heat is either nothing, or next to nothing, as in the present case, the effect, together with the cause, by an universal law in nature, ceases. The same thing happens in both extremes of excitability, that is, of excessive abundance in direct, and of nearly a cessation of it, in indirect debility; and so much more *readily will this happen*, because, whatever be its source, debility is always the same,

CCXXIV. Because the excitement in sthenic diseases is for the most part much and equally increased over the whole body; the heat, on that account, is also equally diffused over the whole. From which fact no cases are excepted, but those, in which, in certain parts, as the stomach, under a strong disposition to vomiting, and, therefore, in danger of falling into indirect debility, indirect debility either actually takes place, from the disease proceeding with an excessive force of stimulus; or direct debility comes on, when the debilitating plan of cure has been pushed beyond the rule. But, so long as the sthenic diathesis is vigorous, and supports a high force of excitement, the heat will almost always be equal.

CCXXV. The same thing happens in moderate debility. Accordingly, through the whole course of predisposition, and in those diseases, where the matter has not gone so far as almost a total cessation of motion, the heat is pretty equal. The effect of cessation of motion has been explained (*u*). 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 of that is, that a greater degree of debility as in cold, labour, and sweat from these, or any other source, and that sweat cold and clammy, has been applied to those parts, than to others. 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 that arises from debility, checking perspi-

(*u*) See above, CCXXIII.

ration, is proved by fatigue, cold, and other debilitating powers proving hurtful to it; and heat, rest and other stimulant powers, giving it ease.

CCXXVI. It remains now, that it be explained, how too great excitement, in high sthenic diseases, impairs some functions, but never, by a debilitating operation; and how too small an excitement in violent asthenic diseases, gives an appearance of increasing some functions, but always a false one.

CCXXVII. If, in peripneumony, synocha (x) and violent rheumatism, the voluntary motions are impaired, *and* to such a degree, that a person can neither use his hands nor his feet, more than a paralytic person; that that is not owing to debility, that is diminished excitement whether directly or indirectly (y), is, evident from this double proof; that if the *apparent* debility were real, stimulants would be of service, and debilitating remedies of disservice (z). 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 increase the affection.

(x) Or the inflammatory fever,

(y) 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.

(z) 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 (*a*), in colic, in dysentery (*b*), in cholera (*c*), in hysteria, in any violent attack either of vomiting or looseness of belly, (great numbers of which affections happen every day, without being distinguished by names); or in the burning affection of the alimentary canal (*d*), which is considered by physicians as an inflammatory affection; or in affections of the voluntary motions externally, as in the lock-jaw, in tetanus (*e*), and in many spasms of other parts; or in convulsion, epilepsy (*f*), and many other convulsive affections; if these functions seem very much increased; that that is not owing to increase of strength, that is increase of excitement, shall also be proved to any unprejudiced judge by the following two-fold fact; that, if this were a case of really increased strength, debilitating powers, or the remedies of sthenic diathesis, would remove it; and stimulants (*g*) not proceeding to *their ultimate effect of inducing* indirect debility, but remaining within that range, in which they

(*a*) in English indigestion.

(*b*) in English the bloody-flux.

(*c*) or that disease the urgent symptom of which is vomiting and purging.

(*d*) See above, CXCVIII. and the annexed notes.

(*e*) 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 Britain, 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 Britain, 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.

(*f*) or the falling-sickness in English,

(*g*) keeping within their stimulant range, and

remove asthenia (*b*), would increase it. But to such a fact also is the truth in diametrical opposition (*i*). For stimulants alone, which remove the other signs of acknowledged debility, also remove those spasms and convulsions; and debilitating powers increase them or change the disease into a worse (*k*).

CCXXXIX. Because we know not what contraction is, or almost any function of living systems (*l*); we shall not, therefore, wrangle about whether it be an increased or diminished function (*m*); but we will by no means give up the point of those spasmodic and convulsive motions being an impaired function (*n*); for, if, within certain

(*k*) or affections of debility,

(*i*) Who does not now know, that bleeding, evacuations of other kinds are hurtful, and that stimulants proportioned to the degree of the cause, are the only successful remedies?

(*k*) 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 even that 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.

(*l*) 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 several erroneous Systems of Physic, &c. where it will appear, that even the great Sir Isaac Newton did not altogether avoid this error, especially in the questions he put, however modestly, with respect to an all pervading æther; the wanton and 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. in this.

(*m*) See above, Chap. V. throughout.

(*n*) 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

boundaries (*o*), excitement, when increased, produces more strength, and less when it is either diminished without limitation, or ultimately 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 any boundary, or to the ultimate increase of exciting power beyond the stimulant range; consequently, in the last of these cases it is a most proper definition to say, that the function is diminished; and in the first, that it is increased (*p*).

know, that nothing but debilitating powers, produce them, 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.

(*o*) See above, par. XXIV.

(*p*) 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 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 rheumatic 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 the 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

CCXXX. The notion, therefore, hitherto received with respect to these motions is false. It proceeds upon a supposition (*q*), as if the motions proceeded from an excessive influx of the nervous fluid, according to a mode of style which they first held (*r*), or of the nervous power (*s*), which is now the common language, that is, if it has any meaning, from an excessive excitement in the fibres that have been mentioned (*t*); and, as according to the phraseology of the logicians, "error draws on error;" so this notion of the abstract cause led to another

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.

(*q*) 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.

(*r*) 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 several erroneous 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.

(*s*) 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 Observation referred to, had ridiculed them out of their æther.

(*t*) 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.

(*u*) with respect to the operation of opium. And as they senselessly enough supposed excessive motions to be occasioned by an excess in 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, those motions, and that contrary to the whole analogy of nature, and the certain proof afforded by all the exciting powers, every one of which has been proved to be stimulant, not one sedative (*x*); but if it were in any respect doubtful, that nothing in nature, at least in those powers, that are commonly applied to animal bodies, is sedative, how can there be any uncertainty of *that point* as to opium, much less, that the contrary conclusion should be held for the truth? Has not it 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 the onset of battle, chew opium with the intention of checking their natural alacrity and propensity to action, and of blunting and depressing their high spirits and 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 gave the subject a 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 these diseases, in which it is serviceable, have been demonstrated to be affections depending on debility, are we to agree, that opium proves of service by an operation that is further debilitating, or rather that extinguishes the miserable remains of nature's motions? If the various forms of wine, and other strong drinks, have a very great effect in removing the same diseases, which has likewise been discovered by late experiments, and are, therefore, understood to be beneficial by the same *mode of operation* as opium, are we to agree, that that similitude of operation argues a diversity, nay a diametrical opposition in the nature of the powers that unite, with such harmony, in producing the same effect! Lastly, if it cures diseases, *that depend* upon a confessed deficiency of motion (*w*), equally as those, the motions in which, though seemingly

(*u*) that is, they supposed the most powerful stimulus, opium, a sedative.

(*x*) See above, par. XIX. to XXII. with the additions and notes.

(*w*) 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,

increased, are in reality diminished ; what can any person say in objection to so strong an argument, added to so many and so powerful ones already advanced ? In faith, 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 has been owing, and, in future, will be owing ; so it must be acknowledged, that spasms and convulsions, over which it has so great power, do not consist in increased, but diminished excitement, and that opium cures them by the same operation by which it cures any 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 : it is sparingly expectorated from the lungs, and tinges the urine. The first and last of these three (*y*) are considered as critical signs ; but they have no other meaning than an abatement of sthenic diathesis, and a disposition to indirect debility. This is an effect, that, for the most part, soon goes off, leaving behind it a state of convalescence (*z*), and soon after a restoration of health, seldom passing into an *establishment of indirect debility* (*a*).

CCXXXII. Great and continued bleeding discharges, whether from the womb, from the anus, or from around the latter, or by the nose, depend upon pure debility (*b*). An overproportion of blood, distending the vessels beyond bounds, and establishing indirect debility, may sometimes be the primary cause. But, in this case, if no other debilitating power, and

that even the slight degree of muscular contraction necessary to support my posture in bed failed. In that state, when my eye, 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.

(*y*) The original is altered according to the translation here.

(*z*) or of recovery,

(*a*) What follows in the original is erased as not necessary to the sense at present.

(*b*) These are the several hemorrhages 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. *γ.*) 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

particularly directly debilitating, has acceded to 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 the health be restored. On the contrary, when indirect debility has not preceded, and other directly debilitating powers have been applied ; such as those are which have been spoken of ; and more *especially* if the diseases are treated by bleedings and other evacuations, by abstinence, or by vegetable food and watry drink ; in such a case the diseases become chronic (*c*), troublesome, at last direful and fatal. That they depend upon debility, is proved by the failure of the cure just now mentioned. and by the great success of the stimulant plan. The true cause of bleeding discharge is not plethora, which cannot happen in the case of persons ill nourished, in water drinking, and under the application of other hurtful powers, that equally destroy the tone and density of the vessels (*d*). For as food is nearly 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, upon account of the debilitating effect of other hurtful powers, any food that is taken is not digested, how can there be an over proportion, and not a manifest scantiness of blood ? But *it may be alledged, that* loss of blood, and every sort of debilitating power, diminish perspiration, and that from that *circumstance* the quantity of blood is increased. How can that happen ? The matter from which the blood is made, *it may be added*, is taken into the stomach, and a smaller quantity of fluid passes off by perspiration. But, *to that it is to be answered, that* in the first place it is not taken in ; and next the little that is, is not digested (*e*) ; then after the serous part has been separated from the red, will it, if detained and thrown back into the blood, again become blood ? If these questions, to which there is no possibility of returning any answer, should seem in any degree ambiguous ; are

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.

(*c*) of long duration,

(*d*) See above, CXXXIV, and *λ*.

(*e*) No idea in medical writings seem 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 symp-

we to believe that one part of the body is 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 carry off by the due outlets its corrupted matter? And must we, *giving up our fundamental principle after so complete an establishment of it*, allow, that the excitability over the whole body 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 (*f*)? It is in vain to talk of the fattening of chickens and cattle by keeping them from exercise and in a

thy, 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 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 overruling 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.

(*f*) It has been proved in the IVth chapter, 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 their excrementitious matter. On the contrary, 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 orifices 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. XLI.

state of rest. The condition of health and disease is very different. In the former there is a certain latitude of the strength of the stomach; in the latter, and especially when debility is the cause, there is a prostration of strength. In fine, it is an universal and constant effect of all debility, to produce a deficiency of the fluids in the internal parts of the system with a relaxation of the vessels over all, especially about their excretory terminations, and a discharge of the fluids by some outlets. The death that happens, during the time of an entertainment, is not to be imputed to an over proportion of blood, which cannot happen in so short a space of time. The drink has no effect in filling the vessels. Nor do any persons, but those, who are under direct or indirect debility meet with such an end, never those, who have an over proportion of blood; which, as the appetite is gone, and the digestive powers destroyed, cannot be produced (*g*). In what diseases was it that plethora was supposed to take place? Not in those, in 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 very keen, and the digestion most perfectly performed, and the digested matter most completely converted into blood; but in those, 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. In this way, the gout, apoplexy, epilepsy, palsy, asthma and hysteria, the indigestions of persons, who have been formerly addicted to luxury, in fine, those very diseases, which make our present subject, the hemorrhages, as they are called and falsely defined by that term, lastly the far greatest 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 and truth, that both all the rest of those diseases, and those accompanied with bleeding discharge, depend upon a penury of blood and other

(*g*) All that follows from "concedendum" at the foot of page 136 in the original is an addition in M. S. The added words are as follow. "Frustra pallorum & pecoris, per otium pinguefactio jactatur. Alia secundæ valetudinis est, adversæ alia conditio. In illa quædam ventriculi virium latitudo est; in hac, maxima eque, ubi debilitas eam causa continet, illæ prorsus franguntur. Denique omnî debilitati proprium est & perpetuum, ut, relaxatis ubique, maxime circa fines excernentes, vasis, humores intus deficient, aliquibus foraminibus disfluant. Mors convivii tempore, sanguinis abundantia, quæ tam brevi usci nequit, non est tribuenda. Nihil valet potio. Nec talem finem, nisi recta eventure debiles, & nunquam sanguine, qui, perduto cibi desiderio, fractis digerendi viribus, abundare nequit, abundantes fortuntur."

debilitating powers, is proved by the constant failure of the antisthenic plan of cure to the great disgrace of the profession, and by the incredible success of the new stimulant plan. And with respect to the bleeding discharges, consider the persons affected with them in the hurtful powers, that precede them, and in the symptoms *that attend them*. During the whole period of predisposition, quite delicate and weakly, they have very little appetite for food, and take very little, and what they take, is not digested, and often rejected by vomiting. In their weak state they are not supported by the stimulant *operation* of corporeal, or mental exercise, not by that of the animal spirits, which are quite puny and 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 drink, which from the misleading advice of their physicians, they look upon as poison, nor by that of the distention of vessels, which are not sufficiently filled with blood, nor by that of the secretory small vessels, upon account of their sluggish motion, and the stagnation of their degenerated fluids every where, and the direct debility constantly arising from that. What sort of pulse have they? Such, as it is in all diseases of manifest debility, for instance, fevers, (in which last, which is surprising, their favourite plethora, was seldom suspected by them), small, weak, and very quick, and almost empty. Upon the whole, what like are their intellectual functions, those of passion and emotion, and their corporeal functions, either in sense or motion whether of the voluntary or involuntary kind? All weak, all frail, all such, as show, that they have not a third part of life to support them. What, on the contrary, is the state of those, who abound in blood, and yet never experience discharges of it? They are strong and full of vigour in all their functions, with redness of countenance, sparkling eyes, strong, hard and moderately frequent pulse. Their appetite for food is keen, the quantity they take is great and well digested. As those persons, may experience droppings of blood of no consequence, and yet not often, so they fall into no discharges of blood. And it is in perfect consistency with all that has been said, *to add*, that the various forms of strong drink, and these particularly, which are the strongest, such as are called spirits, are surprisingly successful remedies of bleeding discharges, in spite of every thing that has hitherto been thought to the contrary, in spite of rooted prejudices: but the preparations of opium (*b*) and of

(*b*) 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 pra-

the other diffusible stimuli are *still* more successful. This is a fact, that proves to a demonstration, that in the bleeding discharges there is no excessive activity, no hemorrhagic effort as it is called, and on the contrary, that that there is only a falling off of the natural moving energy. The hemorrhages, then, that have been the subject of so much false explanation, and false denomination, must be rejected from the number of sthenic diseases, 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 after that accompanied with a large expectoration, if the hoarseness at first is deep, and afterwards slighter and freer, 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 what of it there is, seems forced up by the convulsive motion of the cough ending in expectoration, and in such a manner, as either

perty 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 (b)). They also assigned it the virtue of allaying pain, but there is a kind of pain, that it increases, and, besides 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 palliater 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 sthenic; the pain of any deep seated sore or gun-shot 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.

not to return, or to have no spontaneous tendency to a return; if the strength is otherwise good, and the pulse strong, full, and more or less hard, *and* not much exceeding the frequency of a healthy pulse: such a case will be found to be sthenic, and to depend upon heat and every other stimulus (*i*), to be cured by cold and every other debilitating remedy (*k*). The cause of these symptoms is a high degree of sthenic diathesis (*l*) over the whole body, higher on the *external* surface of the body, and especially in the throat, *which is a part of that surface* (*m*). The same symptoms in whatever *morbid* case they occur, are to be explained in the same manner. Consequently, the catarrhial symptoms, which are an inseparable part from the measles, admit precisely of the same conclusion; and, as well as the whole disease, are to be understood to arise from excessive excitement, and to be cured by the debilitating plan. The same is the judgment to be formed of the influenza. In all which cases it is easy to make trial *of the truth*. Give a glass of wine or brandy, give a little opium; the hoarseness will increase, the cough will be more hard and bound, the expectoration will suffer a temporary suppression. Give a large draught of cold water, *and all the symptoms* will be relieved. Often *does it happen* that a person *troubled* with a cough when he sits down to drink wine is freed from it in the course of *the circulation* of the glass (*n*). The reason of which is, that asthenic diathesis was the cause, which was converted by the drink into a cessation of all diathesis, or into a temporary sthenic diathesis. Often at the end of a debauch in drinking, the cough, and that very violent, returns for this reason, that the sthenic diathesis has made considerable advances. It will be cured by drinking a tumbler or two of cold water, and drinking no more wine; *which precautions operate* by stopping the excess of excitement.

CCXXXIV. *From the description just now given* (*o*) it appears, that symptoms, commonly supposed to be the same, are

(*i*) See above the following paragraphs CXIII. CXIV. CXXII. CXXIV.

(*k*) and also 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.

(*l*) or stimulant operation or excessive excitement, or wasted excitability.

(*m*) See above, par. CXIII.

(*n*) 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.

(*o*) of the nature and cure of the symptoms we have been speaking of, compared with that which is next to be given.

however of a diametrically opposite nature (ρ); which will be evinced by a fuller explanation. If, therefore, any one has a very great cough, a very great expectoration, either at first with hoarseness, and afterwards, through the whole course of the disease, without the 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, and *withal* very quick; if this concurrence of symptoms has been preceded by either direct or indirect debility, as usually happens in *the case of famine, of*

(7) 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 athletic diseases affords as many proofs of the truth of this proposition, as the instances of dissimilarity or difference in opinion are numerous. What is seemingly more opposite than diarrhoea and colic, than typhoid 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 their flow, at last, attains its ultimate excess both in degree and duration? And, with respect to febrile and non-febrile diseases, what is more similar than 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 is 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 liker one another, than a crowded distinct and confluent small-pox, or than the common inflammatory sore throat and that which was lately described (see *sec. par. CCX. I.*) 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. It is to be observed, that the natural historian, by all their artificial methods of analysis, have made little progress in exploring the true nature of their subjects, and in the contrary, with scarce a single exception, have confounded it; and so ridiculous was the attempt 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 in this hopeful employment has John Bull expended thousands of money while he left the most solid and important departments of science neglected and covered by the dirt among his feet. We have too little utility to be yet, it is time to improve our scanty store, (see the introduction to *Observations, &c.*)

water-drinking, of a long course of ebriety, and of having led a life of luxury : one may be certain, that all these symptoms are asthenic (*q*), and to be removed by stimulant remedies.

CCXXXV. The explanation of the dry cough is easy, and such as was formerly given (*r*). The origin of the cough and expectoration is quite the reverse (*s*). For, whether the system has been weakened directly or indirectly, as the excitement over the whole body is diminished in the highest degree, as the debility in every part is exquisite ; the consequence is, that in the vascular system the tone, and in proportion the density, is every where diminished ; and the diminution chiefly takes place in the extreme 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 (*t*). When all this has taken place ; the quantity of fluid that is thrown up by expectoration is incredible. Indeed (*u*) it is great enough, not to be inferior in its degree to the greatest profusion that ever takes place in consumption, and even to exceed it.

CCXXXVI. The cure of it, however, in all the cases that depend upon direct debility, is by no means difficult (*x*), unless the disease has proceeded beyond the boundary of admitting a cure, and life is now approaching to its end. The cure,

(*q*) or depend upon debility,

(*r*) See above, par. CLX.

(*s*) XXVIII. in the M.S. addition CLXI. and particularly CXXXIV.

(*t*) LIX. LX. LXXI.

(*u*) though it has never been attended to,

(*x*) 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 course of his cure, he had been more than once bled, though his disease had ushered itself in by a great profusion of bleeding, 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 glistered. The 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 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.

however, is a good deal more difficult in the case of indirect debility, and for this *good* reason, that *there is no other plan of cure but stimulating, to remove a disease occasioned by an excess of stimulant operation (y)*. Nay, the same debility, as shall afterwards be observed, 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 (z) sometimes in that of the gout, the physician has often a long struggle, while he employs *his* diffusible stimulants, *the event of which is such, as to produce a complete reiteration of health, and thereby to leave not the least suspicion, of there being any local affection in the lungs, which is so much the object both of the faith and fear of physicians (a.)*

(y) See above, CIII.

(z) See the last note (x.)

(a) 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 (x). 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 (vide par. CXXII. and MS. addition) by an alteration 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 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

I. When, in all the vessels, the fluids are not agitated by a sufficient action, they are proportionally more imperfectly mixed, and therefore in a vitiated state. But in the extreme terminations of the vessels, as being at a greater distance from the center of motion, they often, from a total cessation of motion, stagnate, and degenerate into a foreign nature. This is an effect not produced by heat alone (*b*) but by cold (*c*), nor only by this, but by all the powers that debilitate in an equal degree (*d*) (*e*).

C H A P. VII.

Of Sleep and Watching, whether salutary or morbid.

CCXXXVII. AS death finishes the operations of all life, so sleep finishes those of every day: and, as the former is the consequence of a perfect extinction of the excitement, from, either a complete exhaustion or ultimate abundance of excitability; so the latter (*a*) succeeds to a diminished excitement, while the excitability is either diminished, but in such sort that it can be accumulated again, or abundant, in such sort that the abundance can be wasted, and the excitement, in both cases, renewed.

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 superabundance, direct debility. And, as any exciting power, carried beyond its boundary (*b**), can produce the former, and the with-holding of any, give occasion to the latter (*c**) so the

even in those, who die of a confirmed consumption, there is not often reason for the suspicion of 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.

(*b*) See above, paragraph CXV.

(*c*) See also paragraph XVII.

(*d*) See also CXIX. which compare with par. XXVIII. Nay all the power mentioned in par. XI. and XII. and fully explained in Part Second, Chap. I. throughout.

(*e*) This from I. is an addition to the original in the following words, "Humores in omnibus vasis, minus ab idonea horum actione agitati, pro ratione minus quoque permixti, vitiantur. In extremis vero vasorum finibus, utpote quæ a motu centro longius distent, deleto sæpe motu stagnantes, in alienam naturam degenerant. Quod quidem, non calor solum, sed & frigus, nec hoc solum, sed & omnia pari vi debilitantia, præstant." CXV. CXVII. CXXII. CCXXXVI. and I. ad.

(*a*) or sleep,

(*b**) See par. XXVIII.

(*c**) See par. XXXVIII.

same proposition holds good of the excessive or too sparing use of several of them, or of them all (*d*). Sleep, then, is the effect of the actions of the day, at first giving always more and more excitement, but less and less *in proportion to the continuance of their operation* (*e*), but in such sort as always to add some excitement, till the matter *at last* comes to a point, where the degree of excitement, necessary to constitute the waking state, no longer exists. Of this we have the most certain proof in every day's experience, and in the confirmation of it, which the complete induction of the effects of all the exciting powers affords (*f*).

(*d*) 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.

(*e*) See par. XXXVI.

(*f*) 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 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 a-sleep. 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 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 intest-

Thus, heat not ultimately excessive, or reduced, by cold, from that excess to its stimulant degree (*g*), and food, and drink, and labour, either of body or mind; and the exercise of 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 state of sleep (*h*).

K. Premature, unseasonable, or morbid sleep, is produced by either indirect or direct debility.

L. With respect to the effect of the former, an excessive energy of any one or more of the stimuli (*i*) produces it; accordingly, any one or more of those that have been mentioned, by acting in excess, and wasting the excitability, such as hurried drinking, produce that effect.

M. 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, produce sleep, will surprise into a bad kind of it; accordingly, when a person is in that state, that he wants excitement in order to be in health, the defect of light, of sound, and of the various contacts 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 the exercise of passion, of heat, acting in its stimulant degree, and too long continued sleep itself, all these produce hurtful sleep (*k*).

CCXXXIX. On the contrary, sound watching is the effect of the suspense of the same diurnal actions during the period of sleep, taking off more and more excitement, most at

tines, 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.

(*g*) See above par. CXXII.

(*h*) A little here is added in MS. to the original by way of correction.

(*i*) Of indirect debility in producing premature sleep, see par. CCXXXVIII.

(*k*) Coma, or an insuperable disposition to sleep, is most commonly owing to the want of most of the stimuli mentioned in the text, as that 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.

first, and less and less after, but always adding to the sum of diminution of excitement, and accumulation of excitability; that is, always continuing to take off stimulus, till the matter comes to the degree of diminished excitement, and increasing excitability necessary to the watching state. In this way does sleep prepare the system for the watching 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 action, sleep is produced again (*l*).

N. Too long or morbid watching is also brought on in a two-fold way, by indirect and direct debility. Thus, intense thinking (*m*), violence of passion in extreme (*n*), ultimate excess in corporeal labour (*o*), unusual and high relaxing heat, debauch in eating and drinking, a great excess in the use of the diffusible stimuli (*p*), a great abundance and velocity of blood; all, or any of these, rising to indirect debility by an ultimate excess in their operation, are notorious for their effect of repelling sleep. Again, cold, not in that extreme degree which immediately precedes death; abstinence from food, or that sort of it that is not sufficiently nourishing, or of sufficient indirect stimulus to produce *the requisite* distention; weak drink, as tea, coffee, or watery drink, especially when a person has been accustomed to more generous; intermission of usual labour or exercise, whether of body or mind; a sense of shame from disgrace, and fear, 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 in part a mixture of *both* (*q*), is the cause of sleep, the first of sound sleep, the two latter of an improper or morbid state of that function; so an excess of the same debility, whether indirect or direct, is also a cause of improper or morbid vigilance. The only salutary 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 either excessive sleep, or excessive vigilance, are either so many tendencies to disease, or actual disease (*r*).

(*l*) See last par. CCXXXVIII.

(*m*) See above, CXXXVIII.

(*n*) See CXL.

(*o*) See CXXXVII. r.

(*p*) See CXXXIV. CXXXV. CXXXVI. *o*, *g*.

(*q*) See par. XLVII. and the note belonging to it.

(*r*) 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,

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 (*s*).

CCXLI. As the effect of both indirect and direct debility is sometimes sleep, sometimes watching, both of *them* unsound, both hurtful; so the cause of bad sleep is either *sort* of debility; without a stimulus acting upon the system in a weakened state, and, thereby, throwing the system into a state of disturbance. The same debility of either kind, with such a stimulus, produces the morbid watching; in which case it is a small stimulus that acts as an irritating power (*t*).

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.

(*s*) 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 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 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.

(*t*) 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, phlogistic 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, the typhomania or constant working, of so frequent occurrence and so noted a symp-

N. Instances of morbid sleep occur in the predispositions to diseases, and the actual diseases, that depend upon sthenic diathesis, and in the ordinary state of intoxication from drinking.

But all the exciting powers, when converted into hurtful ones of excessive stimulus, each in proportion to its degree of excess, have the same tendency (*u*). But, when the exciting power proceeds beyond the sleep-inviting point; or when any stimulus, still finding *unwasted* excitability to act upon, continues to act; in that case the watching will be continued with bad effect (*x*).

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* (*y*); as in the several cases of the phlegmasiæ, that arise from the violent progress of the morbid state, or 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 deliveries, 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 fall into this sort of morbid sleep.

tom 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, as being considered, 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.

(*u*) 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.

(*x*) as in the harrowing watchfulness, which is liable to accompany the phlegmasiæ, or the several sthenic diseases with inflammation of a part.

(*y*) That 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.

CCXLIII. When either direct or indirect debility, sometimes produces sleep that gives no refreshment (z), sometimes an ungentle, turbulent waking state, neither of them accommodated to health; as the debility, productive of either effect, exceeds that in which sound sleep consists; the use of that degree of stimulus which may repel the former, and convert the latter into sleep, will remove the complaints and serve for an illustration of the nature of both (a). In asthenic diseases the

(z) 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.

(a) 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 be considered 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 16 hours, and was followed by the most surprising relief. The continuance of this practice, with only an increase of the doses in proportion 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 seven 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 affected with the most constant disposition to sleep, so found 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

watching state for the most part is the consequence of direct debility with some power acting with slight stimulant effect; the reason of which is, that the disease depends upon more debility than that which constitutes sleep. Hence it comes about, that every thing that stimulates, every thing that raises the excitement as it were to that point, 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, such as a little animal food; if the weakness had been owing to vegetable food, such as wine, or any drink of equal power, after a water regimen; such as consolation in affliction of mind; heat, when cold has been the debilitating power; gentle exercise or gelation; or *the stimulus* of a pleasant train of thought, when one has been deprived of the stimulus of corporeal or mental exercise, is sufficient. In a higher degree of debility (for the curative force should always be adapted to the degree of the disease *b*); either a proportional 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 which cases, the virtue of opium is great; its virtue, however, is not peculiar to it, or any other than what it possesses in common with all the other stimulant powers, differing only from the rest in the higher degree of its *(c)* virtue. Thus in great debility, as in fevers, as in a violent

too much for the enfeebled state of his system. In the cases of children whose diseases are almost all asthenic, 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.

(b) See above, par. XLIV. and XCII.

(c) The notion of some powerful remedies, as opium, mercury, the Jexuits 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 *specifics*; an idea, which, like many other of their vague conceptions, was altogether contrary to sound philosophy; since the more careful our enquiries 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 Isaac Newton found the whole planetary syst-

fit of the gout, disturbing with tumultuary disorder the internal parts, and in other similar diseases of debility, in which the violence of the disease keeps off sleep; opium often, after the watchful state has remained many days, brings on profound and sound sleep; in which case, because the excitability is very abundant, and, therefore, can bear but a very small force of stimulus, we should, on that account, begin with the smallest degree of stimulus, and proceed gradually to more and more (*d*); till at last we arrive at the point of sleep, which will soon happen, as it is placed much within the range of direct debility: and with respect to coma, or that sleep which is not recruiting; 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, in that way, conducts *the patient* safely, gently, and pleasantly to health. But as the influence of the stimulant operation, that supports excitement, is of so great importance, and as sleep of longer duration than to prove refreshing, may arise even from good remedies, *the rule to be observed when that happens* is, whenever any attack of sleep, upon account of too long a suspension of stimulant action, has been of less service than was expected, to shorten its next attack, and renew the operation of the stimulus.

CCXLV. In asthenic diseases, and those arising 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, both other stimuli should be employed according to the degree of debility requiring their use, and, when the degree of debility is very considerable, the diffusible stimuli, and among the rest opium, should *not be omitted*.

CCXLVI. These are the times and circumstances of the body, 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; among others it banishes sleep and produces great activity and vigilance. Thus if any one is under the pressure of sleep without an evident

tems 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 will 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.

(*d*) See above, par. CVII.

cause, he will by opium be rendered surprisngly 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 dislike 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 most hurtful in sthenic diathesis, because, when added to the other stimulant powers, it not only banishes sleep, but is liable to precipitate those diseases from the sthenic state to indirect debility, and from this last to death.

CCXLVII. That the debility, upon which coma depends, is less than that which supports morbid vigilance, is proved, 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 the hurtful effect it may produce from direct debility (*e*) ; in which case recourse should be had to the different forms of wine and opium, with the intention of raising the excitement to that degree, which repels the sleepy state, produces more strength, and facilitates the return of health (*f*).

CCXLVIII. In the gout, in indigestion, of which examples have already been adduced, in diarrhoea and the colic, and many other asthenic diseases, particularly disturbing the alimentary canal, and chiefly affecting those women who are exhausted with frequent child bearing, and long 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 sleeping attack is prolonged, without the indulgence in it bringing 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 desire for sleep depends upon direct or indirect debility is evident from every thing that gives further debility increasing the disease, and every

(*e*) See above, par. CCXLI, and the note under it, as well as this whole chapter.

(*f*) 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, ensuring a safe return of the disease, as they did ; it was at best but a negative 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.

thing that strengthens, removing it. Among those all strong drink, and the preparations of opium, are peculiarly effectual, and that in proportion to their greater and more diffusible stimulant power, *than that which others possess.*

CCXLIX. Nor is it unconnected with this explanation of *the nature of sleep and watching*, and of both of them being sometimes repelled, sometimes induced, by a certain degree of stimulus (*g*) ; that excessive motions, as the spasmodic and convulsive, which have been mentioned (*h*), such as the quick pulse in fevers (*i*) and other *motions*, are removed by an equal force of stimuli, *to that which is required to remove morbid affection without any motions.* Hence *it is plain, that irregular motions are not only not increased functions (k), independent upon debility, but that they are impaired functions, and consist nearly in the same degree of debility.*

CCL. From what has been said, the analogy between watching and life, and sleep and death, and their dependence upon the same laws of nature, that govern all the other functions, clearly appears ; and the most solid probation has been adduced, that the most vigorous vigilance consists in the highest degree of salutary excitement ; that the middle and deep period of sleep depends on the highest debility that is consistent with the healthy state ; that true sleep depends on a middle 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 Diatheses.

CCLI. AS the cause of both the diatheses is that which has been formerly (*l*) related ; the indication of cure, therefore, to be taken from that is in the sthenic diathesis 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 that degree, which proves the cause of health.

CCLII. The remedies that produce that effect in *the cure of sthenic diathesis*, are the powers, which, when their stimulant operation is excessive, produce that very diathesis, in this

(*g*) See above, par. CCXLI. where this proposition is reduced to its exact principle.

(*h*) See above, par. CCXXX.

(*i*) See par. CLXXIX.

(*k*) See above, CCXXIX.

(*l*) See above, par. CXLVIII.

case, acting with that slight and reduced force of stimulus, by which they produce less excitement than health requires, or by which they prove debilitating (*m*).

CCLIII. The powers which produce the same effect in the asthenic diathesis, are those that, when their stimulus is small, produce that diathesis, *in this case*, exciting with that high degree of stimulus, by means of which they give more excitement, than suits the healthy state, or by means of which they stimulate.

CCLIV. In the sthenic diathesis that temperature (*c*) which is called heat, must by all means be avoided; and for this *very good* reason, that the only degree of it which proves debilitating, that is the excessive to an extreme, cannot be carried to that height, in which it debilitates, without the risk of hurtful or pernicious consequence from the excess of stimulus (*d*).

CCLV. But, when the diathesis, and its cause the increased stimulus, is gentle in the actual diseased state, there is no occasion for forbidding that degree of heat, which accompanies *the operation of sweating and pediluvium* (*e*); because the waste of fluids in the former, and the agreeable sensation in the latter, promise somewhat more advantage, than the moderate *degree of heat employed in this case* threatens disadvantage.

CCLVI. In a particular manner, after the application of cold in an intense degree, must *the application of heat* be avoided, because its operation, from the increase of the excitability by cold, becomes more effective (*f*). And the consequence is

(*m*) What follows in this paragraph goes out in the original.

(*c*) 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. Rite paratam rem verba haud invita sequuntur.*

(*d*) See above, par. CXV. Though very intense heat relaxes the simple 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 ensure that effect, and thereby occasion the conversion of the disease into a much worse one, such as hydrothorax, or the dropsy of the breast.

(*e*) Pediluvium is the warm bath of the legs and feet.

(*f*) See above, par. XXXVII, θ and note (*d*).

the more to be dreaded, that, at the same time, other stimuli are usually urgent.

CCLVII. Cold is the beneficial *degree* of temperature in the cure of this diathesis, but it must be cold not followed by any considerable degree of heat. That mistake, therefore, in medical practice, of thinking cold hurtful in sthenic diathesis by a stimulant operation, should be corrected; and its benefit 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, the same cold either alone, or in conjunction with other debilitating powers, has lately been found the most effectual remedy of catarrh (*g*).

CCLVIII. From which circumstance, and because a cap of fresh dug up earth put upon the head, has been of service in phrenitis; and that degree of cold, which produces frost and snow, when applied to the naked body, has removed a synocha accompanied with delirium (*h*); and because cold is so effi-

(*g*) or the common cold in English, a name stamp'd upon it by the very blunder we have been speaking of.

(*h*) 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 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.

acious *a remedy* in the small-pox ; it clearly follows, that the use of cold should be extended to the whole range of predisposition, 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 (*i*), is proved by its very high influence, when applied to the surface of the body in the small-pox, in keeping up a freedom of perspiration in proportion to the degree of its application. And its influence in producing atony with proportional laxity of *the fibres of the vessels*, is in conformity to the same observation (*k*).

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 giving a further increase of the excitement, too much increased already. Hence in fevers, in the gout, in dyspepsia, in the colic, in rheumatism (*l*), and in all asthenic diseases, the system is very much cherished by heat, and debilitated by cold : which, by its debilitating effect, is ranked among the powers that produce the disease (*m*), and is destructive in fevers.

CCLXI. As cold is hurtful in asthenic diathesis in the proportion in which it is serviceable in the sthenic (*n*) ; it is accordingly, for this further reason, to be avoided in diseases of the highest debility, that, like intense heat, it relaxes the extreme vessels, and produces a putrefaction in the fluids (*o*).

CCLXII. The more certainly to moderate the sthenic diathesis while as yet it remains within the range of predisposition, a sparing use should be made of flesh and the preparations from it, and vegetable dishes used with greater freedom. But, when

(*i*) 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.

(*k*) 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.

(*l*) or what is improperly, as it has been said before, called the chronic rheumatism.

(*m*) 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.

(*n*) See par CCLVIII.

(*o*) See above, CXVII.

the same diathesis is increased to the degree, that constitutes disease, abstinence from animal food, especially in a solid form, 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 management of diet goes.

CCLXIII. In that degree of this diathesis, which does not exceed predisposition, it is proper to avoid seasoning, which is destructive in diseases.

CCLXIV. Watery drink is very suitable to it, and all pure and strong drink hurtful, and that in proportion to the quantity of alkahol that it contains. The latter *sort of* drink, unless *taken* very weak, is destructive in diseases. In the number of which pure water, especially with an 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 (*p*).

CCLXV. Since the indirect stimulus of food assists the direct, that is, propagates itself over the whole body; for that reason bounds should be set to the bulk even of the suitable matter (*q*).

CCLXVI. In every degree of asthenic diathesis, vegetable food should be avoided, and recourse had as soon as possible to that, which consists of meat and animal matter. And, as that can seldom be executed immediately upon account of the weakness of the stomach; the diffusible stimuli should, therefore, be used; such as the *different* forms of wine when the debility is moderate, and opiates when it is greater. *And at the same time*, from the very beginning rich soups should be given in great quantity upon the whole, and a gradual transition made to the use of more solid matter.

CCLXVII. As it is animal matter in this case, that is of service, so the degree of stimulus, that seasoning adds to it, improves its effect (*r*).

CCLXVIII. During the predisposition to asthenic diseases, watery, cold, acid, fermenting (*s*) drink is hurtful, and that proportion of pure strong liquor, that the degree of debility requires, is beneficial. But, after the diseases have actually taken place, and have now attained a high degree of vehemence, the same strong drink becomes so indispensably necessa-

(*p*) The last line is an addition in these words, "Ante omnia stimuli diffusibiles in hac diathesi nocent."

(*q*) See above, par. CXXVII.

(*r*) See above par. CXXV.

(*s*) There is an addition, to the original, in the words, frigida, acida, fermentifera.

ry, that excepting the soups, and the still more diffusible stimuli, it is the only *support* required for a long time. There is no occasion for any dread of the indirect stimulus of food, when the matter, which chiefly affords it, that is, vegetable matter, is guarded against (*t*).

CCLXIX. For *the purpose of* diminishing the stimulus, which an over proportion of chyle and blood (*u*), directly applied to a great extent of the body, produces; 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 (*x*), respecting a moderate diathesis, ought to be observed; that is, we should adhere to *the practice of* vomiting (*y*), and purging from time to time, and to a sparingness in diet. But blood should not be let. And, if upon any occasion, the patient shall give way to a little fulness in his use of food, he should use vegetable matter, abstinence, gentle and frequent exercise, and sweating, and, thereby, keep up a full perspiration.

CCLXX. The same are the means of cure for an excess in the velocity of the blood (*z*), in so far as it depends upon an over proportion: when the velocity depends upon violent motion of the body, the means of lessening it, when the diathesis is so moderate, *as only* to produce predisposition, or a gentle degree of actual disease, are an abatement of exercise, more indulgence in rest, and a reduction of other stimuli. In the very great diathesis, that which occasions severe diseases, in order to retard the motion of the blood, a point must be made to avoid the stimulus of all the exciting powers, and blood must be taken profusely. *Here* it is superfluous to lay down a rule *for the observance of keeping the body in a state of* rest, as rest, even in spite of the patients, is unavoidable (*a*).

(*t*) Compare this with what was lately said in paragraph CCLXV.

(*u*) 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, to be afterwards mixed, first with the venous, and then with all the other blood in succession. Such is the nourishing matter of animals.

(*x*) See above, par. CCLV.

(*y*) An addition in MS.

(*z*) See above, par. CXXXI. to CXXXIV.

(*a*) 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 the bed without pain.

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 energy, produces (*b*). *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 (*c*), first, the strength must be gradually brought back by diffusible stimuli (*d*) and soups; next, we should gradually use the latter more sparingly, and solid matter more plentifully; lastly, to give the whole system still more strength, it should be fortified by exercise, and the rest of the durable stimuli; but no further use should be made of the diffusible, than to employ them so long as considerable debility remains (*e*).

(*b*) 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.

(*c*) How great the space or extent of the system is, that, in the sthenic diathesis, receives the stimulus of an overabundance of blood; and, 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 overabundance of blood, as well as the debility 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, hurtful 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 the 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.

(*d*) 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 is it 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 par. CXXVI. and CXXX, and subjoined notes, and a little above, par. CCLXVI.

(*e*) 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 ma-

CCLXXIII. In a weak state both of the vessels and of the rest of the body, every motion of the body, any way considerable, and all other stimuli, which quicken the motion of the blood, and bring on an indirect temporary debility, should be withheld. But, in a case of slighter debility, such motion as does not prove fatiguing, but acts as an agreeable stimulus, and gives recruit, should not be avoided. When a person is recovering from a disease, he should be gradually brought back to his usual plan of life; nor should it be forgot, that, till that is done, the health is never 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 removed by the stimulant plan of cure, which has just now been spoken of *(f)*, not by an antiseptic one *(g)*.

CCLXXV. The suitable remedy of that *sort of* stimulus, which arises from either violence or assiduity of thinking, is an abatement *in the degree* of thinking, or that high stretch of the intellectual function, whether its degree or frequent repetition be regarded, that, by wasting the excitability, proves, at last, indirectly debilitating: which is a rule, however it may suit the state of predisposition, that is by no means safe, after the disease has once made its appearance, and especially if it is a violent one; because there is no access to any benefit from it, but through the intermediate degrees of that stimulant range, which, by increasing the excitement, already too great, would do mischief *(h)*.

nage 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 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.

(f) See above, CCLXXII.

(g) See above, CXVI. and CXVIII.

(h) See above, CCLIV.

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, that every first gust of passion should be prevented. The ultimate excess of passion, upon account of the intermediate danger of stimulating too much, is by no means to be thought of.

CCLXXVII. In so far as debility depends upon excess in mental exertion, or upon a languid state of that faculty, the excess should be diminished, and the languor removed, and an agreeable train of thinking set on foot; 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 brought about (*i*).

CCLXXVIII. In every degree of debility that high force of the passions, that produces indirect debility, must be avoid-

(*i*) 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 slight 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 outstrip 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 book of the mathematical elements, commonly called Euclid's? He jumped about in an ecstasy, crying out *Ευρηκα*, and was so much more substantial than some of his few brother discoverers, as to possess the means of 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 honor of the day!"

ed ; and it must not be forgot, that a very small degree of them is sufficient for that effect ; we are not to give loose reins to agreeable passions (*k*).

CCLXXIX. When there is a deficiency in the force of *any* of the passions, as in sadness, grief, fear, terror, and despair, which are only lesser degrees of gladness, confidence, and hope, and imply only a diminution of exciting passions ; such deficiency or *diminution* must be expelled, and the exciting degree of passion recalled ; hope and assurance must be infused, and the patient gradually carried up to *feelings of joy*.

II. For there is only a sum total of the passions, which act in the same manner as all the 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, it, by accumulating the excitability, has the effect of making the other stimuli act more powerfully (*l*). Take, for instances, the terror of an army before the sound of trumpet for the onset of battle, and the courage with which they are afterwards inspired, from the consciousness of their bravery, the General's speech to animate them, or, perhaps, his commemoration of their former brave deeds.

P. An ultimately excessive voluptuousness in the exercise of the senses, as well as the effect of disagreeable objects, presented to them, in asthenic diathesis, should equally be avoided ; and, in the sthenic diathesis, their turbulent force should be guarded against (*m*).

Σ. Nothing is better accommodated to the asthenic state, than purity of air ; which, either alone, or conjoined with exercise, must consequently, be of the greatest benefit to convalescents.

T. Since the matter of contagion, in so far as it has any

(*k*) 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, near 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.

(*l*) See above, par. XXXVII. and the note annexed to it.

(*m*) See par. CXLIII. and CXLIV.

tendency to produce general disease, produces either sthenic (*n*), or asthenic, diathesis (*o*), and acts by an operation similar to that of the general hurtful powers; *the inference to be drawn from that is*, that in the cure, general remedies should be employed; and debilitating ones opposed to sthenic, stimulant ones to asthenic, diathesis (*p*).

CCLXXX. These powers, the same in kind with those that produce the diatheses, differing only in degree, and in that respect diametrically opposite, remove the diatheses seldomer, and less successfully, one by one; oftener, and more effectually, *when* several co-operate, but, best of all, if all of them be taken together, especially when there is occasion for great assistance.

(*n*) as in the small-pox and measles,

(*o*) as the contagious typhus, the gangrenous sore throat, dysentery, and the plague,

(*p*) Par. CXLVII. and CLXXV.

END OF VOL. I.



THE
ELEMENTS OF MEDICINE;

OR,

A TRANSLATION

OF THE

ELEMENTA MEDICINÆ BRUNONIS.

WITH LARGE

NOTES, ILLUSTRATIONS, AND COMMENTS:

BY THE AUTHOR OF THE ORIGINAL WORK.

IN TWO VOLUMES.

VOL. II.

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SEP. 3 - 1901

PHILADELPHIA:

PRINTED BY WILLIAM SPOTSWOOD,

FOR

ISAIAH THOMAS, OF WORCESTER, MASSACHUSETTS,

MDCCXCI.

THE
ELEMENTS
OF
MEDICINE.

CHAP. IX.

*A Comparison of the different Parts of the Sthenic Plan of
Cure with each other.*

CCLXXXI. **A**S, in the sthenic diathesis, bleeding is the most powerful remedy of all others, being that, which completely carries off a stimulus, as much more powerful *than any other*, as it is directly applied to a greater extent over the system; consequently, as often as the diathesis is very high, it should be freely used; but never risked during predisposition, and sparingly, or not at all, ventured upon in diseases of a gentle nature; in which other remedies should be preferred (a).

CCLXXXII. The next place of importance to *bleeding*,

(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.

when heat and other stimuli are guarded against, is claimed by cold. Heat is always hurtful, and still more so after a previous application of cold; but it is most hurtful, when it is also combined with other excessive stimulant powers. Cold is always of service, and 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 after these remedies is claimed by vomiting and purging and sweating. These evacuations have a powerful effect in removing sthenic diathesis, and therefore do they, with great advantage, supersede the oftener imaginary, than real, necessity of profuse bleeding. They are often alone sufficient to restore the healthy state.

CCLXXXIV. Together with all these, the articles of diet, the stimulant operation of which prevents the benefits to be received from them, should be sparingly used, and that 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 and gentle diathesis.

CCLXXXV. Also with all *the remedies yet mentioned* we must conjoin rest, when the diseased state has taken place, and moderation in motion during the period of predisposition (*b*).

CCLXXXVI. The practice of the common run of physicians is very bad, in going too much upon 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, not even in peripneumony itself; but employ all the rest either in concurrence or succession.

CCLXXXVII. The disturbed functions, or those that are impaired (*c*) not from a debilitating cause, admit of the general *plan of cure*, and no other.

CCLXXXVIII. The symptoms of debility, which are the consequence of the violence of the sthenic diathesis, in the progress of the disease, and that threaten death by indirect debility, ought to be prevented by an early interposition of the remedies.

CCLXXXIX. The same early cure serves to prevent supuration, effusion, and gangrene, which arises from ultimately excessive excitement, passing into indirect debility.

(*b*) So considerable a stimulus is exercise, that, if 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.

(*c*) See above, par. CXLVII. CLI. CLXXII.

v. 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.

The same Comparison of the different Parts of the Asthenic Plan of Cure with one another.

CCXC. IN asthenic diathesis, and the diseases depending upon it, reproducing the *lost* quantity of blood, is the most powerful remedy, when we, at last, find access to it, as being the only means of restoring a stimulus of so much more power and efficacy, that its direct application is made to so great an extent of the system (*a*). For which reason, as, in every degree of debility, the quantity of food, from which only blood is made, that is taken and digested, is always in an inverse proportion to the degree of debility (*b*); so much, and of 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, giving solid animal food sparingly each 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, broth made from it, as rich as possible, and as free of fatty matter, should be carefully administered (*c*). *With this view* to excite the stomach, and render it more fit for receiving and digesting the food *just now* mentioned; the diffusible stimuli, such as different kinds of wine, and more particularly still opiates and other remedies of similar powerfulness, 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 (*d*). In the *case* of indirect debility, we should also gradually proceed from the highest to the lowest force of stimulus, as has been mentioned formerly (*e*), and, in an inverse manner, go on from the small-

(*a*) Compare this with par. CCLXXXI. above, and with all the paragraphs from CXXXI. to CXXXVI.

(*b*) Or in a direct proportion to the degree of excitement.

(*c*) Compare this with par. CCLXXII.

(*d*) See last note (*e*), and compare it with this.

(*e*) Par. CIII.

est 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 an abundance of blood is the greatest support of health (*f*), and that we are not to give way to a weakened appetite (*g*).

CCXCI. To the vital fluid, and the several means of increasing its quantity, which have just now been mentioned (*h*), the next remedy in the cure of asthenic diathesis is heat; as being the power by which animals (*i*), in their first formation, in their growth, and most especially in their decay, are brought forth into existence, are nourished, and acquire vigour, and afterwards, through *the several degrees of their declining state*, are to some extent upheld, till their excitement is all extinguished (*k*). By heat, understand that point of external temperature, which intervenes as a mean betwixt cold, as it is called, and high heat (*l*); under which our sense of temperature, is agreeable and pleasant; under which the body is neither weakened by that relaxation which produces sweat, nor by that torpor (*m*) which cold begets, *where the debility is*, in this case, direct, and in the former indirect; 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 (*n*).

CCXCII. Such a temperature as that is suited to every state of the body, but still more to *its 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 such*

(*f*) How widely different is that 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.

(*g*) This is equally the reverse of the general practice of inanition in almost every disease, without a single exception.

(*h*) The addition in MS to the text for these last words is, “*et relatis ejus, copiae augendæ rationibus.*”

(*i*) And we may add vegetables.

(*k*) Compare this with par. CXII. and CCLIV. and CCLX.

(*l*) The Latins have a single word for this which we want; the word is *ardor*.

(*m*) Or benumbed state.

(*n*) 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.

deficiency. Hence, both in other diseases of great and direct debility, and particularly in fevers, heat is found to be of the greatest benefit, and above all others in all such complaints of that kind, as cold has had any share in producing (*o*). In the same 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 in a progress to indirect debility (*p*). We must be equally on guard, in every degree of asthenic diathesis, against excessive heat : which is equally debilitating as 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 (*q*).

CCXCIII. As refilling the vessels is the greatest remedy, because its direct stimulus is applied over such an extent of the system ; for that reason heat, which is immediately applied to the whole surface of the body, and directly affects the body to that extent, should be next in virtue *to it*.

CCXCIV. Since vomiting, purging (*r*) and sweating (*s*) are so powerful in debilitating, as to claim the third place of rank in the sthenic 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. To run over the list of stimuli, that answer this purpose, we must begin with the cure of that slighter loss of fluids *that occur* in those diseases, and proceed to the more violent kinds of them.

In a slight looseness of belly, such as happens in predisposition to asthenic diseases, or in the slighter degrees of the latter ; it will be commonly sufficient to abstain from vegetable food, and from weak, watery drink, or that *kind of it that ferments in the first passages*, such as the several drinks made from barley, called beers ; to use animal food, as well seasoned and as rich, as possible, and free of all fatty matter ; to drink pure wine,

(*o*) See again, par. CCLX.

(*p*) 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 θ . 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.

(*q*) With this proposition compare par. CXV. CXVII. and CXVII.

(*r*) See par. CCLXXXIII.

(*s*) See par. CCLV.

or spirit, in different degrees of strength ; and to take *such exercise as is* gentle in degree, and often repeated (*t*).

CCXCVI. When the belly is still looser, and *with that affected* with gripes and pains, as happens in the violent diarrhœa, and in the 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 fluids *of the system*.

CCXCVII. In which case, the use of the stimuli will be so much the more necessary, that other symptoms usually accompany those increased excretions. Their great efficacy, and stimulant power, is proved by their singular virtue *in removing* those and other *symptoms* in fevers and other most violent sthenic diseases, nay, in the article of death itself, from ultimate debility.

CCXCVIII. Accordingly, in spasms and convulsions, in the internal, in the external parts (*u*), in bleeding discharges (*x*), in the direful delirium of fevers, and other very violent diseases (*y*), in asthenic inflammation (*z*) ; when those stimuli, which have a more permanent influence, fail, or act to no good purpose ; the virtue of the diffusible stimulants, the principal of which is opium, is eminent.

CCXCIX. As, therefore, the energy of that stimulant virtue serves to check looseness of the belly, and vomiting, or even sweating, when these symptoms are gentle, and depend upon a less violent *degree* of the 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 greatest of all the powers, which are ever applied to the human body ; which may be known from this proof, that when the action of all the other powers by which life is supported, is of no effect, they turn aside the instant stroke of death.

(*t*) See and compare, for the more clear understanding of this paragraph, the CCLXVI. CCLXVIII. CCLXXIII.

(*u*) See par. CXCIV. and CXCVI.

(*x*) See par. CXXXIV. χ . ψ . and CCXXXII. and the subjoined notes.

(*y*) See par. CXCVIII. CC. CCI.

(*z*) See par. CCIV. to CCXII.

CCC. The most weak degree of the diffusible stimuli (*a*) 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 the latter *taken* pure, and higher still, those that have undergone many rectifications. The strength of which is in proportion to the quantity of water expelled, and of the alkali retained.

CCCI. A higher place in the scale is claimed by musk, volatile alkali, camphor; our trials of which are not yet so complete, as to ascertain its force exactly; next comes æther, and, last of all, opium (*b*). Of all which, however unless, when, as they sometimes do, they have lost their effect by a continuance of their application, and are, therefore, substituted in place of each other, for the sake of a renewal of the operation of each; and when, in that way, we make the complete round of them, for the sake of repelling extreme debility; *in every respect*, the preparations of opium are sufficient for most purposes of high stimulating (*c*).

CCCII. Together with all these (*d*), regard must be had to the articles of diet (*e*). And, as in great debility, and the diseases depending upon it, of the only suitable matter, that is meat, nothing solid can be taken; for that reason, the matter to be used must be fluid, but strong. Animal soups should be given sparingly at a time, but repeatedly, in proportion to the degree of debility, and jellies, both along with the diffusible stimuli. After that, when, chiefly by means of the diffusive stimuli, the strength is in part restored; at first solid meat, likewise in sparing quantities, but often repeated; then *given* more plentifully, and at greater intervals, should be taken. *In which progress* the patient should gradually recede from the use of the diffusible stimuli.

CCCIII. When now the diffusible stimuli are altogether laid aside, and the convalescent is given up to his usual diet, his usual manner of living, and 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 hurt-

(*a*) See above par. CXXVI. o. π. ρ. ς.

(*b*) A few words with respect to the rank of æther in the scale are erased, as not being correct in point of fact.

(*c*) The original is corrected as follows, "opii formæ satis in plerisque altius stimulandi usus sunt."

(*d*) They are animal soups, and solid meat (CCXC.) heat, (CCXCI.) stimulants (CCXCV.) diffusible stimulants, (CCXCIX.)

(*e*) See par. CCLXXXIV.

ful) ; 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 (*f*). 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 (*g*) : the most nourishing food should be taken, but not in too great a quantity, lest the excitability of the stomach be worn off, without the attainment of a due degree of vigour ; but it should be often taken, in order to reduce the excitability gradually, which only serves to produce proper vigour, and reduce it to its half wasted state (*h*) ; that degree of heat, which stimulates, should be employed (*i*), and both excesses of it, as well as cold, as they are equally debilitating, should be avoided : the patient should breath 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 in frequent gay entertainments ; he should travel through a pleasant country, and be moderate in love. Neither is the management of the senses, and any return of contagious matter to be neglected.

C H A P. XI.

How the Remedies should be varied.

CCCIV. AS the hurtful powers, that produce predisposition 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 such a part is commonly that which they directly affect (*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. And the reason

(*f*) See above par. CV. and CIX.

(*g*) See par. CCXLII. and sequent.

(*h*) See above the XXIV. XXV. and XXVI.

(*i*) See par. CXII.

(*a*) Par. XLIX.

is, that, though the excitability is sufficiently reduced by *that remedy* in the greater blood-vessels, 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 sort 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 fluids 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: for instance, the small vessels which open into the stomach, are not sufficiently relieved of their distending (*c*) load. And although vomiting (*d*), which has been improperly left out of the cure of sthenic diseases, and *still more* improperly employed in *every one* of the asthenic, should be conjoined with the two remedies just now mentioned, even that would not be enough to produce an equality of diminished excitement; as there would still remain in the perspiratory vessels, the same state of the excitement, which has been mentioned, as 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* of sweat to the evacuations that have been spoken of, will produce a more equal diminution of excitement, 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. But the matter stops not even here. For, since in slight sthenic affections much nourishing food, and in them all, too much can be taken; the consequence of that must be,

(*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 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*) and therefore stimulating load, the stimulus in any vessel being the quantity of its fluid.

(*d*) See par. CCLXIX.

that, however much the quantity of the blood and other fluids has been diminished, if the 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 fuel of excessive excitement. To prevent which inconvenience, and to diminish excitement, still with greater equality over the system; abstinence, or an allowance of vegetable matter in a fluid form, and watery drink, will have a very great effect. But neither does the matter end here. 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 that 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, (*e*), 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 so fully pointed out, have been 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 a great effect in producing sthenic diathesis (*f*), so the guarding against them, or prevention of them, must be equally effectual in removing that *diathesis*, and in re-producing that equality of excitement, upon which health depends (*g*).

CCCVI. If the cure of sthenic diseases hitherto has consisted in bleeding, purging of the belly, and in the use of refrigeration in a few cases; and, if the other objects of attention, which have now been so fully treated of, have either been totally neglected, or mentioned in a slight way, by the by, and as if they had been of no consequence, and, in the cures which were prescribed in that way, not reduced to any principle; it will easily *now* appear, from what has been said above, and in

(*e*) See par. CXIII.

(*f*) See par. CXXXVIII. CXL.

(*g*) 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.

other parts of this work, how much the knowledge of those 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 practice of the cure of them, considered either as an art and imitative, or as rational and scientific, has been discovered and demonstrated.

CCCVII. As the debilitating or antisthenic (*h*) remedies are the same with the asthenic hurtful powers (*i*) ; so the sthenic remedies (*k*) are also the same as the sthenic hurtful powers.

φ. And as the remedies of asthenic diathesis (*l*), 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 (*m*). For, while they indeed increase the excitement over the whole body, at the same time, they produce that effect in the stomach with greater force *than any where else*. Hence, even from the beginning of the cure, when almost no food can be taken, and other durable and more natural stimuli (*n*) are most imperfectly applied ; yet, together with the diffusibles, soups (*o*) 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 properly secure both the internal and external surface. Nay, in the same way, we remove that in-
 aution of the vessels which takes place in asthenic diseases in an exact proportion to their degree. For, as in that abundance of blood, which is the most powerful means of bringing on sthenic diseases, there is an opportunity of making a quick

(*h*) See par. XC.

(*i*) See par. CCCIV. to CCCVII. the present one.

(*k*) See par. XCI.

(*l*) All from the number CCCVII. to this reference, or in the original to "recta admoventur," is a correction of the original in these words, " Ut auxilia debilitantia, seu antisthenica (XC.) eadem, quæ noxæ asthenicæ (CCCIV. ad CCCVII.), ita auxilia sthenica (XCI.) eadem quoque, quæ noxæ sthenicæ, sunt. Utque diatheseos asthenicæ remedia, cuicunque par-
 ti," &c.

(*m*) See par. CCCI.

(*n*) as that of pure air, exercise, the stimulus of the motion of the blood and other fluids in their respective vessels.

(*o*) See par. CCCII.

cure by the immediate taking of blood; so it is only by insensible, gradual, imperceptible (*p*), and obscure successive steps, that we open the access to the removal of that penury of blood, which proves the most hurtful power in asthenic diseases, and effect the filling of the vessels again.

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 effect this further in part; at the same time some most diffusible stimulus, suppose any preparation of opium should be administered, and the little animal food, *or meat*, that there is any appetite for, and that can be taken and digested, should be added. The idea of giving food is evident from the late explanation given about soups (*q*). 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 the stimulus of the motion, by which all the muscles, which, from their situation on the surface of the body, by their contractions propel the blood along the veins to the heart, are thrown into action, has not been supplied (*r*); and, therefore, both upon account of the emptiness of the vessels, and the slow circulation from the want of that impulse, the excitement is not sufficiently aroused over all that tract. After the strength has, then, been so recruited, that rich food can now be taken, the body can now be roused, first by foreign, then by its own organs, of which the former is called gestation, the latter exercise, and also refreshed by air; *when all that has happened*, then it is, that the excitement is further raised in several points, and becomes more equal upon the whole.

CCCXI. The last stimuli to be mentioned, 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 (*s*). In this state of convalescence, the same *management*, which was formerly mentioned upon the going off of asthenic diseases, perfectly applies (*t*).

(*p*) “ & cæca ferie is added in MS.

(*q*) See par. CCCVIII.

(*r*) See par. CXXXVII. α. β. γ. δ. CCLXXIII. CCCIII.

(*s*) See and compare with these last mentioned stimuli the following paragraphs CCLXXV. CCCLXXVIII. CCLXXIX. π.

(*t*) 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,

CCCXII. The 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 hurtful powers, or the indication of cure and the remedies, be considered. May it, therefore, be put as a question, whether the whole doctrine, which has hitherto been delivered, has, at last, brought forward clear proof, that the art of medicine, hitherto conjectural (*u*), inconsistent with itself, altogether incoherent, is now reduced to an exact science, proved not by mathematical principles, which is only one kind of probation, 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 that of the Remedies is, also the same.

CCCXII. As it is found certain, and proved, that the common effect of all the exciting powers is precisely the same,

is much the same; being a state of some remaining debility in all; in the sthenic from the 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.

(*u*) 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 their 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.

to wit, the production of the phænomena peculiar to life, that is, that sense, motion, intellectual operation, and passion and emotion, are the same; for what else is the effect of heat, of food, of seasoned food, of drink, of the blood, of the colourless fluids secreted from it, and of the air, among external bodies; what else in the functions of the living body itself, is the effect of muscular contraction, of thought, of the passions, and of sensation, but to excite, preserve, and continue as the sustaining cause of those functions in common to animals? And, as it is from that evident, that the operation of all the same powers is also the same; (for it must be granted, that the same cause, by an universal law in nature, tends to the same effect: (a) and further, as the operation *betwixt cause and effect* depends upon stimulating (b), and that stimulus, produces all the phænomena of life, health, disease, and those intermediate degrees between both, which are called predispositions (c); from these certain and demonstrated facts it follows, and 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 diseases, except an excess of excitement in the latter, and none betwixt the former and asthenic diseases, but deficient excitement in these last, what else can the operation of the remedies, to remove 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 things, it must be the same thing as each of them, each of them the same thing as it, and every individual of them the same thing as every other individual.

§ In sthenic diseases, bleeding (e), vomiting, and purging (f) sweating, abstinence (g), rest of body and mind (h), tranquillity with respect to passion, *all those* 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 keeping the food upon the stomach, and of assisting in the di-

(a) See par. XX. with the annexed note.

(b) See XIX. and XXII.

(c) See XXIII.

(d) See LXXXVIII.

(e) See CCLXXXI.

(f) See CCLXXXIII.

(g) See CCLXXXIV.

(h) See CCLXXXV.

gestion 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 of only increasing excitement.

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 an excess of force, produce sthenic diseases; by a deficiency of force, asthenic, as well as the predispositions to both, are they not the same, with no other variation but that of degree (*a*)?

CCCXVI. Further, as we learn from the whole doctrine delivered above, the hurtful exciting powers, which produce sthenic diseases, are the remedies of asthenic; and those which produce the latter, are the remedies of the former (*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 hurtful exciting powers (*e*) in the cure of both those, their indications, and remedies adapted to each (*f*); all that, in every respect, is precisely the case 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 action of plants also consists in stimulus (*g*);

(*i*) See CCXCIV. to CCCII.

(*k*) See CCCII.

(*l*) CCCII. CCCIII.

(*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. CXLII. to an CXLVII.

(*e*) See the same.

(*f*) See LXXXVIII. LXXXIX. XC. XCI.

(*g*) See XVII. XIX. and notes

by means of which, the phœnomena peculiar to that sort of life, sense, 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 the former depend on an excessive, the latter upon a deficiency of stimulus. Accordingly, excess or scantiness of moisture, excessive heat or cold, by an equality of *hurtful* operation, 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; or to prevent an excess, or long continuance of darkness from producing direct debility, and the diseases peculiar to it (*i*).

CCCXXII. Nor do plants want 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 (*k*).” The effect of which is, that, to whatever part of a plant any exciting power is applied, its operation, whether in excess, in due proportion, or in under-proportion, 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 any part to which its exciting power is directly applied, than in any other equal part. And, as there are two reasons for that fact in animals, the direct impression of the power upon the part more affected, and a greater energy of the excitability of *a part or relation to which it is so applied*, than on that of any other equal part (*l*); the very same is the fact with respect to plants. Further, as the excitability bears a greater relation to

(*h*) See part I. Chap. II.

(*i*) Chap. IV. 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.

(*k*) See part I. Chap. IV.

(*l*) See XLIX. and addition L. LI.

the impression of the *exciting* powers, on the brain, the stomach, and intestines, than on any of most of the other parts; so the part in plants, that corresponds to these parts, is the root, which is affected in the highest degree by the exciting powers. It is the root of plants, in preference to any of their other parts, to which the conflux of moisture is made. The heat there is the best, which is neither excessive, and therefore liable to produce sthenic affection, nor ultimately excessive, and therefore ready to induce indirect debility (both which disadvantages are prevented by the depth of the ground); nor deficient, or what is called cold, which would bring on direct debility (*m*).

CCCXXIV. But the only use of the soil, through the pores of which the powers that have been mentioned penetrate, is to furnish that sort of a strainer, by which the powers may neither, 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; nor, from the contractedness of the pores, be insufficiently admitted to the root, and occasion indirect debility, or the decaying state of a plant. But that the soil is not otherwise necessary to the production of some 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 relaxing the pores: *on the other hand, we have proof of the same thing* in the success of contracting the pores 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*, the reason is evident, why every sandy as well as clay soil, when the former has not received, and the latter parted with its toughness, is barren and unfruitful. Hence it is, that very hot summers and countries are hurtful to clay grounds, by shutting up the pores; and serviceable to friable and lean grounds, by diminishing their porosity. Hence, dry seasons are suitable to

(*m*) 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 lye 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?

low-lying rich grounds, which, from all quarters, conduct a quantity of moisture around the roots of the plants; while rainy seasons are those that answer in grounds that are high and of a thin soil. Declivities facing the north, which are commonly of a thin and poor soil, are cherished and protected by hedges and clumps of trees, and a great number of bare stones, covering every thing, which some persons, of more industry than sense, often remove with hurtful effect; their good effect being to give heat and keep in moisture. But in those places, the declivity of which looks towards the south, there is not equal occasion for such *protection from cold* and dryness, as they, from their more happy situation, are cherished by the sun, defended from the cold winds, and exposed to those which blow from the southern points that are seldom too dry (*n*).

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 governed by excitement, which the exciting powers only afford; 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 that way renewed, that *the system of nature* remains, and maintains an eternal vigour; in one word, that all the phenomena of nature are fabricated by one single organ (*o*).

There are many circumstances that give reason to believe, that this globe has undergone great changes, and 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 of the respective form of each of its individuals. But whether the last, like animals and plants, have a

(*n*) While the northern winds, that is, the wind due north, and all the 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.

(*o*) 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.

fort of life, so as, after their manner, to be produced into living existence, to grow, to run through a period equally without growth and diminution of bulk, to decay, to die, and, in death, lose their proper form; the great duration of their age, and the shortness of ours, deprive us of any possibility of learning.

CCCXXVII. As all the motions of the planets, which latter were formed to remain and continue their courses for ever, depend upon this one 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 pulled downward, and thereby, upon the whole, thrown all into circular motions; so, in the lesser and living bodies, with which those greater bodies are filled, that is, animals and plants, of which the whole 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.

CHAP. XV.

CCCXXVIII. **I**N every sthenia, in all sthenic diseases, in the whole first form of diseases (*a*), an universal criterion is increased excitement over the whole system,

(*a*) See above par. LXIX. LXXXVIII. CXLVIII. CLI. CCLI. Chap. IX.

evidenced, during the predisposition, by an increase of the functions of body and mind (*b*), and demonstrable, after the arrival of disease, by an increase of some of the functions, a disturbance of others, and a diminution of others; in such sort, that the *two* latter are easily perceived to arise from the hurtful powers that produce the former, and to depend upon their cause. As by that 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: for, there are some sthenic diseases, accompanied with pyrexia (*c*) and the inflammation of some 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 distinction, be treated *here* according to their rank in excitement, from the highest to the lowest degree of excitement.

CCCXXXI. The phlegmasiæ and exanthematic diseases have the following symptoms in common to them. The first of these is 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 other excretions (*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 affection nearly allied to it; while the general affection, for the most part,

(*b*) See par. CLI. throughout.

(*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 mucous, 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.

precedes this local one, and 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 pustles, more or less crowded, according to the degree of the diathesis, covers and diversifies the skin. *The eruption appears upon the occasion* of a foreign, contagious, matter having been taken into the body, and detained below the cuticle.

CCCXXXIII. The explanation of all those 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 *frequency*, the quantity of blood, to be thrown into quick motion, sets bounds to it and prevents its rising to quickness. But, *at the same time*, it is evident, that a quantity *so great* cannot be transmitted with the same

(*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 phlegmalizæ 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, though for any thing these authors said to the contrary, they might sometimes have come on together, yet, that there was not one, in which it could be fairly alledged, 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.

(*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.

celerity, as an under proportion (*l*). 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 (*m*). The hardness of the sthenic pulse is nothing else, than the continuance for some time of each strong contraction, closely embracing 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, and during the period of predisposition; it is proved by the same and other powers, giving an unusually great excitement over the whole system (*o*) and, therefore, among *their* other effects increasing the digestive energy: and it is proved by evacuant, with other debilitating remedies, both preventing and removing the diseases. The confounding, therefore, this state with one diametrically opposite (*p*), which has hitherto been an universal practice, was

(*l*) 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 those 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.

(*m*) See above LIX. LX. and LXI.

(*n*) See par. CLV. If it should be alledged, that, though in fevers and the other cases mentioned just now in the note (*a*), 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.

a very capital blunder, and could not miss of producing the worst consequences, by equally perverting the theories and actual practice of the art.

CCCXXXVI. The shivering and sense of cold depend for their cause 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, confined within certain boundaries (*g*). 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 transmitted (*r*). This state is not spasm, is not 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 otherwise 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 now mentioned (*x*), is foreign from the present explanation; and on that account, the diathesis, that affects the interior vessels, is more gentle. These vessels, for that reason, and because they are naturally of a larger diameter, are sooner relaxed in these 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 the straining of the fluid to be secreted to distend the small vessels (*a*), and

(*g*) See above CLIV.

(*r*) See above par. CLXVI.

(*s*) See LXIX. and CXIII.

(*t*) See XXXVII. *θ*. 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.

(*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.

the counter-straining of the moving fibres, by their contractions, 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 mass of 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 to pass off by the skin (*b*).

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* (*c*). And the heat, by dissipating what fluid is excreted, contributes to the effect.

CCCXLII. The inflammation and affection nearly allied to it (*d*), whether of a catarrhal or of any other nature, is a part of the sthenic diathesis, greater in the affected, than any other equal, part of the *system* (*e*): which is manifested by the exciting powers, also in this case acting upon the whole system, by the symptoms of the diseases showing an affection in common to the whole, and by the remedies driving that affection, *not from the inflamed part only*, but from the whole system (*f*).

CCCXLIII. The general affection, for the most part, precedes that confined to one part, or is synchronous with it, never comes after it, because its cause, the excessive excitement (*g*), producing the diathesis, exists before the disease itself (*h*); and, though it forms the rudiments of the affection of the part during the predisposition (*i*), yet it does not, *at that time*, form that affection itself, and not always even during the disease, but only in a certain high degree both of the disease and of the particular affection itself (*k*). Hence, when the diathesis is great, the affection of the part is in proportion (*l*), and slight under a lesser degree of the diathe-

(*b*) The rest is erased.

(*c*) See par. CLIX.

(*d*) mentioned above in par. CCCXXXII.

(*e*) CLXVIII. CLXIX. CLXX. CLXXI.

(*f*) LXXXIX. See also part first, Chap. IV.

(*g*) See LXII. LXIX.

(*h*) See CLXXIV.

(*i*) See above CLXIX.

(*k*) See above CLXVIII. r.

(*l*) as in peripneumony and rheumatism, inflammatory sore throat, and mild erysipelas, sore throat.

sis (*m*); while in a moderate and gentle diathesis it does not happen at all (*n*), and for this reason, that 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 (*o*). And even in the measles, the danger of which turns entirely upon the degree of sthenic diathesis, the danger of inflammation is equal, by which, and often in a high degree, the lungs themselves are affected. Synocha is never phrenitic, but when a great diathesis occurs, threatening the brain with inflammation, or the danger of it. Nor is there any danger to be apprehended in erysipelas (*p*) even when *its inflammation* affects the face, but when the pyrexia is violent. And the mildness of the diathesis ensures a good termination. Simple synocha is nothing else but a phlegmasia, consisting of a pyrexia and diathesis, inadequate, upon account of their small degree, to the production of inflammation. Yet, as all the hurtful powers producing it, and all its remedies are precisely the same, with those of any phlegmasia; the separating it from them, and uniting it with fevers, which are diseases of extreme debility, was an unpardonable blunder (*q*); and so much the more so, that inflammation, which was falsely supposed essential to the nature of the phlegmasiæ, does take place in it, as often as the diathesis, necessary to produce it, is present (*r*). Yet this fact, upon account of another blunder, neither of a slighter nature, nor of less hurtful consequence, that of supposing inflammation the cause of the phlegmasiæ, could not be discerned. In fine, to remove all doubt of inflammation being compatible with the nature of catarrh, but

(*m*) as in the sthenic.

(*n*) As in synocha, or the common inflammatory fever and catarrh.

(*o*) 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.

(*p*) or the rose, or St. Anthony's fire.

(*q*) This has been more than once hinted at, and once a little above. The Nologists 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.

(*r*) What is a peripneumony, a rheumatism, or any phlegmasia, but a synocha, with a diathesis sufficient to produce inflammation.

commonly not taking place in it, upon account of the moderate general diathesis, upon which it usually depends; even in it, as often as the diathesis rises high, which sometimes happens, when the proper plan of cure for it has been neglected, and the effect of the exciting hurtful powers has been carried to excess, an inflammation, and a formidable one indeed, arises, often affecting the throat (*s*), and sometimes the lungs, and producing *there* an affection rising to all the rage of a peripneumony.

CCCXLIV. It is in vain to talk of a thorn thrust under the nail, wounding it, super-inducing inflammation upon the wound, and spreading a similar affection *along the arm* to the shoulder, and a pyrexia over the whole body, 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 now upon the eve of spontaneously breaking out into some one or other of its respective diseases. But 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 fever, arising as a symptom of gangrene (*t*), 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. Which happens, as in the case just now mentioned, as often as the general diathesis is absent, or the inflamed part is not an internal one and of high sensibility (*u*). Accordingly, all the examples of phlegmone, all those of erythema or erysipelas, without general diathesis (*x*), are foreign from the phlegmasiæ,

(*s*) When that happens it is still commonly a mild disease, as will be shown by and by.

(*t*) 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 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.

(*u*) See above CLXXI.

(*x*) See also par. LXXXI. The Nosologists, under their genus of phlegmone which in one of them is divided into two species, proper phlegmone, and erythma, 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 in-

absurdly conjoined with them, and more absurdly still considered as their prototypes; being *in fact* all only local affections, or symptoms of other diseases. This conclusion is not weakened by a certain resemblance of diseases with inflammation in an internal part to the phlegmasiæ; these diseases being neither preceded by the usual hurtful powers, that produce either the phlegmasiæ, or any general disease whatever, nor cured by the usual remedies of the latter. It was, therefore, a very bad mistake, and of most hurtful consequence to the practice of cure, to enumerate among the phlegmasiæ those diseases, that arise from stimulants, acrids, and compression, and are only curable by removing their local cause which is seldom effected by art (*y*).

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; they being by it most advantageously distinguished on the one hand from fevers, which are diseases of debility in extreme, and on the

inflammation in a part. But will any man in his senses see any connection 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 stie, 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 bit part; will he see any connection 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, nor 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 first. Chap. IV. and particularly par. L.

(*y*) 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 Cayen pepper; or symptomatic of a schirrous obstruction and tumor. 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 effect 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 sthenic diathesis is present, which is 17 times out of 20 for the other,

other from a similar, but altogether different, affection, which is a symptom of local diseases (*z*), and may be called a *symptomatic pyrexia*.

CCCXLVII. The true sthenic diseases (*a*) accompanied, except one, with pyrexia (*b*), and external inflammation (*c*), 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 of inflammation are catarrh, simple synocha, the scarlet fever, the small-pox, the measles; when in the two latter cases, the eruption consists only in a few pustules.

The Description of Peripneumony.

CCCXLVIII. The symptoms peculiar to peripneumony (*d*) (under which pleurisy, and as far as it is a general disease, carditis, are comprehended), are pain somewhere in the *region* of the chest, often changing its seat; difficult breathing; cough, for the most part bringing up an expectoration, and sometimes a mixture of blood *in the matter of expectoration*.

CCCXLIX. The seat of the disease is the whole body, the whole nervous system (*e*); which is proved by the disease being produced by an increase of the diathesis which took place in the predisposition, and by no new circumstance (*f*); by the inflammation within the chest, for the most part following the pyrexia at a considerable interval of time, and never preceding it (*g*), and by bleeding and other remedies of similar operation, which affect not the inflamed part, more than any other equally distant *from the centre of activity*, removing the disease. The proper seat of the inflammation; which is only a part of the general diathesis, is the sub-

(*z*) 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 galtritis, 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.

(*a*) See above CCCXXIX: (*b*) See par. CCCXXXII. (*c*) See CLXVIII.

(*d*) 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.

(*e*) See par. XLVII. XLVIII. XLIX. LIV. LV. and not the inflamed portion in the lungs, according to the common opinion.

(*f*) See above LXXV. LXXVI.

(*g*) See above CCCXXXII, and the note (*b*).

stance of the lungs, and a production of the pleura, covering their surface; or any part of that membrane, whether the part lining the ribs, or that containing, within the external surface of it, the thoracic viscera, different in different cases, and in the same case at different times.

CCCL. Pain, in some part of the chest, depends upon an inflammation of the corresponding internal parts just now mentioned (*b*), which is proved by dissection; only that it is 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, either as distributed upon the membrane, or as plunging into the substance of the lungs, or emerging from it, can alone be inflamed without *a communication of the affection* to the next points (*i*). The distinction, therefore, of the inflammation *accompanying the phlegmasiæ* into parenchymatose, or that affecting the substance of the viscus, and into membranous; as well as the notion which makes the latter case universal, is equally remote from the truth. The reason of neither the membrane contiguous to the lungs, nor the substance of the latter, being always inflamed, but of the inflammation being sometimes communicated to some part of the neighbouring membrane, is explained by the vicinity of the part inflamed

(*b*) See above par. CLXXIV.

(*i*) 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 phlegmasiæ 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, in 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.

in the last case to that which receives the air, and, therefore varies in its temperature (*k*).

CCCLII. The pain often shifts its seat (*l*) 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 part to remain in it, while in its greatest part it rushes into another. Which is a fact proved by the comparison of the known change of the pain with the traces of inflammation in the corresponding parts, discovered after death (*m*).

CCCLIII. This fact, added to those already produced, brings another solid argument (*n*) in retutation of the opinion of the disease being produced or kept up by inflammation, or in any shape depending upon it; confirms that 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; that, *as depending on that 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 cure in relieving or removing the diathesis. The same fact is confirmed by the nature of rheumatism, the pains of which are severer and greater in number, in proportion as the diathesis runs higher; and milder and fewer in proportion to its gentleness. These pains, that 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 (*o*).

CCCLIV. The difficult breathing is owing to no fault in the lungs, as an organ, to no defect of excitement in them, but to the air alone in inspiration, by filling and distending its own, compressing the inflamed, vessels.

CCCLV. The cause of the cough is a large secretion and

(*k*) 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 note here at (*i*), 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

(*l*) See above CCCXLVIII.

(*m*) Many such are to be found in Morgagni, Bonnetus, and Liutod.

(*n*) See all that has been said.

(*o*) Stiches 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.

excretion of the exhalable fluid, and mucus, irritating the air vessels, increasing their excitement, as well as *that* of all the powers, that enlarge the cavity of the thorax; then suddenly suspending it, and thus performing a full inspiration, and a full expiration, partly in conjunction with the operation of the will (*p*).

CCCLVI. The cough is less or none at all at first; because, on account of a strong diathesis occupying the extremities of the vessels, the same fluids flow on 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, with their effect, the effort of coughing, are carried forward in the rapid action of the air rushing out, as it were, in a torrent (*q*). And the mixture of blood with them point out the force of secretion formerly explained.

CCCLVIII. The softness of the pulse, commonly taken into the definition *of the disease* (*r*), has been here rejected, because the characteristics of the pulse do not follow the inflammation, but the general diathesis (*s*). With respect to the diathesis, *the proper language is*, that the pulse, instead of soft, is less hard; and when the effect, *that the cure has produced upon the pulse*, is considered, it may then be said to be soft (*t*).

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 an uneasiness than pain, though immediately dependant upon the inflammation, to be considered 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 denounces, 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 it is obtuse, must be rejected as good for nothing, must be guarded against as destructive (*u*).

(*p*) See above CLX. and CLXI.

(*q*) See above par. CCXXXIX.

(*r*) at least, when they call it peripneumony.

(*s*) See above CLV. CLXXIV.

(*t*) It is an universal effect of sthenic diathesis to render the pulse hard in one degree or another. And peripneumony is not an exception in that fact. But the distinction arose from the mistake of inflammation being the all, instead of an unimportant part of, the disease.

(*u*) See par. CCCLI. and the note under it at (*i*).

For often, when the disease has arrived at an advanced stage, a sudden abatement of the pain taking place, without a proportional relief of the breathing, to an unskilful person, gives an appearance of a return of health. But the cause of that, while it has nothing to do with the seat or sort of inflammation, is that degree of excitement, which shows, that the excitability is exhausted, the excitement come to an end, and that the vigour, before excessive, is now converted into direct or indirect debility (x). Hence arises in the vessels, especially the labouring vessels, in place of the excessive excitement, *with which they were before affected*, no excitement at all; and extreme laxity takes place of their former density. Hence, instead of an excretion increased by violence, an immense discharge takes place without force, without effort, *and merely* by the watery part of the fluid, from the inert state of the vessels, leaving the more consistent; and a sudden suffocation takes place, in consequence of an effusion of fluids from all quarters into the air vessels.

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 use 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 hurtful powers, and is removed by the same remedies, it is not to be separated.

The Description of Phrenitis.

CCCLXI. Phrenitis is one of the phlegmasiæ (y), 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, appears not in this case. And yet there is an approach to inflammatory state in the joints, in the muscles, and especially over the spine, or about the chest, or in the bottom of the throat; or *there is a*

(x) The direct debility may be owing to the proper cure, which is directly debilitating, have been carried too far, or to the indirect debility arising in the course of the disease, seldom now to Alexipharmac treatment. See above par. XLVII. and the subjoined notes.

(y) See above par. CCCXLVII.

catarrhal state, which is an affection depending, *however*, upon the same cause, *as inflammation*, and only differing from it in being less.

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, exciting in excess, and contracting the vessels, to a degree that gives pain (*z*). To the production of which last inflammation is not necessary: independent of which, this excessive action is painful, because it exceeds that mediocrity in which agreeable sensation takes place (*a*). 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 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, by whetting the organ of sensation (*b*); so, when the cause rises to excess, an equal increase of the effect must be the consequence. But these *very* symptoms, with pain, arise in an opposite state of excitement, to wit, the asthenic.

CCCLXV. The vigilance and delirium are occasioned by the same excess of excitement, produced by the excessive stimulus of the abundance of blood and of the other powers. Other hurtful powers, contributing their effect, are intense thinking, and a high commotion of passion. Excited by those, no body, even in health, sleeps, and, therefore, the wonder is the less, that a high degree of them, and under the influence of a violent disease, should repel sleep. Both increased watching and delirium are symptoms of disturbance.

An Explanation of the Sthenic Exanthemata.

CCCLXVI. The sthenic exanthemata, after the application of a contagious matter, and of the usual hurtful powers which produce sthenic diathesis, appear first in the form of a sthenic pyrexia, or synocha, and then, after a space of time, not certain to a nicety, are followed with small or larger spots.

(*z*) See above CLVII. and CLVIII.

(*a*) See par. CLXXXII. CLXXXIII.

(*b*) 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 it is subservient.

CCCLXVII. That the exanthematic sthenic diseases differ not from other sthenic diseases *not exanthematic*, in any circumstance of consequence, is proved by this strong argument; that, except the eruption and the phœnomena peculiar to it, there is nothing in the symptoms, and except the contagion, there is nothing in the hurtful exciting powers, but what happens in any sthenic disease; and the preventatives, as well as the remedies, are the same *in all*. While that is the state of the fact, it was the height of absurdity, *merely* for the sake of the eruption and its peculiar phœnomena, to separate the exanthematic from their kindred diseases, and to unite them with the most opposite diseases, both to them and to one another (*c*). 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, in so far as it affects general disease is not of an opposite nature to the general sthenic operation, but precisely the same.

CCCLXVIII. Contagion is a certain matter imperceptible,

(*c*) 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 phœnomena 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 cop-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.

of an unknown nature, and like most of the phænomena of nature, only in any measure open to our 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 a sound body, it ferments without any change of the solids or fluids, it fills all the vessels, and then is gradually ejected by the pores.

CCCLXIX. And, as no effect, except sthenic diathesis, follows it, and the hurtful powers, that otherwise usually produce that diathesis, always precede it, and an athenic or debilitating plan of cure always, and only, succeeds *in removing it*, and consequently its effect no ways differs from the diseases hitherto mentioned; it is, therefore, with justice, that the diseases arising from it, are conjoined with those others, as belonging to the same form.

CCCLXX. Betwixt them there is only this difference, that in the exanthematic cases of sthenic disease, the matter requires some time to pass out of the body, *which time is* different in different cases; and it passes out more copiously or scantily, the more free or impeded the perspiration is (*d*). 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 fact, that cold, by its debilitating operation, procuring a free issue for the matter, clearly promotes the perspiration (*e*). And that it produces this effect, by diminishing the diathesis, not by removing a spasm, has been demonstrated formerly. 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, by that delay, it acquires a certain acrimony, 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* (*f*).

CCCLXXII. The period of eruption is more or less certain, because the operation of fermentation, being in some measure certain and uniform, to that extent requires a certain uniform *space of* time, for being finished, diffused over the system, and reaching the surface of it, as is attested by the effect. Again, it is not exactly certain, because the perspiration, in

(*d*) See above par. XXI. and LXXVI.

(*e*) See par. CXVII. CXVIII. CXX. CXXI.

(*f*) See above par. CLXXV. and CCCXLVI.

the varying state of vigour, that must occur, must, *at different times, and under different circumstances*, be more vigorous or more languid.

CCCLXXIII. The pyrexia, symptomatic of the eruption, sometimes takes on the form of an actual fever: the reason of which is, that the high degree of stimulus, which the eruption throws upon the whole surface, produces ultimately excessive excitement, and therefore, *puts an end to it in the establishment of indirect debility (g).*

The Description of the violent Small-pox.

CCCLXXIV. The violent small-pox is a sthenic exanthema, on the third or fourth day of which, sometimes later, small spots or points, inflamed, and by and by to be transformed into exact pustules, break out; containing a liquor *which*, generally on the eighth day after the eruption, often later, *is* changed into pus, and dwindles away in the form of crusts. The eruption, the degree of which is always in proportion to that of the sthenic diathesis, in this case is the greatest that ever occurs.

CCCLXXV. All these phenomena are governed by the laws of fermentation, lately mentioned (*h*). The number of pustules being proportioned to the degree of diathesis, shows, that, without the hurtful powers, that otherwise, *and without any co-operation of contagious matter*, produce that diathesis, the contagion has not much effect in producing the real morbid state, and that it chiefly regulates the exterior form of the disease (*i*).

CCCLXXVI. But a 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. Antecedent to which, the hurtful powers are very violent sthenic ones, and 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 exanthema-

(g) See par. CCXV. CCXVI.

(h) See above par. CCCLXVIII.

(i) Which without diathesis, is of no consequence, and does not amount to general morbid state.

tic disease (*k*), beginning with sneezing, watery eyes, dry cough, and hoarseness; on the fourth day of which, or later, there appears an eruption of small numerous papulæ, or little points; that 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 upon sthenic diathesis (*l*). 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; hence are we to suppose, that the sthenic diathesis follows the hurtful powers, that usually produce it, and not entirely the peculiar matter in this case, and that it is indispensably necessary to the measles. But though that *supposition* should be rejected, and it should be contended, that those symptoms arise from the *contagious* matter; it still must be granted, that this disease differs, however, in nothing from the other sthenic diseases, but equally depends upon sthenic diathesis, and yields to antisthenic or debilitating remedies. And it must be allowed, that, since the matter produces the same effect as the usual hurtful powers, its operation must be absolutely the same, *and* the cause of the disease the same. Consequently we find nothing in the indication of cure, but what is in common to this disease with other sthenic exanthematic ones, which is, that time must be given to the matter to pass out of the body, and the perspiration be conducted in the same manner, as the sthenic diathesis is usually treated upon other occasions (*m*).

CCCLXXIX. The eruption admits of the same reasoning that has been delivered (*n*). 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 went into the interior parts of the body; which is a danger, that is chiefly threatened at the end of the disease; and

(*k*) See above par. CCCLXVI.

(*l*) See above par. CLXXV.

(*m*) See above par. XCVI.

(*n*) See above par. CCCLXXV.

shows, that this matter, in the same manner as the variolous, kindles up a symptomatic inflammation over the surface of the body, and then, by a further increase of the diathesis, suppresses the perspiration. Hence, with other viscera, the lungs (*o*) are often inflamed (*p*).

CCCLXXXI. The violent state of the small-pox, often from the great stimulus of the eruption, converts both the sthenic diathesis, and eruption into the asthenic ones, and thereby produces the confluent small-pox, of which we are afterwards to treat. Whether any thing like that is the consequence of the 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 run into indirect debility; it is, therefore, scarce to be doubted, but that the same thing happens to this disease which is inferior to none in violence.

What follows of this paragraph is erased.

(*p*) 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. CLXVI. i.) 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 vacuant, 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 Alexipharmac practice, that was then used in this disease, indirect 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.

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, ofteneft in the face, sometimes in the throat, with redness, of an unequal edge, somewhat raised, creeping from one place to another, and attended with a sense of burning.

CCCLXXXIII. It is peculiar to this inflammation, and foreign from the other general ones, to invade the corpus mucosum. To assign a reason for which 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 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. The same is the cause of the slow 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.

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, rendering the inflammation proportionally great (*q*). In which latter case, whatever part is inflamed, the disease must be held for a severe one; but still severer, if the inflammation seizes the face; in which case a great tumult of affection internally accompanies the disease.

CCCLXXXVI. When such a sthenic diathesis, and affection of the head depending on it, happens, 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, especially in that temperament, which inclines to the sanguine. It is a con-

(*q*) See par. LXXXV. CCCXLIII.

sequence of heat succeeding to cold, or so alternating with it as to prove the more stimulant: it is accompanied with pain nigh, or between the joints, chiefly the greater ones, and proportioned to the degree of the diathesis (*r*): and the inflammation always comes after the pyrexia.

CCCLXXXVIII. External temperature is hurtful in this disease in the same way, as it has been often now explained (*s*).

CCCLXXXIX. The rage of the pain is in the parts that have been mentioned (*t*), because it is in these parts that the inflammation, or more increased part of the general diathesis (*u*), chiefly acts. Which *again* happens, for this reason, that the nearly most powerful of the exciting hurtful causes, the temperature, that has been mentioned (*x*), is only directed thither. There is no translation of the inflammation to the internal parts, for this reason, that these parts, which preserve nearly an equal temperature amidst every change of it externally, are not acted upon by the same hurtful power *which annoys the external parts*.

CCCXC. Cold, according to the common opinion, is not hurtful in this disease; because the rage of the disease is greatest under the operation of heat, which has an effect quite opposite to that of constriction (*y*). This fact is confirmed by stimulant diet, *in all its articles*, proving always hurtful, and by abstinence being always serviceable, and often alone making out the cure. And it brings a *sufficient* refutation of that mistaken notion, according to which, temperature is alledged to be more hurtful, and sweating more serviceable, than is consistent with the truth; as if there were no other hurtful 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. Which is a clear fact, and supported by the evidence of every part of this doctrine that has yet been delivered. The pains of parts, which sometimes precede this disease, oftener happen without being followed by it, and that, in both cases, have nothing to do with sthenic diathesis, upon which this disease entirely hinges, are a local affection, or belong to a very different general disease, rheumatgia, of which more afterwards (*z*).

CCCXCI. The reason of the greater joints being affected in this disease, and the lesser ones in the gout, is the following:

(*r*) See CCCXLIII.

(*s*) CXIII. et passim.

(*t*) CLXVIII.

(*u*) Ibid.

(*x*) CXIII.

(*y*) Ibid.

(*z*) CCCLIII.

in rheumatism, because both the rest of the disease and the pains depend upon a violent sthenic diathesis; therefore it is, that the greater joints, which, for the reasons assigned, undergo more of the diathesis, have also a greater share of the disease. But, as the gout consists in debility, its influence 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 (a).

A Description of the mild Erysipelas.

CCCXCII. Both the definition and explanation of the violent erysipelas (b), delivered before, suffice for those of the mild; but, in such sort, that the latter both in its antecedent hurtful powers and 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 from a similar lenity of the hurtful powers, and manifesting a similar mildness of symptoms through its whole course.

CCCXCIV. Nay, in the same persons, in the same state of the hurtful powers, sometimes this erysipelas, sometimes cynanche, sometimes catarrh, promiscuously arise, and are *all* removed by the same gentleness in the method of cure (c).

(a) 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.

(b) From CCCLXXXII to CCCLXXXVII.

(c) 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 degree 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.

A Description of the Cynanche Sthenica.

CCCXCV. The sthenic cynanche is a phlegmasia, with an inflammation taking place in the throat, and especially the tonsils, 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 *d*). And, when it has once taken place, it is afterwards liable to frequent recurrence, because its seat being in the way of the most hurtful power (*e*), and less covered than other parts (*f*), is exposed : and the vessels *first* distended by the inflammation, and then afterwards relaxed, take in an over-proportion of blood upon every increase of its impetus (*g*).

CCCXCVII. As the inflammation, like that of the other phlegmasiæ, never precedes the pyrexia (*b*), for the reason assigned (*i*) ; so, if an unskilful person should think it did, the reason of that is the gradual degeneracy of the general sthenic inflammation into a local disease, from its frequent recurrence, and always leaving a taint behind it in the affected part. This latter *inflammation* may happen, without a general sthenic diathesis, and therefore, without being followed by a sthenic cynanche ; and it may accidentally coincide with the former, or *sthenic diathesis*, and therefore, precede the latter, or sthenic cynanche : 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 cure (*k*). In an asthenic habit, whether succeeding to the former or not, there is again another general inflammation to be referred to asthenic diseases.

(*d*) See CXIII. CCCXLII.

(*e*) Heat and alternation of temperature. See XXXVI. with addition.

(*f*) 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.

(*g*) 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.

(*h*) See the definitions of them all, &c.

(*i*) See par. CLXVIII. CCCXLIII.

(*k*) 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.

CCCXCVIII. If any person can explain why the pain is aggravated in swallowing, he may *communicate* his knowledge; if he cannot, it is no matter.

CCCXCIX. The cynanche oesophagaea 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 not but in the inflammation being farther down, and in some redness only coming within view. But, as there is a suspicion that it may be local, as when the oesophagus happens to be eroded or burnt, by a stimulus, or some acrid matter; the distinctions, therefore, should be attended to (*l*), and made use of for the sake of practice.

CCCC. There is likewise a rare disease, sometimes happening in certain countries, never in others, called the croup (*m*). In it the respiration is laborious, the inspiration sonorous, with hoarseness, a ringing cough, and a swelling scarce to be discerned (*n*). It is a disease that infects very young children almost only. And in all other particulars it is of a doubtful nature (*o*).

CCCCI. Concerning which, when it happens to occur in practice, use the following *marks of judgment*. As the sthenic diathesis, in the degree requisite to the formation of actual disease, which depends upon a high degree of diathesis, happens less, either in the beginning, or towards the end of life; because the high degree of excitability in the former, and the low degree of it in the latter, admit a smaller degree of the effect of the exciting power, *that is*, a smaller force of excitement (*p*), than the long period of human age betwixt these two extremes; yet it is not altogether foreign from either (*q*). 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 deficiency of the former, and suffice to induce some sthenic diathesis, even to that degree which constitutes disease. In this way in-

(*l*) See above LXXXI. LXXXIII. CLXX.

(*m*) by Nosologists cynanche stridula.

(*n*) It is perceived upon dissection of the dead subject.

(*o*) 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, 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 parts, and probably the right one missed by both.

(*p*) See par. XXV. and XXVI.

(*q*) 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.

fants undergo wonderful vicissitudes of excitement, and within the shortest spaces of time. This day they will show every sign of extreme debility, next day every one of *restored* vigour; because the operation of *any* stimulus given them soon rises to its highest, upon account of their high degree of excitability, and sinks as soon to its lowest, upon account of its own small degree (*r*). Hence every sthenic diathesis, that happens to them, is short, acute, and soon removed (*s*); nor is their asthenic state of long continuance, or difficult to be removed; provided there is no local affection (*t*), and a proper method of cure is employed (*u*).

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 boundishness of belly at first, which becomes more free 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 reckoned from its frequency, small, falling softly like snow upon the finger of him who reckons it, so that he is uncertain if he touch it at all; a very loose scouring belly, with green matter; frequent vomiting; dryness of the skin, heat greater than natural, and greater in some parts than others; interrupted sleep, never refreshing; a feeble voice in crying, fit to excite compassion.

CCCCIV. The former *diathesis*, besides other hurtful powers is preceded by the use of sound milk, animal food, an abuse of opium or strong drink; excessive heat after cold and moisture, which latter increases the debilitating effect of the former; a strong set of simple solids.

CCCCV. The latter, together with the known hurtful 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 by other means used for the latter, and particularly by magnesia, given with the intention of absorbing an acid; cold not followed by heat; a weak mass of simple solids.

(*r*) 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.

(*s*) A single gentle purge will do it.

(*t*) which very seldom, indeed, happens,

(*u*) Which, till of late, has been very rare: the antiphlogistic cure has made away with three-fourths of mankind, before they arrived at the seventh year of their age.

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, but their facts *still* more. Be on guard not to be misled by the vanity, emptiness, and rashness of young physicians; as well as by the obstinacy and bigotry of the older sort, that increases with their age and practice, to be bent by no force of reasoning, no weight of truth, scarce by the power of God: regard their minds as bound in the fetters of prejudice: remember, that a whole age of physicians were in the wrong, except one man (x), and persisted obstinately in their error, in the case of the Alexipharmac physicians: and, reflect within yourself, *good reader!* whether the present physicians, who followed the doctrines delivered in the schools, judge better *than their predecessors*, and do not run into the contrary extreme of madness, doing as much mischief in fevers, and diseases of pure debility, as they did in sthenic diseases, and in fact take a wide range of spreading destruction among mankind. Thus secured against mistake, consider the cures of this disease that have appeared. If in those, 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 will be still* more certain, if you shall find that the exciting hurtful powers and symptoms, which have been enu-

(x) 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, peripneumony, and one or two more of the sthenic diseases. The bias, in favour of the Alexipharmac 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 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 Hoffmanian and Stahlian doctrines. See our observations, outlines, p. lxxxv. to cxlix.

merated, at the same time agree *with the other marks of judgment.*

A Description of Catarrh.

CCCCVII. Catarrh is a phlegmasia, in which, to the general symptoms mentioned before (*y*), are added cough; hoarseness; and first a suppression, or slight increase of the excretion from the nose, fauces, and bronchia, followed afterwards by a further increase; arising from stimulant powers, often heat alone, but chiefly after a previous application of cold; and to be removed by debilitating powers, often by cold alone, guarding against heat (*z*).

CCCCVIII. The explanation of the cough is the same as that given before. But it is freer, *than in peripneumony*, and not avoided, because there is no inflammation in the neighbourhood to aggravate it, and raise pain (*a*).

CCCCIX. That the hoarseness is owing to a suppression of the vapour that should be exhaled into the bronchia, may be known from this; that, when the hoarseness has remained long, almost without expectoration and cough, or with a moderate degree of them, while the sthenic diathesis continued in full force, and did not abate in the bronchia; upon the 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 that kind and degree, that constitutes sthenic diathesis, is shown by *the effect of strained speaking producing temporary hoarseness, by silence removing the hoarseness, and cold drink relieving it.*

CCCCX. The suppression of excretion is that of the mucus and exhalable fluid, related before (*b*), and it admits of the same explanation that was formerly given.

CCCCXI. That stimulants produce catarrh is evident from this, that heat alone, fulness in food, strong drink, and moderate exercise, for certain produce it; cold, cold drink, 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 it, but when its action is succeeded by that of heat,

(*y*) CCCXXXI.

(*z*) See par. CXII. CXIV. CXVII. CXXII. and all the stimulant powers, from CXII. to CXLVII.

(*a*) See par. CLX. CCCLV.

(*b*) See par. CCCCVIII.

to be explained as before (*c*). The occurrence of catarrh so often in summer, where its action can be a thousand times traced back to heat, but not to cold; the influenza never needing the assistance of cold, which catarrh often does, in the manner just now said; its never succeeding to *pure* cold, but immediately to heat, facts known to old women, to shoemakers and tailors, to fore-eyed persons and barbers, unknown to medical authors and professors, *all* confirm the same fact.

A Description of the simple Synocha.

CCCCXII. The definition of simple synocha is the same with that of phrenitis (*d*), excepting the symptoms affecting the head. It is a slight disease, ending in health often in one, always in a few days, unless when new hurtful powers, either accidentally or from the use of a stimulant plan of cure, have been superadded.

A Description of the Scarlet Pyrexia.

CCCCXIII. The scarlet pyrexia is an exanthema (*e*); about the fourth day of which, or later, the face swells somewhat, and at the same time the skin is here and there affected with a red afflorescence, and then chequered with large spots; which are afterwards to unite, and in three days to end in little scales, as if branny ones. This eruption does not arise, but in consequence of sthenic diathesis produced from another source. And there is another similar to this, which accompanies an opposite disease, afterwards to be mentioned.

CCCCXIV. The eruption, appearing at a certain time, and remaining for some time, must be imputed to the fermentation, requiring a certain time, different in different diseases, and is to be explained in a similar manner as before (*f*).

CCCCXV. The swelling of the face depends upon a greater degree of sthenic diathesis there, than any other equal part. And we are to imagine, that, besides the hurtful powers that usually produce it, it is increased by the contagious matter, now approaching the surface.

(*c*) See CXXII.

(*d*) See par. CCCLXI.

(*e*) See CCCXXX.

(*f*) See par. CCCLXVII. and CCCLXXVIII.

CCCCXVI. This matter of itself produces no morbid state, only giving the exterior and exanthematic form (*g*), and following the nature of the sthenic or asthenic diathesis. Hence, after its application, the disease that arises is sometimes sthenic, as this is, of which we have given a definition, sometimes asthenic, as that disease which we are afterwards to mention in its proper place. This view of it serves to reconcile the jarring and 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 there are often very few pustules, never exceeding one or two hundred in number: sometimes the place only, which was inoculated, is beset with pustules, without any other in the rest of the body; and besides those, there may be only one.

CCCCXVIII. The number of pustules and crowded eruption is occasioned not by the nature of the contagious matter, nor by its quantity, but by the sthenic diathesis, in so far as it is induced by the sthenic hurtful powers, in which the matter has very little participation (*b*). If, therefore, that diathesis be prevented, and especially upon the surface, the eruption will never be crowded; and, after it has appeared, if it be immediately removed, the eruption will never be dangerous.

CCCCXIX. As the contagious matter does not contribute much towards sthenic diathesis, for the reasons alledged (*i*); so, that it does contribute something, is proved by a crowded eruption both appearing and increasing, when the diathesis, after the reception of the contagion, was not increased by the ordinary hurtful powers (*k*).

CCCCXX. And, therefore, while 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

(*g*) See par. CCCLXXV.

(*b*) See par. CCCLXX. CCCLXXII. CCCLXXV.

(*i*) From CCCCXVII. to CCCCXIX.

(*k*) 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.

reduced, 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 (*l*) which, unless treated upon a stimulant plan, would prove fatal.

A Description of the mild Measles.

CCCCXXII. The definition of the mild measles is the same with that of the violent. To which all the reasoning that has been employed about the small-pox will apply. If immediately upon the arrival of the catarrhal symptoms, the asthenic diathesis contrary to every mode of curing this disease hitherto thought of, be removed; often no disease of that kind which affects the whole body, follows. And the disease always proceeds with the same gentleness as the small-pox treated in the same way (*m*).

CCCCXXIII. The catarrhal symptoms are of the same nature as in the catarrh, and admit of the same cure, that is, the asthenic (*m*).

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 the general, and exhibit upon the surface a local, inflammation of no consequence (*n*).

A Description of the Sthenic Apyrexia.

CCCCXXV. The sthenic apyrexia, which are equally free of pyrexia (*o*) and every degree of inflammation, arise from a sthenic diathesis, that has less effect upon the vascular system, than the other sthenic diseases (*p*).

A Description of Mania.

CCCCXXVI. Mania is a sthenic apyrexia; in which the mind is disordered, and forms false ideas of every thing.

(*l*) from the top of the head to the ancles. See above par. CCXX. and two notes.

(*m*) All this has been well proved by every one of my children, and by an 100 patients at once.

(*n*) See par. CLXX. and CCXI.

(*o*) See par. CCCXXIX.

(*p*) So much so, as never to have been thought in any sort connected with that affection we call pyrexia.

CCCCXXVII. In so far as mania does not arise from a fault 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 or less also upon the whole body, though not to the degree of drawing pyrexia after them (*q*). Which is proved by the disease being cured by a debilitating plan, and by other stimuli, as well as those just now mentioned, not immediately applied to the brain, but to a distant part of the system from it.

CCCCXXVIII. The most powerful of those stimuli are, spirituous or vinous drink, and opium, and, perhaps, some other things, taken into the stomach, and first acting there. Of the other asthenic hurtful 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 hurting 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 (*r*). But if these very poisons act by destroying the texture of a part, they must be considered as the origin of a local disease (*t*).

CCCCXXX. The heart and arteries are less affected in mania, *than in any of the pyrexial diseases*; because, the hurtful power, which chiefly affects the vessels, too much food, has less concern in the number of the hurtful powers, *here*. And yet that the food, superadded to the other hurtful 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, in the diseases that have just now

(*q*) 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.

(*r*) See par. XX.

(*t*) See par. IV. VI. XX.

been mentioned (*t**), the pulse is commonly said, and believed, to be not at all affected, that, however is not exactly the truth; for in mania, so long as it continues to be a sthenic disease (*u*), more or less of sthenic state can be perceived (*x*).

The Description of Morbid Watchfulness.

CCCCXXXII. Pervigilium, or morbid watchfulness, is a sthenic apyrexia (*y*); in which there is no sleep, or no sound sleep, and the mind, in a startled state, is agitated with vivid, strong, or uneasy impressions (*z*).

CCCCXXXIII. The hurtful 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, in preference to other hurtful powers. The degree of thought, that has that 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 could only act so, by means of indirect debility, the consideration of which is foreign from this place (*a*). And the same is the degree of disturbance of feeling, that proves hurtful, in so far as it produces this disease: every ultimate excess of which (*b*), 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 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 an often returning, or deeply affecting, irritation upon the brain, and, therefore, one that leaves a lasting impression, which has any considerable force in producing this disease. In this last way, an eager, inordinate, and vast desire for the attainment of high objects of pursuit, the impulse that hurries on to the revenge of a great injury, and the horror that arises upon the perpetration of it, the fear of future punishment for crimes, are held up to us as produc-

(*t**) from CCCCXXV. to CCCCXXXII.

(*u*) that is, so long as it is really mania,

(*x*) The characteristic of hardness of the pulse is never wanting, and therefore also fulness. (See CCCCXXXIV.)

(*y*) See par. CCCCXXV.

(*z*) Read after 'cit' & mens excito animo, vivis, validis, aut molestis imaginibus, agitur.

(*a*) See CXLI.

(*b*) See CXLI.

tive of high 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 those, or other stimuli; so often are we to conclude, that this disease takes place.

CCCCXXXIV. As the hurtful powers just now mentioned (*c*), produce this disease; so there are others, which belong not to this place, *but* are to be mentioned, that also repel sleep (*d*).

CCCCXXXV. To pervigilium belong all the hurtful powers that have been already mentioned in mania (*e*), whether acting within or without the brain, but acting with less force, and which yield to the asthenic plan of cure.

CCCCXXXVI. As the powers stimulating vigorously in this way (*f*), and without any diminution of their sum of stimulating, produce pervigilium; from that we learn, that the cause of this disease is the same with that of the rest of the sthenic form of diseases (*g*), and that the same is the state of body in which every one of those diseases consist: nor is it understood, that different hurtful powers, but precisely the same, with only a variation in the proportion of their force, which often happens to other sthenic diseases, precede *this disease*.

CCCCXXXVII. The same fact is also discovered from the functions, of which, though these diseases are called apyrexia, or without pyrexial state, the pulse, however, is not altogether, free of disease (*h*). 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 (*i*). And the state of the other functions, except those of the brain, that are 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 to both dis-

(*c*) See the par. CCCCXXX. and CCCCXXXIII.

(*d*) The rest of the sentence in the original is struck out as belonging to asthenic watchfulness.

(*e*) See from CCCCXXVI. to CCCCXXXII.

(*f*) See CCCCXXXIII. (*g*) from CXLI to CXLVIII.

(*h*) See CCCCXXX. and CCCCXXXI. and the note to the latter.

(*i*) For a proof of their vigour maniacs have often four times the strength, they used to have in health.

eases and the predisposition to them, that some part is more affected *than any other part* (*k*).

A Description of Obesity.

CCCCXXXVIII. Obesity is a sthenic apyrexia (*l*); 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 rises to the degree of incommoding the functions.

CCCCXXXIX. That obesity, so defined, is a disease, is understood from the definition of disease (*m*); and that it is a sthenic disease, appears from the certain signs of sthenic diathesis in it. Of which, the strong action of the stomach, whether the appetite or the digestion be considered (*n*), 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 above that degree of it, which suits good health, to that in which sthenic diathesis consists, without which last 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, those with pyrexia and inflammation; that it never rises to the extreme height at which indirect debility is produced, and is never indeed so great as to be sufficient to have any considerable effect on the heart and vessels.

CCCCXLI. But it happens to all those diseases, that both these last and all the other functions, get somewhat above the standard of the sound functions, 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 much within that degree of *force*, that wastes the excitability much; as is perceived from the proof of the effect; for they are diseases of much longer standing than any other asthenic diseases.

CCCCXLII. From which fact, 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, that *excitement*, which the other stimulant powers produce, be added, 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.

(*k*) See part first, Chap. IV. and in it XLIX. and LII. CLIX. CCV.

(*l*) See CCCCXXV.

(*m*) See IV.

(*n*) See par. CCLXII.

CCCCXLIII. The diathesis, then, in these diseases, is, upon the whole, less than in the rest of the sthenic diseases; 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 that in the predisposition to the other diseases, and exceeding its force in the labouring part. Hence it comes out, that, contrary to the nature of those other diseases, and similar to the predisposition to them, they are usually of long standing and duration, and for this reason, that the mediocrity of the sum of stimulant operation never consumes the excitability, and always produces too much excitement. The great tumult of symptoms in the brain and blood-vessels in these diseases does not imply a great sum of excitement, for this reason, that the affection of a part, however formidable, compared with the affection of all the rest of the body, is infinitely inferior in its degree (*o*). However much, then, any stimulus presses upon a part, and from that spreads at large over the rest of the body; unless, however, other stimuli, applied to other parts, sustain its operation, so as that the sum of the operation of them all may deeply affect the whole body; the effect of the solitary stimulus, making 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 always arises from the excitement which the united force of several stimuli has produced.

CCCCXLIV. In these sthenic apyrexia, as a certain part, the brain in the two first, and the blood vessels in the last (*p*), is much more affected, and in greater proportion, than in the other sthenic diseases, because the affection of the part is much less supported by stimuli acting upon the other parts; so the stimuli, acting in that way upon the labouring parts, are however, understood to affect the rest of the body, though less considerably. That this is the fact, is proved by there being *in this case*, no asthenic diathesis, and evidently such a sthenic one, 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, being aiding in the cure here, and by powers of a contrary nature, always proving hurtful. Whence, it is an evident and certain truth, even here, where it might have been least expected, that every stimulus that affects a part, affects the whole body, upon account of the excitability being one uniform, undivided, property over the whole.

(*o*) See par XLIX. to LIII.

(*p*) See par. CCCCXLIII.

CCCCXLV. With respect to obesity in particular; that the other hurtful powers, as well as food, have more or less effect, one may know from the certain fact of the digestive powers, which depend upon the influence of these *powers*, being 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 hurtful powers are applied in a degree short of that, which being ultimately excessive, or approaching nearly to that, puts an end to excitement by wasting the excitability, or which tends, by a high degree of disturbance, to exhaust the body.

CCCCXLVI. Thus passions are not with 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 (p^*), 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 (q). They are averse to bodily motion, by which all the functions, and particularly that of the vessels, are much excited, and the perspiration proportionally promoted; and *they have* so far reason for it, that all motion is more fatiguing to them than to others. Hence, that quantity of fluids, which under motion is usually thrown off by the pores on the surface, and turned out of the course to the adipose cells, has a great opportunity of quitting the direction to the former, and of turning aside, in a state of rest, to the latter.

CCCCXLVII. After explaining the peculiarities of these diseases; *it is now to be observed*, that, since the affection of a part in general disease, depends upon the general affection, is of the same kind, arises from the same exciting powers, and

(p^*) 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 over-ruled, 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.

(q) 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.

and is removed by the same remedies (*r*); it is from that reasonable to believe, that the affection of a part, whether it be inflammation, or a greater affection of the brain or vessels, than of any other part, is not different in different cases, but altogether the same in all; that it only differs in some trifling circumstances of no signification, and by no means requires a different *plan of cure*, or affords fundamental distinctions; and that a mistake, which has had the most ruinous effect upon the art, must be done away. It is with propriety, then, that all the diseases that have been treated of, have been reduced not first to two genera, and after to species (*s*), but, without regard either to genera or species, only to two forms.

CCCCXLVIII. Further, as in all those 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 (*t*), with the view of removing, by their action upon it, the disease, as if all locked up in it; the meaning of all that is, to 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 in the upper end 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 most severe affection of the head. 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 and gentle erysipelas, *far short of those above it in violence*, and claiming nearly an equal place to the sthenic cyananche, being much more nearly allied to the latter than any of the former. Those are the diseases accompanied with pyrexia and inflammation.

CCCCCL. Of these two which stand lowest, the mild erysipelas and the sthenic cyananche, or common inflammatory sore throat, are of so doubtful a rank, with respect to each other and catarrh (*u*), a disease without the accompaniment of inflammation; that it is doubtful which of them all should be set above the others. Below them, however, the simple synocha and

(*r*) See part first, Chap. IV. and particularly par. LIII.

(*s*) which was attempted and dropped in the first edit.

(*t*) See par. LVI and XCII.

(*u*) See CCCXCIV. and the note to it.

scarlet fever, in so far as the latter is an asthenic disease, and in so far as the usual state of them both is considered, are to be placed without any hesitation (*x*). The lowest part of the scale 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, that have been made use of, 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 (*y*). The investigation of symptoms, which has hitherto been devoid of all benefit, has been of the highest detriment to the art; and as much in medicine the most productive source of fundamental blunders, as the question about abstract causes had been in the other departments of philosophy (*z*), must be laid aside, and Nosology damned.

CCCCLII. Below the last mentioned diseases, mania, pervigilium, and obesity are set. Betwixt which, and the diseases mentioned above, is the *point* of perfect health to be fixed (*a*).

The Cure of the Sthenic Form of Diseases.

CCCCLIII. To apply the indication of the cure of the sthenic form of diseases to practice; that mentioned before (*b*) will be accommodated first to a violent degree of the diathesis and danger of parts, in such a manner, as that regard only will be had to the degree of *force* in the remedies (*c*).

CCCCLIV. When, therefore, a violent diathesis is discern-

(*x*) 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.

(*y*) See par. LVIII.

(*z*) See par. XVIII. and look into Observations on the different systems of physic, and in it the introduction throughout.

(*a*) It will be easy for the reader with the directions above to make out the table for himself.

(*b*) See par. LXXXVIII.

(*c*) See also par. XCII.

ed, as in peripneumony, phrenitis, the small-pox, the measles, and erysipelas in the highest degree of these three last, immediate recourse must be had to the most powerful and quickly effectual remedy; and so much blood should not be taken, as many who entrust nearly the whole cure of the disease to it, think (*d*), but more, however, than others are of opinion, should be taken away (*e*)

CCCCLV. No measure suits all cases; the quantity to be taken being different in different cases, as those differ in age, sex, strength, and in the degree of force applied by the exciting hurtful powers. In childhood, which, excepting the measles, and small-pox (*f*), is seldom affected with the diseases we have mentioned, and in a very advanced age, which is also in less danger than that at the flower of human life; sparing bleeding succeeds for this reason, that, at both those ages, it is a lesser degree of excitement that upholds the disease as a cause; 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 been much abated; and now the temperature is discerned to be much more moderate, 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 (*g*); then it may be looked upon as certain, that enough of the vital fluid has been shed for the time.

CCCCLVII. To obtain that 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, re-

(*d*) which is the common practice;

(*e*) The most early among the Alexipharmac practitioners, after once making his escape from peripneumony without bleeding, fell a victim to the folly of his theory in the next attack. The Alexipharmacs 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.

(*f*) See par. CCCCI.

(*g*) The references for facts are CLIX. CLV. CCCXXXIV. CLVII. CLXXIV. CCCXLIX. to CCCLV. CLIV. CLIX. CLXXXIV. CCCXXXIII. to CCCXXXVI. CLV. CCCXLIII. CCCLIV. CLVIII.

course must be had to that, which recommends the abatement of the symptoms as a direction more to be depended upon (*b*).

CCCCLVIII. Since the local affection depends upon the degree of general (*i*) diathesis, remember, therefore that there is no occasion for any particular direction with regard to it, any farther, than to take advantage of its being accessible to help the general remedy by an application of it to the part (*k*).

CCCCLIX. When that has been done, and the first violence of the disease is now broken; we must next have recourse to purging the belly, as a great remedy in point of efficacy (*l*). To effect which, we should not employ violent means, such as many formerly employed (*m*); the stimulus accompanying the first operation of which being liable to be hurtful; but it is the gentle cathartics that should be depended upon, such as Glauber's salts, which are highly debilitating, and carry a great quantity of fluids out of the vessels. Though a man of good sense in the last century used these day about with bleeding; yet, if the violence of the disease should be urgent, there is nothing to hinder the use of them the same day that the blood has been taken.

CCCCLX. Purging, after a sparing bleeding, has more effect in overcoming sthenic diathesis, than any bleeding without it; because, as it has been mentioned above, in that way the debilitating power, (which has always more debilitating effect in the place to which it is first 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, with more equality diminished (*n*).

o. Vomiting, which, in sthenic diseases, where it is pernicious, has hitherto never been admitted in the common practice, and in sthenic ones, where it is of the greatest benefit, ever neglected, comes in here as a proper part of cure; being of the same evacuant nature, and in any other part of the same canal, and admitting of all the reasoning that has been applied to purging (*o*).

(*b*) See CCCCVI.

(*i*) See above LVI. and CCCXIII. to CCCXLVI.

(*k*) 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.

(*l*) See CCLXXXIII.

(*m*) the Alexipharmics particularly.

(*n*) See par. CCCCLXXXIII. CCCCLXXXVI. also CCCV.

(*o*) See the same. What respects vomiting here, is a supply of a great omission, that had run through both editions of the *Elementa Medicinæ*.

CCCCLXI. At the same time that the excessive, and therefore hurtful, use of the lancet is superseded by those two last mentioned evacuations; its use, however, is not altogether to be laid aside in the diseases of excessive excitement; and for this reason, that the excitement, by its stimulating operation often rises to that high degree, that, from the consumption of excitability which puts an end to its existence, threatens instant death (*p*).

CCCCLXII. Besides, those remedies (*q*), the patient should always be required to abstain from every sort of food but vegetable, and in a fluid form, as well as from all strong drink, and *indeed* all but watery drink, acidulated (*r*). This direction does not seem to have been so much neglected in words by former *writers and authors*, as in fact and actual application to the practice; it having been delivered slightly, by the by, and as if it had been thought of no consequence, *with such effect*, that its force 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 of blood is taken from its vessels, whatever quantity of serous fluid is carried off by the mouth and anus, if that stimulus is not roundly guarded against, all this evacuation may easily be frustrated. While that is the case, still fluid vegetable matter is not to be discharged, and for this good reason, that watery matter is not kept in the vessels; but, easily entering the smallest of them, flows out in all directions by their various outlets; and, at the same time, supports the efficacy of another remedy (*s*), by and by to be mentioned.

CCCCLXIII. Conjointly with the use of the first bleeding, of the first vomiting and purging, and that of abstinence and watery drink, it must not be forgot, that particular regard must be paid to temperature (*t*): for, if cold always debilitates, and if that is its proper operation (*u*), if it only seemingly acts otherwise, because heat succeeding to its action, or alternating with it (*x*), converts it into a stimulant one, if it alone is adequate to the cure of the small-pox (*y*), and prevents the violence of that disease, if it is the best remedy for catarh (*z*), and, when heat is avoided, of the greatest af-

(*p*) See par. CCLXXXI. and CCLXXXIII. CCLXXXIV.

(*q*) From CCCCLIV. to CCCCLXII.

(*r*) See CCLXXXIV.

(*s*) sweat.

(*t*) See par. CCLXXXII.

(*x*) See XXXVII. and the addition,

(*z*) See CCCCVII.

(*u*) See par. CXVII.

(*y*) See par. CXXI.

stance in every sthenic disease ; it is not to be doubted, but that it is of the greatest benefit in the diseases of the highest sthenic diathesis.

CCCCLXIV. Its operation in the small-pox, and in the rest of the 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, which is the case in the diseases that make our present subject, rising to its greatest rage, demands instant relief ; because, *in that case*, every moment's delay brings instant danger ; because the remedies, which we have mentioned, are sufficient for the solution of the disease, of which we have the direct proof in the practice ; because that degree of cold, which could produce that effect, is neither always within our reach, nor can be managed by every person ; and many persons might not be disposed to believe its effects so beneficial : for those reasons we should not desist from the plan of cure here laid down (*a*), and do our best for our 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 plan of cure should, for the most part, be preferred to *that of* the most intense cold, for this further reason, that the shortness of the time in which any one could possibly remain in it, would oblige him immediately to return to a higher temperature, which would produce a greater stimulus of excitement, *than that he had been under before his exposure*, at least too great a stimulus (*b*).

CCCCLXVI. Since such is the operation of cold (*c*), the power falsely imputed to it, of occasioning the striking in of the measles, is to be imputed not to cold alone, but to heat and other stimuli ; giving as has been explained, more excitement (*d*), than if it had not preceded. And why not ? 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, highly promotes the discharge of that matter (*e*) : why, in a most similar case, should its operation be supposed different, not to say, diametrically opposite ? Must we again have the trouble to refute the false notion of thinking a cause precisely the same should pro-

(*a*) From CCCCLIV. to CCCCLXV.

(*b*) See XXVI.

(*c*) Look back from CCCCLXIII. to CCCCLXVI.

(*d*) See XXVII. and the addition, and CCCLXXX.

(*e*) See CCCLXXVI.

duce contrary effects? Cold diminishes the eruption in the small-pox: it makes it disappear in the measles. What then? Take a wider view of the fact: is its effect in both these cases to be supposed the same, or different? How comes any person to know, that the matter, which has disappeared, is driven into the interior parts? What proof will you bring of that? Confess the truth: and be candid enough to acknowledge, that this is another relic of the Alexipharmac doctrine, *handed down to us*, which supposed, that the stimulus of heat as well as other stimuli promoted, and that cold impeded, perspiration. And after a great man had shown the error of that doctrine, both in the small-pox and other diseases (*f*), 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 have, from that very circumstance, occurred to their mind, that cold, in the measles, did not stimulate, or act as an astringent; and in that way, repel the eruption, but performed the same operation as in the small-pox? Is it, to such a degree, difficult and up-hill work, to think and use one's own good sense, 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 of their own? But, in this case, it may be contended, that the action of cold is peculiar, because, after the eruption, *which it is supposed to check*, has disappeared, all the symptoms increase in rage and violence. Consider what that circumstance makes for the argument, or whether it makes any thing, and not absolutely against it? Was the action of cold, that is supposed, 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 said just now (*g*), produce excessive excitement after a previous application of cold, and more than without it; if the latter, *or debilitating powers were used*, then there would not be wanting a suspicion, that cold had a concern in the effect. But it is not so: and, in every case, in which the ac-

(*f*) 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.

(*g*) in the last paragraph but one.

tion of cold has been followed by sthenic diathesis, the true cause of that effect is not sufficiently guarding against the stimulus of heat, as well as that of other noxious powers. And this is most clearly proved by the use of heat being positively ordered, instead of being forbid, in the common practice. Nor is that to be wondered at: for if the cause of catarrh (*b*) deceived physicians so much, the catarrhal symptoms in the measles could not fail to deceive them. And, if doctrines, discarded in words, are often kept up in fact; what was there to hinder this part of the Alexipharmac doctrine from meeting with a similar fate?

CCCCLXVII. If cold, therefore, can scarce be so managed, as that the effect occasioned by the accompaniment, the succession, or the alternation, of stimulants with it, may be prevented, whether that be the fault of the physician, or owing to the difficulty of the nature of the thing (*i*); 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 of the Cure.

CCCCLXVIII. After using the remedies which have been mentioned (*k*) when the symptoms are renewed, 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 particulars must be executed, 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 doing which;*

CCCCLXIX. If the diathesis seems now nearly removed, if the affection of the head, of the lungs, or any internal one, seems alleviated or repelled; and yet there is some apprehension of a likelihood of the return of the disease: in that case, recourse must be had to more gentle debilitating powers.

(*b*) See from CCCCVII. to CCCCXII.

(*i*) Turn back to CCCCLXV. and CCCCLXVI.

(*k*) from CCCCLIV. to CCCCLXVIII.

Sweating, the stimulus accompanying the first operation of which, the body, as the diathesis is now rendered mild or ended, will be able to bear, must be preferred to bleeding, vomiting and purging. But before proceeding to speak of it, it seems proper to say a few things upon the sum total of blood that should be taken *during the course of the whole disease*.

CCCCCLXX. As in single bleedings, so also in the whole quantity of blood to be taken, the sum should be a mean betwixt those, which the common run of physicians approve, while some think too much, some too little, should be taken. 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 now more divided among the other remedies that have been spoken of. The age must be regarded, as was formerly recommended (*l*), the former mode of life must be looked to, the quantity of stimulus, that may lately have preceded the morbid state, must be considered, and the state of the body compared with the degree of the symptoms and the effect of the cure. From those circumstances a judgment should be formed of bleeding and other evacuations: and it should be estimated, what further of the same sort may seem proper to be put in practice, or 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 the health better secured (*m*).

CCCCCLXXI. With respect to the kind of bleeding, it should always be made from a very large vein; because the cutting a lesser one, or opening an artery, does not afford a sufficient quantity for the relief of the vessels, and arteriotomy is further attended with certain inconveniencies (*n*). As far as any certain rule, in an affair 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 age of life, and less at a more early or later period.

CCCCCLXXII. All bleeding should be followed by vomiting and purging, so long as any considerable part of the sthenic diathesis remains; nor should the other parts of cure, that

(*l*) See CCCCLV.

(*m*) See CCLXXXVI. and CCCV.

(*n*) 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 purpose can be shown for doing so.

have been pointed out, be neglected. But purging, a single dose of which can at any time, bring back a fit of the gout; which cures the sthenic cynanche or common inflammatory fore-throat, and the mild erysipelas, when even the face or head is affected; which is of manifest detriment in fevers; which, in dyspepsia, in asthma, and every sort of diseases depending upon debility, whether direct or indirect, does very great and conspicuous mischief; and is a great part of the very bad common method of cure over the whole form of asthenic diseases; in proportion as it ought to be avoided in all those diseases, should be as certainly laid hold of in sthenic diseases, and not omitted in any considerable one, such as those are that require bleeding, but be managed according to the directions given (*o*) lately, and as it was *directed to be* managed before (*p*). And we must, above all things, be on our guard against that diffidence in the use of this remedy, as well as in that of vomiting, where they are serviceable, and that confidence in them when of disservice, both introduced by the spasmodic doctrine, and know that they were both admitted upon a false and absurd principle (*q*).

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 that very reason, nothing is more happy and successful than *their use* in the cure of sthenic diseases.

CCCCLXXIV. It is scarce credible to say, how far the aversion to the Alexipharmac method of cure has had the effect of branding the very best medicines, what a depraved use of them it has suggested, and to what a degree it has perverted their proper use. Not to repeat what has been formerly said of that kind in other instances; sweating, which is of the highest service, and a most efficacious means of cure, in every moderate sthenic diathesis, in every degree of it, that is not the highest, or where it presses not 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 every one of them, but one, not only, as useless, but as hurt-

(*o*) See CCCCLXI.

(*p*) See CCLXXXIII.

(*q*) 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 foundation.

ful; which has chiefly happened since the spasmodic doctrine began to be received into this country, and, *for a few years only*, gradually to gain ground (*r*).

CCCCLXXV. But, in truth and fact, except rheumatism (which, at least as produced by one form of a medicine, it 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 *any other than the spasmodic* practice; what reason, what certain and well proved fact, will any one bring, *to show*, why sweating should not be used, after the most violent diathesis is much diminished by the other medicines, and is now reduced to that small degree, to which that remedy is adapted; what eloquence would be requisite to bring any man *of sense* into such a persuasion?

CCCCLXXVI. They 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 (*s*). As that effect will readily be admitted in an high rage of diathesis, threatening indirect debility (*t*); it will not also be granted, that in a moderate *degree of* the diathesis, either from the beginning, or effected by the other remedies, and consequently, after the plan of cure, that we have laid down, has been executed, that such heat will not be compensated by the great profusion of fluids taken away over the whole body; and 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 sys-

(*r*) Turn back to CCCCLXIX.

(*s*) 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 that 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 no body who knows it but themselves.

(*t*) 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.

tem. If the numerous vessels, that open into the intestines and into the stomach, are so powerful in diminishing sthenic diathesis, how should a similar evacuation in the similar perspiratory vessels have no tendency to produce the same effect? With which reasoning, if the facts just now related be further conjoined, what will any person have to say against the use of sweating, when a degree of heat, not greater than what cannot be avoided, attending the operation of the sweat, can no longer be hurtful, and the sweat itself certain to be of great service (u). Let the spasmodic caviller against the use of that remedy, in the cases of *sthenic affection where it is admissable*, muster up all 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 all this about? Will there never be an end of running from one extreme of error into the opposite? Shall no mean be found betwixt the Alexipharmac plan of cure, and an equally bad or worse one? If that doctrine hesitated not to prescribe sweating in the rage of a peripneumony, and that too by means of the most heating stimulant powers; does it therefore follow, that a plan of cure must be admitted, which rejects the certain and safe use of that remedy, when conducted 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 did not know, that several remedies diminished excitement more powerfully than *any* one; and, if they were to be forgiven for that; were they also to be excused for not seeing, what any empiric might have seen, that is, that some things were of service, and others of disservice; was that want not of genius, which is not required of them, but of common sense, also to be pardoned? If thinking without a leader, and making any sort of discovery, was too much, and not to be ex-

(u) 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.

pected from them; is it not somewhat surprising, that out of a thousand persons, who had treated of every part of medicine, and entertained different sentiments from one another, in some measure right, and, no doubt, wrong too, they could squeeze no information, but always trod in the footsteps of one single man?

CCCCLXXVII. Sweat, therefore, after the management that has been mentioned, is to be excited, and so much the more determinedly, if there should seem something still wanting to the complete return of health, some degree of sthenic diathesis still remaining, and a spontaneous tendency to it should appear.

CCCCLXXVIII. When the signs of a spontaneous sweat arising 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, by this management, there shall ensue a copious and universal flow of sweat, there will be no occasion for giving a medicine. After it has succeeded, and increased the relief formerly procured; if it should sink in towards the end, it should at last be supported by Dover's powder, or by laudanum alone, covering the body, so as that it may get as quickly as possible to the surface, till the expected benefit be obtained. And to this management it must be added, that, if a draught of cold water be sometimes given, and then the body well covered up and properly managed, the business 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 away, we must also keep that 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 the sweat should be attended with less relief, or with some 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, and differently on different occasions, in proportion as the remaining part of diathesis may require, each in a higher or lower

degree, or in a larger or smaller quantity, to be brought into play, and the curative circle enlarged: and besides them,

CCCCCLXXX. Some of slighter consequence, such as acids and nitre; some of uncertain *use*, such as leeching, cupping, and blistering, are mentioned, 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, and prove, in a certain measure, refrigerant, are to be permitted; and more certainly, if there should be a desire for them. Every body should know, that the refrigerant power of nitre is less than is commonly thought. In rheumatism, and the sthenic cynanche, if the latter should be unusually severe, blisters, leeches, and cupping-glasses, applied in the neighbourhood of the inflamed parts, may, in some measure, be of service (x). Nor does there seem to be any reasonable objection to the clapping a cap of recently dug-up earth upon the head in the case of phrenitis.

The other Part of the Indication of Cure.

CCCCCLXXXI. To pass over to the other part of the indication of cure (y): when there is a gentler diathesis in the habit, as in the other phlegmasiæ, and sthenic affections, that have not been yet named *in the cure*; as in the mildest state of erysipelas, of the sthenic cynanche, catarrh, simple synocha, the scarlet fever, and the mild small-pox and measles; a smaller force of 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 part are demanded.

CCCCCLXXXII. In all these cases, not even with the exception of rheumatism, which depends upon a very great diathesis, bleeding is not necessary; and with the exception of that disease, bleeding, with any degree of freedom, is hurtful: for, when the excitement is not the greatest, and, on the contrary, is moderate, scarce exceeding that degree that produces the predisposition to other diseases; in that case it is absurd to make use of a most debilitating power, by way of a

(x) All from refrigerant is an addition in these words: "In rheumatismo, et cynanche sthenica si quando solito gravior erit, vesicatoria et hirudines, vel concisa cute cucurbitulæ, juxta partem laborantem adhibita, communem quodam tenus, curationem poterunt expedire. Nec, quo minus in phrenitide pileum ex terra recens effossa, capiti imponatur, objici posse videtur."

(y) CCCCL.

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 in death, an event of which there is not the least danger, in a moderate diathesis, such as that, which is the cause of the diseases here in question; for that reason, the cure must be adapted to the cause, and bleeding must be either obtained 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 restrained.

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 one, 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. And 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 its effect (z,) directs its principal energy to the surface of the body. Hence, after excessive bleeding, the disease, notwithstanding, often obstinately recurs. The cause of which fact, 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 those disposed of in the tract of the muscles; and still less in the last, because the operation of the bleeding is counteracted by that of heat: which is an explanation confirmed by the certain testimony of physicians; who often complain that their favourite remedy fails them.

CCCCLXXXV. Upon which account, sweating, which we spoke of *so* lately, is remarkably adapted to *the cure of* this disease: to it, therefore, after a previous bleeding to twelve ounces, and observing the rule of temperature and diet before directed, must we have immediate recourse, if the diathesis happens to be considerably violent, and is signalized by heat *of the body*, by pains raging most in the night time, and by a strong and hard pulse. In order to render the sweat universal, and of sufficient duration, it should be brought out by

(z) See XXXVII. and addition.

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 a 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 case, after the sweating course, and also in that 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 that rage which constitutes the case of cure first taken notice of; we should use either a very small bleeding, and then chiefly the evacuations before-mentioned (a); then a slight and short sweat ought to be kept up not longer than eight or ten hours; and, during the whole time of the cure, we should go on with abstinence, weak drink, rest of body and mind, and cold, unless in the time of sweating, and even then, with as little heat as possible; and, finally, with tranquillity of mind, as these were formerly enjoined: the united use of which is perfectly equal to the removal of any of these diseases; but there will not always be occasion for them all.

CCCCLXXXVII. Often so gentle a diathesis occurs, that one or two of them, once or twice employed, is sufficient for the cure: so slight a diathesis that is, in which, unless for a little at first, the shivering, languor, and then heat, is very moderate, pointing out a proportional slightness of diathesis upon the surface; in which there are scarce any lassitude, showing the same moderation of diathesis in the organs of voluntary motion; in which the vigour of the stomach remains, manifesting a moderate excess of excitement in it; in which, in fine, the other functions, over the whole body are sufficiently calm, and only suffer conspicuously in the labouring part: in these cases, often a single purge with Glauber's salt, often, without that, cold, rest, and abstinence, have conducted the morbid excitement to its salutary degree. A thousand times has the sthenic synache, a thousand times has catarrh and the simple synocha, nay erysipelas itself with affection of the face, been in that way removed. And the scarlet fever is often so gentle 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 often terms must be disregarded. For, as it was with this view, that the simple synocha was before distinguished from the phrenitic, and the gentle erysipelas from the violent; so, it often happens, that catarrh rises to that magnitude that threa-

(a) See CCCV.

ens or brings on a peripneumony, and that the latter proceeds with much more gentleness than usual. In which circumstances, it is the degree of excitement alone, that ought to govern the physician, without respect 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 good sense, and due reflection upon these principles. The frequency of the pulse in all sthenic diseases is moderate: with that there is conjoined some hardness and fullness. Whenever, therefore, the pulse is very quick, it is to be suspected, that the sthenic diathesis has passed into the asthenic, the excessive excitement into a cessation of excitement, or that the disease has been sthenic from the beginning. To remove which doubt and ascertain the truth, the habit of body, the age, must be considered, and an enquiry be made to know, whether the disease has been preceded, or not, by contagion. Heat of the skin is in common to these diseases and fevers, which are diseases of an opposite stamp, and therefore a doubtful mark. Which, as it depends upon an interruption of perspiration, from whatever source, is never to be strained into a proof of the state of excitement. And, since dryness of the skin, which is in common to the same diseases however different from each other, in the asthenic diseases depends upon debility; in order to know the amount of what that symptom means, the other symptoms and the exciting hurtful powers, should be considered. In fine, the only enquiry 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 of any peculiar form.

CCCCXC. When, therefore, the signs, that have been related, are compared with all the rest and with the diathesis, we are then to set about the antisthenic or stimulant plan of cure. The violent sthenic diseases, which we first considered can scarce be confounded with the contrary ones; the more gentle are daily confounded. But, while it is easy to distinguish them from the asthenic diseases resembling them; if, however, any person should think the *marks of distinction* ambiguous, let him know, that, upon account of that gentleness, *though the disease under examination should be asthenic*, blood is not even to be let, much less *under the apprehension that they may turn out asthenic*; to which last so debilitating a power is destructive, as it has *so often already* been said upon former occasions; and, with that information, let him understand, that his method of cure *conducted* in that way, will be fenced and secured from all

mistake. For, if the diathesis, though sthenic, be slight, bleeding will often precipitate it into the opposite, and will at the best be useless (*b*). If, on the contrary, the disease that passes for a sthenic one, should, in its progress, show itself an evident asthenic one; in that case, every drop of blood that may have been taken will go to the increase of the disease (*c*). Yet this pernicious and daily practice sends more men out of this world than all the curses of human life (*d*).

CCCCXCI. As abstinence, cold, and the management of the belly, are sufficient to prevent a gentle state of the small-pox; so, when that proper preparatory plan has been neglected, and now a crowded eruption appears; besides those, trial must be made also of the other remedies (*e*) except sweat. But sweat must be avoided, because the tendency of the stimulus accompanying it, by increasing the sthenic diathesis on the surface, would be to check the perspirable fluid, and detain the contagious matter under the scarf-skin, and produce that pyrexia, symptomatic of the inflammation, which is called the secondary fever. This particularity of cure is taken from the particularity of the symptom just now mentioned, and forms no objection to the principles of this work. In perfect consistency with which, though there is all the proof that can be derived from sure practice, that the remedies we have mentioned are sufficient; yet, before the eruption comes on, there is nothing can be objected either to sweating or bleeding, as remedies in common to this with every other sthenic disease (*f*). In fine, as the success of low diet, cold and purging, in this manner, is certain; at the same time, the other remedies, that remove sthenic diathesis, in this cast likewise operate to the same effect (*g*). 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 think, that the small-pox and measles, differ from other sthenic diseases

(*b*) 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 that the excitement will go down not only the 17° necessary to bring it to the point of health, but to 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.

(*c*) See CCLXIX. CCLXXXI. CCXC.

(*d*) See par. CCCVI. towards the end.

(*e*) CCCCLIII. to CCCCLXVIII.

(*f*) 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.

(*g*) 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.

attended with pyrexia, but in the particularity of their eruption in running a certain course, and not admitting of an accelerated cure.

CCCCXCII. We are not to wait the arrival of the symptoms of debility, that follow a violence of diathesis, and threaten certain death by indirect debility, with the view, forsooth, that, when they have happened, we may cure them : on the contrary, they ought to be prevented by the early administration of the remedies, *now so* fully commented upon. If that should be omitted, the consideration of the diseases that will be the consequence, and which is altogether an asthenic consideration, must be referred to the asthenic form.

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 hurtful 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 bladder of urine, of the womb, of the liver (*b*) ; the diathesis, because it aggravates the pyrexia, should be removed by its respective remedies, to wit, the debilitating ones. And, when neither it nor the asthenic diathesis is present, nothing should be attempted : but, if the asthenic diathesis should be present, which very readily may happen ; the stimulant plan should be proceeded upon, to prevent a very bad disease (*i*). Nor, when that 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 with passion or emotion ; a practice that in the

(*b*) See LXXXI. LXXXIII. LXXXV. LXXXVII.

(*i*) As asthenic diseases to sthenic ones are 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. Disfmal 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.

very high degrees of the diathesis is indispensibly necessary. Our attention will especially be directed to this particular, when we observe, that the stimulus of thinking and of any 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, 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 (*k*).

CCCCXCVI. That fact of great consequence, to give corroboration to this whole doctrine, 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 administered in a higher degree, as that is a disease of a higher degree of excitement. Thus, it is not ease and tranquillity 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; for that reason, 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 draft-cattle should be imposed on him, and assiduously continued; his diet should be the poorest possible, and his drink only water (*l*): in water as cold as possible, the patient should be immersed, and kept under it, covered all over, for a long time, till he is near 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 more in an affection of the brain, upon which the principal noxious 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 (*m*), that proves, that not even in them, where you might most be disposed to believe it, the whole morbid affection depends upon the part conspicuously affected;

(*k*) See above CCCCXXXIII.

(*l*) See CCCXXVIII. CCCCXXX. CCCCXXXV. CCCXXXVI.

(*m*) Part I. Chap. II.

but that the whole body is concerned in it, that the excitability is one uniform undivided property over all ; that the force both of the exciting, hurtful powers and of the remedies, is directed to the whole, with the inequality so often mentioned (*n*) ; and that the foundations of this doctrine are sure and stable.

CCCCXCVIII. As these are the principal hurtful powers in mania and pervigilium, and the brain principally affected ; so, in obesity the hurtful powers most considerable are animal food (*o*) 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 understood to be 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 ; from thence it is ascertained, that all the digestive powers have more force in the former, than in the latter, and, consequently, that the other exciting hurtful powers have contributed to the effect, and that a proportional excitement follows. Of the hurtful powers, that belong to this place, an easy exercise of the intellectual faculty, and tranquillity of mind, which are moderate stimuli, favour obesity ; over-strained thinking, and habitual 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 from the high degree or long continuance of its stimulus. On the contrary, the powers that favour it, are those that act gently, and with some excess ; but never attain that high degree of activity, that inclines to indirect debility : they are powers that go on softly and pleasantly, that particularly 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 the means of the tranquillity of motion *kept up in the latter*, allow a fluid, that would otherwise pass off by the external pores of the surface, to turn aside into the cells of fat. Hence, though, as it has been said before, an 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,

(*n*) Part I. Chap. IV.

(*o*) 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.

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, it is understood, 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 cause (*p*); hence it may be observed, that for the cure also of this disease the common indication is sufficient (*q*); that is, that the excess of excitement must be reduced to the salutary degree, and a remedy opposed to every hurtful power, equal to the removal of it.

D. In this case, therefore, as food is the principal hurtful power, less of it should be given, and more exercise engaged in. These are sufficient for the cure (*r*).

DI. But, for the sake of bringing both *further* confirmation, as well as illustration of this doctrine; it is to be observed, that all the powers, which very much affect the excitement, and in a greater degree, than the hurtful power of this disease mentioned above, 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 productive of that effect, till they induce that degree of meagerness 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. The next *rule* to that, is to refrain from the latter, and use the former in greater abundance. The first of these is suitable to all such persons as are liable to diseases of debility, such as the gout, the indigestion that after a long time succeeds to luxury, asthma, epilepsy, and similar others. The latter management is more accommodated to those, who otherwise enjoy good vigour, are under predisposition to sthenic pyrexia, and in the flower of their age. But, it is not, even in the latter state of the body, to be prosecuted, unless for a time; because, such is the debilitating influence of that practice, 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 that.

(*p*) See CIX.

(*q*) XLVIII. CCCCLIII.

(*r*) CCCXCVIII.

PART THE FOURTH.

THE SECOND FORM OF GENERAL
DISEASES;

O R,

THE ASTHENIC DISEASES.

C H A P. I.

DIII. **T**HE form of asthenic diseases, and which is to be called asthenia, for the sake of distinguishing it from the form of sthenic diseases, which is called sthenia, is a state of the living body, in which all the functions are more or less weakened, often disturbed, almost always with a more conspicuous affection of some *function*. In the treatment of which, that order will be observed, in which the progress from the smallest disease *of this kind* to the greatest, through all the intermediate degrees, is to be followed out.

DIV. *In this part of our subject*, there occurs a great variety of symptoms; of which, because it is without meaning, and even misleading, no use is to 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 specious, point of view, we shall begin with a simple enumeration of the principal diseases to be afterwards fully treated of.

DV. The asthenic diseases are macies, inquietude, or restlessness without sleep, the asthenic amentia, the scabby eruption, the slight diabetes, the asthenic scarlet fever, the rickets; the hæmorrhææ, or general bleeding discharges, such as menorrhæa,

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 diarrhæa, or loose belly, and colic without pain; after these the affections of children, as the worms, the general consumption, called tabes, dysentery and cholera in the gentle state of these two; angina, the scurvy, the gentle hysteria, rheumatism, asthenic cough, cystitis, or mucus discharge from the bladder; the gout of strongish persons, asthma, cramp, anasarca, dyspepsia with pain, the violent hysteria, the gout of weakened persons, the hypochondriasis, dropsy, chin-cough, epilepsy, or the falling sickness, palsy, the lock-jaw, apoplexy, tetanus; lastly fevers, as the quartan, tertian, and quotidian, *intermittents* or *remittents*, dysentery, and cholera both in their violent degree, synochus, simple typhus, the gangrenous sore throat, the confluent small-pox, the pestilential typhus, and the plague.

DVI. This scale of asthenic diseases is to be understood *in* this way, that those diseases, which in their most usual state are slight, and claim a higher place in the scale, are sometimes more, sometimes most, violent; and those, that in their most common state are severe, such as the gout of weakened persons, the pestilential fevers, and the plague itself, sometimes proceed with the greatest gentleness (*a*).

DVII. The affections of parts, which often accompany those diseases, such as ulcer, tumor, increased excretion, bleeding discharge, inflammation, spasm, convulsion, point out indeed some degree of debility *as their cause*, but in such sort that the same degree may happen without them. Hence, because it is the influence of debility that is fundamentally regarded in this scale; with the diseases, that are often conjoined with these affections, others, without them, as hysteria and the cramp, are blended; and, with the cases that are accompanied with spasm and convulsion, dropsy is conjoined, by keeping to the idea of an equal degree of debility; *and all* this without any regard to remarkable symptoms, but keeping the degree of debility only in view. Neither is the violent cholera kept back from its place among fevers, which last are distinguished by failure in the intellect and affections of the head, because it shows a degree of debility equal to the febrile. The idea in proportioning this division is to show that true morbid energy does not consist in an affection of any parts, but of the

(a) See par. CCCCL.

whole body ; and that the *restoration of health* is not to be attempted by a change of *the state of parts only*, but *without excluding that*, by a change of the state of the whole system.

Of Leanness.

DVIII. Leanness is an asthma, less discernible in the other functions, but evident from the weakness of the digestive function ; in consequence of which, the system, though receiving proper aliment, does not become plump.

DIX. Since the cause of this disease is debility, both in the rest of the system, and in the stomach and other organs of digestion ; it thence *follows*, that the general indication for the cure of it, should be chiefly directed to the most languid part, that is, the organs of digestion and the perspiratory vessels. More nourishing food, therefore, should be used, less labour undertaken, and moisture on the surface, or too free perspiration, should be checked by more rest of body, by proper gestation and rubefaction, and a plan, quite contrary to 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 languor, and the patient is affected with a constant necessity to change his posture, and toss about his limbs without being able to fall asleep.

DXI. As the cause in this case, in the same manner as in every other general disease, is universal over the system ; so it affects the organs of voluntary motion, and the brain in particular, with the inequality *so often* formerly mentioned (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 : and that stimulus of both, which is agreeable, ultimately excessive corporeal labour when it has proved hurtful, as well as deficient when it has had a concern in the cause, 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 the other stimuli have, each its proportion, in the cure.

(b) See par. XLIX.

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 a lowness of spirits, and the functions of the body weak and sluggish.

DXIII. In this case, while the debility is universal, there is a prevalence of it in the perspiratory vessels. And, therefore, the chief parts of cure are, together with the remedies, *the operation of which is directed to the whole system*, such as nourishing food, 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 every thing clean about his cloths.

Of the Gentle Diabetes.

DXIV. In that asthma, which is named the gentle diabetes, there is an excess in the quantity of urine discharged, but the profusion is not immoderate as in the most violent case of the same name. The organ of respiration labours under the same weakness and sluggishness, as in the scabby eruption.

DXV. To remove this affection much more frequent than it has been hitherto believed, 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 supplying enough of stimulus: and, above all things, the perspiration should be sustained. The contrivances for checking the flow of urine, which have no existence, are to be passed from.

Of the Rickets.

DXVI. The rickets is an asthma; to the general symptoms of which are added an unusual bulk of the head, especially the fore part of it, and likewise of the knees and abdomen, a flatness of the ribs and meagerness.

(*c*) See par. CCLXVII.

(*d*) See CCLXVIII.

(*e*) CCLXX.

DXVII. The rickets is a disease of children, chiefly arising from uncleanliness, want of dandling or exercise, cold, either without moisture or with it, food not giving sufficient nourishment, and bad air.

DXVIII. For its cure the common asthenic indication must be employed ; remedies, of an opposite nature to the hurtful 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 drink allowed (*g*).

Of Retarded Menstruation.

DXIX. Retarded menstruation is also an asthenia : 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 asthenia ; in which after it has appeared, and the flow continued for some time, the discharge is made in too sparing quantity, or after too long intervals of time, with other signs of weakness accompanying it.

Of the Suppression of Menstruation.

DXXI. Suppression of menstruation is that degree of asthenia, in which the discharge is totally stopt at any period betwixt their natural commencement and the time when, in the course of nature, they cease altogether.

DXXII. An inquiry must be made into the cause of natural menstruation, before *it would be proper to enter upon* that of the retardation, or deficiency, of the discharge in any of its degrees.

(*f*) See DXIII.

(*g*) See CCXCV. CCCIII.

Of the Cause of Menstruation.

DXXIII. The cause of menstruation is a conformation of the vessels that pour out the blood *in this discharge*, taking 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 the other species of animals*.

DXXIV. Of other animals there are very few, the females of which undergo any sort of menstruation out 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 womb about the age of puberty, are at last so very much expanded, as now to transmit first the serous part of the blood, and then, after an effort kept up for some time, pass to formal 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 preference to other parts, in the genitals of both sexes, in the female, over the whole region of the ovaria, womb, and vagina: by this stimulus, the uterus, its seat, being nearly incessantly solicited, is the more powerfully affected, the more there is of excitability, hitherto acted upon by no such stimulus, existing in the system. Hence, among other organs, the muscular fibres of the next vessels, as well as the nerves interwoven with them, undergo 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 the highest degree of that effect. The remembrance of each embrace remains, renews the dear idea of the delightful scene, and continues more or less to excite the uterus.

DXXVII. This new affection is further cherished and nourished by every stimulus that is usually applied to the system: hence, in the absence, in the presence, of the beloved object, at all times generally, scarce with the exception of *that which passes in dreaming*, a stimulus so steady, and the more powerful, that 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 the greatest rapidity, a rapidity momentarily increased, 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 activity by which it is driven on. This is the first cause of menstruation : in that way, the two circumstances, a sufficient enlargement of the diameters of the vessels, and the stimulus acting more powerfully, from its novelty, upon the unwaited excitability (*h*), are sufficient for the whole business.

DXXVIII. This state is not inconsistent with other states of the body, but bears an analogy to some well known ones : accordingly, 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 ; so as to take off our surprise at finding vessels fitted, by their degree of diameter, for the purpose of transmitting red blood.

DXXIX. The reason that the females of other animals do not menstruate but in their orgasm, and not at other times, is, that it is only at certain times that they are exposed to that energy of stimulus which produces menstruation.

DXXX. How much is owing to the stimulus just now mentioned (*i*), in the production of menstruation, is further evident from the following chain of facts : which are, that, the less addicted to love women are, the less they menstruate ; the more they give way to that passion, the freer do they experience this discharge within certain boundaries ; that, before puberty, and after the time of life when menstruation ceases (which are the two periods, at which the fitness for effective love has not yet commenced, or is now passed,) the menstrual discharge is constantly wanting ; that the privation of enjoyment, which, by *its* debilitating effect, produces chlorosis (*k*) and other similar diseases, is remarkable for bringing on a menorrhœa, or a retention of menstruation ; and, finally, that girls, who are of a forward growth, of great strength, and large limbs, and consequently 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

(*h*) See DXXIII.

(*i*) See DXXIII. DXXVI.

(*k*) or the green sickness.

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 by 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; that fact also, *which it certainly is*, added to those above, gives weight to our conclusion, and shows, in a clearer point of view, how much menstruation depends upon the venereal emotion. It is to be asserted, therefore, again (*k*), that besides the conformation of the vessels, suited to *the function of* menstruation, and the stimulus which has been mentioned (*k*), 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 of it, happening 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 stimuli, mentioned above, explain, why women menstruate more than the females of other animals; so their immoderate operation upon women serves to show why *their effect*, the menstrual discharge, becomes greater than natural (*l*).

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 reading to one's self, or to others, of conversation, of pictures, contrived to kindle up lustful appetite, and the uncovering of parts that modesty conceals, which all produce a lively impression on the imagination of the thing so much desired; can be indistinctly felt by none perhaps but eunuchs. The same is the effect of nourishing food, and generous drink, and high seasoning; and hence the proverb, without meat and drink love starves: likewise, that degree of exercise, or *even* labour, that does not prove fatiguing, but that keeps within the boundary of stimulant operation; as also an abundance of blood, both from that circumstance and from rich diet; lastly, frequent and ardent dalliance, or *inconcessa hujus imitatio*; all these, increase the

(*k*) See DXXIII. DXXVI.

(*l*) 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.

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 the ultimate end of all the stimuli, that produce excessive menstruation, is such, that, 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; that is, 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 of it, runs rapidly into indirect debility.

DXXXV. That that is the fact, is proved by the hurtful powers that produce excessive and morbid menstruation; and by remedies, that are stimulant and suited to fill the vessels, removing the disease according to our late discovery; and also by the unfortunate effect 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, that have been mentioned, 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; that is in the region of the womb: the blood thrown into quick motion, and rushing with a more rapid flow, increases its cause, the stimulus: and, as this mutual stimulus continues incessantly to affect the women through the whole interval, when they are allowed scope of love; the uterine vessels are gradually unfolded, till at last, within three weeks, or a lunar month, they are opened to their ultimate extremities: and, when the fluid, first serous for a little, and afterwards sanguine, and afterwards serous again for a little, has flowed one, two, or three days, in healthy persons, the vessels are at last shut up.

DXXXVII. During the whole time of this process, the more excitability there is, and 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 the stimulus, is altogether exhausted, the stimulus always adds something to the sum of excite-

ment (*m*), though constantly less and less. The same is the explanation of the operation of food, of drink, and of all the exciting powers.

DXXXVIII. As what has been said of the stimulus, productive of menstruation, is conformable to the effects of all the other stimuli: the same is its conformity to the whole sum of menstrual effect from the beginning to the end of the process. Thus in the beginning of that long period, the force of stimulus is far the greatest, upon account of its novelty, and the unwaisted state of 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 after the beginning of this function, and when now the office of menstruation is 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 way decrease from the beginning to the end; so, menstruation is often interrupted, in pregnancy, in suckling, in the diminution or suppression of menstruation. This interruption in the two former is natural, and suitable to health; *but* in the diminution or suppression of the menstrual evacuation, it becomes morbid.

DXLI. Since the stimulus 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 any internal excretion, as that in the fauces and alimentary canal, is sometimes 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 nearly allied to such a contraction for a reason *formerly* assigned (*n*); so great a force of excitement, so high

(*m*) See XXXVI.

(*n*) LVII. LXII. CXII. CXIII.

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 proofs of a debilitating cause.

DXLIII. To ascertain that fact, which is of the greatest consequence for this reason, that it directly interests the method of cure, and, if not explained, would leave a gap in our principles; *we have to observe*, that, as some men, in consequence of the stimulus of excessive love, in the case of a most beautiful woman being the subject of it, have, by means of sthenic diathesis, been so inflamed as to fall into a temporary fit of impotence, and been cured by bleeding; so, besides that that is a rare fact (*o*), it is not very probable, that the patulous uterine vessels can be so contracted in their diameters, as to be incapable of transmitting their fluid. Nay facts contradict it: the retardation or deficiency of menstruation receive a temporary alleviation from the debilitating plan of cure; but the discharge is not usually also brought back, on the contrary it is more kept off: 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 it again be the cause of a disease, which resists a degree of evacuant and debilitating plan of cure, that would cure ten peripneumonies? And since any stimulus, as well as *that of an over-proportion of blood*, may, from its excessive force, go into indirect debility; why may not the same thing happen in a disappointment in love, and 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 (*p*), and of all those stimuli that support it (*q*), and from a penury, or under-proportion of blood.

DXLV. That that is the fact, is proved by the hurtful

(*o*) I remember one instance in Dr. Whyte, and I think I have only heard of another.

(*p*) See DXXIII. DXXVI. DXXIX.

(*q*) DXXVI. DXXVII. DXXXII. DXXXVII.

powers mentioned in the retardation of menstruation, and other debilitating ones in every deficiency of that discharge, producing each disease; it is proved by the stimulant and filling plan of cure removing it, and also by the hurtful effect of the debilitating plan of cure (r).

DXLVI. The remedies for the cure of retarded menstruation are, rich food, generous drink, gestation, exercise accommodated to the strength, pediluvium and semicupium, or the warm bath of the under-extremities, and gratification in love (s).

DXLVII. The same remedies, are required for the suppression, and the same, but inferior in their degree of force for the diminution of menstruation: when there is an unusual force 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 an over-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 hurtful powers, therefore, that produce it, are food not nourishing enough, or too small a proportion of what is so, watery drink, or that over-proportion of pure strong drink that produces indirect debility, excessive heat, or cold not prevented from its debilitating operation by any stimulus, and salacity.

DL. Its remedies are the reverse of the hurtful powers; rich food, generous strong drink, heat acting within its stimulant range, cold kept from direct debility by the stimulus of heat and other stimuli, and gratification in love.

DLI. The effect of the hurtful powers and remedies of which we have spoken, that of the former in producing, and that of the latter in removing, the disease, and the failure in success of the debilitating plan of cure, all confirm the fact.

Of Epistaxis, or Bleeding from the Nose.

DLII. Epistaxis is an asthenia; which besides the general symptoms of the latter, is distinguished by bleeding from the

(r) See DXXXV.

(s) DXXVI.

nose, without any force behind, an affection troublesome at any age, but particularly to young persons under a rapid growth, and to enfeebled old age.

Of Hæmorrhoids.

DLIII. The characteristic of hæmorrhoids, or the piles, added to other signs of asthenia, is a flow of blood from the anus, or the parts around it.

DLIV. The same thing, nearly, that has been said of menorrhœa, is to be said of the hurtful powers and remedies of this disease.

DLV. The cause of the piles is manifest, from the hurtful powers producing it, the remedies removing 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 (*t*): which debility, while it relaxes all the vessels, and impairs their tone, produces that effect, in a special manner, upon the labouring vessels. The reason of which is, that, in consequence of the inequality so often mentioned, the chief prevalence of the cause operates in the seat of the urgent symptom (*u*). 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 hæmorrhoidal vessels, and those of the nose, which are delicate, and weakly supported, in preference to others. In this case plethora, which has no existence (*x*), is equally unnecessary to our reasoning (*y*).

Of Thirst, Vomiting and Indigestion, as well as the Kindred Diseases of the Alimentary Canal.

DLVI. There is a very frequently occurring affection, beginning with thirst and proceeding to vomiting (*z*). It often

(*t*) See par. DXLIX.

(*u*) See XLIX. L. LI.

(*x*) See par. CXXXI. CXXXIV. and the addition.

(*y*) CCXXXII.

(*z*) CLIX. CLXXXV. CLXXXVI. and CLXXXVII.

proceeds no farther than those symptoms; it oftener ushers in the most severe affections, such as sometimes dyspepsia, or indigestion, sometimes colic, sometimes the gout, sometimes proper fevers, and many other asthenic diseases. Its most frequent source by far is weakness, being the attendant sometimes of too long suckling, sometimes of the diarrhœa incident to women wasted with a long course both of that and repeated pregnancies.

DLVII. There are two causes of as many affections which have got only one name between them, that of thirst: the one is sthenic, the other asthenic (*a*). 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, which is 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 (*b*). Its tendency is always to stomach sickness, and, as that increases, to vomiting (*c*); and when the vomiting becomes any way considerable, the consequence is that most acute pain, which a cramp in the stomach produces (*d*), and the other affection formerly explained (*e*). This progress is spontaneous, direct, and for the most part rapid.

DLIX. The hurtful powers here are all debilitating. The indirectly debilitating hurtful powers are, debauch in eating and drinking (*f*), drunkenness, extreme fatigue, ultimately excessive heat (*g*), violent passions (*h*), excessive exercise of the intellectual faculty (*i*), debilitating food (*k*), an over-proportion of blood now converted into an under-proportion, together with the conversion of the sthenic diathesis that attended the former, into the asthenic, the inseparable attendant on the latter. The following powers act by a directly debilitating operation; cold corrected by no stimulus (*l*), cold drink, ve-

(*a*) Ibid. (*b*) CLXXXV.

(*c*) See CLXXXVII. CLXXXVIII.

(*d*) See par. CLXXXIX.

(*e*) CXC. to CXC. and from that to CXCVIII.

(*f*) CXXVIII. CXXX. (*g*) CXV.

(*h*) CXLI. (*i*) CXXXIX.

(*k*) CXXVIII. (*l*) CXXII.

getable food (*m*), penury of blood (*n*), of other fluids (*o*), want of pure air (*p*), anxiety, grief, fear (*q*), and, in fine, that weakness of the system, which arises from all those. The affection is often of a mixt origin, from a mixture of both these sorts of hurtful powers: for, as direct debility always increases the indirect, so does the latter the former, both in this and all cases (*r*).

DLX. A corruption of the common mass of fluids, whether it be called acrimony, or putrefaction, has no concern in the cause; because, while life remains, and the action of the vessels upon their respective fluids continues, such a faulty state of the fluids cannot make its havock over such an extent of the system, that being only the effect of a cessation of motion of the fluids under heat; nor can it happen, but in the extreme vessels and excretory ducts, which, by their atony, do occasion such a cessation of motion, and likewise in the alimentary canal.

DLXI. The cause of this thirst is the common one of every asthma, but predominant in the throat and stomach, upon account of the atony of the salivary, and other excretory ducts (*s*).

DLXII. The remedies are also the common ones of every asthma, to be accommodated to the degree of debility in the cause. In a slighter degree of 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 (*t*). That should be followed by eating some animal food (*u*); and it 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, not quenched by these means, proceeds directly to vomiting, and when, by and by, an ex-

(*m*) CXXVIII.

(*o*) CXXXVII.

(*q*) CXLII.

(*s*) CLXXXVI. CLXXXVII.

(*n*) CXXXIV.

(*p*) CXLVI.

(*r*) XLVII. LXXI.

(*t*) The addition of cold water counteracts, that of hot co-operates with, the effect, which has been ascertained in a thousand trials.

(*u*) 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 stomach sickness, that now begins to take place with it, renders eating impracticable.

cruciating pain supervenes upon the vomiting; which excepting the pain, is an affection, that, together with the symptoms that have been mentioned (x), 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 those cases recourse must be had to a larger dose of the drink: 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 grease, should, from time to time, be poured in, and the canal carefully bathed all over with them. After which, the other stimulants should be added; in the use of which, a straight direction 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; that, by neglecting it, or depending upon

(x) From DLVI. to DLXII.

the common purgative debilitating plan, the consequence is, that often a proper general disease degenerates into a local affection. To proceed to the consideration

Of the Kindred Diseases of the Alimentary Canal.

DLXVII. Among them, besides those that have been mentioned above (y), there are not wanting others, which, when compared with them in the similitude and nature of the cure, absolutely claim this place in the scale.

Of the Diseases of Children.

DLXVIII. The diseases of children are, dryness of the skin, sudden slobber, or salivation of short continuance; a simular rejection of milk, without effort (z); green scouring; at other times costiveness; both commonly with gripes; the usual mark of which is, a pulling up of their knees towards their stomach, with very severe crying; unequal heat. A little more severe than those 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 (a); by a custom of picking the nostrils: by 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

(y) From DLVI. to DLXVI.

(z) See CCCCIII.

(a) It is that longitudinal depression which runs down from the partition of the nostrils perpendicular to the upper-lip.

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 excites tenderness and compassion.

DLXXI. The hurtful powers, producing all those affections, are in common to them with every asthenia; 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, are, milk not nourishing enough, and at the same time acescent and flatulent; want of food, or made of watery matter and bread; cold, and moisture, the latter increasing the effect of the former; habitual vomiting and purging; too little dandling; mistiming 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 those, nourishing exciting milk; three or four meals a day, consisting chiefly of warm milk, pure animal soups, not weak, with a mixture of flour or bread of the same kind; heat without being carried so far as to produce sweat, or too much redness, and free from 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 cold weather, and cold bathing in warm; and pure air, being out in the fields as often as possible in all but moist weather; such a judicious attention to desires and propensities as not to neglect scratching any part that itches (*b*).

DLXXIII. These directions suit the gentler cases *under consideration*. To remove the more violent, while they also are not by any means to be neglected; at the same time others are to be subjoined. When the green scourings, great looseness, and boundness of belly, are vexatious; recourse must be had to pure wine, spirits, more or less diluted as the occasion may require, or if there should be need, not diluted at all: more of the soup that has been mentioned, and also of a richer kind.

(*b*) See above DXVIII.

DLXXIV. If those should not succeed to the *physicians* mind, which will seldom be the case; in the same affections, and 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 (*c*), 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 replaced; which will, upon trial, be found more practicable, than has yet been imagined from the employment hitherto 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 hitherto, is to be imputed not to their cause, but to the depravity of the common method employed for their cure (*d*): nay, though they do degenerate into local affections, as in the instance of the tabes, or general consumption, ending in an obstruction of the mesentery; in that of colic at every age, terminating in an inflammation, tumour, or complication of the intestines; and in those of both colic and long-neglected diarrhoea, running into a gangrene in the same part; that 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 the perversity of that plan of cure, or the neglect of this, which is the proper one. To the same kindred diseases of the alimentary canal (*e*), further belong *the two following ones*, under the title

Of the gentle Dysentery and Cholera.

DLXXVI. To which, every thing that has been said of those kindred ones, will apply: or, if there be occasion for any particular observation upon them, it will be taken up, af-

(*c*) The durable and diffusible.

(*d*) 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 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.

(*e*) From DLXVI. to the present paragraph.

ter 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 higher, 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 same 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 Scurvy.

DLXXVII. Scurvy is an evident asthenia: the principal symptoms of which 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 hurtful powers producing this disease, are the common asthenic ones, appearing in the following form; it is cold in this case, but conjoined with moisture in the northern seas, 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 with it all the other debilitating powers contribute their share: such are, grief for the loss of liberty, relations, kindred, and friends; a horrid dislike to their 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*; there not having been allowed, till of late, fresh meat, which is the only nourishing and invigorating (*f*) *form of it*; their being kept upon salt-

(f) See CXXIV.

ed and spoiled meat, and not even corrected by recent vegetable aliment, such as that is (g); watery or small drink; the terror which the expectation of a battle at sea inspires.

DLXXIX. All those particulars prove, that scurvy is so far from being the effect of one or two hurtful powers, and from resting upon so narrow a basis of the cause producing it, as has hitherto been imagined; that it is rooted in a multiplicity of debilitating powers, and is a real asthenia, or universal disease of debility.

DLXXX. And this fact is confirmed by both the true and false method employed for its cure: for, though nearly all the common powers concur in the production of scurvy; if, however, it be considered, how easily, upon the removal of the hurtful powers, and the patient getting a shore, the disease is got under, by fresh meat, either with or without greens, by wine, gestation, and exercise, in fine, by the recovery of his usual manner of living; it will be impossible to entertain a doubt of its being both an asthenia, and by no means a violent one. The pretence of its cure being affected by greens, roots, sour crout, and similar things, so much boasted of lately, which without the remedies just now enumerated, 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 Gentle Hysteria.

DLXXXI. The gentle 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 the patient with suffocation.

DLXXXII. The striking symptom in this disease is a spasm, not fixed in a part, but running the course just now described. The disease attacks in fits, for the most part leav-

(g) See CXXVIII.

ing long intervals betwixt them, and often never 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 asthenia, not so much a sequel of rheumatism when left to proceed in its own spontaneous course, as of the profusion of blood and of other fluids employed for the cure of it, and of too debilitating a cure ; with a change of the sthenic diathesis and the inflammation, which is a part of that, into the asthenic diathesis and inflammation. Paleness of the skin takes the place of complexion : 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 : as that, which has been assigned, is the most frequent cause of rheumatism, so it sometimes arises not from a sthenic origin, and an excess in the means of reducing that.

DLXXXV. The cause of the disease is the usual one of any asthenia, 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 powers that act by a debilitating operation 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 is nourishing food, friction, gestation, wine, taken in moderation, exercise, rather frequent than violent, and being as much as possible in the open air. If it is an acknowledged fact, that rheumatalgia is one of the reproaches of physicians, it is more so than has been hitherto understood ;

it being an asthenic disease, while they at all times made use of the same kind of cure, as if it had been the most sthenic, or even upon the whole more debilitating (*h*).

Of the Asthenic Cough.

DLXXXVIII. The asthenic cough is an asthenia, which with the constant symptoms of the latter, depends upon a frequent expectoration, that 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 violence of all stimuli that have been applied either for a short time, or for a great part of life, their operation coming to the same amount, that of the former from its degree, and that of the latter from its long continuance (*i*). In so far as its cause is direct debility, a deficiency of all the stimuli, leaving the excitability to be accumulated, allows this form of asthenia to happen from the spontaneous tendency of nature, of which life is only a forced state (*k*).

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, the increase of the stimulus, *the want of which occasioned the disease*, till the degree of excitement, which constitutes health is replaced, effects the cure.

(*h*) 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.

(*i*) See above XXIX. XXX. and CCCC.

(*k*) 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.

DXCI. Such is the nature of direct and indirect debility; that if the remedies of the former be pushed beyond the boundary, the cough appears again; and the same is the event of the same excess in the use of the remedies of the latter (1).

DXCII. Frequent and violent cough with copious expectoration has been always held for a sure mark of a vitiation or faulty state in the lungs. That faulty state was esteemed to be of a sthenic, nature, and to give assurance of the presence sometimes of phthisis pneumony, or consumption from an ulcer in the lungs, sometimes 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 in true peripneumony was, in their opinion, its primary cause, was considered as the cause; and in the last case, no 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 enquiry was made, but whether the matter that was spit up, was mucus or pus. To ascertain that, premiums were proposed.

DXCIII. But, in fact, besides that no phthisis pneumony, no bastard peripneumony, as they call it, no inflammation in the alimentary canal, was ever cured by antisthenic or debilitating remedies; and that, in the several trials that have yet been made, the first of these cases has been evidently assisted, nay frequently completely removed, and the two latter thoroughly cured in numberless instances, and in all in which it has been used by the sthenic, or stimulant plan of cure; I say, besides these large and comprehensive facts, so little signification is there, either in the quantity or appearance of the expectoration, that in certain fevers, in other diseases of debility, quite free of all 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 the whole tumult, hitherto so alarming,

(1) See par. XXXIII. XXXIV. and XLIII. XXX. CXXXIV. with the addition, and especially CCXXXIII. to CCXXXVI.

could be stopt 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 whole and long life-time, whose lungs, however, are found, and free from any organic taint? How often in phthisipneumony itself after finishing its course, and at last terminating in death, has the whole fabric of the lungs been found upon dissection as found as ever happens in death from any cause (*m*)?

DXCV. The cause of cough has hitherto been unknown. To pass over the sthenic cough, with which we have nothing to do in this part of our subject (*n*); the cause of the asthenic, is the same as that of any asthma, but more vehement in the fountain of expectoration, to wit, the exhalent and mucus arteries, the secreted fluids of which, inspissated by stagnation *in the bronchia*, compose the matter to be expectorated.

a. a. The most powerful of the asthenic, hurtful agents in exciting asthenic cough, is cold, just as heat has been demonstrated the most hurtful agent in catarrh (*o*). Nay, in the asthenic cough, such is the rage of cold, that the slightest breath of air reaching the body, excites a most prodigious tumult of coughing, and brings out the whole series of subsequent symptoms; and heating the body in the bed as soon allays the cough, prevents the threatening, and cures the urgent disturbances (*p*).

(*m*) 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 this 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 phthisipneumoniacs, 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.

(*n*) See CLX. CCXXXIII.

(*o*) See par. CCCCVII. to CCCCXII.

(*p*) All from *a. a.* is an addition to the original.

DXCVI. In this as well as the sthenic cough, it is the serous and mucous fluids that chiefly flow to the bronchia. Which bear their pressure for a little, till, distended by the load, they can bear it no longer. The disagreeableness of the stimulus excites a commotion in the excitability of the labouring part, and, therefore, over its whole seat, and rouses the excitement. A cough arises, and throws off its cause, the collected humours.

DXCVII. This disease is always to be treated for its cure, 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, but at first with a force of stimulus little less than that, which occasioned the disease, and then with still less; and, after changing, from time to time, the form of the stimulus, with less still; till we come down to the stimuli that are agreeable to nature, those that suit the most perfect health (q). In that way is ebriety, in that way is every form of intemperance, to be treated. If direct debility has been the cause, the cure will be a good deal more easy: that is we must go on to stimulate more and more, till we get up 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 Chincough

DXCVIII. Is given, to be encountered in practice. Chincough is attended by a contagious matter; which varies in its degree, but in such sort, however, that a sthenic plan of cure, adapted to the degree of the disease, for certain cures it. The change of climate or place is a tale, the practice of vomiting is death (r). And, since the disease is an asthenia,

(q) See par. CIII.

(r) 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 knew 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.

vomiting, which is so very debilitating an agent, cannot fail to be of the highest detriment (s).

Of Cystirrhæa, or the Mucous Discharge from the Bladder of Urine.

DXCIX. Cystirrhæa 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 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. The gout of stronger persons is a form of asthma; in which, after a long habit of luxury and indolence, and especially, when to those hurtful powers directly debilitating ones have been recently, superadded, indigestion, or diarrhæa, or rather both conjoined, with manifest signs of a diminished perspiration, precede; then the lower extremities are affected with languor. Of the lesser joints, almost always the one or other foot is seized with an inflammation, which, if not resisted by a piece of art quite new, will prove most severe, most painful, and of short duration, comparatively to its state in that respect in the after part of the disease.

DCII. This disease may be called the indigestion or dys-

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 diarrhæa 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 stop'd. The contrary practice is as good sense, as it would be to propose bringing on a dead rattle to cure the morbid one.

(s) See par. CXXXVII. and the addition in MS and CCXCIV.

pepsia of the luxurious, that is, depending upon indirect debility; while dyspepsia may be denominated the same disease, that is, the gout of persons under direct debility, as having every symptom of the gout, except the inflammation (*t*). For, in diseases, so little is there in names, that not only those diseases, of which we have been just now 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 cure precisely. Which is indeed the reason why the gout has been ranked in the number of the diseases of the same canal.

DCIII. A taint transmitted from parents to their offspring, and celebrated under the appellation of hereditary, is a tale, or there is nothing in the fundamental part of this doctrine. The sons of the rich, who succeed to their fathers estate, succeed also to his gout: those who are excluded from the former, are also from the latter, unless they bring it on by their own merit. Nay, if there be but only two diseases in the strict sense of the word, they must be either all, or none of them, hereditary. The former supposition makes the hurtful powers superfluous, which have been proved to be every thing *respecting disease*; and, as it is, therefore absurd, so the truth of the latter must be admitted. The stamina, or bulk of our simple solids, are so given in our first conformation, that some persons are distinguished by a gross, others by a slender state of the whole mass. That variety of the stamina, if the exciting powers, upon which the whole phænomena of the life depend, be properly directed, admits each its respective state of health, suited to its respective nature, and sufficiently commodious, if the excitement suited to each, from a proper direction of the stimuli *producing it*, be properly applied. Though Peter's father may have been affected with the gout, it does

(*t*) There are very few persons, who at one time or another in their life have not experienced painful twiches in some part or other of one of their feet, especially when they happened to be in a state more languid and sluggish than ordinary. Every such case may be considered as a gout in miniature. But when the whole phænomena, 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.

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.

β . β . If the same person, who from his own fault and improper management has fallen into the disease; afterwards, by a contrary management, and taking good care of himself, both prevents and removes the disease, as it has been lately discovered: what then is become of hereditary taint (u)?

Lastly, if the gout is the same disease as dyspepsy, arises from the same hurtful powers, is removed by the same remedies; and 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 (x)? Nothing by them further is set forth, than, that a certain texture of stamina is favourable to certain forms of diseases, which (forms) are of no consequence, in such sort, that, when the excitement is adapted to the stamina, even those forms can be prevented or cured.

DCIV. The hurtful powers producing the gout are, first, indirectly debilitating, not effectual all of a sudden, nor commonly before the meridian of life, that is, before the thirty-fifth year of one's age. Rich food, too much ease, have a very great effect, drink has less. To that all that have a tendency, to wear out life, to consume the excitability, contribute. But the first fit scarce comes on till directly debilitating hurtful powers have been superadded to the indirect (y). The following are particularly hurtful, abstinence, vegetable food, the hurtful effect of which is in proportion to the imbecility of of the matter that composes it. The farinaceous substances,

(u) All this, from β . β . is an addition to the Latin text in MS.

(x) 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.

(y) My gout came on at the thirty-sixth year of my age, after five or six month's 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.

which are by no means safe, (*z*) and less hurtful than roots, and these less so than greens (*a*); but fruits are the most hurtful of all (*b*). Cold water, in the height of the diathesis, given 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 (*c*). 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 claret, indeed all the French wines, and punch with acid, all these are remarkably hurtful. And as indolence helps on with the first fit, so fatigue, especially that of walking, hurry 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 no body ever thought of taking blood (*d*). Vomiting is bad, and indeed one of the natural symptoms of a very bad state of the disease; but purging the belly is worse (*e*). 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, that is, 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. That effort at first is not perceived; but in the advance of age, and after many returns of the disease, it is felt at last with a vengeance (*f*). Great

(*z*) A mess of porridge, a dish used in Scotland, with small beer poured upon it, and taken over-night, would bring on a fit of the gout next day.

(*a*) 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 ate, with lamb or fowl, are both harmless and grateful.

(*b*) Apples and pears are such: but the cold fruits, as melons, cucumbers, are almost instantaneous in their hurtful effect.

(*c*) See CLXXXIV. to CXC. to CCXXXVII.

(*d*) This is one of their many contradictions between theory and theory, and theory and practice.

(*e*) 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.

(*f*) 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.

heat, by its indirectly debilitating operation, does some hurt (*g*), but great cold, by its direct debility, much more (*h*). Impurity of air is inimical (*i*), as well as an interruption in the train of thinking (*k*); but hard thinking is more hurtful. A deficiency in the stimulus of passion is a pretty considerable hurtful power (*l*): but a high intensity of it will convert this moderate degree of the gout into that highest degree of it, that attacks the head; lays a snare to life, and brings on certain death (*m*).

DCVI. Long sleep is bad (*n*), as producing direct debility, by deferring the re-application of the stimuli, which the watching state afford; but short sleep is much more hurtful, leaving behind it a degree of fatigue still remaining from *the effect of the stimuli of the former day* (*o*). Often, after the upper parts of the body have been recruited with enough of sleep, after getting up, the *podagric* feeling a state of languor in his lower extremities, and a demand for more sleep to them, is obliged to go to bed again, and give the unrecruited limbs their respective share of sleep. When a person is torpid 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 *is that way*, to make up the necessary compliment of the sleep that is wanted.

DCVII. To prolong the intervals of *health*, and prevent a fit, the remedies are all the reverse of the hurtful powers: they are, rich food taken in plenty (*p*), 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 (*q*) (at which time cold water is

(*g*) CXV.

(*i*) CXLVI.

(*l*) CXXI.

(*n*) CCXLV.

(*p*) See par. CCLXVI.

(*h*) CXVII.

(*k*) CXXXIX.

(*m*) Ibid.

(*o*) See part II. Chap. VII. CCXXXVII.

(*q*) 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, 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

safe after a good meal), not mixed with acid, not acceſcent, not under a turbid fermentation while it is taken (*r*); geſtation (*s*), exerciſe ſhort of bringing out ſweat, or giving fatigue (*t*), a full quantity of blood, which is procured by food and the motion juſt now mentioned (*u*), no evacuation (*x*), ſparing venery, if that could be made good in ſuch perſons (*y*), a moderate temperature (*z*), kept equally between *the extremes* of direct and indirect debility, and inclining to neither; pure air (*a*), conſequently cleanlineſs, and being much in the open fields, a happy train of thinking (*b*); ſuch a ſtate of excitement as to paſſion, as keeps between fiery exceſs and ſtupid apathy, with as great tranquillity of mind as poſſible (*c*); moderate ſleep, rather inclining to be long *than ſhort, a rule which ſhould* be ſo much the more *obſerved*, as the diſeaſe is of longer ſtanding and greater ſeverity: in ſine, ſleep ſhould be allowed to continue till the moſt vigorous watching ſtate is procured (*d*).

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 not depend upon vigour of the conſtitution and plethora, as it 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 had hitherto deceived phyſicians, *and paſſed* for a cauſe of the gout, was 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 *great* ſtrength. But, good men! they never recollected, that vigour and a great quantity of blood was not a property

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*.

(*r*) CCLXVIII.

(*t*) Ibid.

(*x*) CCXC.

(*z*) CXII.

(*b*) DXIII. DXVIII.

(*d*) DC.

(*s*) CCLXIX

(*u*) CCXC. CCXCV.

(*y*) DCXXV.

(*a*) CCCIII.

(*c*) CXL. CCCIII.

inherent in animals, but that it depended upon foreign circumstances every day and every hour (*e*). If any one, according to that idea, who has happened to get a great bulk of simple solids, and who has had abundance of proper diet, and lived in that way to the thirty-fifth or fortieth year of his age, should all at once be deprived of all the articles of diet; 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 will, notwithstanding *his present* absolute want, continue plethoric and vigorous; and that the latter, from being now crammed with unusual plenty, will continue empty, as he had been 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 governed by foreign powers, to be forgot? Is a person liable to the gout, 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, either than another person who has lived lower, or than himself twenty years before? Where, pray, was the necessity of comparing gouty persons with others free from *all bias to that disease*, and not comparing them with themselves (*f*)?

(*e*) X. XI. XII. XIII.

(*f*) 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 ensuring 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 systems

Of the Gentle Asthma.

DCX. Asthma is an asthenia ; in which, to the symptoms in common to all asthenizæ, there is superadded a difficult respiration, returning at uncertain spaces of time, often unequal, without any unusual expectoration accompanying the fits.

DCXI. The same are the hurtful and curative powers here, as in the gout ; in the same manner are the fits *both* prevented and removed (*g*).

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 bladder of urine, *that* suffers : the disease is not confined to indirectly debilitating powers, as producing it ; it also arises from directly debilitating ones, *such as* abstinence, vomiting, loose belly, and drinking water contrary to custom.

DCXIII. To remove this disease ; when it does not exceed the gentleness that is here understood, the whole body must be invigorated by moderate stimuli, every most urgent exciting power should be taken out of the way ; gestation,

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 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.

(*g*) 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 Elements.

and that exercise, which does not exceed the strength, should be put in practice. A more severe degree of the disease will by and by be treated under tetanus.

Of Anasarca.

DCXIV. Anasarca is a form of asthenia, distinguished by water betwixt the fill 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 cure, the body must be invigorated, and in that part of it chiefly, where the greatest laxity and atony prevails, 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, and twisting pain about the naval, with pain in some part of the belly, often enormous, and sometimes with a tumour, that can be felt externally (*b*).

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 knaw-

(*b*) immediately above the brim of the pelvis, on the right-side, at the place of the blind-head of the colon.

ing feeling in the region of the stomach, and is highly expressive of a very severe disease.

Of the violent Hysteria.

DCXVIII. The violent hysteria is a higher degree of the gentle hysteria; in which, besides the *symptoms* there described, mobility and changeability 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 asthma, in which the inflammation runs out to greater length, and, at last, does not form at all; and the general affection increases in violence, in obstinacy, and, at last, attains its highest degree; exhibiting, towards the end of the disease, almost all the symptoms of debility, every form of asthma, and sometimes by a false resemblance, counterfeiting synocha.

DCXX. As the diseases affecting the alimentary canal, formerly mentioned (*i*), have, in a great measure, a common nature; so, these also, that is, the colicodynia (*k*), the dyspepsodynia (*l*), the violent hysteria (*m*), and the gout (*n*), are equally participant of the same, differing only from the former in their higher degree of violence. Their most distinguished symptoms are either spasm, which takes place in the colic, and indigestion, both with pain, or a spasmodic convulsive affection, distinguishing the rest. But neither, in that respect, do these differ from each other in any thing essential;

(*i*) From DLVI. to DLXXVI.

(*l*) DCXVII.

(*n*) DCXIX.

(*k*) DCXVI.

(*m*) DCXVIII.

since they *all, without distinction*, depend not only on debility, but also nearly upon an equality in the degree of it, as the similarity of their morbid powers and remedies proves. For a very full explanation of spasm and convulsion go back, to the following numbers, CLXXXVIII. to CXC. and from the latter to CCI.

DCXXI. For the cure of them all (*o*), abstinence, fatigue, evacuations, acids, and ascetics, cold, directly and indirectly debilitating passions, the debility arising from exertion of the intellectual function, and impurity of air, must be avoided. The cure of every one of them must be stimulant: when each of them is but slight, beef soup and similar rich ones, which act partly by dilution, partly by a nourishing and stimulant operation, in the weak state of the stomach, and by supporting the system, and afterwards, when the strength is so far recovered, solid animal food, and moderately diluted drink, which, at last, confirm the strength, are sufficient. In a higher degree of violence of any of them, while the soups should still be continued, at the same time pure strong drink should be administered. And when the violence of any case baffles this whole form of stimulus, 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. For the patient's management in the intervals, all debilitating powers must be avoided, such as fatigue, abstinence, cold, and excessive heat (*p*); and take it for a certain and demonstrated fact, that *the fits of recurrent diseases* do not return from any inherent power of nature, but from human folly. Accept of that as a joyous piece of news, and such as nobody ever expected. The recurrence of fits of the gout itself is not unavoidable (*q*); but, by guarding against the hurtful powers mentioned, 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 the same 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*

(*o*) Peruse the whole of Chap. IX. Part II. from numb. CCLXXXI.

(*p*) See again the same Chapter, which compare with the preceding, the VIIIth of the II. part.

(*q*) See par. DXCVII.

to the use of another, from that still to another, and in that way go over the whole circle (r).

Of Hypochondriasis.

DCXXIII. The hypochondriasis is an asthma, 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 is paved to the disease 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 the highest 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 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 the definition given of it by hypochondriacs, it is beyond doubt an asthma, as being accompanied with a noise in the belly and flatulency; and the course of the disease distinguished by slowness to passion, keenness in thinking, and 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 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; *it follows*, therefore, that the stimulus of food, drink, and others, should be employed in the cure of hypochondriasis. The patient should be kept cheerful, by *being placed in* agreeable company, and gay entertainments, by entering upon a journey, and amusing himself with the various scenes of nature and art through which he passes. 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,

(r) See XLI.

should have their turn for a time, for the purpose of striking a stroke at once. And their use again gradually laid aside in proportion as the strength can now be supported by the more natural and accustomed stimulants. Darkness and bad air should be shunned; pure 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 (s).

Of Dropsy.

DCXXVI. Dropsy is an asthma, commonly in the form of an anasarca, with a swelling in some viscus, which, for the most part, at least in the beginning, attacks some place in preference to others, and more than any other.

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, of the same kind of vessels, it is often urgent in a particular part in preference to others.

DCXXVIII. As all the debilitating hurtful powers concur in producing this, as well as any other asthma; so those powers have the greatest influence in this case, that press most urgently 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, over heated, and burned up with thirst, are the most

(s) 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 obdurate fullness, 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.

powerful agents in bringing on this disease. The hurtful effect of the latter of which, in every case of debility, when its operation is followed by no stimulus, has been more than sufficiently explained above (*t*). Besides, in this case, when all the vessels are open, the water flowing to their most weak terminations, passing out by these, and being not all transmitted from the exhalants into the absorbents, is collected into every neighbouring cavity (*u*). And hence the commencement of the urgent symptom in this disease.

DCXXIX. To this asthma belong all the watery effusions, which do not arise from a local affection, but depend on pure debility. And, therefore, if at any time any other form of asthma, whether from wrong treatment, or other hurtful powers, in its progress terminates in this effusion; every such case should be held as a proper dropsy (*x*); 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, and particularly from bleeding, epilepsy, palsy, the gout, terminate in real dropsy. Nay, the same is the termination of peripneumony itself, when it is either converted into indirect debility, from the debilitating plan of cure having been pushed to excess, or into direct 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, the cure of it, provided that it be a proper one, 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* (*y*). If long before the effusion there was no internal complaint, if the disease rather came on suddenly, and in consequence of evident hurtful powers, and yields to the first part of the curative means, there is reason to doubt of a cure.

(*t*) See par CXVII. to CXXIV.

(*u*) LIX. LX. LXI.

(*x*) See LXXXI.

(*y*) Sometimes the predominant symptom rises to the degree of being above the power of the excitement, as in the tumor of scirrus, and the effusion here.

DCXXXI. Besides the general indication of cure for asthenia, that *suited to this case* must be particularly directed to the whole vascular system, and especially about their terminations, and the commencements of the absorbent veins. The remedies are also the usual ones; that is diet, as nourishing and stimulant 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; and together with both, strong drink, such as the best wine that can be got, 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, 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 got 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, and the strength supported by wine, strong drink, and any stimulus more diffusible, we must return to the management mentioned a little above. And if it should likewise fail now, our judgment must be, that either 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; the distinguishing symptoms of which are, some heaviness of intellect, dulness in the exercise, of the senses; and then a very impaired state, or temporary extinction of the latter, accompanied with various convulsions over the body: fits, consisting of such a course of symptoms usually return afterwards at uncertain spaces of time, and *each of them* terminates in a foaming at the mouth.

DCXXXIV. As all the debilitating hurtful agents are productive of this disease: so the loss of the blood and other fluids, excess in venery, passions, such as fear, terror, assiduous and intense thinking in great geniuses; a deficiency of that

kind of stimulus in stupid persons, are particularly so (z). These powers that produce the first fit, more easily bring on after ones: and besides them, 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 (a) are said to have the same effect.

DCXXXV. But the appearance of symptoms is a thing full of fallacy, and, unless the nature of the hurtful powers producing them, 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 one produced by a vitiated state of a part, suppose that part either the stomach or brain, such a vitiated state, as in some point of the lower extremities proves the cause of the aura epileptica; and whether this vitiated state resists the virtue of the remedies, that perform their cure 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 (b); if the latter be the truth, 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, 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 most false appearance, counterfeit epilepsy, sometimes apoplexy, sometimes certain other general diseases besides.

DCXXXVI. For the purpose of preventing this disease, we must both avoid other debilitating powers, and those that have the greatest power in producing it. The vessels should be filled, by giving food as nourishing, and as effectual in producing blood as possible; the indulgence in venery must be moderated, cheerfulness and tranquillity of mind must be favoured, an agreeable train of thinking must be found, and all the objects of the senses, which give them disturbance, guarded against; the strength must be fortified by recruiting exercise, by the

(z) See above par. CXXXIV. CXXXVII. and the addition; CXLII. and CXXXIX.

(a) See XX.

(b) See above CCXXIV.

Peruvian bark, if the approach of the fits can be perceived, and by wine and the more diffusible stimuli. A length of sleep, that is a medium betwixt too long and too short a continuance of it, should be kept up. Stimulant heat should be applied; and all excess of it as well as cold avoided (*c*). The purest air, such as that in the fields, which 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, that are most 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 (*d*).

Of Palsy.

DCXXXVIII. Palsy is an asthenia, in which, with the other proofs of the usual debility, often with some degree of apoplectic fit, commonly all 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 greater duration of it is death.

DCXXXIX. The hurtful powers, that usually produce epilepsy and apoplexy, also tend to produce palsy. And be-

(*c*) See CXXIV. CXXVII. CCXXVIII. CCLXXVII. CXXXVII. CXXX. CCXXXVIII. CCXXXIX. CCLX.

(*d*) 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 slighter one, and was cured in the same way.

sides 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: more affecting the circumference of the body, where the organs of voluntary motion are chiefly seated, and the internal parts and the brain less; as is evident in ebriety, gluttony, and every sort of intemperance; likewise an indolent way of life, which is commonly connected with these hurtful powers, have all the same tendency.

DCXL. When the disease has once taken place, as it is kept up equally by directly and indirectly debilitating powers; so

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 principle 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 can bear, 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 with stimulant virtue, by any means should be omitted, in order that the excitement, which is of great consequence in every cure, be more equal and vigorous all over; 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, therefore, employ a great deal of an opiate, (CXXX and CCXXX.) the influence of which upon the surface, is the most considerable of all other powers, and press the cure, 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, 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 overportion of blood, but a scantiness of the latter, and a deficiency of the former, that is the cause.

Of Apoplexy.

DCXLIII. Apoplexy is an asthma, resembling the two just now mentioned, in its cause and cure, differing in the appear-

ance of the symptoms, which makes no difference in the truth (*e*): in which, besides the symptoms in common to it with them and the other asthma, all of a sudden, sense, intellectual energy, and the voluntary motions, are impaired, the respiration remains, but with snoring, the pulse is weak, and the whole fit is finished with the appearance of a profound sleep (*f*).

DCXLIV. The heads of the patients are large and not well formed, their necks short and thick: the disease arises from both direct and indirect debility, but chiefly from the latter. Of the indirect 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, is 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, so that 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, got the better of.

DCXLV. The cause of epilepsy, palsy, and apoplexy, is the same with that of every asthma; 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, in convulsion seemingly increased, amounts to the same thing, and, as was formerly explained, depends upon debility (*g*).

DCXLVI. The same here too is the indication of cure; with that, which runs through this whole form of diseases, and the force of remedies is especially, and as much as possible, to be directed to the parts most affected. To prevent, therefore, the fits, in every respect alarming and full of danger, we ought to recollect, how far indirect debility has a share in producing this disease, and how far the direct concurs with it; and also 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, according to the rule of nature, others, which the excitability, yet not worn out with respect to them, can re-

(*e*) See LXXXI. DXXIX.

(*f*) CLIII. CC.

(*g*) LVIII. CCXXX.

ceive should be substituted, that is, the kinds of food, of drink, and of diffusible stimuli, should be changed all round, and upon the failure of each lately used one, to return to those that have been long ago laid aside (*h*).

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 (*i*), at that extreme age at which those diseases happen; or sometimes in epilepsy, when it affects weak and starved children, how can the blood be in over-proportion? Can penury of food, which alone is the matter that forms blood in the latter, and in the former a vigour long gone, create an over-proportion of blood, and not, on the contrary, a penury of it?

DCXLVIII. As plethora has then no share in inducing those diseases, so neither is an effusion of blood or of serum (*k*) upon the brain to be accused of it. Nay, a similar effusion happens in every case of the vessels, from great debility as well as in this case.

Of the Lock-Jaw.

DCXLIX. The lock-jaw is a less degree of tetanus, its spasm being confined to the lower jaw and the neighbouring parts. This is a rare affection, without others equally conspicuous as being a formidable symptom of fevers and wounds. When the former of these happens, it will be treated of in fevers; when the latter, it will give occasion to an enquiry, 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 latter is healed up, or after a considerable interval of time; *the inference from that* is, that it either arises from the violence and duration of the pain, which is always a cause of very much debility, or from that debility, which the usual antisthenic 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 debili-

(*h*) CCCI.

(*i*) CXXXI. CXXXIV. DXLIX. DLV.

(*k*) CXXXVII. and the addition.

ty (*l*); from tetanus, which is precisely the same affection, only differing in degree (*m*), 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 one. All the other particulars regarding this subject will be taken notice of under the next head of disease tetanus.

Of Tetanus.

DCLII. Tetanus is an asthenia, and, therefore, always affecting persons under debility, whether direct or indirect; in which, sometimes with consciousness, sometimes not, 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 the offspring of cold countries, as the northern parts of Europe, but rarely; more frequently of the warm southern regions of that division of the world; but most frequently of the torrid zone. The rare case, such as that among us, is the sequel of a debility scarce usual in other 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 dashed, increasing the sum of that debility that existed before, or that happened to be induced in the course of the cure. 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 very great many, if not all of them, concur. The most powerful of these is, that degree of heat, which is intolerable, to persons engaged in exercise or labour (*n*), to whom almost only, and therefore to the slaves, it is hostile. Hence, even under the slightest corporeal motion, fatigue, and sweat, are produced (*o*), and from the sweat a scantiness of blood and other fluids. From all those arises a languor over

(*l*) CLXXXIX. CXI.

(*m*) CCXXVIII.

(*n*) CXXVII. and the addition.

(*o*) CXV. CXXXVII. and addition.

the whole body, and, therefore, in the stomach (*p*): 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 a state of circumstances, are followed by the highest degree of debility over the whole body: and, as the most noxious power, the 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 effect, and consequently, like every other asthenia, depends upon debility as its cause; and, as all the astheniæ are removed by remedies, exciting the whole system in such a manner, as to exert the greatest influence possible upon the labouring part; the same, accordingly, is the nature of tetanus, however little that disease has been understood, the same simplicity of nature is found in it: and if there is occasion in it for the very highest remedies, that circumstance shows, that the whole disease does not depend upon the spasm, and that the labouring muscles are not its whole seat, but that there is vast debility in every part, only greater in the muscles, than in any other equal part, according to the law we have mentioned (*q*).

DCLV. From what has been said, after tetanus has taken place, and upon account of the teeth being shut by the lock-jaw, there is neither access to the weaker and less powerful stimuli of food, drink, and such like, which are often sufficient for the cure of diseases of lesser 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 that of opium itself, till the whole tumult of the disease is allayed (*r*).

Of Intermittent Fevers.

DCLVI. Paroxysms, consisting of a cold, hot, and sweating fit, are a sort of phænomena that occur in every intermittent;

(*p*) CLXXXVI. CXCIV. to CXCVIII.

(*q*) XLIX.

(*r*) CCXCV. to CCCII.

and, in a certain proportion, in every remittent fever. They often come on in consequence of a certain taint received from neighbouring morasses, or from a similar state of a neighbouring soil; *but they also happen, and often too*, after an application of cold only (*s*); at other times after that of heat only (*t*), when the common athenic hurtful powers accompany either (*u*): and they return with a remarkable exacerbation, after a temporary solution of the disease, or an abatement of it; in the cold fit, exhibiting manifest debility; in the hot, counterfeiting a deceitful appearance of vigour; and scarce ever observing any strict exactness in the time of their return (*x*); 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, changing into quintans (*y*) septans (*z*), nonans (*a*), or into sextans, octons, and decans (*b*).

DCLVII. The fever of this kind, 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,

(*s*) 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, and 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 course 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.

(*t*) 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.

(*u*) "Utramque" is corrected into "utramvis" in the Latin.

(*x*) 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.

(*y*) Where the fit does not return till the fifth.

(*z*) Where its return is not till the seventh day.

(*a*) Where the intermission continues till the ninth day.

(*b*) That is, prolonging their intermission till the sixth, eighth, or tenth day.

that degenerates into a remittent or continued form, is of a worse nature than that which is regular in its returns, or that which puts off fits, and protracts the intervals *betwixt them*: 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, by the exciting hurtful 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 (*c*), with trembling, and that shaking motion in which the whole body is lifted up from the bed (*d*), with paleness, dryness, and shriveling of the skin, with the diminution of tumors, and drying up of ulcers, that 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, a 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 of them; if in cold situations, where cold is the principal hurtful power, it is the poor people, who are ill clothed, starved in their diet, and enfeebled by labour, who in general are only affected with disease; if in warm regions of the globe, those who have been most exposed to debilitating hurtful powers of all kinds, who, in preference to others are seized with it (*f*); if in moist places, those who live well in their diet, and cheer themselves with their bottle, escape the disease (*g*), and water drinkers

(*c*) I remember yet, 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.

(*d*) By authors and lecturers in Latin absurdly called rigor.

(*f*) See DCLIII.

(*g*) 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 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.

and persons in a state of inanition from low living peculiarly experience it ; all these facts show, how far this disease is from depending upon heat and moisture alone ; and *prove*, that it also arises from cold, and not from either alone, but also from all the usual hurtful powers, like every other asthenia.

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 (*b*) ; if, before the Peruvian and some other barks of similar operation were found out *to act as remedies*, a variety of strong drinks (*i*) 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 this sort of argument and certainty in point of fact, we derive the most solid conviction, that there is nothing in this disease different from other astheniæ, but that it perfectly agrees with them in the exciting hurtful powers, in the cause, and in the cure. And, if it differs in the appearance of the symptoms, that shows no difference of nature, and not even any thing unusual ; as all the astheniæ that have been mentioned, however much they have been proved to be the same (*k*), differ notwithstanding, in a similar manner, from each other, and symptoms lead not to truth, give no real information. For, though precisely the same sound functions flow from the same state of perfect health ; yet when the latter is so changed, as that the excitement is either increased or diminished, the functions are chang-

(*b*) They have talked of taking a little blood in the spring intermittents, but that was a theory of Dr. Sydenham, 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 fervently 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 when he is right, as in the rejection of purging in some sthenic diseases (CXXXVII.)

(*i*) 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. Sthaal 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.

(*k*) See par. LXXI. and the addition. LXXXI. DCXXXV.

ed, from the standard into every sort of appearance, in such sort, however, that they point out no difference in the cause, as has been commonly believed, and not always even a difference of degree (*l*).

DCLXII. Accordingly, *the following demonstrated* facts of spasm, convulsion, tremor, inflammation from weakness, deficiency of menstruation (*m*), bleeding discharges (*n*), loss of appetite, thirst, nausea, vomiting, diarrhœa with pain, diarrhœa without pain, and all the other asthenic affections (*o*), arising from one and the same cause, and being removed by one and the same operation of the remedies (*p*), and, not even in their morbid state, expressing degrees of debility in such a manner, as that it can be thought proper to take any order of arrangement from that *mark*; all these serve to confirm the observation just now made, and, by *their* analogy to demonstrate, that the 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 their febrile impulse, sometimes exert it more remissly, and sometimes, by performing the latter imperceptibly, go on almost in a continued career (*q*); do they, in that respect, differ from the gout (*r*), which never goes on with an equal force, but abates from time to time; and even, when it has interposed an interval of health, returns with more severity than ever? Or do they differ from asthma, as well as many other diseases, in all which the same thing precisely happens? And what is more usual, in indigestion, and often violent vomiting (*s*) accompanied with a rage of other symp-

(*l*) DIV. DVII.

(*m*) DXLV. and the following paragraph.

(*n*) DXLVIII.

(*o*) CLXXXVI. to CXCIV. and to CXCVII.

(*p*) CCXXII. DLVI. DLXI. DLXXI. DLXXIII. DLXXIV. to DCC. and from that to DCCIII. Look also carefully over the whole IVth Chapter of the second part.

(*q*) DCLVI.

(*r*) When the gout in the old way, is left to patience and flannel 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 very podagric, who is still treated in the old way, can bear witness to. Dr. Sydenham fell a victim to his ignorance of its nature.

(*s*) A gentleman in Scotland, came to dine with his brother, who lived

toms, than the intervention of intervals of the greatest relief? The same is the nature of the chin cough (*t*) the same is that of the asthenic cough (*v*). In fine, where is there one of all the asthenic, or all the asthenic diseases, the morbid career of which continues the same from beginning to end? There is none (*u*). For, as life in all its states (*x*) is always in proportion to the action of the exciting powers, upon the excitability, and both predisposition to diseases, and diseases themselves supervene in proportion to its being greater or less than the proper degree; so the course of diseases follows the same rule; and, according

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 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.

(*t*) See 579.

(*v*) And from DLXXXVII. to DXCVII.

(*u*) All this confirms, and 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.

(*x*) See par. IX.

to the variation of the degree of that action, is one while increased, another while diminished, another while exhibits a temporary eruption; just like what happens in this sort of fevers.

DCLXIII. The cause of them is the common one of all astheniæ, whether febrile or not; but 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. And the reason of that is, that the exciting hurtful powers in the same proportion are either removed, or more gentle in their operation; in one word, the excitement is increased for the time. The variation of types is not owing to a matter, subject to the same variation: for, if that were the case, how could the same case run through all the forms, sometimes of intermission, sometimes of remission, and at other times of nearly going on with a continued movement and the contrary? Is the matter, which is supposed to produce each form, in order to produce another form, changed into the matter, which is supposed necessary to the latter (*y*)? 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 one, when this is changed into an inter-mittent, or remittent nature, also, together with the change of type, changed into a marsh miasma, or defilement 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 being the truth*, how should the 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, or defilements, are not the cause (*z*). 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 neither is any other matter taken into the body, either in this

(*y*) 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?

(*z*) DCLIX. DCLX. DCLXI.

or any case, that which produces the disease, and that the change of excitement alone is the universal source of all general diseases (*a*).

DCLXIV. To enquire into 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 to the gout, as often as a return of the disease again succeeds to a return of health (*b*), and for the same reason (*c*): for, as those 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, 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 the forms of 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 without medicines, in process of time, first in consequence of the heat of the bed, and then, as the summer sets in, by 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 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 (*d*).

(*a*) See the paragraphs XXII. XXIII. LXII. and addition LXIX. LXX. LXXII. LXXIII. and LXXXVIII.

(*b*) DCLXII.

(*c*) DCLXIII.

(*d*) 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

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 gentle degree of the disease, as cold is the most hurtful power, the consequence is, that 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 same heat, acquire vigour, and at last, excited in their perspiratory terminations by the same stimulus, the most hurtful symptom being thereby removed, they restore the hot fit, and afterwards carry on the same process to the breaking out of sweat.

DCLXVII. When the force of the disease is greater, these powers are ineffectual ; and, unless the most powerful remedies are applied, the disease, instead of producing intermissions, rushes head-long into the remittent state only, or even into those very obscure remissions, which give the appearance of a continued disease.

DCLXVIII. And, since in every case of disease of any energy the disease returns, for this reason, that either the lesser force, by which it is kept up, is not stopt by a lesser force of remedies, or the greater force of the former by a greater force of the latter (*e*) ; the remedies therefore 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 now be supported by the lesser and more natural (*f*).

Of the severe Dysentery.

DCLXIX. The severe dysentery, or bloody-flux, is an asthenia ; in which, besides the symptoms in common to that

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.

(*e*) For the curative force must be always accommodated to the morbid, or cause of the disease. See above XCII. CIX.

(*f*) CV. and CVII.

whole form of diseases, so often now repeated, there are pains in the intestines, gripes, innumerable dejections, chiefly mucous, sometimes bloody, for the most part without the natural matter that passes that way, all which happen often after contagion has been applied.

Of the severe Cholera.

DCLXX. The severe cholera adds to the common symptoms of every asthenia, *those of vomiting and purging alternating with great violence, and for the most part consisting of bilious matter.*

Of Synochus.

DCLXXI. Synochus is a very mild typhus, and such as chiefly happens in cold countries and cold seasons; in the beginning deceiving physicians by a certain resemblance to synocha, but a counterfeit one.

Of the simple Typhus or Nervous Fever.

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 Cynanche Gangrenosa.

DCLXXIII. The gangrenous cynanche 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, and conceal-

ing ulcers below them. The end of the angina, formerly mentioned (*g*), 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: *which*, by their local and violent stimulus, convert 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; in which the surface of the body is first dry, pale, hot, shrivelled; then, chiefly towards the end, moist, drivelled with spots, and colliquative sweats, diversified with vibices, or long strokes like those laid on by a whip, and walted with colliquative diarrhœa; in which the stomach is affected with want of appetite, loathing of food, nausea, often with vomiting; in which the belly is first boundish, and then, as it has been said, subject to colliquative evacuation; in which the intellectual function is first impaired, then becomes incoherent, afterwards delirious, and that often in the highest degree; in which the spirits are dejected and walted with sadness and melancholy; in which the voluntary motions are early impaired, and then so destroyed, that the patient cannot be supported in his posture in bed by his own muscles, or *prevented* from slipping down, from time to time, from the upper to the lower part, and the senses are either blunted, or preternaturally acute. In fine, the urine, the fœces, the breath, and all the excrementitious discharges, have a singular fœtid smell.

(*g*) CCXII. CCXIV.

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 (*g*).

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 (*b*), nor is heat so much to be blamed ; for cold has an equal power in producing that effect as heat (*i*), as has also every thing, as well as heat, that either directly, like cold, or indirectly like it, debilitates (*k*). 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 (*l*). By means of that debility in the extreme vessels, internally, as well as externally, and, therefore, especially in those of the alimentary canal and in the perspiratory vessels, the fluids stagnate ; and by stagnating under the heat of the body, degenerate into that foreign quality, which, in a more extensive sense, is called corruption, but in a more uncertain one, putrefaction (*m*).

(*g*) CCXIX.

(*b*) See above CXV. CXXII. CCXXXVI. and the addition I.

(*i*) Ibid. and CCLXI.

(*k*) See again CCXXXVI. and the addition at I.

(*l*) These words from “ Nay” are an addition to the Elementa ; the words, in the original, corresponding to them, being “ Immo vaforum eī cibus negatis, vel adsum digerique non potibus, inanitas, item a tristitia et mærore, ubi materia nulla subest, inducta debilitas, eodem pertinent.”

(*m*) There are three states or qualities produced in fluids by as many different fermentations, the saccharine, acid, or putrefactive. To one or other of those 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 those : and, as we are not yet acquainted with any of those 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, 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 acid ; while compared to their state in morbid degeneracy, they may be called bland, and the latter acid.

DCLXXIX. As 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; so

DCLXXX. The indication also of cure is the same as that of the other astheniæ, but must be conducted with a good deal of more attention than is *necessary* in them, upon account of their much greater mildness (*n*). 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 (*o*).

DCLXXXI. The indirectly debilitating powers, are the violent and local stimulus of the eruption in the confluent small-pox (*p*), so often inducing prostration of strength, and drunkenness (*q*), heat (*r*), or long continued luxury (*s*). To these hurtful powers, thus indirectly debilitating, all, the others may more or less be added (*t*).

DCLXXXII. And as it never happens, that either direct or indirect debility alone proves hurtful, *hence we have a third case given, where we have to combat both sorts of debility* (*u*).

(*n*) 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.

(*o*) See par. CIII. CVII.

(*p*) See CLXXV. CCXV. CCXVI. CCXVII. CCXVIII.

(*q*) CXXX. and addition.

(*r*) See CXV.

(*s*) See above par. CXXVII. and addition.

(*t*) Look for them in Part I. Chap. I.

(*u*) 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 dif-

DCLXXXIII. The directly debilitating powers are known, to wit, cold (*x*), low diet (*y*), bleeding, and other evacuations (*z*), rest of body and mind, and want of passion and emotion (*a*), and impure air (*b*).

DCLXXXIV. As both those sets of powers act by debilitating; be, at the same time, on your guard from 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 (*c*).

DCLXXXV. In the gentle cases, as in the agues of cold places, and especially the vernal agues (*d*), and likewise in the 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 cure is to be conducted according to the directions so often now laid down in the mild asthenic diseases.

DCLXXXVI. In the most severe fevers, such as the remittent (*e*), in the warmer regions of the earth, and in the torrid zone, and 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 (*e*), the cause of all which affec-

ease, 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 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.

(*x*) See par. CXVII.

(*y*) CXXVIII.

(*z*) CXXXIV. CXXXVII. and the addition.

(*a*) CXXXVII. and addition and CXXXIX. and CXLII.

(*b*) CXLVI. Compare the whole with Part II. Chap. X. all from CCXC. to CCCXII. and from that to par. CCCXV.

(*c*) See par. DCLXXVIII. and the addition.

(*d*) See DCLVI. DCLX. DCLXV.

(*e*) DCLVI. DCLXV. DCLXIX. DCLXX.

tions is in general direct debility; or in gentler cases of the same disease at first, and that have now 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 (*f*); and afterwards, when the strength is restored, and the force of the stomach confirmed by their use, to proceed to *the use of 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 cure, 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, and which, are next in quantity to that degree of stimulus, which produced the disease (*g*); then recourse should be had to lesser stimuli, and a greater

(*f*) XLI. XLIII. CXIII. DCLXV. to DCLXIX.

(*g*) 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 redundancy of excitability, and bring the patient back to his healthy excitement. The drunk 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 stopt 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 still a lesser 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 somewhat a lesser 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.

T

number of them, till, as was said just now (*h*), the strength can be supported by the accustomed and natural stimuli (*i*).

DCLXXXVIII. To give some estimate of the dose in both cases (*k*); in direct debility, where the redundancy of excitability does not, for the time, admit of much stimulus, (*l*), ten, or twelve drops of laudanum given every quarter

(*h*) DCLXXXVI.

(*i*) CCCVIII. to CCCXII.

(*k*) DCLXXXVI. and DCLXXXVII.

(*l*) 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, both the degree and equality 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 those 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 those 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

of an hour, till the patient, if, as is usually the case, in such a high degree of debility, he has wanted sleep long (*m*), falls into it: after sleep, when now some vigour is acquired both by that and the medicine, and now 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 now be supported by stimuli lesser in degree, greater in number, and more natural (*n*).

DCLXXXIX. In indirect debility an hundred and fifty drops should forthwith be thrown in; and then the superaddition *to be made*, should be less and less, till *we arrive at* the boundary just now mentioned (*o*). Both the measures are recommended (*p*), 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 (*q*).

proceeds 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 these 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.

(*m*) 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.

(*n*) See above par. CIII. and CVII.

(*o*) DCLXXXVIII.

(*p*) in par. DCLXXXVIII. and this.

(*q*) 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 born 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

DCXC. And since the use of the diffusible stimuli only succeeds, when life cannot be preserved by the usual and more congruous to nature, and a due quantity of blood and other stimuli soon become sufficient to finish 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, in that of soups; which should be alternated with all the doses of the diffusible stimulus: then, in a gradual way, proportioned 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 cure terminate in the management 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 hurtful powers, or proves hurtful by the same operation *by which they are so*, is not otherwise to be regarded, than that time be allowed for its passing out by the pores, together with the perspiratory fluid, and, therefore the perspiration be properly supported; which, as it is effected by stimulating, is no addition to the *general* indication (*r*).

DCXCIII. Lastly, the corruption of the fluids in the extreme vessels must be obviated (*s*), not by means, that by a direct operation remove it, but by the powers that act upon the excitement of the solids, and that increase excitement over the whole body, and, therefore, *among other parts*, upon the labouring vessels.

DCXCIV. Having now run 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 sci-*

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 30 drops of the Thebaic tincture, which the surgeon had been administering in miserable small portions, in three hours removed the whole disease. As I have said somewhere before, the disease, from her neglect in fulfilling directions, had very nigh returned next day; but another glass repelled it.

(*r*) See LXXXVIII. XCVIII.

(*s*) CCXXXVI. addition at F: and CCLXXIV.

ence, if not finished off in an elaborate, elegant, and highly polished manner, at least marked in outlines, and, like a rough statue, to be polished afterwards, in some measure fashioned in all its limbs, and embracing an entire plan of a work, connected in all its parts; we must next pass over 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 an order of nature, into five parts; the first of which 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 made up of organic affections, occurs in parts of the system, whether internal or external, that are very sensible, endued with a great deal

(*a*) V. VI. VII.

of excitability (*b*); where the effect of the local affection is propagated over the whole body, over the whole nervous system, and where a very great many symptoms arise, similar to those which are peculiar to universal diseases.

DCXCVII. The third part 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 of degree, at which, being no longer under the influence of excitement, it cannot be affected by remedies that correct the excitement.

DCXCVIII. The fourth part, *or 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 part 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, hurt the texture of these in different manners; and, after occasioning that *local* hurt, by means of it, produce disturbance over the rest of the body.

C H A P. II.

The first Part of Organic Local Diseases, where no Effect, but in the hurt Part, arises.

DCC. WITH regard to the first part of local, organic diseases; the hurting powers, that produce them, are such as

(*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 lesser 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.

(*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.

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 hurting powers, producing solution of continuity, are all cutting, pricking, or missive, weapons: acrid bodies and poisons produce solution of continuity in another manner.

DCCII. When any of these hurting powers slightly divide the surface, and scarcely, or not at all, get to the bottom of the skin; for the cure of so trifling an affection, there is occasion for nothing but shutting out the air, and cold, and excessive heat, and avoiding every irritating substance. For the only use of the cuticle is, by means of its insensibility (*a*), (it being a simple (*b*) 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 (*c*), whether external or internal.

DCCIII. When the surface, therefore, is hurt 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 plaister is sufficient for the cure.

DCCIV. The division, therefore, of phlegmasiæ, into phlegmone, or erythema, is without foundation, and misleading, both as to the cause, and as to the cure, from the knowledge of the truth (*d*): for, however much they differ in their remote cause, as they call it, and in their seat, and in their appearance; since the exclusion of the air and of other stimuli is their effectual cure; it, consequently, follows, that their cause is the same, that is, that the nature of all these affections is the same.

(*a*) See DCXCVI. and the note.

(*b*) not a living.

(*c*) 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 of 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.

(*d*) See the seventh Genus in Genera Morborum Culleni, 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 that they almost all come under this head of local diseases, and every one of them under one of these heads.

DCCV. In *the cure of* contusion, compression, and sprains(*e*), the same in general are the remedies; and besides them, there is occasion for rest of *body*, 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 (*f*). It is the excitability, or that property of life, by which the functions are produced (*g*), that, wherever life, whether in a part, or over the whole body, is hurt, 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 (*g*).

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 that in the in-

(*e*) See par. DCC.

(*f*) 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.

(*g*) 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. The rest of this paragraph in the Latin is erased.

(*a*) or gastritis.

testines (*b*); as also bleeding discharge, 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 ate or drank, or in any shape taken into the stomach; hiccup, an inclination to vomiting, and the sudden throwing up what is taken in; and the pulse soon getting into a state of debility, quickness, swiftness, and hardness.

DCCIX. The exciting hurtful powers, and 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 Cayan pepper and such like things.

DCCX. Inflammation is a consequence of the wound or erosion, that are the effect of the operation of those *exciting powers*: the effect of which, in the very sensible organ of the stomach, is to diffuse the disturbance before-mentioned (*c*) over the whole system. The burning heat and pain, inseparable from every inflammation, and the anxiety (*d*), are the offspring of the inflammation (*e*): and, of them, the anxiety is more peculiar to the stomach, the latter being its accustomed feat (*f*), and the pulse becomes such as has been related, because it is peculiar to every rude, fixed, and permanent *local stimulus* (*g*); to weaken, and *to be so much the more liable to that effect*, the greater 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 any way generally; though even there, when a part is sensible, as in the case of a burn spread

(*b*) or enteritis.

(*c*) DCXCVI.

(*d*) CLXXI. CCCXLV.

(*e*) CLXXI.

(*f*) CCCXLV.

(*g*) XVII. and the addition.

to any extent, or of a thorn having been thrust below the nails, an equal disturbance arises over the whole body (*b*), which confirms a former proposition, *in which it is asserted*, that the more abundant the excitability is (*i*), the less stimulus can be borne (*k*).

DCCXI. The disease is easily known, both from the symptoms *above* described, and, with not a little more certainty, from the known taking in of the hurtful powers; and, over and above, by this particular sign, that, as it has been said before, without such marks, inflammation scarce seizes upon an internal and shut part (*l*).

DCCXII. As this is a local disease, and does not, like the general ones, depend upon the increase or diminution of excitement; consequently, 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 a diluent drink.

Of the 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 twisting of the pain around the navel, with vomiting, and an obstinate costiveness, and such a pulse as in the inflammation of the intestines.

(*h*) CCCXLIV. CCCXLV.

(*i*) XXXVI.

(*k*) The rest of this sentence is erased, in the original, as being nonsense.

(*l*) CXIII. and CLXVIII. The stomach is sometimes inflamed from a scirrous 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, have every mark of difference from the general diseases mentioned in the VIth paragraph. See also Chap. I. of the fifth Part.

DCCXIV. The hurtful powers, exciting this disease, are precisely the same, as those that have been said to excite the inflammation of the stomach, that is :

DCCXV. The inflammation arises in a similar manner, as in the inflammation of the stomach, and the more readily, that the intestines are more sensible than the stomach (*m*). And hence also, in a similar manner, is a state of disturbance diffused over the whole body.

DCCXVI. The acute pain of the belly depends upon the inflammation : its distention and the costiveness is the offspring of the detained *feces*. The same is the cause of vomiting ; for the peristaltic motion being prevented, upon account of the obstruction, to proceed downward in its usual way, from its wrestless nature recoils in the direction upward ; as affecting neither 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 in particular (*n*). The pain twisting about the navel, is produced by the inflammation, for this reason, that the principal, and by far the greatest part of the intestines, is thrown in a convoluted state about the navel.

DCCXVII. The diagnosis is the same as in the gastritis ; excepting, that the seeds of fruits, hairs, and similar foreign bodies, sometimes upon account of the torpor of the peristaltic motion, adhering to the sides of the intestinal canal, gradually, by their irritation, kindle up an inflammation : which is a fact, that if examined attentively, and once rightly considered, will not disturb our diagnosis.

DCCXVIII. The cure is precisely the same as in the inflammation of the stomach.

DCCXIX. All the rest of the pretended phlegmasiæ, distinguished by the appellation of "*itides*," as the splenitis (*o*), hepatitis (*p*), the true nephritis (*q*), the cystitis (*r*) without a stone, or the hysteritis, not arising from schirrus (*s*), and

(*m*) 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.

(*n*) See par. CLXXXVIII. CLXXXIX.

(*o*) or inflammation of the spleen.

(*p*) or the inflammation of the liver.

(*q*) or inflammation of the kidneys.

(*r*) or inflammation of the bladder of urine?

(*s*) or inflammation of the womb.

the peritonitis (*t*), do not belong to this place ; as, besides the doubt of their ever being inflamed, not arising from stimulants and acids, neither of which have access to the shut viscera (for these substances are not carried in the vessels, or can be carried), but from the reliicks of other diseases, of which we are to speak afterwards, with the following exception :

DCCXX. The exception is, that if any one falls from a height, if he is run through any part of his bowels with 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 be pained in the region of the kidney, and seized with vomiting, and a stupor of his leg ; in

DCCXXIV. The case of the inflammation happening in his bladder, he will have a tumour and pain in the under belly.

DCCXXV. Bleeding discharge, followed by inflammation (*u*), such as happens in the inflammation of the womb, or of any neighbouring part, and in abortion, and in the wound of any internal part, is easily distinguished by the pain of the affected part, and by the preceding accident.

DCCXXVI. In the inflammation of the womb, or any neighbouring part, the lower belly is affected with heat, tension, tumour, pain, and *these symptoms accompanied with vomiting* (*x*).

DCCXXVII. The hurtful powers, that excite the hysteritis, or inflammation of the womb and parts in its neighbourhood, all amount to violence done to the womb. Thus using violence during the labour, hurrying the birth, often produce a solution of continuity, and wound the womb with a tearing *rude-ness*.

(*t*) or inflammation of the peritonaeum.

(*u*) DCCVII.

(*x*) The inflammation is frequently not in the womb, 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 enquired into, and none yet less understood.

DCCXXVIII. And since a great deal of blood is often lost in that way, and the local affection followed by debility of the whole system (*y*); for that reason bleeding, according to the common practice, any mode of evacuation, are not to be practised, nor is the patient to be forbid to eat; but, in the first place, regard is to be had to the affected part, the body must be laid in an horizontal posture, she 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 she should have her belly bathed: and, if the debility should get a-head, recourse must be had to more wine, drink 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, like what happens in child-labour; and there is either an unusual flow of the menses, or an extraordinary discharge from, the vagina.

DCCXXX. The hurtful powers, that force abortion, are falling from a height, slipping a foot, 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 hurting powers, just now mentioned, in that case 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 (*z*).

DCCXXXI. The indication for preventing the disease is, to guard against all the hurting powers that induce the dis-

(*y*) Pain and loss of blood are in one degree or another inevitable causes of debility.

(*z*) All the words here, from "præcesserint" in the original, are an addition. The words in the Latin are, "Qui, cum, post locales offensas, modo relatas, sine imbecillitate accidit, tum profus localis est; commixta cum illis offensis imbecillitate, cum locali malo commune intermiscetur." These are distinctions not ostentatious, not frivolous, much less misleading, but of indispensable necessity to the understanding of the subject.

safe ; to ride out, when the patient has any degree of strength, but, *in case of any apprehension of danger from weakness*, to go in a carriage, which will be more safe ; to be upon guard 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 a horizontal position, with the buttocks higher than the head ; to bestudious 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 enlarged diameters, with wine and opiates, and, in that way, take off, at the same time, the atony and laxity, which are the principal cause of the discharge.

Of difficult Child-Labour.

DCCXXXIII. In difficult child-labour, the most common cause of which by far is weakness, and which always produces weakness when it proves lingering ; the laying-in woman should be supported with wine, and when the labour proves more difficult, and is now like to be tedious, opium should be administered.

DCCXXXIV. When now some part of the uterus is hurt by the hurting powers that have been mentioned (a), and the child and placenta are now both delivered, the woman 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 contrary 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 now extracted, or though it still remains in *the body*, in a place not necessary to

(a) See par. DCCXXX.

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 those 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 asthenic 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, is admitted : consequently upon account of the fear of a fever being to supervene, though often a great quantity of blood is 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, and never a recovery, that is not owing to accident (*b*).

DCCXXXVII. But all this is a method of cure *conducted upon* an erroneous theory, which is proved by all the principles of this doctrine, and by the very unfortunate issue of that practice. In a person, who has lost a great deal of blood, an over proportion of blood can never be the cause of 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 accuse 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 wants an antisthenic plan of cure : for, besides its hardness, if the pulse is not, at the same time, strong and full ; it has been now often above demonstrated, that all its celerity, depends upon debility and penury of blood (*c*). Finally, as the sthenic diathesis depends upon the general sthenic hurtful powers, as the energy of pain, from local affection and particularly inflammation, has no tendency to induce that diathesis, but *the contrary one of* debilitating (*d*) ; that is another reason for the supposition of the habit, either remaining

(*b*) The words in the end of this paragraph are thus corrected, "Unde mors sæpissime ; salus, nisi, casu, nunquam."

(*c*) See par. CLXXIX. to CLXXXI.

(*d*) DCCX.

such as it was before the wound *was received* (*e*), or, which is more probable, of degenerating into the asthenic diathesis. Lastly, the true explanation of the distinction betwixt irritation and sthenic diathesis is in confirmation of the same *conclusion*; the sthenic diathesis being that state of the system, which is produced by all the powers, the operation in common to which is stimulant, over the whole system, and, by a fulness in the vessels, producing the same effect, and to be removed by debilitating powers weakening also the whole system, and by evacuant remedies acting by the same general operation; whereas, on the contrary, it is irritation, or that state, in which the whole body is often without any stimulus, debilitated (*f*); and often a local stimulus, such as distention exciting spasm, or a concentrated acid, inducing convulsion, or the pain of a wound that producing the general commotion here (*g*), and effect enormous motions in a weakened system. But, whether the debility be without 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

(*e*) Which can hardly happen if blood has been lost, which must diminish the excitement and in proportion to its degree.

(*f*) 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 tumours 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 diarrhoea, subsultus tendinum, &c. But they are all the effect of the general weakened state being fluttered by very slight stimuli. At other times irritating powers, in the same weakened state, do occur; such as those mentioned in the text.

(*g*) 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 effect. (DCXCIII)

being about to come on, with a view to allay the disturbance arising from it; which has the contrary tendency, that of inducing the 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 now induced by the continuance of the pain, least, *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 this single consideration, that as the loss of blood, in proportion to its degree, has a tendency to produce 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*, does not any longer engage in gestation, exercise, and the other functions both of body and mind, and of passion or emotion, according to custom, and, of course less nourishment and recruit is now required; therefore, 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 now described (*b*). 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 without motion, his posture should not be changed but to avoid the disagreeable feeling of too long continuance of it, and even then it should be done as warily as possible. He should make his water lying, *and* 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 faintiness 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 now the habit is rushing into debility, upon account of the greatness or long

(*b*) See last paragraph.

continuance of the pain; *in that case*, besides the soups formerly allowed, meat as rich and delicate as possible should be given; wine should be administered sparingly 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 very tender external parts are violated by any rude matter, such as *happens* in that case, where a thorn is pushed below 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 any general inflammation, whether sthenic or asthenic, or that inflammation, which is a symptom of general diseases, or it is a consequence of local inflammation, whether sthenic, or asthenic, as a symptom of local affection. In it 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 it happen to supervene upon it, and it is accompanied with an undulatory, and as it were, a pulsatory, motion of the labouring part; these symp-

toms are commonly preceded by a shivering : if the affection is internal, the patient should be kept quiet, and free from 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 Pustle.

DCCXLIV. A pustle is a purulent vesicle, turgid, and at last of its own accord opening in consequence of having become tender, 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 in proportion, as more or less sthenic diathesis, occasioned by improper treatment, or a neglect of the proper, has preceded (a).

DCCXLVI. The indication of cure for them 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 a 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 in the top, and inflamed in its edges all round.

Of Bubo.

DCCXLVIII. Bubo is a glandular tumor, especially affecting the one or the other groin, and of 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 oftener with the plague. They depend upon a contagious matter, and, in

(a) XXI. LXXVI. XCVI. XCVII. XCVIII.

so far as they do not sufficiently yield to the general remedies, they must be treated with a very strong spirit poured upon them, and with laudanum, and opening them.

Of Gangrene.

DCCL. Gangrene is an imperfect inflammation of a part, not terminating in suppuration, discoloured, scarce painful, consisting of pustules of a bad matter, and at last inducing the death of the part.

DCCLI. The hurtful power, that precedes gangrene, is always inflammation, often ultimately violent in a sensible part, oftener languid, and occupying a part less sensible, less supported by the powers of life (*b*); it is sometimes a symptom of the phlegmasiæ, sometimes of fevers, sometimes of local phlegmone (*c*).

DCCLII. The method of cure, when the gangrene is seated in the alimentary canal, is to pour in spirit and laudanum; when the shut viscera are affected, to place some hope in the same and other stimuli, but *much* less. And, as the same remedies also suit gangrene, when it is external, consequently liquid opium should be rubbed in upon the dying part, spirit should be poured upon it, the parts already dead should be cut out, the edge of the living part all round should be stimulated, and an inflammation made in it.

Of Sphacelus.

DCCLIII. Sphacelus is a more perfect and more extended gangrene, with an extinction of sense, motion, and heat;

(*b*) The inflammation, out of which gangrene arises, is always unsupported, and the gangrene always a state of either direct or indirect debility; the high excitement in the phlegmasiæ, and the low in fevers, causing that.

(*c*) CCCXLVII. DCLV. to DCXCIV.

in which the part becomes soft, blackish, completely black, putrid, and at last thoroughly putrid to the very bones, 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 (*d*).

Of Scrofulous Tumour and Ulcer.

DCCLV. When a scrofulous tumour and ulcer 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; after that no more is to be done, but to keep the ailing part clean, bath it often, and defend it from the injury of the air; unless that, as local debility also takes place here, spirit and laudanum, applied to the part, may be of service.

Of Schirrous Tumour.

DCCLVI. When the tumour, which, while it was moderate, was a part or symptom of the general disease, called schirrus, 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 the present circumstances will admit of.

DCCLVII. The two heads of division that remain (*e*), are of so obscure and abstract a nature, that, if ever they are to be attempted, they must be passed over at present. The third

(*d*) An addition.

(*e*) DCXCVIII, and DCXCIX.

head (*f*) 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.

(*f*) DCXCVII, DCCXLII. to DCCLVII.

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