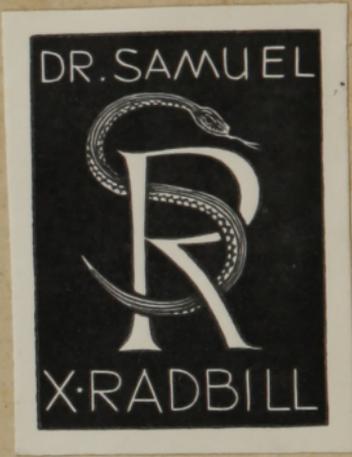




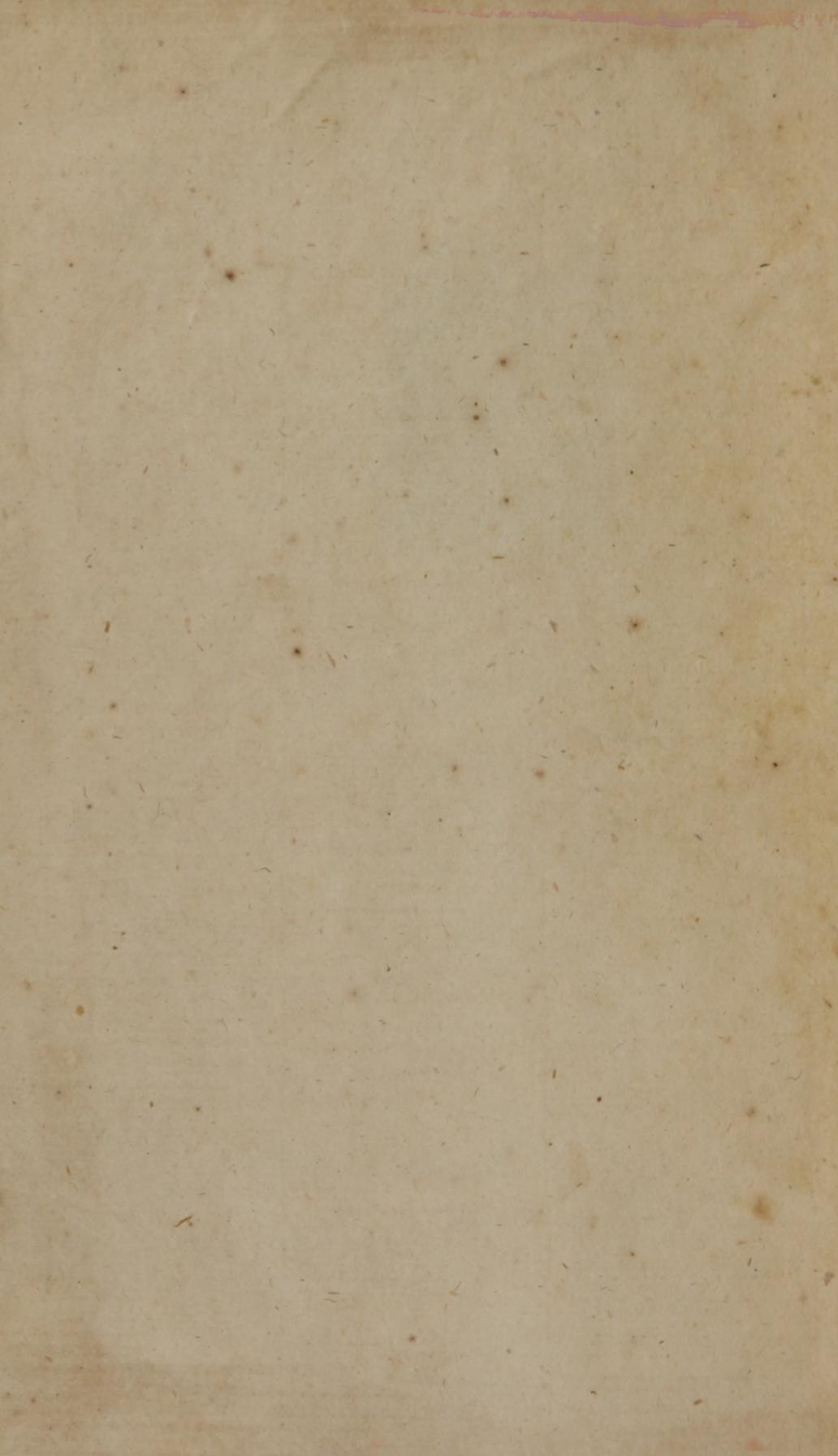
Sweet Echo, loveliest Nymphe, that lovest unseen
Within thy airy Cell ~~and~~ *and*

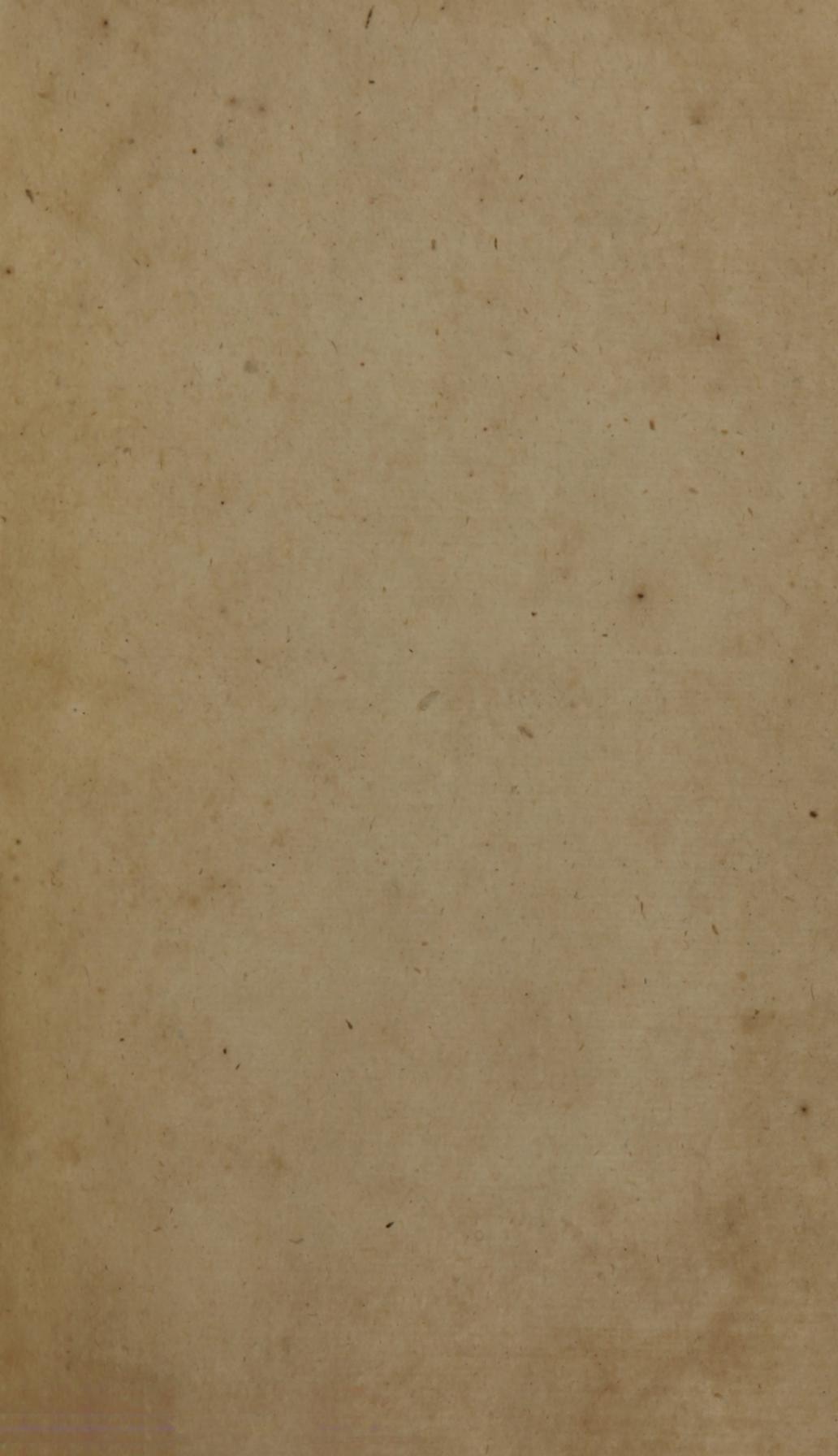
Sweet Echo, now Behov'nd of True Love,
And my lovely Nymphe Drive with Passion More



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PHYSICS 309

LECTURE NOTES

BY

ROBERT A. FAY

1962

CHICAGO, ILLINOIS

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F I R S T L I N E S

OF THE *Preston Retreat.*

PRACTICE OF PHYSIC,

FOR THE USE OF STUDENTS,

IN THE

UNIVERSITY OF EDINBURGH.

BY WILLIAM CULLEN, M. D. & P.

V O L. I.

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FROM THE EDITOR.

THE author of the following work is too well known in the literary world to stand in need of much commendation. He has produced a revolution in medicine. The Editor is happy in an opportunity of introducing the out-lines of the first part of his illustrious master's discoveries of the causes and cure of diseases to the knowledge of Students of Physic in America, to whom it is recommended and most respectfully inscribed by

BENJAMIN RUSH.

PHILADELPHIA, }
April 13, 1781. }

P R E F A C E.

AN attempt to deliver a SYSTEM of the doctrines and rules proper for directing the PRACTICE OF PHYSIC, is an undertaking of great difficulty; and, after an experience of forty years in that practice, as well as much reading and reflection, it is still with great diffidence that I enter upon such a work. My duties, however, as a Professor, have necessarily produced the following sheets, intended chiefly as a text-book for the use of my students. I could have wished to confine it to the hands of those who attend my lectures, and hear the explanations and proofs, which I deliver in support of my several opinions; but I have found this to be impossible, and am therefore laid under the necessity of offering my work to the public, even in its present form. It is, indeed, proper that the public should have access to judge of the propriety of what I teach; and I willingly submit to their judgment. I must acknowledge, however, I have found the commonly received systems to require so many alterations, as well as additions, that it is with no small anxiety I presume to offer my own, which is in so many respects new. At the same time, I cannot offer it, without a request, that, in judging of a work, from its very nature concise, the learned will proceed with reserve, and will not condemn my opinions till they shall be certain that they fully comprehend my meaning, and shall be ac-

quainted with the proofs which I can produce to confirm my doctrines. They will, I hope, observe, that I mean to admit no inference of reasoning, which I cannot, at the same time, render, in some measure, probable as a matter of fact. As, in the conduct of the following work, this has been my peculiar object, so, I flatter myself, that any disputes which may happen concerning my doctrines, will always resolve into questions with regard to facts, which I hope, those who may differ from me will be as ready as I am to submit to the farther examination of the candid and unprejudiced.

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Of the Writs of Habeas Corpus Ad Subjunctum

Of the Writs of Habeas Corpus Ad Sine Curia

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Of the Writs of Habeas Corpus Ad Sine Curia

Of the Writs of Habeas Corpus Ad Testamur

Of the Writs of Habeas Corpus Ad Subjunctum

FIRST LINES

OF THE

PRACTICE OF PHYSIC.

INTRODUCTION.

I.

IN teaching the PRACTICE of PHYSIC, we teach to discern, distinguish, prevent, and cure diseases, as they occur in particular persons.

II.

The art of DISCERNING and DISTINGUISHING diseases, may be best attained by an accurate and complete observation of their phenomena, as these occur in concurrence and succession; and by a METHODICAL NOSOLOGY, or an arrangement of diseases according to their genera and species, established upon observation, abstracted from all reasoning. This arrangement we have attempted in another work, to which, in the course of this, we shall frequently refer.

III.

The PREVENTION of diseases depends upon the knowledge of their remote causes, which are partly delivered in the general Pathology, and partly to be delivered in this treatise.

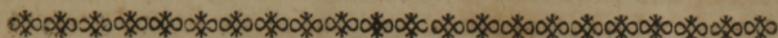
IV.

The CURE of diseases is chiefly, and almost unavoidably, founded in the knowledge of their proximate causes. This last requires the knowledge of the Institutions of Medicine, or the knowledge of the structure, action, and functions of the human body; of the several changes which it may undergo; and of the several powers by which it can be changed. Our knowledge of these particulars, however, is still incomplete, is in many respects doubtful, and has been often involved in mistake and error. The doctrine, therefore, of proximate causes, founded upon it, must be frequently precarious and uncertain. It must depend, however, upon the extensive knowledge and judgment of the physician to discern the degree of probability in the several parts of medical doctrine, to admit those only, as a foundation of practice, which are simple, obvious, and certain; and for the most part, to admit, as proximate causes, those only which are established as matters of fact, rather than as deductions of reasoning. When this cannot be done with sufficient certainty, the judicious and prudent physician will have recourse to EXPERIENCE alone; always, however, aware of the hitherto incomplete and fallacious state of Empiricism.

V.

With a strict attention to these considerations in the whole of our conduct, we proceed to treat of particular diseases in the order of our Methodical Nosology.

Preston Retreat.

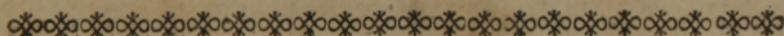


PART I.

OF PYREXIÆ,

OR

FEBRILE DISEASES.



PART I

OF THE HISTORY OF THE
CITY OF BOSTON

IN THE YEAR 1780
BY JOHN WATSON

THE HISTORY OF THE
CITY OF BOSTON

BOOK

PART I.

OF PYREXIÆ, OR FEBRILE
DISEASES.

VI.

PYREXIÆ, or Febrile Diseases, are distinguished by the following appearances: After beginning with some degree of cold shivering, they shew some increase of heat, an increased frequency of pulse, and some diminution of strength in the animal functions.

VII.

These Pyrexiae form a class, which may be subdivided into the five orders of FEVERS, INFLAMMATIONS, ERUPTIONS, HEMORRHAGIES, and FLUXES. See Synopsis Nosologiae Methodicae.

BOOK

B O O K I.
O F F E V E R S.

C H A P I.

O F T H E P H E N O M E N A O F F E V E R S.

VIII.

Those diseases are more strictly called FEVERS, which have the general symptoms of pyrexia, without any topical affection, that is essential and primary, joined with them, as the other orders of the pyrexiae always have.

IX.

Fevers, on different occasions, have different appearances in the number and diversity of their symptoms, and are, therefore, very properly considered as of different genera and species. But we suppose, that there are certain circumstances common to all the diseases comprehended under this order, which are therefore those essentially necessary to, and properly constituting the nature of fever. To investigate these especially, it is our business; and we expect to find them occurring in the paroxysm, or fit, of an intermittent fever, as this is most commonly formed.

X.

The phenomena to be observed in such a paroxysm are the following. The person is affected, first, with a languor or sense of debility, a sluggishness in motion, and some uneasiness in exerting it. At the same time, the face and extremities become pale, the features shrink,
the

the bulk of every external part is diminished, and the skin, over the whole body, appears constricted, as if cold had been applied to it. Now also some coldness of the extremities, though little taken notice of by the patient, may be perceived by another person. At length, the patient himself feels the cold, first, commonly in his back, but, from thence, passing over the whole body; and now, very often, his skin feels warm to another person. The patient's sense of cold increasing, produces a tremor in all his limbs, with frequent succussions or rigors of the trunk of the body. When this sense of cold, and its effects, have continued for some time, they become less violent, and alternate, with warm flushings. By degrees the cold goes off entirely, and a heat, greater than natural, prevails, and continues over the whole body. With this heat, the colour of the skin returns, and a preternatural redness appears, especially in the face. With the heat and redness, the skin is relaxed and smoothed, but, for some time, it continues dry. The features of the face, and other parts of the body, recover their usual size, and become even more turgid. When the heat, redness, and turgescence have increased and continued for some time, a moisture appears upon the face, and, by degrees, becomes a sweat, which at length prevails over the whole body. As this sweat continues to flow, the heat of the body abates; the sweat, after continuing some time, gradually ceases; the body returns to its usual temperature, and most of the functions are restored to their ordinary state.

XI.

This series of appearances gives occasion to divide the paroxysm into three different stages, which are called the COLD, the HOT, and the SWEATING STAGES or fits.

In the course of these, a considerable change happens in the state of several other functions, which is now to be mentioned.

XII.

XII.

Upon the first approach of languor, the pulse becomes sometimes slower, and always weaker than before. As the sense of cold comes on, the pulse becomes smaller, very frequent, and often irregular. As the cold abates, and the heat comes on, the pulse becomes more regular, hard, and full; and, in these respects, increases till the sweat breaks out. As the sweat flows, the pulse becomes softer, and less frequent, till, the sweat ceasing altogether, it returns to its usual state.

XIII.

The respiration also suffers some changes. During the cold stage, the respiration is small, frequent, and anxious; as the hot stage comes on, it becomes fuller, and more free, but is still frequent and anxious, till the flowing of the sweat relieves the anxiety, and renders the breathing less frequent and more free. With the ceasing of the sweat, the breathing returns to its ordinary state.

XIV.

The natural functions also suffer a change. Upon the approach of the cold stage, the appetite for food ceases, and does not return till the paroxysm be over, or the sweat has flowed for some time. Generally, during the whole of the paroxysm, there is not only a want of appetite, but an aversion from all solid, and especially, animal food. As the cold stage advances, there frequently come on a sickness and nausea, which often increase to a vomiting of a matter, for the most part, bilious. This vomiting is especially troublesome towards the end of the cold stage and beginning of the hot. As the hot stage advances, the nausea and vomiting abate, and when the sweat breaks out, they, for the most part, cease altogether.

XV.

XV.

A considerable degree of thirst is commonly felt during the whole course of the paroxysm. During the cold stage, the thirst seems to arise from the dryness and clamminess of the mouth and fauces; but, during the hot stage, from the heat which then prevails; and, as the sweat flows, the mouth becomes moister, and the thirst, together with the heat, gradually abates.

XVI.

In the course of a paroxysm there is often a considerable change in the state of the secretions. The circumstances just now mentioned, show it in the secretion of the saliva and mucus of the mouth; and it is still more remarkable with respect to the urine. During the cold stage, the urine is almost colourless, and without cloud or sediment. In the hot stage, it becomes high coloured, but is still without sediment. After the sweat has flowed freely, the urine deposits a sediment commonly lateritious, and continues to do so for some time after the paroxysm is over.

XVII.

Till towards the end of a paroxysm, stools seldom occur, except in certain uncommon cases, which are attended throughout with a diarrhœa.

XVIII.

Analogous to these changes in the state of the secretions, it frequently happens that tumours, subsisting on the surface of the body, suffer, during the cold stage of fevers, a sudden and considerable diminution of their bulk; but which returns, though not always, during the sweating stage. In like manner, ulcers are sometimes dried up during the cold stage, and return again to discharge matter, during the sweating stage, or after the paroxysm is over.

XIX.

Certain changes appear also in sensation and thought. During the cold stage, the sensibility is often greatly impaired; but, when the hot stage is formed, the sensibility is recovered, and often considerably increased.

XX.

With respect to the intellectual functions, when the cold stage comes on, attention and recollection become difficult, and continue so, more or less, during the whole paroxysm. Hence some confusion of thought takes place, and often arises to a delirium, which sometimes comes on at the beginning of the cold stage, but more frequently not till the hot stage be formed.

XXI.

It belongs also to this place to remark, that the cold stage sometimes comes on with a drowsiness and stupor, which often grow to a degree that may be called comatose, or apoplectic.

XXII.

We have still to add, that, sometimes, early in the cold stage, a headach comes on; but which, more commonly, is not felt till the hot stage be formed, and then it is usually attended with a throbbing of the temples. The headach continues till the sweat breaks out; but as this flows more freely, that gradually goes off. At the same time with the headach, there are commonly pains of the back, and of some of the great joints; and these pains have the same course with the headach.

XXIII.

These are nearly the whole, and are, at least, the chief of the phenomena which more constantly appear in the paroxysm of an intermittent fever; and we have pointed out their ordinary concurrence and succession.

With

With respect to the whole of them, however, it is to be observed, that, in different cases, the several phenomena are in different degrees ; that the series of them is more or less complete ; and that the several parts or stages in the time they occupy, are in a different proportion to one another.

XXIV.

It is very seldom that the disease consists of a single paroxysm, such as we have now described ; and it more generally happens, that, after the series of phenomena mentioned, and after a certain length of time free from them, the same series of phenomena again arise, and observe the same course as before ; and these states of fever and APYREXIA often continue to alternate with one another for many times. In these cases, the length of time from the end of one paroxysm to the beginning of another, is called an INTERMISSION, and the length of time from the beginning of one paroxysm to the beginning of another next succeeding, is called an INTERVAL.

XXV.

When the disease consists of a number of paroxysms, it is generally to be observed, that the intervals between them are nearly equal ; but these intervals are of different lengths in different cases. The most usual interval is that of forty-eight hours, which is named the TERTIAN period. The next most common is that of seventy-two hours, and is named the QUARTAN period. Some other intervals also are observed, particularly one of twenty-four hours, named therefore the QUOTIDIAN, and this is not infrequent ; but all other intervals longer than that of the quartan are extremely rare, and probably are only irregularities of the tertian or quartan periods.

XXVI.

The paroxysms of pure intermittent fevers are always finished

finished in less than twenty-four hours ; and, though it happens, that there are fevers which consist of repeated paroxysms, without any entire intermission between them ; yet, in such cases, it is observed, that, though the hot and sweating stages of the paroxysms do not entirely cease before the twenty-four hours from their beginning have expired, they suffer, however, before that time, a considerable abatement or REMISSION of their violence, and, at the return of the quotidian period, a paroxysm is in some shape renewed, and runs the same course as before. This constitutes what is called a REMITTENT FEVER.

XXVII.

When in these remittents the remission is considerable, and the return of a new paroxysm is distinctly marked by the symptoms of a cold stage at the beginning of it ; such fevers retain strictly the appellation of REMITTENTS. But, when it happens, as in certain cases, that the remission is not considerable, is perhaps without sweat, and that the returning paroxysm is not marked by the most usual symptoms of a cold stage, and chiefly by the aggravation or EXACERBATION of a hot stage, the disease is called a CONTINUED FEVER.

XXVIII.

In some cases of continued fever, the remissions and exacerbations are so inconsiderable as not to be easily observed or distinguished ; and this has led physicians to imagine, that there is a species of fever subsisting for several days together, and seemingly consisting of one paroxysm only. This they have called a CONTINENT FEVER ; but, in a long course of practice, we have not had an opportunity of observing such a fever.

XXIX.

With respect to the form, or TYPE of fevers, this further may be observed, that the quartan, while it has the longest interval, has, at the same time, the longest
and

and most violent cold stage; but, upon the whole, the shortest paroxysm: That the tertian, having a shorter interval than the quartan, has, at the same time, a shorter and less violent cold stage; but a longer paroxysm: And, lastly, that the quotidian, with the shortest interval, has the least of a cold stage; but the longest paroxysm.

XXX.

The type of fevers is sometimes changed in their course. When this happens, it is generally in the following manner: Both tertians and quartans change into quotidians, quotidians into remittents, and these last become often of the most continued kind. In all these cases, the fever has its paroxysms protracted longer than usual, before it changes into a type of more frequent repetition.

XXXI.

From all this, a presumption arises, that every fever consists of repeated paroxysms, and differs from others only in the circumstances and repetition of the paroxysms; and, therefore, that it was allowable for us to take the paroxysm of a pure intermittent as an example and model of the whole.

C H A P. II.

O F T H E P R O X I M A T E C A U S E O F
F E V E R.

XXXII.

The proximate cause of fever seems hitherto to have eluded the research of physicians; and we shall not pretend

pretend to ascertain it in a manner that may remove every difficulty ; but shall endeavour to make an approach towards it, and such as we hope may be of use in conducting the practice in this disease.

XXXIII.

As the hot stage of fevers is so constantly preceded by a cold stage, we presume that the latter is the cause of the former ; and, therefore, that the cause of the cold stage is the cause of all that follows in the course of the paroxysm.

XXXIV.

To discover the cause of the cold stage of fevers, we may observe, that it is always preceded by strong marks of a general debility prevailing in the system. The smallness and weakness of the pulse, the paleness and coldness of the extreme parts, with the shrinking of the whole body, sufficiently shew that the action of the heart and larger arteries is, for the time, extremely weakened. At the same time, the languor, inactivity, and debility of the animal motions, the imperfect sensations, the feeling of cold, while the body is truly warm, and some other symptoms, all shew that the energy of the brain itself is, on this occasion, greatly weakened ; and we presume, that, as the weakness of the action of the heart can hardly be imputed to any other cause, this weakness also is a proof of the diminished energy of the brain.

XXXV.

We shall hereafter endeavour to shew, that the most noted of the remote causes of fever, as contagion, miasmata, cold, and fear, are of a sedative nature ; and, therefore, render it probable, that a debility is induced. When the paroxysms of a fever have ceased to be repeated, they may be again renewed ; and are most commonly renewed, by the application of debilitating powers. And, further, the debility which subsists in the animal motions,

motions, and other functions through the whole of fever, renders it pretty certain, that sedative or debilitating powers have been applied to the body.

XXXVI.

It is therefore evident, that there are three states which always take place in fever, a state of debility, a state of cold, and a state of heat; and, as these three states regularly and constantly succeed each other, in the order we have mentioned them, it is presumed, that they are in the series of cause and effect with respect to one another. This we hold as a matter of fact, even although we should not be able to explain in what manner, or by what mechanical means these states severally produce each other.

XXXVII.

How the state of debility produces some of the symptoms of the cold stage, we cannot particularly explain, but refer it to a general law of the animal œconomy, whereby it happens, that powers, which have a tendency to hurt and destroy the system, often excite such motions as are suited to obviate the effects of the noxious power. This is the *VIS MEDICATRIX NATURÆ*, so famous in the schools of physic; and it is probable, that many of the motions excited in fever are the effects of this power.

XXXVIII.

That the increased action of the heart and arteries, which takes place in the hot stage of fevers, is to be considered as an effort of the *vis medicatrix naturæ*, has been long a common opinion among physicians; and we are disposed to assert, that some part of the cold stage may be imputed to the same power. We judge so, because the cold stage appears to be universally a means of producing the hot; because cold, externally applied, has very often similar effects; and more certainly still, because it seems to be in proportion to the degree of tremor

mor in the cold stage, that the hot stage proceeds more or less quickly to a termination of the paroxysm, and to a more complete solution, and longer intermission. See XXIX.

XXXIX.

It is to be particularly observed, that, in the time of the cold stage of fever, there seems to be a spasm induced every where on the extremities of the arteries, particularly of those upon the surface of the body. This appears from the suppression of all excretions, and from the shrinking of the external parts; and although this may, perhaps, be imputed, in part, to the weaker action of the heart, in propelling the blood into the extreme vessels; yet, as these symptoms often continue after the action of the heart is restored, there is reason to believe, that a spasmodic constriction has taken place; that it subsists for some time, and supports the hot stage; for this stage ceases with the flowing of the sweat, and the return of other excretions, which are marks of the relaxation of vessels formerly constricted.

XL.

This then may be the idea of fever; that a spasm of the extreme vessels, however induced, may prove an irritation to the heart and arteries; and that this continues till the spasm is relaxed or overcome. There are many appearances which support this opinion; and there is little doubt that a spasm does take place, and proves an irritation to the heart; and therefore may be considered as a principal part in the proximate cause of fever. It will still, however, remain a question, what is the cause of this spasm, whether it be directly produced by the remote causes of fever, or if it be only a part of the operation of the *vis medicatrix naturæ*.

XLI.

We are disposed to be of the latter opinion, first, because it remains still certain, that a debility lays the foundation

foundation of fever; secondly, because, supposing this uncertain, we can more easily perceive how debility induces spasm, than how spasm produces the debility, which always, more or less, appears; and, thirdly, we, especially, conclude, that the spasm depends upon the debility; because we perceive, that the degree of spasm formed, and the obstinacy of its continuance, depend, in many cases, upon the power of the causes inducing debility, and upon the debility induced; for the more powerful the debilitating causes, and the greater the debility produced, the paroxysms are the longer, and the more frequently repeated.

XLII.

From hence we are led to believe, that, together with the spasm, there is an atony subsisting in the extreme vessels, and that the relaxation of the spasm requires the restoring of the tone and action of these.

XLIII.

Some illustration and proof of this we expect will arise, from considering the symptoms which take place with respect to the functions of the stomach in fevers, such as the anorexia, nausea, and vomiting. (XIV.) The connection or consent, which we observe between the perspiration and the appetite in healthy persons, renders it probable, that the tone of the extreme vessels on the surface of the body, and that of the muscular fibres of the stomach, are connected or consenting with each other; and that, therefore, in fevers, the want of appetite or of tone in the muscular fibres of the stomach, may depend upon the atony of the extreme vessels on the surface of the body.

Further, that, in fevers, an atony affects the fibres of the stomach, appears from the nausea and vomiting which so frequently occur, and which so commonly depend upon a state of debility in the stomach.

Lastly, that the debility of the stomach which produces vomiting, depends upon an atony of the extreme vessels on the surface of the body, appears particularly

from a fact observed by Dr. Sydenham. In the attack of the plague, a vomiting happens, which prevents any medicine from remaining upon the stomach. And Dr. Sydenham tells us, that he could not overcome this vomiting but by external means, applied to produce a sweat or determination to the surface of the body.

The connection between the state of the stomach, and that of the extreme vessels on the surface of the body, appears from this also, that the vomiting, which so frequently happens in the cold stage of fevers, commonly ceases upon the coming on of the hot, and very certainly, upon any sweat's coming out. (XIV.) It is, indeed, probable, that the vomiting in the cold stage of fevers, is one of the means, employed by nature, for restoring the determination to the surface of the body; and it is a circumstance affording a proof, both of this and of the general connection between the stomach and surface of the body, that emetics thrown into the stomach, and operating there, in the time of the cold stage, commonly put an end to it, and bring on the hot stage.

It also affords a proof of the same connection, that cold water taken into the stomach produces an increase of heat on the surface of the body, and is very often a convenient and effectual means of producing sweat.

We draw a proof of the same connection from this also, that cold applied to the surface of the body, when it does not stop perspiration, is always a powerful means of exciting appetite. It may likewise be considered, whether the fever, so constantly accompanying the digestion of food in the stomach, be not induced by filling the stomach, by relaxing its muscular fibres, and thereby inducing an atony of the extreme vessels.

Upon the whole, we think it sufficiently probable, that the symptoms of an anorexia, nausea, and vomiting, depend upon an atony subsisting in the extreme vessels on the surface of the body, and that this, therefore, is a principal circumstance in the proximate cause of fever.

XLIV.

It may seem difficult to explain how an atony and spasm can subsist, at the same time, in the same vessels; but,

but, whatever difficulty there may be in accounting for this, we consider it as a matter of fact, and at the same time think it may be found analogous to what happens upon other occasions in the system, where we often observe atony producing spasm.

XLV.

This atony we suppose to depend upon a diminution of the energy of the brain; and that this diminution takes place in fevers, we conclude, not only, as before, from the debility prevailing in so many of the functions of the body, mentioned above, but particularly from symptoms which are peculiar to the brain itself. (XXXIV.) Delirium is a frequent symptom of fever; and as, from the physiology and pathology, we learn, that this symptom commonly depends upon some inequality in the excitement of the brain or intellectual organ; we hence conclude, that, in fever, it denotes some diminution in the energy of the brain. Delirium, indeed, seems often to depend upon an increased impetus of the blood in the vessels of the brain, and therefore attends phrenitis. It frequently appears also in the hot stage of fevers, accompanied with a headach and throbbing of the temples. But, as the impetus of the blood in the vessels of the head is often considerably increased, by exercise, external heat, passions, and other causes, without occasioning any delirium, it must be supposed, that the same impetus, in the case of fever, produces delirium; for this reason only, that, at the same time, there is some cause which diminishes the energy of the brain, and prevents a free communication between the parts concerned in the intellectual functions. Upon the same principles also, we suppose there is another species of delirium, which depends more entirely on the diminished energy of the brain; and may therefore arise when there is no unusual increase of the impetus of the blood in the vessels of the brain. Such seems to be the delirium occurring at the beginning of the cold stage of fevers, or in the hot stage of such fevers as shew strong marks of debility in the whole system.

XLVI.

XLVI.

Upon the whole, our doctrine of fever is explicitly this. The remote causes (XXXV.) are certain sedative powers applied to the nervous system, which, diminishing the energy of the brain, thereby produce a debility in the whole of the functions, (XXXIV.) and particularly in the action of the extreme vessels. (XLII. XLIII.) Such, however, is, at the same time, the nature of the animal œconomy, (XXXVII.) that this debility proves an indirect stimulus to the sanguiferous system; whence, by the intervention of the cold stage, and spasm connected with it, (XXXVIII. XXXIX.) the action of the heart and larger arteries is increased, (XXXIX.) and continues so (XL.) till it has had the effect of restoring the energy of the brain, of extending this energy to the extreme vessels, of restoring, therefore, their action, and thereby especially overcoming the spasm affecting them; upon the removing of which, the excretion of sweat, and other marks of the relaxation of excretories, take place.

XLVII.

This doctrine will, as we suppose, serve to explain not only the nature of fever in general, but also the various causes of it which occur. Before proceeding, however, to this, it may be proper to point out the opinions, and, as we judge, the mistakes which have formerly prevailed on this subject.

XLVIII.

It has been supposed that a lentor or viscosity prevailing in the mass of blood, and stagnating in the extreme vessels, is the cause of the cold stage of fevers and its consequences. But there is no evidence of any such viscosity previously subsisting in the fluids; and as it is very improbable that such a state of them can be suddenly produced, the suddenness with which paroxysms
come

come on, renders it more likely that the phenomena depend upon some cause acting upon the nervous system, or the primary moving powers of the animal economy.

XLIX.

Another opinion, which has been very universally received, is, that a noxious matter introduced into, or generated in the body, is the proximate cause of fever, and that the increased action of the heart and arteries, which makes so great a part of the disease, is an effort of the *vis medicatrix naturæ* to expel this morbid matter, and, particularly, to change or concoct it, so as to render it either altogether innocent, or, at least, fit for being more easily thrown out of the body. This doctrine, however, although of as great antiquity as any of the records of physic now remaining, and although it has been received by almost every school of medicine, yet appears to me to rest upon a very uncertain foundation. There are fevers produced by cold, fear, and other causes, with all the essential circumstances of fever, and terminating by sweat, and yet, at the same time, without any evidence or suspicion of morbid matter. There have been fevers suddenly cured by a hemorrhagy, so moderate as cannot carry out any considerable portion of a matter diffused over the whole mass of blood; nor can we conceive how the morbid matter could be collected or determined to pass off by such an outlet as in that case is opened. Even supposing a morbid matter were present, there is no explanation given in what manner the concoction of it is performed; nor is it shewn, that any such change does in fact take place. In certain cases it is indeed evident, that a noxious matter is introduced into the body, and proves the cause of fever; but, even in these cases, it appears, that the noxious matter is thrown out again, without having suffered any change; that the fever often terminates before the matter is expelled; and that, upon many occasions, without waiting the supposed time of concoction, the fever can be cured, and by remedies which do not seem to operate upon the fluids, or to produce any evacuation.

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While we thus reason against the notion of fevers being an effort of nature, for concocting and expelling a morbid matter, we by no means intend to refute, that the cause of fever frequently operates upon the fluids, and particularly, produces a putrescent state of them. We acknowledge, that this is frequently the case; but, at the same time, we maintain, that such a change of the fluids is not commonly the cause of fever; that very often it is an effect only; and that there is no reason to believe the termination of the fever to depend upon the expulsion of the putrid matter.

LI.

Another opinion which has prevailed, remains still to be mentioned. In intermittent fevers, a great quantity of bile is commonly thrown out by vomiting; and this is so frequently the case, that many have supposed an unusual quantity of bile, and perhaps a peculiar quality of it, to be the cause of intermittent fevers. This, however, does not appear to be well founded. Vomiting, by whatever means excited, if often repeated, with violent straining, seems to be powerful in emulging the biliary ducts, and commonly throws out a great deal of bile. This will happen especially in the case of intermittent fevers. For, as in the state of debility and cold stage of these fevers, the blood is not propelled in the usual quantity into the extreme vessels, and particularly into those on the surface of the body, but is accumulated in the vessels of the internal parts, and particularly in the vena portarum; so this may occasion a more copious secretion of bile. The circumstance, however, which chiefly occasions the appearance of bile in these cases is, the influence of warm climates and seasons. These seldom fail to produce a state of the human body, in which the bile is disposed to pass off, by its secretories, in greater quantity than usual, and perhaps, also, changed in its quality, as appears from the disease of cholera, which so frequently occurs in warm seasons.

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This disease, however, occurs often without fever; and we shall hereafter render it sufficiently probable, that intermittent fevers, for the most part, arise from another cause, that is, marsh effluvia; while at the same time, there is no evidence of their arising from the state of the bile alone. The marsh effluvia, however, commonly operate most powerfully in the same season that produces the change of the bile; and, therefore, considering the vomiting, and other circumstances of the intermittent fevers which here concur, it is not surprising, that autumnal intermittents are so often attended with effusions of bile. This view of the subject does not lead us to consider the state of the bile, as the cause of intermittents, but merely as a circumstance accidentally concurring with them, from the state of the season in which they arise. What attention this requires in the conduct of the disease, we shall consider hereafter.

LII.

From this view of the principal hypotheses which have been maintained hitherto, with respect to the proximate cause of fevers, it will appear, that these do not arise from changes in the state of the fluids; while, on the other hand, almost the whole of the phenomena of fevers lead us to believe, that they chiefly depend upon changes in the state of the moving powers of the animal system. Though we should not be able to explain all the circumstances of fevers, it is at least of some advantage to be led into the proper train of investigation. We have attempted to pursue it; and shall now endeavour to apply the doctrine we have delivered, to the explaining the diversity of fevers.

C H A P. III.

OF THE DIFFERENCE OF FEVERS,
AND ITS CAUSES.

LIII.

With the most part of physicians, we suppose, that, in every fever, there is a power applied to the body, which has a tendency to hurt and destroy it, and produces certain motions in it, which deviate from the natural state; and, at the same time, in every fever which has its full course, we suppose, that, in consequence of the constitution of the animal œconomy, there are certain motions excited, which have a tendency to obviate the effects of the noxious power, or to correct and remove it. Both these kinds of motions are considered as constituting the disease. The latter, which are of salutary tendency, and considered as the operations of the *vis medicatrix naturæ*, we shall hereafter call the REACTION of the system.

LIV.

From what has been delivered above, (XLVI.) it appears, that, in fever, the circumstances of debility, spasm, and reaction, are chiefly to be considered; and therefore, according as these are different in degree, and different in proportion to one another, they will exhibit the chief differences of fevers.

LV.

To apply this more exactly, we maintain, that every fever of more than one day's duration, consists of repeated paroxysms; and that the difference of fevers,
from

from the difference of the circumstances, (LIV.) appears in the different state of paroxysms, and in the different circumstances of their repetition. (XXXI.)

LVI.

That fevers generally consist of repeated paroxysms, we have alledged above (XXIV. XXVI. XXVIII. XXXI.) to be a matter of fact; but must here endeavour to confirm it, by assigning the cause.

LVII.

In every fever, in which we can observe any number of separate paroxysms, we constantly remark that every paroxysm is finished in less than twenty-four hours; but, as we cannot perceive any thing in the cause of fevers determining to this, we must suppose it to depend on some general law of the animal œconomy. Such a law seems to be that which subjects the œconomy, in many respects, to a diurnal revolution. Whether this depends upon the original conformation of the body, or upon certain powers constantly applied to it, and inducing a habit, we cannot positively determine; but the returns of sleep and watching, of appetites and excretions, and the changes which regularly occur in the state of the pulse, shew sufficiently, that, in the human body, a diurnal revolution takes place.

LVIII.

It is this diurnal revolution which we suppose determines the duration of the paroxysms of fevers; and these paroxysms being so universally limited, as in (LVII.) while no other cause of this can be assigned, renders it sufficiently probable, that their duration depends upon, and is determined by, the revolution mentioned. That these paroxysms are connected with that revolution, appears further from this, that, though the intervals of paroxysms are different, in different cases, the times of the accession of paroxysms are

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generally fixed to one time of the day; so that Quotidians come on in the morning, Tertians at noon, and Quartans in the afternoon.

LIX.

It is still to be remarked, that, as Quartans and Tertians are apt to become Quotidians, these to pass into the state of Remittents, and these last to become Continued; and that, even in the continued form, daily exacerbations and remissions are generally to be observed; all this shews so much the power of diurnal revolution, that when, in certain cases, the daily exacerbations and remissions are with difficulty distinguished, we may still presume, that the general tendency of the œconomy prevails, that the disease still consists of repeated paroxysms, and, upon the whole, that there is no such disease as that which the schools have called a Continent fever. We expect that this doctrine will be confirmed by what we shall say hereafter, concerning the periodical movements observed in continued fevers.

LX.

It being thus proved, that every fever, of more than one day's duration, consists of repeated paroxysms; we, in the next place, remark, that the repetition of paroxysms depends upon the circumstances of the paroxysms which are already formed. This appears from what is observed in (XXIX. and XXX.); for from these it appears, that the longer paroxysms are protracted, they are the sooner repeated; and, therefore, that the cause of the frequent repetition is to be sought for in the cause of the protraction of paroxysms.

LXI.

The duration of the hot stage, in which the reaction is operating to take off the spasm formed in the cold stage, is that upon which the duration of the whole paroxysm chiefly depends. We may, therefore, suspect, that the longer duration of the hot stage is owing either
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to the obstinacy of the spasm, or to the weakness of the reaction; and it is probable, that sometimes the one, and sometimes the other of these circumstances, takes place.

LXII.

Though the cause of spasm may be the same in different persons, it is obvious that the degree of it produced may be greater or less, according to the irritability of each particular person; and, therefore, the reaction in fever being given, the paroxysm, or continuance of the hot stage, may be longer or shorter, according to the degree of spasm that has been formed.

LXIII.

One cause of the obstinacy of spasm in fevers, may, I think, be clearly perceived. In inflammatory diseases, there is a diathesis phlogistica prevailing in the body, and this diathesis we suppose to consist in an increased tone of the whole arterial system. When, therefore, this diathesis accompanies fever, as it sometimes does, it may be supposed to give occasion to the febrile spasm's being formed more strongly, and thereby to produce more protracted paroxysms. Accordingly, we find, that all inflammatory fevers are of the continued kind; and that all the causes of the diathesis phlogistica have a tendency to change intermittent into continued fevers. As continued fevers, therefore, are often attended with the diathesis phlogistica, we conclude, that, in many cases, this is the cause of their continued form,

LXIV,

In many fevers, however, there is no evidence of any diathesis phlogistica being present, or of any other cause of more considerable spasm; and in such fevers we must impute the protraction of paroxysms, and the continued form of the fever, to the weakness of reaction. That this cause takes place, we conclude from hence, that, in many cases of fever, wherein the separate paroxysms are
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the most protracted, and the most difficultly observed, we find the most considerable symptoms of a general debility; and therefore, we conclude, that, in such cases, the protracted paroxysms and continued form depend upon a weaker reaction; owing either to the causes of debility applied having been of a more powerful kind, or from circumstances of the patient's constitution, favouring their operation.

LXV.

Upon these principles, we make a step towards explaining in general the difference of fevers, and with some probability; but must own, that there is much doubt and difficulty in applying the doctrine to particular cases. It applies tolerably well to explain the different states of intermittents, as they are more purely such, or as they approach more and more to the continued form: But several difficulties still remain with respect to many circumstances of intermittents; and more still with respect to the difference of these continued fevers, which are formed from intermittents, and those which we have distinguished in our Nosology, as more especially entitled to the appellation of Continued. See Syn. Nos. Meth. P. IV. Ch. I. Sect. II.

LXVI.

The character of continued fevers, given in the place referred to, is hardly sufficient. To make the distinction more accurate, it is necessary to add, that the fevers of a continued form, which, however, still belong to the section of intermittents, may be distinguished by their having passed from an intermittent or remittent form, to that of a continued; by their shewing some tendency to become intermittent, or at least remittent; by their being known to have been occasioned by marsh miasmata; by the nature of the prevailing epidemic; and, for the most part, by their having but one paroxysm, or one exacerbation and remission, in the course of twenty-four hours. On the other hand, continued fevers, to be more strictly so called, may be distinguished
by

by their shewing little tendency to become intermittent or remittent in any part of their course, and especially after the first week of their continuance; by their being occasioned by human contagion, at least, by other causes than the marsh miasmata; by the nature of the prevailing epidemic; and by their having pretty constantly an exacerbation and remission twice in the course of every twenty four hours.

LXVII.

From the view given (LXIII. and LXIV.) of the causes of the protraction of paroxysms; and, therefore, of the form of continued fevers, strictly so called, it seems probable, that the remote causes of these operate by occasioning either a phlogistic diathesis, or a weaker reaction; for we can observe, that the most obvious difference of continued fevers depends upon the prevailing of one or other of these states.

LXVIII.

Continued fevers have been considered as of great diversity; but physicians have not been happy in marking these differences, or in reducing them to any general heads. The distinctions of the antients are not well understood, and, so far as either they, or the modern nosologists, have distinguished continued fevers by a difference of duration, their distinctions are not well founded, and do not apply in such a manner as to be of any use. We think it agreeable to observation, and to the principles above laid down, (LXIII. LXIV.) to distinguish continued fevers, according as they shew either an inflammatory irritation, or a weaker reaction.

LXIX.

This distinction is the same with that of fevers into the INFLAMMATORY and NERVOUS; the distinction at present most generally received in Britain. To the first, as a genus, we have given the name of Synocha; to the second that of Typhus; and, little studious
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whether these names be authoris'd by the antient use of the same terms, we depend upon their being understood by the characters annexed to them in our Nosology, which we think are founded on observation.

LXX.

By these characters we think continued fevers may be distinguished in practice, and, if they may, the principles above laid down will be confirmed.

LXXI.

Besides these differences of continued fever, now mentioned, we are not certain of having observed any other that can be considered as fundamental. But the most common form of continued fevers, in this climate, seems to be a combination of the two genera mentioned; and we have therefore given such a genus a place in our Nosology, under the title of Synochus. We think, however, that the limits between the Synochus and Typhus, will be with difficulty assign'd; and we are dispos'd to believe, that the Synochus arises from the same causes as the Typhus, and is therefore only a variety of it.

LXXII.

The Typhus seems to be a genus comprehending several species. These, however, are not yet well ascertained by observation; and, in the mean time, we can perceive that many of the different cases observed do not imply any specific difference, and seem to be merely varieties, arising from a different degree of power in the cause, from different circumstances of the climate or season in which they happen, or, from different circumstances in the constitution of the persons affected.

LXXIII.

Some effects arising from these circumstances, require to be particularly explained. One is an unusual quantity
of

of bile appearing in the course of the disease. This abundance of bile may possibly attend some continued fevers, strictly so called; but it more commonly, for the reasons above explained, attends intermittents; and, we believe, it might have been enumerated among the marks distinguishing the latter kind of fevers from the former. But, though an unusual quantity of bile should appear with continued fevers, we consider it in this case, as in that of intermittents, as a coincidence only, owing to the state of the season, producing no different species or fundamental distinction, but merely a variety of the disease.

LXXIV.

Another effect of the circumstances occasionally varying the appearance of typhus, is a putrescent state of the fluids. Both the antients and the moderns, who are in general much disposed to follow the former, have distinguished fevers as putrid and non-putrid; but the notions of the antients, on this subject, were not sufficiently correct to deserve much notice; and it is only of late that the matter has been more accurately observed, and better explained.

From the dissolved state of the blood, as it appears when drawn out of the veins, or as it appears from the red blood's being disposed to be effused, and run off by various outlets, and from several other symptoms, we have now no doubt that a real putrescency of the fluids takes place in fevers. This putrescency, however, often attends intermittent, as well as continued fevers, and, of the continued kind, both the synochus and typhus, and all of them in very different degrees; so that, whatever attention it may deserve in practice, there is no fixing such limits to it as to admit of establishing a species under the title of PUTRID.

LXXV.

Besides differing by the circumstances already mentioned, fevers differ also by their being accompanied with symptoms which belong to diseases of the other orders

orders of pyrexia. This sometimes happens in such a manner, as to render it difficult to say which of the two diseases is the primary one. Commonly, however, it may be ascertained by the knowledge of the remote cause, and of the prevailing epidemic, or by observing the series and succession of symptoms.

LXXVI.

Most of our systems of physic have marked, as a primary one, a species of fever, under the title of **HECTIC**; but, as it is described, we have never seen it as a primary disease. We have constantly found it as a symptom of some topical affection, most commonly of an internal suppuration; and, as such, we shall consider it in another place.

LXXVII.

The distinction of the several cases of intermittent fever we have not prosecuted here, as we suppose it may be readily understood from what is said above, (XXV. XXVI. and XXVII.) and more fully from the Methodical Nosology, P. IV. Cl. I. Sect. I.

C H A P. IV.

OF THE REMOTE CAUSES OF
FEVER.

LXXVIII.

As fever has been considered as consisting chiefly in an increased action of the heart and arteries, physicians have supposed, that certain direct stimulants, fitted to produce this increased action, are the remote causes of fever.

fever. In many cases, however, there is no evidence of such stimulants being applied, and, in the cases in which they are applied, they either produce only a temporary frequency of the pulse, which cannot be considered as a disease; or, if they do produce a permanent febrile state, it is by the intervention of a topical inflammation, which produces a disease different from what is strictly called a fever.

LXXIX.

That direct stimulants are the remote causes of fever, seems farther improbable; because the supposition does not account for the phenomena attending the accession of fevers; and because other remote causes can with greater certainty be assigned.

LXXX.

As fevers are so generally epidemic, it is probable, that some matter floating in the atmosphere, and applied to the bodies of men, ought to be considered as the remote cause of fevers. These matters present in the atmosphere, and acting upon men, may be considered either as *MIASMATA*, or as *CONTAGIONS*.

LXXXI.

Miasmata may arise from various sources, and be of different kinds; but we know little of their variety or of their several effects. We know with certainty only one species of miasma, which can be considered as the cause of fever; and from the universality of this, it may be doubted if there be any other.

LXXXII.

The miasma, so universally the cause of fever, is that which arises from marshes or moist ground, acted upon by heat. So many observations have now been made with respect to this, in so many different regions of the earth, that there is neither any doubt of its being in

general a cause of fevers, nor of its being very universally the cause of intermittent fevers, in all their different forms. The similarity of the climate, season, and soil, in which intermittents arise, and the similarity of the diseases, arising in different regions, concur in proving that there is one common cause of these diseases, and that this is the marsh miasma.

What is the particular nature of this miasma, we know not ; nor do we certainly know whether or not it differs in kind : But it is probable that it does not ; and that it differs only in the degree of its power, or perhaps in its quantity, in a given space.

LXXXIII.

Contagions are next to be considered ; and these also have been supposed to be of great variety. It is possible they may be so ; but that they truly are, does not appear clearly from any thing we know at present. The number of genera and species of contagious diseases, of the class of pyrexiaë, at present known, is not very great. They belong to the order of Fevers, of Exanthemata, or of Profluvia. Whether there be any belonging to the order of Phlegmasiaë, is doubtful ; and, though it should be supposed, it will not much increase the number of contagious pyrexiaë. Of the contagious exanthemata and profluvia, the number of species is nearly ascertained ; and each of them is so far of a determined nature, that, though they have now been observed and distinguished for many ages, and in many different parts of the earth, they have been always found to retain the same character, and to differ only in circumstances, which may be imputed to season, climate, and other external causes, or to the peculiar constitution of the several persons affected. It is, therefore, probable, that, in each of these species, the contagion is of one specific nature, and that the number of contagious exanthemata or profluvia is hardly greater than the number of species taken notice of in our systems of nosology.

LXXXIV.

LXXXIV.

While the contagious exanthemata and profluvia are thus limited, if we should suppose the contagious pyrexia to be still of great and unlimited variety, it must be with respect to the genera and species of continued fevers. But, if we are right in limiting, as we have done, the genera of these fevers, it will be probable that the contagions which produce them are not of great variety; and this will be much confirmed, if we can render it probable, that there is one principal, perhaps one common source of such contagions.

LXXXV.

To this purpose it is now well known, that the effluvia constantly arising from the living human body, if long retained in the same place, without being diffused in the atmosphere, acquire a singular virulence, and, in that state, applied to the bodies of men, become the cause of a fever which is very contagious. The late observations on jail and hospital fevers have fully proved the existence of such a cause; and it is sufficiently obvious, that the same virulent matter may be produced in many other places. At the same time, the nature of the fevers arising renders it probable, that the virulent state of human effluvia is the common cause of such fevers, as they differ only in a state of their symptoms, which may be imputed to the circumstances of season, climate, &c. concurring with the contagion, and modifying its force.

LXXXVI.

With respect to these contagions, though we have spoken of them above, as of a matter floating in the atmosphere, it is proper to observe here, that they are never found to act but when they are near to the sources from whence they arise; that is, either near to the bodies of men, from which they immediately issue, or near to some substances, which, as having been near to the bodies of men, are imbued with their effluvia, and in which

which substance these effluvia are sometimes retained in an active state for a very long time.

The substances thus imbued with an active matter, may be called *Fomites*; and it appears to me probable, that contagions, as they arise from fomites, are more powerful than as they arise immediately from the human body.

LXXXVII.

We have now rendered it probable, that the remote causes of fevers (VIII.) are chiefly Miasmata or Contagions, and neither of them of great variety. We have supposed that miasmata are the cause of intermittents, and contagions the cause of continued fevers, strictly so named; but we cannot, with propriety, employ these general terms. The notion of contagion properly implies a matter arising from the body of man under disease; and that of miasma, a matter arising from other substances. But, as the cause of continued fevers may arise from other substances than the human body, and may, in such cases, be called a Miasma; and as other miasmata also may produce contagious diseases, it will be proper to distinguish the causes of fevers, by using the terms *Marsh*, or *Human Effluvia*, rather than the general ones Miasma, or Contagion.

LXXXVIII.

Though we have endeavoured to shew that fevers generally arise from marsh or human effluvia, we cannot, with any certainty, exclude some other remote causes, which are commonly supposed to have at least a share in producing fevers. We proceed, therefore, to inquire concerning those causes; and the first to be taken notice of is, the power of cold applied to the human body.

LXXXIX.

The operation of cold on a living body, is so different in different circumstances, as to be of difficult explanation;

tion; and this, therefore, is attempted with some diffidence.

Cold, in certain circumstances, has manifestly a sedative power. It can extinguish the vital principle entirely, either in particular parts, or in the whole body; and, considering how much the vital principle of animals depends upon heat, it cannot be doubted that the power of cold is always more or less directly sedative.

But it is equally manifest, that, in certain circumstances, cold proves a stimulus to the living body, and particularly to the sanguiferous system.

And, besides the sedative and stimulant powers of cold, it is manifestly also a powerful astringent, causing a contraction of the vessels on the surface of the body, and thereby producing paleness, and a suppression of perspiration. It is likewise probable that this constriction is in some measure communicated to the whole body, and that thereby the application of cold proves a tonic power with respect to the whole system.

XC.

These several effects of cold do not all take place at the same time, but may be variously combined. The stimulant power taking place, obviates the effects that might otherwise have arisen from the sedative, and, in some measure, those from the astringent power. But the stimulant and tonic powers of cold are commonly conjoined, and the former, perhaps, depend in part upon the latter.

XCI.

In what circumstances these different effects of cold especially take place, it is difficult to determine; but the morbid effects may be observed to be chiefly of four kinds. One is a general inflammatory diathesis of the system; which is commonly accompanied with rheumatism, or other phlegmasia. A second is a catarrhal affection; a third is gangrene; and a fourth is a proper fever. In
producing

producing this last, the operation of cold generally concurs with that of marsh or human effluvia.

In all its operations, cold seems to act more powerfully, in proportion as the body, and particularly the vigour of the circulation, is previously more weakened.

XCII.

Besides cold, there are other powers which seem to be the remote causes of fever, as Fear, Intemperance in Drinking, Excess in Venery, and other causes, which evidently weaken the system. But, whether any of these sedative powers be alone the remote cause of fever, or if they only operate either as they concur with the operation of marsh or human effluvia, or as they give an opportunity to the operation of cold, are questions not to be positively answered.

XCIII.

As we have now mentioned the chief of the remote causes of fevers, we can further observe, that these will arise more or less readily, according as miasmata and contagions are more or less powerful, or as they are more or less favoured by the concurrence of cold, and other sedative powers.

C H A P V.

OF THE PROGNOSIS OF FEVERS.

XCIV.

As fevers, by (XLVI. and LIII.) consist of both morbid and salutary motions and symptoms, the tendency of the disease to a happy or a fatal issue, or the prognostic in fevers, has been established, by marking the

the prevalence of the morbid or salutary symptoms ; and it might be properly so established, if we could certainly distinguish between the one and the other of these kinds of symptoms ; but the operation of the re-action, or salutary efforts of nature, in curing fevers, is still involved in so much obscurity, that I cannot explain the several symptoms of it so clearly as to apply them to the establishing of prognostics ; and this, I think, may be done better, by marking the symptoms which shew the tendency to death in fevers.

XCV.

This plan of the prognostics in fevers must proceed upon our knowledge of the causes of death in general, and in fevers more particularly.

The causes of death, in general, are either direct or indirect.

The first are, those which directly attack and destroy the vital principle, as lodged in the nervous system, or destroy the organs immediately connected with it.

The second, or the indirect causes of death, are those which interrupt such functions as are necessary to the circulation of the blood, and thereby necessary to the due continuance and support of the vital principle.

Of these general causes, those which operate more particularly in fevers seem to be, *first*, the *violence of re-action*, which, either by repeated violent excitements, destroys the vital power itself ; or, by its violence, destroys the organization of the brain necessary to the action of the vital principle ; or, by the same violence, destroys the organization of the parts more immediately necessary to the circulation of the blood. *Secondly*, The cause of death in fevers may be a *poison*, that is, a power capable of destroying the vital principle ; and this poison may be either the miasma or contagion which was the remote cause of the fever, or it may be a putrid matter generated in the course of the fever. In both cases, the operation of such a power appears either as acting chiefly on the nervous system, inducing the symptoms of debility ; or, as acting upon the mass of blood, inducing a putrescent state in it, and in the fluids derived from it.

XCVI.

From all this, we think the symptoms shewing the tendency to death in fevers, may be discovered by their being either the symptoms of *violent re-action*, of *great debility*, or of *a strong tendency to putrefaction in the fluids*; and, upon this supposition, we proceed now to mark those symptoms more particularly.

XCVII.

The symptoms which denote the violence of re-action, are, 1. The increased force, hardness, and frequency of the pulse. 2. The increased heat of the body. 3. Those symptoms which are the marks of a general inflammatory diathesis, and more especially those of a particular determination to the brain, lungs, or other important viscera. 4. Those which are the marks of the cause of violent reaction; that is, of a strong spasm, appearing in the suppression of excretions.

XCVIII.

The symptoms which denote a great degree of debility, are,

In the ANIMAL FUNCTIONS; 1. The weakness of the voluntary motions; 2. The irregularity of the voluntary motions, depending on their debility; 3. The weakness of sensation; 4. The weakness and irregularity of the intellectual operations.

In the VITAL FUNCTIONS; 1. The weakness of the pulse; 2. The coldness or shrinking of the extremities; 3. The tendency to a *deliquium animi* in an erect posture; 4. The weakness of respiration.

In the NATURAL FUNCTIONS; 1. The weakness of the stomach, as appearing in anorexia, nausea, and vomiting; 2. Involuntary excretions, depending upon a palsy of the sphincters; 3. Difficult deglutition, depending upon a palsy of the muscles of the fauces.

XCIX.

XCIX.

Lastly, The symptoms expressing the putrescent state of the fluids, are,

1. In the stomach, the loathing of animal food, nausea, and vomiting, great thirst, and a desire of acids.
2. In the mass of blood; A. the blood drawn out of the veins not coagulated as usual; B. hemorrhagy from different parts, without marks of increased impetus; C. effusions under the skin or cuticle, forming petechiæ, maculæ, and vibices; D. effusions of a yellow serum under the cuticle.
3. In the state of the excretions, frequent, loose, and fœtid stools; high-coloured turbid urine; fœtid sweats; and the fœtor of blisters.
4. The cadaverous smell of the whole body.

C.

These several symptoms have very often, each singly, a share in determining the prognostic; but more especially by their concurrence and particular combination with one another.

CI.

On the subject of the Prognostic, it is proper to observe, that many physicians have been of opinion, that there is something in the nature of fevers which generally determines them to be of a certain duration; and, therefore, that their terminations, whether in health or in death, happen at certain periods of the disease rather than at others. These periods are called the **CRITICAL DAYS**, carefully marked by Hippocrates and other ancient physicians, and also by many moderns of the greatest eminence in practice; whilst, at the same time, many moderns of no inconsiderable authority, deny their taking place in the fevers of these northern regions which we inhabit.

CII.

I am of opinion that the doctrine of the antients, and particularly that of Hippocrates, on this subject, was well founded; and that it is just and true, even with respect to the fevers of our climate.

CIII.

I am of this opinion, *first*, because I observe, that the animal œconomy is readily subjected to periodical movements, both from its own constitution, and from habits which are readily produced in it. *Secondly*, Because I observe periodical movements to take place in the diseases of the human body with great constancy and exactness, as in the case of intermittent fevers, and many other diseases.

CIV.

These considerations render it probable, that exact periodical movements may take place in continued fevers; and I think there is evidence of such movements actually taking place in these fevers.

CV.

The critical days, or those on which we suppose the termination of continued fevers especially to happen, are, the *third, fifth, seventh, ninth, eleventh, fourteenth, seventeenth, and twentieth*. We mark none beyond this last; because, though fevers are sometimes protracted beyond this period, it is, however, more rarely; and we have not a sufficient number of observations to ascertain the course of them; and further, because it is probable, that, in fevers long protracted, the movements become less exact and regular, and are therefore less easily observed.

CVI.

CVI.

That the days now mentioned are the critical days, is, we think, proved by the particular facts which are found in the writings of Hippocrates. From these, as collected from the several writings of that author by Mr. *de Haen*, it appears, that of one hundred and sixty-three instances of the termination of fevers which happened on one or other of the first twenty days of the disease, there are one hundred and seven, or more than two-thirds of the whole number, which happened on one or other of the eight days above mentioned; that none happened on the second or thirteenth day; and upon the eighth, tenth, twelfth, fifteenth, sixteenth, eighteenth, and nineteenth, there are but eighteen instances of terminations, or one ninth of the whole.

CVII.

As the terminations which happen on the seven days last mentioned, upon the whole, are few, and, upon any one of them, fewer than those which happened on any of our supposed critical days, there are, therefore, nine days which may be called NON-CRITICAL; while, on the other hand, the many terminations which happened on the seventh, fourteenth, and twentieth days, both give a proof of critical days in general, and that these are the chief of them. Hereafter we shall mention an analogy that renders the power of the other critical days sufficiently probable.

CVIII.

It appears further, that as, of the terminations which were final and salutary, not a tenth part happened on the non-critical days; and of the terminations which were final and fatal, though the greater number happened on the critical days, yet above a third of them happened on the non-critical; so it is probable, that the tendency of the animal œconomy is to observe the critical days, and that it is by the operation of some
violent

violent and irregular cause, the course of things is sometimes turned to the non-critical.

CIX.

What has been said, renders it sufficiently probable, that it is the general tendency of the animal œconomy to determine the periodical movements in fevers to be chiefly on the critical days. But, at the same time, we must acknowledge it to be a general tendency only, and that, in particular cases, many circumstances may occur to disturb the regular course of it. Thus, though the chief and more remarkable exacerbations in continued fevers happen on the critical days, there are truly exacerbations happening every day, and these, from certain causes, may become considerable and critical. Further, though intermittent fevers are certainly very strongly determined to observe a tertian or quartan period, we know, there are circumstances which prevent them from observing these periods exactly, and render them either anticipating or postponing so much, that the days of paroxysms come to be quite changed; and it is allowable to suppose, that the like may happen with respect to the exacerbations of continued fevers, and thereby disturb the regular appearance of critical days.

A particular instance of this occurs with respect to the sixth day of fevers. In the writings of Hippocrates, there are many instances of terminations happening on the sixth day; but it is not therefore reckoned among the critical days; because, of the terminations happening on that day, there is not one of a finally salutary kind; that the greater number are fatal; and that all the rest are imperfect, and followed with a relapse. All this shews, that some violent cause had, in these cases, produced a deviation from the ordinary course of nature; that the terminations on the sixth day are nothing more than anticipations of the seventh, and therefore a proof of the power of this last.

CX.

The doctrine of critical days has been much embarrassed by some dissonant accounts of it, which appear in the writings imputed to Hippocrates. But this may be accounted for from these writings being truly the works of different persons, and from the most genuine of them having suffered many corruptions; so that every thing, which is inconsistent with the facts above laid down, may be imputed to one or other of these causes.

CXI.

This further has especially disturbed the doctrine of critical days, that Hippocrates himself attempted, perhaps too hastily, to establish general rules, and to bring the doctrine to a general theory, drawn from Pythagorean opinions concerning the power of numbers. It is this which seems to have produced the doctrines of odd days, and of a quaternary and septenary period, which appear so often in the writings of Hippocrates. These, however, are inconsistent with the facts above laid down; and, indeed, as Asclepiades and Celsus have observed, are inconsistent in themselves.

CXII.

We think, therefore, the critical days above assigned are truly the critical days of Hippocrates, and may be consistently explained in the following manner.

CXIII.

From the universality of tertian or quartan periods in intermittent fevers, we cannot doubt of there being, in the animal œconomy, a tendency to observe such periods; and the critical days above mentioned are consistent with this tendency of the œconomy, as all of them mark either tertian or quartan periods. These periods, however, are not promiscuously mixed, but occupy constantly their several portions in the progress
of

of the disease; so that, from the beginning to the eleventh day, a tertian period takes place; and, from the eleventh to the twentieth, and perhaps longer, a quartan period is as steadily observed.

CXIV.

What determines the periods to be changed about the eleventh day, we have not clearly perceived; but the fact is certain; for there is no instance of any termination on the thirteenth, that is, the tertian period next following the eleventh; but, upon the fourteenth, seventeenth, and twentieth, which mark quartan periods, there are forty-three instances of terminations, and six only on all the intermediate days between these.

This prevalence of a quartan period leaves no room for doubting, that the twentieth, and not the twenty-first, is the critical day marked by Hippocrates, though the last is mentioned as such in the common edition of the Aphorisms, taken from an erroneous manuscript, which Celsus also seems to have copied.

CXV.

A consistency with the general tendency of the system renders the series of critical days we have mentioned, probably the true one; and the only difficulty that remains in finding what we have delivered to be the same with the genuine doctrine of Hippocrates is, the frequent mention of the fourth as a critical day. There are, indeed, more instances of terminations happening on this day than on some of those days we have asserted to be truly critical; but its inconsistency with the more general tendency, and some other considerations, lead us to refuse its being naturally a critical day, and to think, that the instances of terminations, which have really occurred on the fourth day, are to be reckoned among the other irregularities which happen in this matter.

CXVI.

CXVI.

We have thus endeavoured to support the doctrine of critical days, chiefly upon the particular facts to be found in the writings of Hippocrates: We might also produce many other testimonies of both antient and modern times; but we must own that some of these may be suspected to have arisen rather from a veneration of Hippocrates than from accurate observation.

CXVII.

With respect to the opinions of many moderns who refuse the prevalence of critical days, we think they are to be little regarded; for we know the observation of the course of continued fevers to be difficult and fallacious; and therefore the regularity of that course may have often escaped inattentive and prejudiced observers.

CXVIII.

Our own observations amount to this, that fevers with moderate symptoms, generally cases of the synocha, frequently terminate in nine days or sooner, and very constantly on one or other of the critical days which fall within that period; but, it is very rare, in this climate, that cases of either the typhus or synochus terminate before the eleventh day; and, when they do terminate on this day, it is for the most part fatally. When they are protracted beyond this time, I have very constantly found that their terminations were upon the fourteenth, seventeenth, or twentieth day.

In such cases, the salutary terminations are seldom attended with any considerable evacuation. A sweating frequently appears, but is seldom considerable; and I have hardly ever observed critical and decisive terminations, attended with vomiting, evacuations by stool, or remarkable changes in the urine. The solution of the disease is chiefly to be discerned from some return of sleep and appetite, the ceasing of delirium, and an abatement of the frequency of the pulse. By these symptoms

we can often mark a crisis of the disease; but it seldom happens suddenly and entirely, and it is most commonly from some favourable symptoms on one critical day, that we can announce a more entire solution on the next following.

Upon the whole, I am persuaded, that, if observations shall be made with attention, and without prejudice, I shall be allowed to conclude with the words of the learned and sagacious Gaubius, ‘Fallor, ni sua confiterit HIPPOCRATI auctoritas, GALENO fides, NATURÆ virtus et ordo.’

C H A P. VI.

OF THE METHOD OF CURE IN FEVERS.

S E C T. I.

OF THE CURE OF CONTINUED FEVERS.

CXIX.

As it is allowed, that, in every fever which has its full course, there is an effort of nature of a salutary tendency, it might be supposed that we should leave the cure of fevers to the operations of nature, or that our art should be only directed to support and regulate these operations, and that we should form our indications accordingly. This plan, however, we cannot adopt, because the operations of nature are very precarious, and are not so well

well understood as to enable us to regulate them properly. We think, that trusting to these operations has often given occasion to a negligent and inert practice; and we believe that an attention to the operations of nature may be often superseded by art.

CXX.

Our plan, therefore, shall be, to consider the proximate cause of fever, and to form our indications of cure upon the means of obviating the tendency to death in fevers.

From what has been formerly laid down on the subject of the prognostic, we form three general indications in the cure of continued fevers, and the one or other of these is to be employed as the circumstances of the fever (XCVII. XCVIII. or XCIX.) shall direct.

The first is, to moderate the violence of re-action.

The second is, to remove the causes, or obviate the effects of debility. And,

The third is, to obviate or correct the tendency of the fluids to putrefaction.

CXXI.

The first indication may be answered, that is, the violence of re-action may be moderated,

1. By all those means which diminish the action of the heart and arteries.

2. By those means which take off the spasm of the extreme vessels, which we suppose to be the chief cause of violent re-action.

CXXII.

The action of the heart and arteries may be diminished,

1. By avoiding or moderating those irritations which, in one degree or other, are almost constantly applied to the body.

2. By the use of certain sedative powers.

G

3. By

3. By diminishing the tension and tone of the arterial system.

CXXIII.

The irritations (CXXII. 1.) almost constantly applied are, the impressions made upon our senses; the exercise of the body and mind; and the taking in of aliments. The avoiding of these as much as possible, or the moderating of their force, makes what is properly called the ANTIPHLOGISTIC REGIMEN, proper to be employed in almost every continued fever.

CXXIV.

The conduct of this regimen is to be directed by the following rules and considerations.

1. Impressions on the external senses, as stimulant to the system, and a chief support of its activity, should be avoided as much as possible; those, especially, of more constant application, those of a stronger kind, and those which give pain and uneasiness.

No impression is to be more carefully guarded against than that of external heat; and, at the same time, every other means of increasing the heat of the body is to be shunned. Both these precautions are to be observed as soon as a hot stage is fully formed, and to be attended to during its continuance, except in certain cases, where a determination to sweating is necessary, or where the stimulant effects of heat may be compensated by circumstances which determine it to produce a relaxation and revulsion.

2. All motion of the body is to be avoided, especially that which requires the exercise of its own muscles; and that posture of the body is to be chosen which employs the fewest muscles, and which keeps none of them long in a state of contraction. Speaking, as it accelerates respiration, is particularly to be avoided.

It is to be observed, that every motion of the body is more stimulant, in proportion as the body is weaker.

3. The exercise of the mind also is a stimulus to the body; and therefore, all impressions which lead to thought,

thought, and those, especially, which may excite emotion or passion, are to be carefully avoided.

With respect to avoiding impressions of all kinds, an exception is to be made in the case of a delirium coming on, when the presenting of accustomed objects may interrupt and divert the irregular train of ideas then arising in the mind.

4. The presence of recent aliment in the stomach proves always a stimulus to the system, and ought, therefore, to be as moderate as possible. A total abstinence for some time may be of service; but, as this cannot be long continued with safety, we must avoid the stimulus of aliment, by chusing that kind which gives the least. We suppose that alimentary matters are more stimulant, according as they are more alkalescent; and, this leads to avoid all animal, and to use only vegetable food.

Our drinks also may prove stimulant; and therefore, aromatic and spirituous liquors are to be avoided; and, in answering the present indication, all fermented liquors, except those of the lowest quality, are to be abstained from. Watery liquors, rendered more grateful by the addition of acids, we shall have occasion hereafter to mention as a remedy.

CXXV.

Besides those stimulant powers more constantly applied, there are others, which, though occasional only, yet, as they commonly accompany fevers, must be attended to and removed.

One is, the sense of thirst, which, as a powerful stimulus, in one way or other, ought always to be removed.

Another stimulus frequently arises from crudities, or corrupted humours in the stomach; and it is to be removed by vomiting, dilution, or the use of acids.

A third stimulus often arises from the preternatural retention of fœces in the intestines; and ought to be removed by frequent laxative clysters.

A fourth stimulus to be constantly suspected in fevers is, a general acrimony of the fluids, as produced by the
increase

increase of motion and heat, joined with an interruption of the excretions. This acrimony is to be obviated or removed by the taking in of large quantities of mild antiseptic liquors.

CXXVI.

The avoiding of irritation in all these particulars, (CXXIII. and CXXIV.) constitutes the antiphlogistic regimen absolutely necessary for moderating the violence of re-action; and, if we mistake not, is proper in every circumstance of continued fevers, as the employment of stimulants is generally uncertain, and the measure of the application of those above mentioned is not easily ascertained.

CXXVII.

A second head of the means (CXXI. I.) of moderating the violence of re-action, comprehends certain sedative powers, which may be employed to diminish the activity of the whole body, and particularly that of the sanguiferous system.

The first of these to be mentioned is, the application of cold. Heat is the chief support of the activity of the animal system; and the system is, therefore, provided, in itself, with a power of generating heat. But, at the same time, we observe, that this would go to excess, were it not constantly moderated by a cooler temperature in the surrounding atmosphere. When, therefore, the generating power of heat in the system is increased, as is commonly the case in fevers, it is necessary not only to avoid all further means of increasing it, but it seems proper also to apply air of a cooler temperature; or, at least, to apply it more entirely and freely than in a state of health. Some late experiments in the small-pox, and in continued fevers, shew, that the free admission of cool air to the body is a powerful remedy in moderating the violence of re-action; but what is the mode of its operation, to what circumstances of fever it is peculiarly adapted, or what limitations it requires,

requires, we shall not venture to determine, till we shall be more particularly instructed by further experience.

CXXVIII.

A second sedative power which may be employed in fevers, is that of certain medicines known in the writings on the *Materia Medica*, under the title of REFRIGERANTS. The chief of these are acids of all kinds, when sufficiently diluted, and which are, in several respects, remedies adapted to continued fevers. Those especially in use are, the Vitriolic and Vegetable; and, on many accounts, we prefer the latter.

CXXIX.

Another set of refrigerants are, the Neutral Salts, formed of the vitriolic, nitrous, or vegetable acids, with alkalines, either fixed or volatile. All these neutrals, while they are dissolved in water, generate cold; but, as that cold ceases soon after the solution is finished, and as the salts are generally exhibited in a dissolved state, their refrigerant power in the animal body does not at all depend upon their power of generating cold with water. The neutral chiefly employed as a refrigerant, is Nitre; but all the others, compounded as above mentioned, partake more or less of the same quality.

CXXX.

Besides these neutrals, some metallic salts also have been employed as refrigerants in fevers; and particularly the Sugar of Lead. We think the refrigerant powers of this are not well ascertained; and its deleterious qualities are too well known to admit of its being freely used.

CXXXI.

The third general head (CXXII. 3.) of the means to be employed for moderating the violence of re-action, comprehends

comprehends the means of diminishing the tension, tone, and activity of the sanguiferous system. As the activity of this system depends, in a great measure, upon the tone, and this again upon the tension of the vessels, given to them by the quantity of fluids they contain, it is evident that the diminution of the quantity of these must diminish the activity of the sanguiferous system.

CXXXII.

The quantity of fluids contained in the sanguiferous system may be diminished most conveniently by the evacuations of blood-letting and purging.

CXXXIII.

Nothing is more evident, than that blood-letting is one of the most powerful means of diminishing the activity of the whole body, and especially of the sanguiferous system; and it must therefore be the most effectual means of moderating the violence of re-action in fevers. Taking this as a fact, we omit inquiring into its mode of operation, and shall only consider in what circumstances of fevers it is most properly to be employed.

CXXXIV.

When the violence of re-action, and its constant attendant, a phlogistic diathesis, are sufficiently evident; when these constitute the principal part of the disease, and may be expected to continue through the whole of it as in the cases of synocha; then blood-letting is the principal remedy, and may be employed as far as the symptoms of the disease may seem to require, and the constitution of the patient will bear. It is, however, to be attended to, that a greater evacuation than is necessary, may occasion a slower recovery, may render the person more liable to a relapse, or may bring on other diseases.

CXXXV.

CXXXV.

In the case of synocha, therefore, there is little doubt about the propriety of blood-letting; but there are other cases of fever, as the synochus, in which a violent reaction and phlogistic diathesis appear, and prevail during some part of the course of the disease; while, at the same time, these circumstances do not constitute the principal part of the disease, nor are to be expected to continue during the whole course of it; and we know, that, in many cases, the state of violent re-action is to be succeeded, sooner or later, by a state of debility, from the excess of which the danger of the disease is chiefly to arise. It is, therefore, necessary, that, in many cases, blood-letting should be avoided; and even although, during the inflammatory state of the disease, it may be proper, the evacuation should not be so large as to increase the state of debility which is to follow.

CXXXVI.

The employing, therefore, of blood-letting, in certain fevers, requires much discernment and skill, and is to be governed by the consideration of the following circumstances:

1. The nature of the prevailing epidemic.
2. The nature of the remote cause.
3. The season and climate in which the disease occurs.
4. The degree of phlogistic diathesis present.
5. The period of the disease.
6. The age, vigour, and plethoric state of the patient.
7. The patient's former diseases and habits of blood-letting.
8. The appearance of the blood drawn out.
9. The effects of the blood-letting that may have been already practised.

CXXXVII.

When, by the consideration of these circumstances, blood-letting is determined to be necessary, we must observe,

serve, that it is more effectual, as the blood is more suddenly drawn off, and as the body is, at the same time, more free from all irritation, and, therefore, when it is in a posture in which the fewest muscles are in action.

CXXXVIII.

Another evacuation by which the quantity of fluids contained in the body can be considerably diminished, is that of purging.

CXXXIX.

If we consider the quantity of fluids constantly present in the cavity of the intestines, and the quantity which may be drawn from the innumerable excretories that open into this cavity, it will be obvious that a very great evacuation can be made by purging; and, if this be done by a stimulus that is not at the same time communicated to the rest of the body, it may, by emptying both the cavity of the intestines, and the arteries which furnish the excretions poured into it, induce a considerable relaxation in the whole system; and is therefore suited to moderate the violence of re-action in fevers.

CXL.

But it is to be observed, that, as the fluid drawn from the excretories opening into the intestines is not all drawn immediately from the arteries, and as what is even more immediately drawn from these, is drawn off slowly; so the evacuation will not, in proportion to its quantity, occasion such a sudden depletion of the red vessels as blood-letting does; and therefore, cannot operate so powerfully in taking off the phlogistic diathesis of the system.

CXLI.

At the same time, the evacuation may induce a considerable degree of debility; and, therefore, in those cases

cases in which a dangerous state of debility is likely to occur, purging is to be employed with a great deal of caution; and this caution is more difficult to be observed than in the case of blood-letting.

CXLII.

As we shall observe presently, that it is of great importance in the cure of fevers, to restore the determination of the blood to the vessels on the surface of the body, so purging, as in some measure taking off that determination, seems to be an evacuation not well adapted to the cure of fevers.

CXLIII.

If, notwithstanding these doubts, (CXL. CXLI. and CXLII.) it shall be asserted, that purging, from the exhibition of purgatives, has often been useful in fevers, I would maintain, that this has not happened from a large evacuation; and, therefore, not by moderating the violence of re-action, except in the case of a more purely inflammatory fever. In other cases, we have seen a large evacuation by purging, of mischievous consequence; and if, upon occasion, a more moderate evacuation has appeared to be useful, we alledge that it has been, only by taking off the irritation of retained fœces, or by evacuating corrupted humours which happened to be present in the intestines: And, indeed, for both these purposes, frequent laxatives may be properly employed. In intermittent fevers, also, to relieve the congestions formed in the abdominal viscera, we judge purgatives to be often necessary.

CXLIV.

Another set of means, (CXXI. 2.) for moderating the violence of re-action in fevers, are those suited to take off the spasm of the extreme vessels, which we believe to be the irritation that chiefly supports the re-action.

CXLV.

For taking off this spasm of the extreme vessels, the means to be employed are either internal or external.

CXLVI.

The internal means (CXLV.) are,

1. Those which determine the force of the circulation to the extreme vessels on the surface of the body, and, by restoring the tone and activity of these vessels, overcome the spasm on their extremities.

2. Those medicines which have the power of taking off spasm in any part of the system, and which are known under the title of ANTISPASMODICS.

CXLVII.

Those remedies which are fit to determine to the surface of the body, are,

1. DILUENTS.
2. NEUTRAL SALTS.
3. SUDORIFICS.
4. EMETICS.

CXLVIII.

Water enters, in a large proportion, into the composition of all the animal fluids, and a large quantity of it is always diffused through the whole of the common mass. In a sound state, the fluidity of the whole mass depends upon the quantity of water present in it. Water, therefore, is the proper diluent of our mass of blood, and other fluids are diluent only in proportion to the quantity of water they contain.

CXLIX.

Water may be said to be the vehicle of the several excreted fluids; and, in a healthy state, the fulness of the extreme vessels, and the quantity of excretion, are
in

in proportion to the quantity of water present in the body. But in fever, though the excretions are in some measure interrupted, they continue in such quantity as to exhale the more fluid parts of the blood; and, while a portion of them is, at the same time, necessarily retained in the larger vessels, the smaller and the extreme vessels, both from the deficiency of fluid, and their own contracted state, are less filled, and therefore allowed to remain in that condition.

CL.

To remedy this contracted state, nothing is more necessary than a large supply of water, or watery fluids, taken in by drinking, or otherwise; for, as any superfluous quantity of water is forced off by the several excretories, such a force applied may be a means of dilating the extreme vessels, and of overcoming the spasm affecting their extremities.

CLI.

Accordingly, the throwing in of a large quantity of watery fluids has been, at all times, a remedy much employed in fevers; and, in no instance more remarkably, than by the Spanish and Italian physicians, in the use of what they call the *Diaeta aquea*.

CLII.

This practice consists in taking away every other kind of aliment and drink, and in giving in divided portions every day, for several days together, six or eight pounds of plain water, generally cold, but sometimes warm.

All this, however, is to be done only after the disease has continued for some time, and, at least, for a week.

CLIII.

A second means of determining to the surface of the body, is by the use of neutral salts. (CXLVII. 2.) These neutrals, in a certain dose, taken into the stomach, produce,

produce, soon after, a sense of heat upon the surface of the body; and, if the body be covered close, and kept warm, a sweat is readily brought out. The same medicines taken during the cold stage of a fever, very often put an end to the cold stage, and bring on a hot one; and they are also remarkable for stopping the vomiting which so frequently attends the cold stage of fevers. All this shews, that neutral salts have a power of determining the blood to the surface of the body, and may, therefore, be of use in taking off the spasm which subsists there in fevers.

CLIV.

The neutral most commonly employed in fevers, is that formed of an alkali, with the native acid of vegetables; but all the other neutrals have more or less of the same virtue; and perhaps some of them, particularly the ammoniacal salts, possess it in a stronger degree.

CLV.

As cold water taken into the stomach, often shews the same diaphoretic effects with the neutral salts, it is probable that the effect of the latter depends upon their refrigerant powers mentioned above. (CXXIX.) What is the effect of the neutral salts, given when they are forming, and in a state of effervescence?

CLVI.

A third means of determining to the surface of the body, and taking off the spasm subsisting there, is by the use of sudorifics, and of sweating. (CXLVII 3.)

CLVII.

The propriety of this remedy has been much disputed; and specious arguments may be adduced both for and against the practice. In favour of the practice, it may be said,

I. That

1. That, in healthy persons, in every case of increased action of the heart and arteries, a sweating takes place, and is, seemingly, the means of preventing the bad effects of such increased action.

2. That, in fevers, their most usual solution and termination is by spontaneous sweating.

3. That, even when excited by art, it has been found useful, at certain periods, and in certain species of fever.

CLVIII.

Upon the other hand, it may be urged against the practice of sweating,

1. That in fevers, as a spontaneous sweating does not immediately come on, there are some circumstances different from those in the state of health, and which may render it doubtful whether the sweating can be safely excited by art.

2. That, in many cases, the practice has been attended with bad consequences. The means commonly employed have a tendency to produce an inflammatory diathesis; which, if not taken off by the sweat succeeding, must be increased with much danger. Thus sweating, employed to prevent the accessions of intermitting fevers, has often changed them into a continued form, which is always dangerous.

3. The utility of the practice is doubtful, as sweating, when it happens, does not always give a final determination, as must be manifest in the case of intermittents, and in many continued fevers, which are sometimes, in the beginning, attended with sweatings which do not prove final; and, on the contrary, whether they be spontaneous or excited by art, seem often to aggravate the disease.

CLIX.

From these considerations, it is very doubtful, if the practice of sweating can be admitted very generally; but, at the same time, it is also doubtful, if the failure of the practice, or the mischiefs said to have arisen from it, have not been owing to the improper conduct of the practitioner.

practitioner. With respect to the last, it is almost agreed among physicians,

1. That sweating has been generally hurtful, when excited by stimulant, heating, and inflammatory medicines.

2. That it has been hurtful, when excited by much external heat, and continued with a great increase of the heat of the body.

3. That it is always hurtful, when it does not relieve, and rather increases the frequency and hardness of the pulse, the anxiety and difficulty of breathing, the headach, and delirium.

4. That it is always hurtful, if it is urged, when the sweat is not fluid, and when it is partial, and on the superior parts of the body only.

CLX.

In these cases, it is probable, that either an inflammatory diathesis is produced, which increases the spasm on the extreme vessels, or that, from other causes, the spasm is too much fixed to yield easily to the increased action of the heart and arteries; and, upon either supposition, it must be obvious, that urging the sweat may produce determinations to some of the internal parts, with very great danger.

CLXI.

Though the doubts started (CLVIII.) are to be attended to; and though the practices (CLIX.) have been found hurtful, and are therefore to be rejected, it still remains true,

1. That sweating has certainly been often useful in preventing the accession of fevers, when the times of it have been certainly foreseen, and a proper conduct employed.

2. That, even after fevers have in some measure come on, sweating has interrupted their progress, when properly employed, either at the very beginning of the disease, or during its approach and gradual formation.

3. That,

3. That, even after pyrexia have continued for some time, sweating has been successfully employed in curing them, as particularly in the case of rheumatism.

4. That certain fevers, produced by a very powerful sedative contagion, have been generally treated most successfully by sweating.

CLXII.

These instances (CLXI.) are in favour of sweating, but give no general rule; and it must be left to further experience to determine, how far any general rule can be established in this matter. In the mean time, if the practice of sweating is to be attempted, we can venture to lay down the following rules for the conduct of it,

1. That it should be excited without the use of stimulant, inflammatory medicines.

2. That it should be excited with as little external heat, and with as little increase of the heat of the body as possible.

3. That, when excited, it should be continued for a due length of time, not less than twelve hours, and sometimes for twenty-four or forty-eight hours; always, however, supposing that it proceeds without the circumstances (CLIX. 3. 4.)

4. That, for some part of the time, and as long as the person can easily bear, it should be carried on without admitting of sleep.

5. That it should be rendered universal over the whole body; and, therefore, particularly, that care be taken to bring the sweating to the lower extremities.

6. That the practice should be rendered safer by moderate purging, excited at the same time.

7. That it should not be suddenly checked by cold any how applied to the body.

CLXIII.

When attention is to be given to these rules, the sweating may be excited, 1. By warm bathing, or a fomentation of the lower extremities. 2. By frequent draughts of tepid liquors, chiefly water, rendered more grateful

grateful by the addition of a light aromatic, or more powerful, by that of a small quantity of wine. 3. By giving some doses of neutral salts. 4. Most effectually, and perhaps most safely, by a large dose of an opiate, joined with a portion of neutral salts, and of an emetic.

CLXIV.

The fourth means of determining to the surface of the body, and thereby taking off the spasm affecting the extreme vessels. (CXLVII. 4.) is by the use of emetics.

CLXV.

Emetics, and particularly antimonial emetics, have been employed in the cure of fevers, ever since the introduction of chemical medicines; but, for a long time, they were employed by chemists and chemical practitioners only; and, although of late their use has become very general, their efficacy is still disputed, and their manner of operating is not commonly explained.

CLXVI.

Vomiting is, in many respects, useful in fevers; as it evacuates the contents of the stomach; as it emulges the biliary and pancreatic ducts, and evacuates the contents of the duodenum, and perhaps also of a larger portion of the intestines; as it agitates the whole of the abdominal viscera, it expedes the circulation in them, and promotes their several secretions; and, lastly, as it agitates also the viscera of the thorax, it has like effects there. All these several effects are procured with advantage, in many cases and circumstances of fever, but do not properly fall under our view here, where we are to consider only the effect of vomiting in determining to the surface of the body.

CLXVII.

This effect we do not impute to the exercise of vomiting in agitating the whole body, but to the particular

ticular operation of emetics upon the muscular fibres of the stomach, whereby they excite the action of the extreme arteries on the surface of the body, and thereby effectually determine the blood to these vessels, remove the atony, and take off the spasm affecting them.

CLXVIII.

That such is the power of emetics, will appear from the several considerations mentioned above (XLIII.); and, therefore, that they are remedies well suited to the cure of fevers.

CLXIX.

Emetics, for that purpose, are administered in two different ways; that is, either in such doses as may excite full and repeated vomitings, or in such doses as may excite sickness and nausea only, with little or no vomiting at all.

CLXX.

Full vomiting is best suited to the several purposes mentioned (CLXVI.); and is also well suited to determine to the surface of the body, and thereby to obviate the atony and spasm which lay the foundation of fever. Thus, vomiting excited a little before the expected accession of the paroxysm of an intermittent, has been found to prevent the paroxysm altogether. It has been observed also, that, when contagion has been applied to a person, and first discovers its operation, a vomit given will prevent the fever, which otherwise was to have been expected.

CLXXI.

These are advantages to be obtained by exciting vomiting at the first approach of fevers, or of the paroxysms of fevers; and they may also be applied after fevers are formed, to take off, perhaps entirely, the atony and spasm, or, at least, to moderate these, so that the fever may proceed more gently and safely.

CLXXII.

It is seldom, however, that vomiting is found to produce a final solution of fevers; and, after they are once formed, it is commonly necessary to repeat the vomiting several times; but this is attended with inconveniency, and sometimes with disadvantage. The operation of full vomiting is transitory, and the exercise of vomiting is a debilitating power; and, therefore, when the vomiting does not remove the atony and spasm very entirely, it may give occasion to their recurrence with greater force.

CLXXIII.

For these reasons, after fevers are fully formed, physicians have thought proper to employ emetics in nau-seating doses only. These are capable of exciting the action of the extreme vessels, and their operation is more permanent. At the same time, they often shew their power by exciting some degree of sweat, and their operation is rendered more safe, by their commonly producing some evacuation by stool.

CLXXIV.

These are the advantages to be procured by nau-seating doses of emetics; and it only remains to mention, what are the medicines most fit to be employed; what are the most proper times for exhibiting, and what the best manner of administering them.

CLXXV.

The emetics chiefly in use at present, are, Ipecacuanha and Antimony. The first may be employed for every purpose of emetics, particularly those mentioned (CLXVI.); and also, either in larger or smaller doses, for determining to the surface of the body; but, even in very small doses, it so readily excites vomiting, as to be, with difficulty, employed for the purpose of nau-seating only; and, however employed, there is reason
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to suspect, that its effects are less permanent, and less powerfully communicated from the stomach to the rest of the system, than those of Antimony.

CLXXVI.

This last, therefore, is generally preferred; and its preparations, seemingly various, may all be referred to two heads; one comprehending those in which the reguline part is in a condition to be acted upon by acids; and, therefore, on meeting with acids in the stomach, becomes active; and another, comprehending those preparations in which the reguline part is already joined with an acid, rendering it active.

CLXXVII.

Of each kind there are great numbers, but not differing essentially from one another. It will be enough for us to compare the Calx Antimonii Nitrata of the Edinburgh Dispensatory, with the Emetic Tartar of the same. Which of these is best suited to the cure of fevers, as above explained, seems doubtful; but it appears to me, that, though the first may have some advantages from its slower operation, and may thereby seem to be more certainly sudorific and purgative, the uncertainty of its dose renders it inconvenient, and has often given occasion to the timid to be disappointed, and to the bold to do mischief. While, on the other hand, the dose of the Emetic Tartar can be exactly ascertained; and we think it may be exhibited in such a manner, as to produce all the advantages of the other.

CLXXVIII.

Whichsoever of these preparations be employed, we think the most proper time for exhibiting them, is the time of accessions, or a little before it, when that can be certainly known. In continued fevers, the exacerbations are not always very observable; but there is reason to believe, that one commonly happens about noon, or soon after it, and another in the evening; and that

that these, therefore, are the most proper times for exhibiting emetics.

CLXXIX.

With respect to the manner of administration, that of the Calx Nitrata is simple, as the whole of what is thought a proper dose is given at once, and no more can be properly given till the next accession. The administration of the Emetic Tartar is different. It is to be given in small doses, not sufficient to excite vomiting; and these doses are to be repeated, after short intervals, for several times, till sickness, nausea, and some, but not much, vomiting, come on. The difference of administration must depend upon the dose, and the length of the interval at which it is given. If it be intended that the medicine should certainly operate by stool, the doses are made small, and the intervals long. On the contrary, when vomiting is proper, or when much purging ought to be avoided, and, therefore, some vomiting must be admitted, the doses are made larger, the intervals shorter.

CLXXX.

With respect to both kinds of preparations, the repetition is to be made at the times of accession, but not very often; for, if the first exhibitions, duly managed, have little effect, it is seldom that the after exhibitions have much; and it sometimes happens, that the repeated vomiting, and especially repeated purging, does harm, by weakening the patient.

CLXXXI.

The other set of internal medicines, which we suppose may be useful in taking off the spasm of the extreme vessels, are those named Antispasmodic. How many of these may be properly employed, I am uncertain, and their mode of operation is involved in great obscurity. It is certain, however, that opium, camphor, musk, and perhaps some others, have been employed in fevers
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with advantage ; but, the circumstances in which they are especially proper and safe, I find it difficult to ascertain ; and, therefore, cannot venture here to lay down any general doctrine concerning them.

CLXXXII.

The external means (CXLV.) suited to take off the spasm of the extreme vessels, are BLISTERING and WARM BATHING.

CLXXXIII.

What are the effects of blistering, so frequently employed in fevers, is not yet agreed upon among physicians ; and many different opinions have been maintained on this subject, drawn not only from reasoning, but also from pretended experience. We must not, however, enter into controversy ; but shall deliver our own opinion in a few words.

CLXXXIV.

I think, that the small quantity of cantharides absorbed from a blistering plaster, is not sufficient to change the consistence of the mass of blood ; and, therefore, that such a quantity can neither do good, by resolving phlogistic lentor, if it exists, nor do harm, by increasing the dissolution of the blood arising from a putrid tendency in it. We therefore neglect, entirely, the effects of cantharides upon the fluids.

CLXXXV.

The inflammation produced by the application of cantharides to the skin, affords a certain proof of their stimulant power ; but, in many persons, the effect of that stimulus is not considerable ; in many it is not communicated to the whole system ; and, even when it does take place in the whole system, it seems to be taken off, very entirely, by the effusion and evacuation of serum from the blistered part. I think, therefore, that
neither

neither much good is to be expected, nor much harm to be apprehended, from the stimulant power of blistering; and the certainty of this conclusion is established, by the great benefit arising from the proper practice of blistering in inflammatory diseases.

CLXXXVI.

Much has been imputed to the evacuation made by blistering; but it is never so considerable as to affect the whole system; and therefore can, neither by a sudden depletion, relax the sanguiferous system, nor, by any revulsion, affect the general distribution of the fluids.

CLXXXVII.

The evacuation, however, is so considerable as to affect the neighbouring vessels; and the manifest utility of blistering near the part affected, in inflammatory diseases, leads us to think, that blistering, by deriving to the skin, and producing an effusion there, relaxes the spasm of the deeper seated vessels. It is in this manner we suppose that the tumour of a joint, from an effusion into the cellular texture under the skin, takes off the rheumatic pain formerly affecting that joint.

CLXXXVIII.

Analogous to this, we think the good effect of blistering in continued fevers, arises from its relaxing the spasm of the extreme vessels, by a communication of the blistered part with the rest of the skin; and this is illustrated by the effect of blistering in colic and dysentery.

CLXXXIX.

We think, that blistering may be employed at any period of continued fevers; but that it will be of most advantage in the advanced state of such fevers, when, the re-action being weaker, all ambiguity from the stimulant power of blistering is removed, and when it may

may best concur with other circumstances tending to a final solution of the spasm.

CXC.

From the view of this matter, given in (CLXXXVI. CLXXXVII.) it will appear, that the part of the body to which blisters ought to be applied, is indifferent, except upon the suspicion of topical affection, when the blistering is to be made as near as possible to the part affected.

CXCI.

Whether SINAPISMS, and other RUBEFACIENTIA, act in a manner analogous to what we have supposed of blistering, may be doubtful; but their effects in rheumatism and other inflammatory diseases, render it probable.

CXCII.

The other external means of taking off the spasm of the extreme vessels, is Warm Bathing. This was frequently, and in different circumstances, employed by the antients; but has, till very lately, been neglected by modern physicians. As the heat of the bath stimulates the extreme vessels, and, with the concurrence of moisture, also relaxes them, it seems to be a safe stimulus, and well suited to take off the spasm affecting these vessels.

CXCIII.

It may be applied to the whole body, by immersion; but this is, in many respects, inconvenient; and, whether some of the inconveniences of immersion might not be avoided by a vapour-bath, we have not learned from experience; but we know, from much experience, that most of the purposes of warm bathing can be obtained, by a fomentation of the legs and feet, if properly administered,

ministered, and continued for a due length of time, not less than an hour.

CXCIV.

The marks of the good effects of such a fomentation, are, the patient's bearing it easily, its relieving delirium, and inducing sleep.

CXC.V.

We have now considered the several means of satisfying the first general indication in the cure of fevers, and proceed to the second, (CXX. 2.) which is to remove the cause, or obviate the effects of debility.

CXC.VI.

Most of the sedative powers inducing debility, cease to act soon after they have been first applied; and, therefore, the removing them is not an object of our present indication. There is only one which may be supposed to continue to act for a long time, and that is, the contagion applied; but we know nothing in the nature of contagion that can lead us to any measures for removing or correcting it. We know only its effects as a sedative power inducing debility, or as a ferment inducing a tendency to a putrefaction in the fluids. The obviating the last will be considered under our third general indication, and the first only is to be considered here.

CXC.VII.

The debility induced in fevers by contagion, or other causes, appears, especially, in the weaker energy of the brain; but in what this consists, or how it may be directly restored, we do not well know; but as Nature, seemingly for this purpose, excites the action of the heart and arteries, we ascribe the continuance of debility to the weaker re-action of the sanguiferous system; and the means, therefore, which we employ for obviating debility, are immediately directed to support and increase the

the action of the heart and arteries ; and the remedies employed are, TONICS or STIMULANTS.

CXCVIII.

In contagious diseases, we know, both from the effects which appear, and from dissections, that the tone of the heart and arteries is considerably diminished ; and that tonic remedies, therefore, are properly indicated. We are to consider them as of two kinds ; the first being the power of cold ; the second that of tonic medicines.

CXCIX.

The power of cold, as a tonic, we have mentioned above (LXXXIX.) ; and it is employed, in fevers, in two ways ; either as thrown into the stomach, or as applied to the surface of the body.

CC.

As we have said above, that the tonic power of cold can be communicated from any one part to every other part of the system, so it will be readily allowed, that the stomach is a part as fit for this communication as any other ; and that cold drink, therefore, taken into the stomach, may prove an useful tonic in fevers.

CCI.

This, the experience of all ages has confirmed ; but, at the same time, it has been frequently observed, that, in certain circumstances, cold drink, taken into the stomach, has proved very hurtful ; and, therefore, that the use of cold drink in fevers requires some limitations. What these limitations should be, and what are all the circumstances which may forbid the use of cold drink, is difficult to determine ; but it seems clearly forbidden, in all cases where a phlogistic diathesis prevails in the system, and more especially when there are topical affections of an inflammatory nature.

CCII.

The other method of employing cold as a tonic, is, by applying it to the surface of the body. The application of cold air to the surface of the body, as a refrigerant power fit to moderate the violence of reaction, we have spoken of above (CXXVII.); but probably it may here be considered also properly as a tonic, and useful in cases of debility.

CCIII.

Not only cool air, but cold water also, may be applied to the surface of the body, as a tonic. The ancients frequently applied it with advantage, to particular parts, as a tonic; but it is a discovery of modern times, that, in the case of putrid fevers, attended with much debility, the body may be washed all over with cold water.

CCIV.

This was first practised at Breslaw in Silesia, as appears from a dissertation, under the title of *Epidemia verna quae Wratislaviam, anno 1737, afflixit*, to be found in the appendix to the *Acta nat. curios.* vol. X. And from other writers it appears, that the practice has passed into some of the neighbouring countries; but in this island, so far as I know, we have as yet had no experience of it.

CCV.

The medicines which have been employed in fevers as tonics, are various. If the Saccharum Saturni has been found useful, it is, probably, as a tonic, rather than as a refrigerant; and the Ens Veneris, or other preparations of iron which have been employed, can act as tonics only. The preparations of copper, from their effects in epilepsy, are presumed to possess a tonic power; but, whether their use in fevers be founded upon their tonic or their emetic powers, may be uncertain.

The

The use of arsenic and of allum, in intermitted fevers, seems manifestly to depend upon their tonic power. And, upon the whole, there, no doubt, may occur cases of continued fevers, which may be cured by tonics taken from the fossil kingdom; but the use of these has been rare, and the effects uncertain, and physicians have employed, more commonly, the vegetable tonics.

CCVI.

A great variety of these has been employed in the cure of intermitted fevers; but how many of them may be employed in continued fevers, or in what circumstances of these fevers, is not well ascertained; and we shall now only consider the question with respect to the most celebrated of these tonics, the Peruvian bark.

CCVII.

This bark has been commonly considered as a specific, or as a remedy of which the operation was not understood. But it is certainly allowable to inquire into this matter; and we think it may be explained.

CCVIII.

To this purpose we observe, that, as in many cases, the effects of the bark are perceived soon after its being taken into the stomach, and before it can possibly be conveyed to the mass of blood, we may conclude, that its effects do not arise from its operating on the fluids; and must, therefore, depend upon its operating on the nerves of the stomach, and being thereby communicated to the rest of the nervous system. This operation seems to be a tonic power, the bark being a remedy in many cases of debility, particularly in gangrene; and, as the recurrence of the paroxysms of intermitted fevers depends upon a recurrence of atony, (XXXIV. *et seq.*); so probably the bark, by its tonic power, prevents the recurrence of these paroxysms; and this is greatly confirmed by our observing, that many other tonic medicines answer the same purpose.

CCIX.

CCIX.

If the operation of the bark may be thus explained, from its possessing a tonic power, we can easily perceive why it is improper when a phlogistic diathesis prevails; and, from the same view, we can ascertain in what cases of continued fever it may be admitted. These cases, are either after considerable remissions have appeared, when it may be employed to prevent the return of exacerbations, on the same footing as it is used in intermittent fevers; or in the advanced state of fevers, when all suspicion of an inflammatory state is removed, and a general debility prevails in the system; and its being then employed is sufficiently agreeable to the present practice.

CCX.

With respect to the use of the bark, we think proper to add, that good effects are to be expected from it, almost only when given in substance, and in large quantity.

CCXI.

Another set of medicines to be employed for obviating debility and its effects, are the direct stimulants (CXCVII.). These, in some measure, increase the tone of the moving fibres; but are different from the tonics, as they more directly excite and increase the action of the heart and arteries. This mode of their operation renders their use ambiguous; and when an inflammatory diathesis is present, as so often happens in the beginning of fevers, the effects of these stimulants may be very hurtful; but it still remains probable, that, in the advanced state of fevers, when debility prevails, they may be useful.

CCXII.

What are the stimulants which may be most properly employed, we are uncertain, as the use of them, in this
age,

age, has been rare; but we are disposed to think that, of all kinds, wine is the best.

CCXIII.

Wine has the advantage of being grateful to the palate and stomach, and of having its stimulant parts so much diluted, that it can be conveniently given in small doses; and therefore it may be employed with sufficient caution; but it is of little service, unless taken pretty largely.

CCXIV.

It may be suspected, that wine has an operation analogous to that of opium; and on good grounds. But we can distinctly mark its stimulant power only, which renders its effects in the phrenitic delirium manifestly hurtful, and, in the mild delirium, depending on debility, as remarkably useful.

CCXV.

These are the means of answering our second general indication (CXX. 2.); and we now proceed to the third, which is to obviate or to correct the tendency of the fluids to putrefaction.

CCXVI.

This may be done,

1. By avoiding any new application of putrid or putrescent matter.
2. By evacuating the putrid or putrescent matter already present in the body.
3. By correcting the putrid or putrescent matter remaining in the body, by diluents and antiseptics.
4. By supporting the tone of the vessels, and thereby resisting further putrefaction, or obviating its effects.
5. By moderating the violence of re-action, considered as a means of increasing putrefaction.

CCXVII.

CCXVII.

The further application of putrid or putrescent matter may be avoided,

1. By removing the patient from places filled with corrupted air.
2. By preventing the accumulation of the patient's own effluvia, by a constant ventilation, and by a frequent change of bed-cloaths and body-linen.
3. By the careful and speedy removal of all excremental matters from the patient's chamber.
4. By avoiding animal food.

CCXVIII.

The putrid or putrescent matter, already present in the body, may be evacuated partly, by frequently evacuating the contents of the intestines, and more effectually, still, by supporting the excretions of perspiration and urine, by the plentiful use of diluents.

CCXIX.

The putrid or putrescent matter, remaining in the body, may be rendered more mild and innocent, by the use of diluents; or may be corrected by the use of antiseptics. These last are of many and various kinds; but, which of them are conveniently applicable, or more particularly suited to the case of fevers, is not well ascertained. Those most certainly applicable and useful, are, acescent aliments, acids of all kinds, and neutral salts.

CCXX.

The progress of putrefaction may be considerably retarded, and its effects obviated, by supporting the tone of the vessels; and this may be done by tonic remedies; the chief of which are, Cold, and Peruvian bark, both sufficiently treated of above. (CXCIX.---CCX.)

CCXXI.

CCXXI.

The violence of re-action increasing the tendency to putrefaction, may be moderated by the several means fully treated of above. (CXXI.---CXCIV.)

CCXXII.

We have now finished the consideration of the three general indications to be formed in the cure of continued fevers, and have mentioned most of the remedies which have been, upon any occasion, employed. It was necessary, in the first place, to consider these remedies separately, and to explain their operation more generally; but, from what we have now delivered, compared with what has been said above, concerning the difference of fevers, and the signification of their several symptoms in forming the prognostic, I expect it will not be difficult to select and combine the several remedies mentioned, so as to adapt them to the several species and circumstances of continued fevers.

We think it may be useful for Students to have the whole of the Cure of CONTINUED FEVERS brought under one View, as in the following TABLE.

IN THE CURE OF CONTINUED FEVERS, THE INDICATIONS ARE,

- I. To moderate the violence of re-action, which may be done, by
 1. Diminishing the action of the heart and arteries, by
 - A. Avoiding or moderating those irritations which are almost constantly applied to the body, as,
 - a. The impressions made upon our senses, particularly,
 - a. Increased heat, whether arising from
 - aa. External heat, or,
 - bb. The accumulation of the heat of the body.
 - b. The exercise of the body,
 - c. The exercise of the mind,
 - d. The taking in of aliments,
 - e. Particular irritations, arising from
 - a. The sense of thirst,
 - b. Crudities

- b.* Crudities, or corrupted humours in the stomach,
 - c.* The preternatural retention of fœces,
 - d.* A general acrimony of the fluids.
 - B. Employing certain sedative powers, as
 - a.* Cold,
 - b.* Refrigerants, the chief of which are,
 - a.* Acids of all kinds,
 - b.* Neutral salts,
 - c.* Metallic salts.
 - C. Diminishing the tension and tone of the arterial system, by
 - a.* blood-letting,
 - b.* Purging.
 - 2. Taking off the spasm of the extreme vessels, by
 - A. Internal means, which are
 - a.* Those remedies which determine to the surface, as,
 - a.* Diluents,
 - b.* Neutral salts,
 - c.* Sudorifics,
 - d.* Emetics.
 - b.* Those remedies named Antispasmodics.
 - B. External means, as
 - a.* Blistering,
 - b.* Warm bathing.
- II. To remove the causes, or obviate the effects of debility, by
- 1. Supporting and increasing the action of the heart and arteries, by
 - A. Tonics, as
 - a.* Cold.
 - b.* Tonic medicines, which are either
 - a.* Fossil, as
 - aa.* Saccharum saturni, &c. or,
 - b.* Vegetable, as,
 - aa.* Peruvian bark.
 - B. Stimulants, as,
 - a.* Aromatics, &c.
 - b.* Wine.
- III. To obviate or correct the tendency of the fluids to putrefaction, by
- 1. Avoiding the application of putrid or putrescent matter, by
 - A. Removing the patient from places filled with corrupted air,
 - B. Avoiding

- B. Avoiding the accumulation of the patient's own effluvia, by
 - a. A constant ventilation,
 - b. Frequently changing the bed-cloaths and body-linen.
- C. Removing carefully and speedily all excremental matters,
- D. Avoiding animal food.
- 2. Evacuating the putrid or putrescent matter already present in the body, by
 - A. Evacuating frequently the intestines,
 - B. Supporting the excretions of perspiration and urine, by
 - a. Diluents,
 - b. Neutral salts.
- 3. Correcting the putrid or putrescent matter remaining in the body, by
 - A. Diluents,
 - B. Antiseptics.
- 4. Resisting farther putrefaction, or obviating its effects, by Supporting the tone of the vessels, by Tonic remedies.
- 5. Moderating the violence of re-action, considered as a means of increasing putrefaction, as in I. A. B. C.

S E C T. II.

O F T H E C U R E O F I N T E R M I T T E N T F E V E R S.

CCXXIII.

It still remains to consider the cure of intermittent fevers; and, with respect to these, we form also three general indications.

1. In the time of intermission, to prevent the recurrence of paroxysms.

L

2. In

2. In the time of paroxysms, to conduct these so as to obtain a final solution of the disease.

3. To take off certain circumstances which might prevent the fulfilling of the two first indications.

CCXXIV.

The first indication may be answered in two ways ;

1. By increasing the action of the heart and arteries some time before the period of accession, and supporting that increased action till the period of the accession be over, and thus to prevent the recurrence of the atony and spasm of the extreme vessels which give occasion to the recurrence of paroxysms.

2. By supporting the tone of the vessels, and thereby preventing atony, and the consequent spasm, without increasing the action of the heart and arteries, the recurrence of paroxysms may be prevented.

CCXXV.

For the purpose mentioned in (CCXXIV. 1.) the action of the heart and arteries may be increased ;

1. By various stimulant remedies, internally given, or externally applied, and that, without exciting sweat.

2. By the same remedies, or others so managed as to excite sweating, and to support that sweating till the period of accession be for some time past.

3. By emetics, supporting, for the same time, the tone and action of the extreme vessels.

CCXXVI.

The tone of the extreme vessels may be supported without increasing the action of the heart and arteries, (CCXXIV. 2.) by various tonic medicines, as,

1. Astringents alone,

2. Bitters alone,

3. Astringents and bitters conjoined,

4. Astringents and aromatics conjoined,

5. Certain metallic tonics ; and,

Lastly, Opiates.

A good

A good deal of exercise, and as full a diet as the condition of the patient's appetite and digestion may allow of, will be proper during the time of intermission, and may be considered as belonging to this head.

CCXXVII.

Of all the tonic remedies mentioned, (CCXXVI.) the most celebrated, and perhaps the most certainly effectual, is the Peruvian bark, the tonic power of which we have endeavoured to demonstrate above, (CCVIII.) and have, at the same time, explained its use in continued fevers. In intermittents, the same observation, as made in (CCX.) is more especially proper; and these further observations or rules may be offered here:

1. That the bark may be employed with safety at any period of intermittent fevers, providing that, at the same time, there be neither a phlogistic diathesis prevailing in the system, nor any considerable or fixed congestion present in the abdominal viscera.

2. The proper time for exhibiting the bark in intermittent fevers, is, during the time of intermission; and it is to be abstained from in the time of paroxysms.

3. In remittents, though no intire apyrexia occurs, the bark may be given during the remissions; and it should be given, even though the remissions be inconsiderable, if, from the known nature of the epidemic, intermissions or considerable remissions are not to be soon expected, and that great danger is apprehended from repeated exacerbations.

4. In the case of genuine intermittents, while a due quantity of bark is to be employed, the exhibition of it ought to be brought as near to the time of accession as the condition of the patient's stomach will allow.

5. In all cases of intermittents, it is not sufficient that the recurrence of paroxysms be stopped for once by the use of the bark; a relapse is commonly to be expected, and should be prevented by the exhibition of the bark, repeated at proper intervals.

CCXXVIII.

CCXXVIII.

Our second indication for conducting the paroxysms of intermittent fevers, so as to obtain a final solution of the disease, may be answered,

1. By exhibiting emetics during the time of the cold stage, or at the beginning of the hot.
2. By opiates given during the time of the hot stage.

CCXXIX.

The circumstances which may especially prevent the fulfilling of those two indications, and therefore give occasion to our third, are, a phlogistic diathesis prevailing in the system, and congestions fixed in the abdominal viscera. The first must be removed by blood-letting, and the antiphlogistic regimen; the second, by vomiting and purging.

B O O K

B O O K II.

OF INFLAMMATIONS,
OR PHELGMASIÆ.

C H A P. I.

OF INFLAMMATION IN GENERAL.

S E C T. I.

OF THE PHENOMENA OF IN-
FLAMMATION.

CCXXX.

WHEN any part upon the surface of the body is affected with unusual redness, heat, pain, and tumour, we name the disease an Inflammation or Phlegmasia. These symptoms of inflammation are never considerable, without the whole system being, at the same time, affected with pyrexia.

CCXXXI.

As the external, so likewise the internal parts may be affected with inflammation; and we judge them to be so, when, together with pyrexia, there is a fixed
pain

pain in any internal part, attended with some interruption in the exercise of its functions.

CCXXXII.

We judge of the presence of inflammation also from the state of the blood drawn out of the veins. When the blood, after cooling and concreting, shews a portion of the gluten separated from the rest of the mass, and lying on the surface of the crassamentum; as such separation happens in all cases of more evident phlegmasia; so, in ambiguous cases, we, from this appearance, joined with other symptoms, conclude the presence of inflammation. At the same time, it must be observed, that, as several circumstances in blood-letting may prevent this separation of gluten from taking place in blood otherwise disposed to it; so we cannot always conclude, from the want of such appearance, against the presence of inflammation.

CCXXXIII.

We cannot easily give any other general history of the phenomena of inflammation than what is contained in the three preceding paragraphs; and the variations which may take place in its circumstances, will occur to be more properly taken notice of under the several heads of the particular genera and species, to be hereafter mentioned. We proceed, therefore, to inquire into the proximate cause of inflammation in general.

S E C T.

S E C T . II.

O F T H E P R O X I M A T E C A U S E O F
I N F L A M M A T I O N .

C C X X X I V .

The phenomena of inflammation (CCXXX.), all concur in shewing, that there is an increased impetus of the blood in the vessels of the part affected; and as, at the same time, the action of the heart is not always considerably increased, we presume, that the increased impetus of the blood in the particular part, is owing especially to the increased action of the vessels of the part itself.

C C X X X V .

The cause of this increased action in the vessels of a particular part is, therefore, what we are to enquire after, and to consider as the proximate cause of inflammation. In many cases, we can manifestly perceive, that inflammation arises from the application of stimulant substances to the part. When the application of such stimulants, therefore, is evident, we seek for no other cause of inflammation; but as, in many cases, such application is neither evident, nor, with any probability, to be supposed, we must, in such cases, seek for some other cause of the increased impetus of the blood in the vessels of the part.

C C X X X V I .

Many physicians have supposed, that an obstruction of the extreme vessels, any how produced, may prove a
cause

cause of inflammation : But many difficulties attend this doctrine.

1. The supposition of an *ERROR LOCI* is not at all probable ; for the motion of the blood in the extreme vessels is so weak and slow, as readily to admit a retrograde course of it ; and, therefore, if a particle of blood should happen to enter a vessel whose branches will not allow its passage, it will be moved backwards till it meet with a vessel fit for transmitting it ; and the frequent ramifications and anastomoses of the extreme arteries are very favourable to this.

2. The supposition of a preternatural lentor, or viscosity of the blood, is not well founded ; for it is probable, that nature has specially provided against a state of the fluids, so incompatible with the exercise of the most important functions of the animal œconomy. While motion continues to prevent any separation of parts, and heat continues to preserve the fluidity of the more viscid, there seems to be always so large a proportion of water present, as to give a sufficient fluidity to the whole.

3. We presume, that no general lentor does ever take place ; because, if it did, it must shew more considerable effects than commonly appear.

4. There are no experiments directly in proof of a preternatural lentor prevailing in the mass of blood ; nor is there any evidence of certain parts of the blood occasionally acquiring a greater density and force of cohesion than ordinary ; neither is there any proof of the denser, or more coherent parts being present in the mass of blood in such greater proportion than usual, as to occasion a dangerous spissitude. The experiments of Doctor Browne Langrish on this subject afford no conclusion, having been made on certain parts of the blood separated from the rest, without attending to the circumstances of blood-letting, which very much alter the state of the separation and concretion of the blood drawn out of the veins.

5. In the particular case of inflammation, there are several circumstances which render it probable, that the blood is then more fluid than usual.

6. Though an obstruction should be supposed to take place, it will not be sufficient for producing the effects appearing

appearing in inflammation. An obstruction of one vessel does not, as has been imagined, increase the velocity of the blood in the neighbouring vessels which are free; and, in fact, it appears from many observations and experiments, that considerable obstructions may be formed, and may subsist, without producing the symptoms of inflammation.

CCXXXVII.

Obstruction, therefore, is not to be considered as the primary cause of inflammation; but, at the same time, it is sufficiently probable, that some degree of obstruction does take place in every case of inflammation. The distention, pain, redness, and tumour attending inflammation, are only to be explained by supposing, that the extremities of the arteries do not readily transmit the unusual quantity of blood, impelled into them by the increased action in the course of these vessels. Such an obstruction may be supposed to happen in every case of an increased impetus of the blood; but it is probable, that, in the case of inflammation, there is also a preternatural resistance to the free passage of the fluids.

CCXXXVIII.

From the doctrine of fever, we are led to believe, that an increased action of the heart and arteries is not supported for any length of time, by any other means than a spasm affecting the extreme vessels; and that the same spasm takes place in inflammation, seems probable from hence, that every considerable inflammation is introduced by a cold stage, and is accompanied with that and the other circumstances of pyrexia; and it seems also probable, that something analogous to this occurs even in the case of those inflammations, which seem less considerable, and to be purely topical.

CCXXXIX.

From all this, the nature of inflammation may often be explained in the following manner. Some causes of
M inequality

inequality in the distribution of the blood may throw an unusual quantity of it upon particular vessels, to which it must necessarily prove a stimulus. But, further, it is probable, that, to relieve the congestion, the *vis medicatrix naturæ* increases still more the action of these vessels, which it effects, by the formation of a spasm on their extremities, as in all other febrile diseases.

CCXL.

A spasm, therefore, of the extreme arteries, supporting an increased action in the course of them, may be considered as the proximate cause of inflammation, at least, in all cases not arising from direct stimuli applied.

CCXLI.

That, in inflammation, there is the concurrence of a constriction of the extreme vessels, with an increased action in the other parts of them, seems probable, from the consideration of Rheumatism. This is a species of inflammation which is often manifestly produced, either by cold applied to over-distended vessels, or by causes of an increased impetus, and over-distention in vessels previously constricted. Hence, the disease especially appears at seasons liable to frequent and considerable vicissitudes of heat and cold.

To this we may add, that the parts of the body most frequently affected with inflammation, are those exposed, both to over-distention, from a change in the distribution of the fluids, and, at the same time, to the immediate action of cold. Hence, quinries and pneumonic inflammations are more frequent than any others.

CCXLII.

That a spasm of the extreme vessels takes place in inflammation, we presume further from what is at the same time the state of the whole arterial system. In every considerable inflammation, though arising in one part only, an affection is communicated to the whole system, in consequence of which an inflammation is readily

readily produced in other parts besides that first affected. This general affection is well known to physicians, under the name of the *DIATHESIS PHLOGISTICA*. It appears most commonly in persons of the most rigid fibres; is often manifestly induced by the tonic, or astringent powers of cold; is increased by all tonic and stimulant powers applied to the body; is always attended with a hardness of the pulse; and is most effectually taken off, by the relaxing power of blood-letting. From these circumstances, it seems probable, that the diathesis phlogistica consists in an increased tone, or contractility, and perhaps contraction of the muscular fibres of the whole arterial system. Such a state of the system presumes a spasm of the extreme vessels, and the general state commonly arises from that begun in a particular part; though it be also probable, that the general state may arise and subsist, for some time, without the obvious inflammation of any particular parts.

CCXLIII.

We have thus endeavoured, in the case of inflammation, to explain the state of the whole system, as well as that of the part more particularly affected, and this last, as in its first formation; but, when it subsists for some time, various changes take place in the part affected, of which we must now take notice.

S E C T. III.

O F T H E T E R M I N A T I O N S O F I N -
F L A M M A T I O N .

CCXLIV.

If an inflammation be cured while the state and texture of the part remain entire, the disease is said to be terminated by *RESOLUTION*. This happens when the previous

previous congestion and spasm have been in a moderate degree, and the increased impetus of the blood has been sufficient to overcome the spasm, to dilate the vessels, and to remove the congestion, so that the part is restored to its ordinary and healthy state.

A resolution takes place also when the increased impetus of the fluids has produced an increased exhalation into the adjoining cellular texture, or, an increased excretion in some neighbouring part, and has thereby relieved the congestion in the vessels, and relaxed the spasm of the inflamed part.

Lastly, a resolution may take place, when the increased impetus of the blood in the whole system occasions such an evacuation, which, though in a distant part, may prove sufficient to take off the phlogistic diathesis of the whole system, and thereby relieve the congestion and spasm of the particular part affected by inflammation.

CCXLV.

The tumour which appears in inflammation may be imputed in part to the congestion of fluids in the vessels; but is owing chiefly to an effusion of matter into the adjoining cellular texture, and, accordingly, tumours seldom appear but in parts adjoining to a lax cellular texture. If, in this case, the matter effused be only a larger quantity of the ordinary exhaled fluid, this, when the free circulation in the vessels is restored, will be readily absorbed, and the state of the part will become the same as before. But, if the increased impetus of the blood in an inflamed part dilate the exhalant vessels to such a degree, that they pour out an entire serum, this will not be so readily re-absorbed; and, from the experiments of Sir John Pringle and Mr. Gaber, we learn, that, under stagnation, the serum may undergo a particular change, by having the gluten present in it changed into a white, opaque, moderately viscid, mild liquor, which we name Pus. When this change happens in the inflamed part, as it is at the same time attended with an abatement of the redness, heat, and pain which formerly distinguished the inflammation, the disease is said to be terminated by SUPPURATION; and an
inflamed

inflamed part containing a collection of pus, is called an ABSCESS.

CCXLVI.

In inflammation, the tendency of it to suppuration may be discovered, by the continuance of the inflammation, without the symptoms of resolution; by some remission of the pain or distention; and by the pain being of a throbbing kind, more distinctly connected with the pulsation of the arteries; by the pulse of the arteries being fuller and softer, and often, by the patient's being affected frequently with cold shiverings. The period at which this takes place is not determined, but is sometimes sooner, sometimes later. When the tendency is determined, the time necessary to a complete suppuration is different in different cases. When pus is completely formed, the pain formerly in the part entirely ceases, and a weight is felt in it. If the collection is formed immediately under the skin, the tumour becomes pointed, the part becomes soft, and the fluctuation of the fluid within can be commonly perceived; and, at the same time, for the most part, the redness of the skin formerly prevailing is entirely gone.

CCXLVII.

In abscesses, while the pus is formed of one part of the matter which had been effused, the other and thinner parts are re-absorbed, so that, in the abscess, when opened, a pus alone appears. This pus, however, is not the converted gluten, alone; for the conversion of this being the effect of a particular fermentation, which may affect the solid substance of the part, and perhaps every solid of animal bodies; so it most readily, and particularly, affects the cellular texture, and thereby a great deal of this is eroded, and forms a part of the pus; and it generally happens also, that some of the smaller red vessels are eroded, and some red blood appears mixed with the pus in abscesses. Upon the whole, the internal surface of an abscess is to be considered as an ulcerated part.

CCXLVIII.

CCXLVIII.

This account of suppuration explains, why an abscess, when formed, may either spread into the cellular texture of the neighbouring parts, or, by eroding the incumbent teguments, be poured out upon the surface of the body, and produce an open ulcer.

CCXLIX.

The matter of abscesses, and of the ulcers following them, is various, according to the nature of what is effused, and which may be,

1. A matter thinner than serum.
2. An entire and pure serum.
3. A quantity of red globules.
4. A matter furnished by particular glands seated in the part.

It is the second only which affords a proper pus, the effusion whereof, whether in abscesses or ulcers, seems to be the peculiar effect of an inflammatory state of the vessels; and from this cause it is, that, when ulcers do not produce a proper pus, a circumstance always absolutely necessary to their healing, we, in many cases, bring the ulcers to a state of suppuration, by the application of stimulants exciting inflammation, such as balsams, mercury, copper, &c.

CCL.

When the matter effused into the cellular texture of an inflamed part, is tainted with a putrid ferment, this produces, in the effused matter, a change, approaching more or less to a complete putrefaction. When this is in a moderate degree, and affects only the fluids effused, with the substance of the cellular texture, the part is said to be affected with **GANGRENE**; but, if the putrefaction affect also the vessels and muscles of the part, the disease is said to be a **SPHACELUS**.

CCLI.

CCLI.

A gangrene, and its consequences, may arise from a putrid ferment acting on the matter, which is most commonly effused ; but it may also arise from the peculiar nature of the matter effused being disposed to putrefaction ; as particularly seems to be the case of the red globules of the blood effused in a large quantity. In a third manner also, a gangrene seems frequently to arise, from the violent excitement of the inflammation destroying the tone of the vessels ; whereby the whole fluids stagnate, and run into putrefaction, which taking place in any degree, destroys further the tone of the vessels, and spreads the gangrene.

CCLII.

In inflammation, the tendency to gangrene may be apprehended from an extreme violence of pain and heat in the inflamed part, and from a great degree of pyrexia attending the inflammation.

The actual coming on of gangrene may be perceived by the colour of the inflamed part changing from a clear to a dark red, by blisters arising upon the part, by the part becoming soft, flaccid, and insensible, and by the ceasing of all pain while these appearances take place.

As the gangrene proceeds, the colour of the part becomes livid, and, by degrees, quite black, the heat of the part entirely ceases, the softness and flaccidity of the part increases, it loses its consistence, exhales a cadaverous smell, and may then be considered as affected with sphacelus.

CCLIII.

Gangrene is thus a third manner in which inflammation terminates, and the schools have commonly marked a fourth termination of inflammation ; which is, by a schirrus, or an indolent hardness of the part formerly affected with inflammation. This, however, is a rare occurrence, and does not seem to depend so
much

much upon the nature of inflammation, as upon the circumstances of the part affected. It is in glandular parts chiefly that schirrosity is observed, and which is owing to the parts readily admitting a stagnation of the fluids. We have observed, that inflammation seldom induces schirrus, which more commonly arises from other causes, and when inflammation supervenes, which it is sooner or later apt to do, it does not so commonly increase as change the schirrosity, into some kind of abscess. From these considerations, it does not seem necessary to take any further notice of schirrus, as a termination of inflammation.

CCLIV.

There are, however, some other terminations of inflammation not commonly taken notice of, but now to be mentioned. One is, by the effusion of a portion of the entire mass of blood, either by means of rupture or anastomosis, into the adjoining cellular texture. This happens especially in inflammations of the lungs, where the effused matter, by compressing the vessels, and stopping the circulation, occasions a fatal suffocation; and this is perhaps the manner in which peripneumony most commonly proves fatal.

CCLV.

Another kind of termination is, that of certain inflammations on the surface of the skin, when there is poured out under the cuticle a fluid, too gross to pass through its pores, and which therefore separates it from the skin, and raises it up into the form of a vesicle containing the effused fluid; and by which effusion the previous inflammation is taken off.

CCLVI.

Besides these already mentioned, I believe there is still another manner in which inflammation terminates. When the internal parts are affected with inflammation, there appears almost always upon their surface an exudation,

fudation, which appears partly in a viscid concretion upon their surface, and partly in a thin ferous fluid, effused into the cavities in which the inflamed viscera are placed. Though these appearances very constantly accompany those inflammations which have proved fatal, it is, however, probable, that like circumstances may attend these inflammations terminated by resolution, and may contribute to that event, as there are instances of pneumonic inflammation terminating in a hydrothorax.

S E C T . I V .

O F T H E R E M O T E C A U S E S O F
I N F L A M M A T I O N .

CCLVII.

The remote causes of inflammation may be reduced to four heads.

1. The application of stimulant substances, among which are to be reckoned the action of fire, or burning.

2. External violence operating mechanically in wounding, bruising, or overstretching the parts.

3. Extraneous substances, lodged in any part of the body, though they be neither of an acrid quality, nor of a pointed form.

4. Cold, in a certain degree, not sufficient immediately to produce gangrene.

It will not be difficult to understand, how these remote causes, singly, or in concurrence, produce the proximate cause of inflammation.

CCLVIII.

We cannot perceive, that, in different cases of inflammation, there is any difference in the state of the proximate cause, except in the degree; and, though some difference of inflammation may arise from the difference of its remote causes, this is not necessary to be taken notice of here; because the different appearances which attend different inflammations, may be referred, for the most part, to the difference of the part affected, as will appear, when we shall consider the several genera and species marked in the Nosology. In treating of these, we shall find a more proper occasion for taking notice of the different states of the proximate, or of the differences of the remote cause, than by treating of them in general here.

S E C T. V.

OF THE CURE OF INFLAMMATION.

CCLIX.

The indications of cure in inflammation are different, according as it may be still capable of resolution, or may have taken a tendency to the several other terminations above mentioned. Its tendency to these last is not always at first obvious; and, therefore, upon the first appearance

appearance of inflammation, the cure of it, by resolution, is always to be attempted. The indications of cure, for this purpose, are,

1. To remove the remote causes, when they are evident, and continue to operate.

2. To take off the phlogistic diathesis affecting the whole system, or the particular part.

3. To take off the spasm of the particular part, by remedies applied to the whole system, or to the part itself.

CCLX.

The means of removing the remote causes will readily occur, from considering the particular nature and circumstances of the different kinds. Acrid matters must be removed, or their action must be prevented, by the application of demulcents. Compressing and overstretching powers must be taken away, and, from their several circumstances, the means of doing so will be obvious,

CCLXI.

The means of taking off the phlogistic diathesis of the system are the same with those for diminishing the violence of re-action in fever, which are mentioned and treated of from (CXX.) to (CXLIII.), and therefore need not be repeated here.

CCLXII,

The means of taking off the spasm of the particular part are much the same as those mentioned above, for taking off the spasm of the extreme vessels in the case of fever, and which are treated of from (CXLIV.) to (CXCIV.) Only it is to be observed, that topical bleedings are here especially indicated, and that some of the other remedies are to be directed more exactly to the part particularly affected; the management of which will be more properly considered when we shall treat of particular inflammations.

CCLXIII.

CCLXIII.

When a tendency to suppuration (CCXLVI.) is distinctly perceived, as we suppose it to depend upon the effusion of a fluid, which cannot be easily reabsorbed, so it becomes necessary that this fluid be converted into pus as the only natural means of obtaining its evacuation; and, as the effusion is, perhaps, seldom made without some rupture of the vessels, to the healing of which a pus is absolutely necessary; so, in the case of a tendency to suppuration, the indication of cure always is, to promote the production of a perfect pus as quickly as possible.

CCLXIV.

For this purpose, various remedies, supposed to possess a specific power, have been proposed; but we can perceive no such power in any of them; and, in my opinion, all that can be done is, to favour the suppuration by such applications, as may support a moderate heat in the part, as by some tenacity may confine the perspiration of the part, and as, by an emollient quality, may weaken the cohesion of the teguments, and favour their erosion.

CCLXV.

As in the case of certain effusions, a suppuration is not only unavoidable, but desirable, it may be supposed, that most of the means of resolution formerly mentioned should be avoided; and accordingly our practice is commonly so directed. But, as we observe, on the one hand, that a certain degree of increased impetus, or of the original symptoms of inflammation, is necessary to produce a proper suppuration, so it is then especially necessary to avoid those means of resolution which may diminish too much the force of the circulation. And, on the other hand, as the impetus of the blood, when violent, is found to prevent the proper suppuration, so, in such cases, though a tendency to suppuration may
have

have begun, it may be proper to continue those means of resolution which moderate the force of the circulation.

With respect to the opening of abscesses, when completely formed, we refer to the writings on surgery.

CCLXVI.

When an inflammation has taken a tendency to gangrene, that event is to be prevented by every possible means; and these must be different according to the nature of the several causes occasioning that tendency, which may be understood from what has been already said of these causes. After a gangrene has in some degree taken place, it can be cured only by the separation of the dead from the living parts. This, in certain circumstances, can be performed, and most properly, by the knife.

In other cases, it can be done by exciting a suppuratory inflammation on the verge of the living part, whereby its cohesion with the dead may be every where broken off, so that the latter may fall off by itself. While this is doing, it is proper to prevent the further putrefaction of the part, and its spreading wider. For this purpose, various antiseptic applications have been proposed; but we are of opinion, that, while the teguments are entire, these applications can hardly have any effect; and, therefore, that the fundamental procedure must be to scarify the part so as to reach the living substance, and, by the wounds made there, to excite the suppuration required. By the same incisions also, we give access to antiseptics, which may both prevent the progress of the putrefaction in the dead, and excite the inflammation necessary on the verge of the living part.

CCLXVII.

When the gangrene proceeds from a loss of tone, and when this, communicated to the neighbouring parts, prevents that inflammation which, as we have said, is necessary to the separation of the dead part from the living, it will be proper to obviate this loss of tone by
tonic

tonic medicines given internally; and, for this purpose, the Peruvian bark has been found to be especially effectual. That this medicine operates by a tonic power, we have endeavoured to prove above (CCVIII.) ; and, from what is said in (CCIX.) the limits of its use also may be learned. When the gangrene arises from the violence of inflammation, the bark may not only fail of proving a remedy, but may do harm; and its power as a tonic is especially suited to those cases of gangrene, which proceed from an original loss of tone, as in the case of palsy and œdema, or in those cases of inflammation where a loss of tone takes place, while the original inflammatory symptoms are removed.

CCLXVIII.

The other terminations of inflammation, either do not admit of any treatment, except that of preventing them by the means of resolution, or they belong to a treatise of surgery, rather than to this place.

And, therefore, having thus delivered the general doctrine, we proceed now to consider the particular genera and species of inflammation. We have hinted above, that the difference of inflammation arises chiefly from the difference of the part affected; and we have, in the first place, arranged them, as they are cutaneous, visceral, or articular; in which order we are now to consider them.

C H A P. II.

O F I N F L A M M A T I O N M O R E
S T R I C T L Y C U T A N E O U S.

CCLXIX.

Cutaneous inflammations are of two kinds, commonly distinguished by the names of PHLEGMON and ERYSIPELAS.

Of the latter there are two cases, which ought to be distinguished by different appellations. When the disease is an affection of the skin alone, and very little of the whole system, or when the affection of the system is only symptomatical of the external inflammation, we shall give the disease the name of ERYTHEMA; and, when the external inflammation is an exanthema, and symptomatical of an affection of the whole system, we shall then name the disease ERYSIPELAS.

CCLXX.

It is the erythema only that we are to consider here. For the difference of the appearances in the phlegmon and erythema, we refer to our Nosology; and we shall here only observe, that the difference of these appearances seems to depend on the different seat of the inflammation. In the phlegmon, the inflammation seems to affect especially the vessels on the internal surface of the skin communicating with the lax subjacent cellular texture; whence a more copious effusion, and that too of serum, convertible into pus, takes place. In the erythema, the affection is of the vessels on the external surface of the skin, communicating with the rete mucosum, which does not admit of any effusion, but what separates the cuticle, and gives occasion to the formation
of

of a blister, while the smaller size of the vessels admits only of the effusion of a thin fluid, very seldom convertible into pus.

Besides these differences in the circumstances of these two kinds of inflammation, it is probable that they differ also with respect to their causes. Erythema is the effect of all kinds of acrids externally applied to the skin; and, when it arises from an internal cause, it is from an acrimony poured out on the surface of the skin under the cuticle. In the phlegmon, an acrimony is not commonly evident.

CCLXXI.

These differences in the seat and causes of the phlegmon and erythema, being admitted, it will appear, that the erythema must affect those internal parts only, whose surfaces are covered with an epithelion, or membrane, analogous to the cuticle. The same difference of causes, and of the seat now marked, will also explain what has been delivered by practical writers, with respect to the cure of these different cutaneous inflammations. But we shall not prosecute this here, because it falls under the province of surgery, which, in this course, we cannot enter into. For the same reason, we shall not say any thing of the variety of external inflammation, which might otherwise be considered here.

C H A P. III.

OF OPHTHALMIA, OR INFLAMMATION OF THE EYE.

CCLXXII.

The inflammation of the eye may be considered as of two kinds, according as it is seated in the membranes of
the

the ball of the eye, when we name it *OPHTHALMIA MEMBRANARUM*, or as it is seated in the sebaceous glands placed in the tarsus, or edges of the eye-lids, in which case it may be termed *OPHTHALMIA TARSI*.

These two kinds are very frequently connected together, as the one may readily excite the other; but they are still to be distinguished according as the one or the other may happen to be the primary affection.

CCLXXIII.

The inflammation of the membranes of the eye affects especially, and most frequently, the *adnata*, and appears in a turgescence of its vessels; so that the red vessels which are naturally there, become not only increased in size, but many more appear than did in a natural state. This turgescence of the vessels is attended with pain, especially upon the motion of the ball of the eye; and this irritation, like every other, applied to the surface of the eye, produces an effusion of tears from the lachrymal gland.

The inflammation commonly, and chiefly, affects the *adnata* spread on the anterior part of the bulb of the eye; but usually spreads also along the continuation of the *adnata* on the inside of the *palpebræ*; and, as that is extended on the *tarsus palpebrarum*, the excretories of the sebaceous glands opening there are also frequently affected. When the affection of the *adnata* is considerable, it may be communicated to the subjacent membranes of the eye, and even to the retina itself, which thereby acquires so great a sensibility, that every impression of light becomes painful.

CCLXXIV.

The inflammation of the membranes of the eye is in different degrees, according as the *adnata* is more or less affected, or according as the inflammation is either of the *adnata* alone, or of the subjacent membranes also; and, upon these differences, different species have been established, and different appellations given to them. But we shall not prosecute the consideration of these,

O

being

being of opinion, that all the cases of the Ophthalmia membranarum differ only in degree, and are to be cured by remedies of the same kind, more or less employed.

CCLXXV.

The proximate cause of Ophthalmia is not different from that of inflammation in general; and the different circumstances of Ophthalmia may be explained by the difference of its remote causes, and by the different parts of the eye which it happens to affect; as may be understood from what has been already said. We now proceed to consider the CURE.

CCLXXVI.

The Ophthalmia membranarum requires the remedies proper for inflammation in general; and, when the deeper-seated membranes are affected, and especially when a pyrexia is present, large general bleedings may be necessary. But this last is seldom the case; and, for the most part, the Ophthalmia is an affection purely local, accompanied with little or no pyrexia. General bleedings, therefore, have little effect upon it, and the cure is chiefly to be obtained by topical bleedings, that is, blood drawn from vessels near the inflamed part; and opening the jugular vein or the temporal artery, may be considered as in some measure of this kind. It is commonly sufficient to apply a number of leeches round the eye; and it is perhaps better still to draw blood by cupping and scarifying upon the temples. In many cases, the most effectual remedy is, that of scarifying the internal surface of the inferior eye-lid, and cutting the turgid vessels upon the adnata itself.

CCLXXVII.

Besides blood-letting, purging, as a remedy suited to inflammation in general, has been considered as peculiarly adapted to inflammations in any of the parts of the head, and therefore to Ophthalmia; and it is sometimes useful; but, for the reasons given before with respect

respect to general bleeding, purging in the case of Ophthalmia does not prove useful in any proportion to the evacuation excited.

CCLXXVIII.

For relaxing the spasm in the part, and taking off the determination of the fluids to it, blistering near the part has commonly been found useful.

CCLXXIX.

Ophthalmia, as an external inflammation, admits of topical applications. All these, however, which encrease the heat and relax the vessels of the part, prove hurtful; and the admission of cool air to the eye, and the application of cooling and astringent medicines, which at the same time do not produce irritation, prove useful.

CCLXXX.

In the cure of Ophthalmia, much care is requisite to avoid all irritation, particularly that of light; and the only and certain means of doing this, is by keeping the patient in a very dark chamber.

CCLXXXI.

These are the remedies of the Ophthalmia membranarum; and, in the Ophthalmia tarfi, so far as it is produced by the Ophthalmia membranarum, the same remedies may be necessary. As, however, the Ophthalmia tarfi may often depend upon an acrimony deposited in the sebaceous glands of the part, so it may require various internal remedies according to the variety of the acrimony in fault, for which we must refer to the consideration of scrophula, syphilis, or other diseases with which this Ophthalmia may be connected; and, where these shall not be evident, certain remedies, more generally adapted to the evacuation of acrimony, such as mercury, may be employed.

CCLXXXII.

CCLXXXII.

In the Ophthalmia tarfi, it almost constantly happens, that some ulcerations are formed on the tarsus. These require the application of mercury or copper, which alone may sometimes cure the whole affection; and they may be useful even when the disease depends upon a fault of the whole system.

CCLXXXIII.

Both in the Ophthalmia membranarum, and in the Ophthalmia tarfi, it is necessary to obviate that gluing together of the eye-lids which commonly happens in sleep; and which may be done by insinuating a little of any mild unctuous medicine between the eye-lids before the patient shall go to sleep.

C H A P I V .

O F P H R E N S Y , O R P H R E N I T I S .

CCLXXXIV.

This is an inflammation of the parts contained in the cavity of the cranium, and may affect either the membranes of the brain, or the substance of the brain itself. Nosologists have thought, that the two cases might be distinguished by different symptoms, and therefore by different appellations; but we do not find this confirmed by observation and dissection; and therefore shall treat of both cases under the title of Phrensy, or Phrenitis.

CCLXXXV.

CCLXXXV.

An idiopathic phrensy is a rare occurrence, a sympathetic more frequent, and the ascertaining either the one or the other is, on many occasions, difficult, as the symptoms by which the disease is most commonly judged to be present, appear sometimes without internal inflammation; and dissections have shewn, that the brain had been inflamed, when few of the peculiar symptoms of inflammation had appeared before.

CCLXXXVI.

The symptoms by which it may be most certainly known are, an acute pyrexia, a violent head-ach, a redness of the face and eyes, an impatience of light or noise, a constant watching, and a delirium impetuous and furious. Some nosologists have thought these symptoms peculiar to an inflammation of the membranes, and that the inflammation of the substance of the brain was to be distinguished by some degree of coma attending it. It is for this reason that in the Nosology I have added the typhomania to the character of Phrenitis; but, upon farther reflection, I find no proper foundation for this; and, if we pass from the characters above delivered, there will be no fixing the variety that occurs.

CCLXXXVII.

The remote causes of phrensy, are all those which directly stimulate the membranes, or substance, of the brain, and particularly all those which increase the impetus of the blood in the vessels of the brain. The passions of the mind, and certain poisons, are amongst the remote causes of phrensy; but, in what manner they operate, is not well understood.

CCLXXXVIII.

The cure of phrensy is the same with that of inflammation in general; but here the most powerful remedies
are

are to be immediately employed. Large and repeated bleedings are especially necessary, and these too taken from vessels as near as possible to the part affected. The opening of the temporal artery has been recommended, and with some reason; but the practice is attended with inconvenience; and we believe that the opening the jugular veins may prove more effectual; with which, however, may be joined, the drawing of blood from the temples by cupping and scarifying.

CCLXXXIX.

It is probable that purging may be of more use in this than in some other inflammatory affections, as it may operate by revulsion. For the same purpose of revulsion, warm pediluvia are a remedy, but somewhat ambiguous. The taking off the force of the blood in the vessels of the head by an erect posture, is commonly useful.

CCXC.

Blistering is generally useful in this disease, but chiefly, when applied near to the part affected.

CCXCI.

Every part of the antiphlogistic regimen is here necessary, and particularly the admission of cold air. Even cold substances applied close to the head, have been found useful, and the application of such refrigerants as vinegar is certainly proper.

CCXCII.

It appears certain, that opiates are hurtful in every inflammatory state of the brain; and it is to be observed, that, from the ambiguity mentioned in (CCLXXXV.) the accounts of practitioners, with regard to the *juvantia* and *laudentia* in this disease, are very uncertain.

C H A P V.

O F T H E Q U I N S Y , O R C Y N A N C H E .

C C X C I I I .

This name is applied to every inflammation of the internal fauces; but these are different according to the part which may be affected, and the nature of the inflammation. In our Nosology, therefore, after giving the character of the Cynanche as a genus, we have distinguished five different species, which must here likewise be separately considered.

S E C T . I .

O F T H E C Y N A N C H E T O N S I L -
L A R I S .

C C X C I V .

This is an inflammation of the mucous membrane of the fauces, affecting especially that congeries of mucous follicles which forms the tonsils, and from thence spreading along the velum and uvula, so as frequently to affect every part of the mucous membrane.

C C X C V .

CCXCV.

The disease appears by some tumor and redness of the parts, is attended with a painful and difficult deglutition; a troublesome clamminess of the mouth and throat; a frequent, but difficult, excretion of mucus; and the whole is accompanied with pyrexia.

CCXCVI.

This species of quinsy is never contagious; it terminates frequently by resolution, sometimes by suppuration, but hardly ever by gangrene, although in this disease some sloughy spots sometimes appear upon the fauces.

CCXCVII.

This disease is commonly occasioned by cold externally applied, particularly about the neck. It affects especially the young and sanguine, and a disposition to it is often acquired by habit. It occurs especially in spring and autumn, when vicissitudes of heat and cold frequently take place. The inflammation and tumor are commonly at first most considerable in one tonsil, and afterwards abating in that, increase in the other.

CCXCVIII.

In the cure of this inflammation, some bleeding may be proper; but large general bleedings will seldom be necessary. The opening of the ranular veins seems to be an insignificant remedy; and leeches set upon the external fauces are of more efficacy.

CCXCIX.

This inflammation may be often relieved by moderate astringents, and particularly by acids applied to the inflamed parts. In many cases, nothing has been found to
give

give more relief than the vapour of warm water received into the fauces.

CCC.

The other remedies of this disease are rubefacient, or blistering medicines, applied externally to the neck, and with these, the employment of antiplogistic purgatives, as well as every part of the antiplogistic regimen, except the application of cold.

CCCI.

This disease, as we have said, often terminates by resolution, frequently accompanied with sweating; which is therefore to be prudently favoured and encouraged.

CCCII.

When this disease shall have taken a tendency to supuration, nothing will be more useful than the frequent taking into the fauces the steams of warm water. When the abscess is attended with much swelling, if it break not spontaneously, it should be opened by a lancet; and this does not require much caution, as even the inflammatory state may be relieved by some scarification of the tonsils. I have never seen any case requiring bronchotomy.

S E C T.

S E C T. II.

OF THE CYNANCHE MALIGNA.

CCCIII.

This is a contagious disease, seldom sporadic, and commonly epidemic. It attacks persons of all ages, but more commonly those in a young and infant state. It attacks persons of every constitution, when exposed to the contagion, but most readily the weak and infirm.

CCCIV.

The disease is usually attended with a considerable pyrexia, and the symptoms of the accession of this, such as, frequent cold shiverings, sickness, anxiety, and vomiting are often the first appearances of the disease. About the same time, a stiffness is felt in the neck, with some uneasiness in the internal fauces, and some hoarseness of the voice. The internal fauces, when viewed, appear of a deep red colour, with some tumour; but this last is seldom considerable; and deglutition is seldom difficult or painful. Very soon, a number of white or ash-coloured spots appear upon the inflamed parts. These spots spread and unite, covering almost the whole fauces with thick sloughs, which falling off, discover ulcerations. While these symptoms proceed in the fauces, they are generally attended with a coryza, which pours out a thin acrid and foetid matter, excoriating the nostrils and lips. There is often also, especially in infants, a frequent purging, and a thin acrid matter flows from the anus, excoriating this and the neighbouring parts.

CCCV.

CCCV.

With these symptoms, the pyrexia proceeds with a small, frequent, and irregular pulse, and there is occurring a manifest exacerbation every evening and some remission in the mornings. A great debility appears in the animal functions, and the sensorium is affected with delirium, frequently with coma.

CCCVI.

On the second day, or sometimes later, efflorescences appear upon the skin, which are sometimes in small points, hardly eminent; but, for the most part, in patches of a red colour, spreading and uniting, so as to cover the whole skin. They appear first about the face and neck, and, in the course of some days, spread by degrees to the lower extremities. The scarlet redness is often considerable on the hands and extremities of the fingers, which feel stiff and swelled. This eruption is often irregular as to the time of its appearance, its steadiness, and the time of its continuance. It usually continues four days, and goes off by some desquamation of the cuticle; but neither on its first appearance, nor on its desquamation, does it always produce a remission of the pyrexia, or of the other symptoms.

CCCVII.

The progress of the disease depends on the state of the fauces and of the pyrexia. When the ulcers on the fauces, by their livid and black colour, by the fœtor of the breath, and by many marks of acrimony in the fluids, shew a tendency to gangrene, this takes place to a considerable degree, and the symptoms of a putrid fever constantly increasing, the patient dies often on the third day, sometimes later, but for the most part, before the seventh. The acrimony poured out from the diseased fauces must necessarily, in part, pass into the pharynx, and there spread the infection into the œsophagus, and sometimes through the whole of the alimentary canal,

canal, propagating the putrefaction, and often exhausting the patient by a frequent diarrhoea.

The acrid matter poured out in the fauces being again absorbed, frequently occasions large swellings of the lymphatic glands about the neck, and sometimes, to such a degree, as to occasion a suffocation.

It is seldom that the organs of respiration escape entirely unhurt, and very often the inflammatory affection is communicated to them. It appears from dissections, that, in the Cynanche maligna, the larynx and trachea are often affected in the same manner as in the Cynanche trachealis; and it is probable, that, in consequence of that affection, the Cynanche maligna often proves fatal by such a sudden suffocation as happens in the proper Cynanche trachealis; but there is reason to suspect that dissectors have not always distinguished properly between the two diseases.

CCCVIII.

These are the several fatal terminations of the Cynanche maligna, which, however, do not always take place. Sometimes the ulcers of the fauces are of milder nature, and the fever is more moderate, and of a less putrid kind. And when, upon the appearance of the efflorescence on the skin, the fever suffers a remission; when the efflorescence continues for three or four days, till it has spread over the whole body, and ends then by a desquamation giving a further remission of the fever; this often terminates entirely, by gentle sweats, on or before the seventh day; and the rest of the disease terminates in a few days more, by an excretion of sloughs from the fauces, while sleep, appetite, and the other marks of health, entirely return. From this, and the preceding paragraph, the prognostics in this disease may be readily learned.

CCCIX.

In the cure of this disease, its septic tendency is chiefly to be kept in view. The debility, with which it is attended, renders all evacuations by bleeding and purging improper,

improper, except in a few instances where the debility is less, and the inflammatory symptoms more considerable. The fauces are to be preserved from the effects of the acrid matter poured out upon them, and are therefore to be frequently washed out by antiseptic gargles or injections; and the septic tendency of the whole system should be guarded against and corrected by internal antiseptics, especially by the Peruvian bark given in substance from the beginning, and continued through the course of the disease. Emetics, both by vomiting and nauseating, prove useful. When any considerable tumour occurs, blisters applied externally will be of service, and, in any case, may be fit to moderate the internal inflammation.

S E C T. III.

O F T H E C Y N A N C H E T R A -
C H E A L I S .

CCCX.

This name has been given to an inflammation of the glottis, larynx, or upper part of the trachea, whether it affect the membranes of these parts, or the muscles adjoining. It may arise first in these parts, and continue to subsist in them alone, or it may come to affect these parts from the Cynanche tonsillarum or maligna spreading into them.

CCCXI.

In either way it has been a rare occurrence, and few instances of it have been marked and recorded by physicians. It is to be known by a peculiar croaking sound of the voice, by difficult respiration, with a sense of straitening

straitening about the larynx, and by a pyrexia attending it.

CCCXII.

From the nature of these symptoms, and from the dissection of the bodies of persons who had died of this disease, there is no doubt of its being of an inflammatory kind. It does not however always run the course of inflammatory affections, but frequently produces such an obstruction of the passage of the air, as suffocates, and thereby proves suddenly fatal.

CCCXIII.

If we judge rightly of the nature of this disease, it will be obvious, that the cure of it requires the most powerful remedies of inflammation, to be employed upon the very first appearance of the symptoms. When a suffocation is threatened, whether any remedies can be employed to prevent it, we have not had experience to determine.

CCCXIV.

The accounts which books have hitherto given us of inflammations of the larynx, and the parts connected with it, amount to what we have now said; and the instances recorded have, almost all of them, happened in adult persons; but there is a peculiar affection of this kind happening to infants, which has been little taken notice of till lately. Dr. Home is the first who has given any distinct account of this disease; but, since he wrote, several other authors have taken notice of it, and have given different opinions concerning it. Concerning this diversity of opinions, I shall not at present inquire, but shall deliver the history and cure of this disease, in so far as these have arisen from my own observation, from that of Dr. Home, and of other skilful persons in this neighbourhood.

CCCXV.

CCCXV.

This disease seldom attacks infants till after they have been weaned. After this period, the younger they are, the more they are liable to the disease. The frequency of it becomes less as children become more advanced; and there are no instances of children above twelve years of age being affected with it. It attacks children of the midland countries, as well as those who live near the sea. It does not appear to be contagious, and its attacks are frequently repeated in the same child. It is often manifestly the effect of cold applied to the body; and therefore appears most frequently in the winter and spring seasons. It very commonly comes on with the ordinary symptoms of a catarrh; but sometimes the peculiar symptoms of the disease shew themselves at the very first.

CCCXVI.

These peculiar symptoms are the following: A hoarseness, with some shrillness and ringing sound, both in speaking and coughing, as if the noise came from a brazen tube. At the same time, there is a sense of pain about the larynx, some difficulty of respiration, with a whizzing sound in inspiration, as if the passage of the air were straitened. The cough which attends it, is commonly dry; and, if any thing be spit up, it is a matter of a purulent appearance, and sometimes films, resembling portions of a membrane. With all these symptoms, there is a frequency of pulse, a restlessness, and an uneasy sense of heat. When the internal fauces are viewed, they are sometimes without any appearance of inflammation, but frequently a redness, and even swelling appears, and sometimes there is an appearance of matter like to that rejected by coughing. Together with the symptoms now described, and particularly with great difficulty of breathing, and a sense of strangling in the fauces, the patient is sometimes suddenly taken off.

CCCXVII.

CCCXVII.

Many dissections have been made of infants who had died of this disease, and almost constantly there has appeared a preternatural membrane lining the whole internal surface of the upper part of the trachea, and extending in the same manner downwards into some of its ramifications. This preternatural membrane may be easily separated, and sometimes has been found separated in part from the subjacent proper membrane of the trachea. This last is commonly found entire, that is, without any appearance of erosion or ulceration, but it frequently shows the vestiges of inflammation, and is covered by a matter resembling pus, like to that rejected by coughing; and very often a matter of the same kind is found in the bronchiæ, sometimes in considerable quantity.

CCCXVIII.

From the remote causes of this disease; from the catarrhal symptoms commonly attending it; from the pyrexia constantly present with it; from the same kind of preternatural membrane being found in the trachea, when the Cynanche maligna is communicated to it; and from the vestiges of inflammation on the trachea discovered upon dissection, we must conclude, that this disease consists in an inflammatory affection of the mucous membrane of the larynx and trachea, producing an exudation analogous to that found on the surface of inflamed viscera, and appearing partly in a membranous crust, and partly in a fluid resembling pus.

CCCXIX.

Though this disease consists in an inflammatory affection, it does not commonly end either in suppuration or gangrene. The troublesome circumstance of it seems to consist in a spasm of the muscles of the glottis, threatening suffocation.

CCCXX.

CCCXX.

When this disease terminates in health, it is by resolution of the inflammation, by a ceasing of the spasm of the glottis, by an expectoration of the matter exuding from the trachea, and of the crusts formed there, and frequently it ends without any expectoration, or at least with such only as attends an ordinary catarrh.

CCCXXI.

When the disease ends fatally, it is by a suffocation seemingly depending upon a spasm affecting the glottis; but sometimes, probably, depending upon a quantity of matter filling the bronchiæ.

CCCXXII.

As we suppose the disease to be an inflammatory affection, so we attempt the cure of it by the usual remedies of inflammation, and which for the most part we have found effectual. Bleeding, both general and topical, has often given immediate relief, and, by being repeated, has entirely cured the disease. Blistering also, near to the part affected, has been found useful. Upon the first attack of the disease, vomiting, immediately after bleeding, seems to be of considerable use, and sometimes suddenly removes the disease. In every stage of the disease, the antiphlogistic regimen is necessary, and particularly the frequent use of laxative glysters. Though we suppose that a spasm affecting the glottis is often fatal in this disease, we have not found anti-spasmodic medicines to be of any use.

S E C T. IV.

OF THE CYNANCHE PHARYNGÆA.

CCCXXIII.

In the Cynanche tonsillaris the inflammation of the mucous membrane often spreads upon the pharynx, and into the beginning of the œsophagus, and thereby renders deglutition more difficult and uneasy; but such a case does not require to be distinguished as a different species from the common Cynanche tonsillaris, and only requires that blood-letting, and other remedies, should be employed with greater diligence than in ordinary cases. We have never seen any case in which the inflammation began in the pharynx, or in which this part alone was inflamed; but practical writers have taken notice of such a case, and to them, therefore, I must refer, both for the appearances which distinguish it, and for the method of cure.

S E C T. V.

OF THE CYNANCHE PAROTIDÆA.

CCCXXIV.

This is a disease known to the vulgar in every country of Europe, but has been little taken notice of by medical

dical writers. It is often epidemic, and manifestly contagious. It comes on with the usual symptoms of pyrexia which is soon after attended with a considerable tumour of the external fauces and neck. This tumour appears first as a glandular moveable tumour at the corner of the lower jaw; but the swelling soon becomes uniformly diffused over a great part of the neck, sometimes on one side only, but more commonly on both. The swelling continues to increase till the fourth day; but from that period it declines, and in a few days more passes off entirely. As the swelling of the fauces recedes, some tumour affects the testicles in the male sex, or the breasts in the female. These tumours are sometimes large, hard, and somewhat painful; but are seldom either very painful or of long continuance. The pyrexia attending this disease is commonly slight, and recedes with the swelling of the fauces; but sometimes, when the swelling of the testicles does not succeed to that of the fauces, or when the one or the other has been suddenly repressed, the pyrexia becomes more considerable, is often attended with delirium, and has sometimes proved fatal.

CCCXXV.

As this disease commonly runs its course without either dangerous or troublesome symptoms; so it hardly requires any remedies. An antiphlogistic regimen, and avoiding cold, are all that will be commonly necessary. But when, upon the receding of the swellings, the pyrexia comes to be considerable, and threatens an affection of the brain, it will be proper, by warm fomentations, to bring back the swelling, and, by vomiting, bleeding, or blistering, to obviate the consequences of its absence.

C H A P. VI.

O F P N E U M O N I C I N F L A M -
M A T I O N .

CCCXXVI.

Under this title I mean to comprehend the whole of the inflammation affecting either the viscera of the thorax, or the membrane lining the interior surface of that cavity; for neither do our diagnostics serve to ascertain exactly the seat of the disease, nor does the difference in the seat of the disease give any considerable difference in the state of the symptoms, or lead to any difference in the method of cure.

CCCXXVII.

Pneumonic inflammation, however various in the seat of it, seems to me to be always known and distinguished by the following symptoms; pyrexia, difficult breathing, cough, and pain in some part of the thorax; but these symptoms are on different occasions variously modified.

CCCXXVIII.

The disease almost always comes on with a cold stage, and is accompanied with the other symptoms of pyrexia, though, in a few instances, the pulse may be not more frequent, nor the heat of the body increased beyond what is natural. Sometimes the pyrexia is from the beginning accompanied with the other symptoms; but frequently the pyrexia is formed for some hours before the other symptoms become considerable, and particularly before the pain be felt. For the most part, the
pulse

pulse is frequent, full, strong, hard, and quick; but, in a few instances, especially in the advanced state of the disease, the pulse is weak and soft, and at the same time irregular.

CCCXXIX.

The difficulty of breathing is always present, and most considerable in inspiration, both because the lungs do not easily admit of a full dilatation, and because the dilatation aggravates the pain attending the disease. The difficulty of breathing is also greater when the patient is in one posture of the body rather than another. It is generally greater when he lies upon the side affected; but sometimes the contrary happens. Very often the patient cannot lie easy upon either side, and can find ease only when lying on the back; and sometimes he cannot breathe easily, except when in somewhat of an erect posture.

CCCXXX.

A cough always attends this disease; but, in different cases, is more or less urgent and painful. It is sometimes dry, that is, without any expectoration, especially in the beginning of the disease; but more commonly it is, even from the first, moist, and the matter spit up various, both in consistence and colour; and frequently it is streaked with blood.

CCCXXXI.

The pain attending this disease, is, in different cases, felt in different parts of the thorax, but most frequently in one side. It has been said to affect the right side more commonly than the left; but this is not certain; while, on the other hand, it is certain, that the left side has very often been affected. The pain is sometimes felt as if it were under the sternum, sometimes in the back, between the shoulders, and, when in the sides, its place has been higher or lower, more forward or backward; but the place of all others most frequently affected, is
about

about the sixth, or seventh rib, near the middle of its length, or a little more forward. The pain is often severe and pungent, but sometimes more dull and obtuse, with a sense of weight rather than of pain. It is most especially severe and pungent when occupying the place last mentioned. For the most part, it continues fixed in one place, but sometimes shoots from the side to the scapula, on one hand, or to the sternum and clavicle on the other.

CCCXXXII.

The different state of symptoms now mentioned does not always ascertain exactly the seat of the disease. To me it seems probable, that the disease is always seated, or at least begins in some part of the pleura, taking that membrane in its greatest extent, as now commonly understood; that is, as covering not only the internal surface of the cavity of the thorax, but also as forming the mediastinum, and as extended over the pericardium, and over the whole surface of the lungs.

CCCXXXIII.

There is therefore little foundation for distinguishing this disease by different appellations taken from the part which may be supposed to be chiefly affected. The term Pleurisy might be properly applied to every case of the disease; and is very improperly limited to that inflammation which begins in, and chiefly affects the pleura costalis. We believe that such a case does truly occur; but we also believe it to be a rare occurrence, and that the disease much more frequently begins in, and chiefly affects the pleura investing the lungs, producing all the symptoms supposed to belong to what has been called the Pleuritis vera.

CCCXXXIV.

Some physicians have imagined, that there is a case of pneumonic inflammation, particularly entitled to the appellation of Peripneumony, and that is, the case of an
inflammation

inflammation beginning in the parenchyma, or cellular texture of the lungs, and having its seat chiefly there. But it seems to me very doubtful, if any acute inflammation of the lungs, or any disease which has been called peripneumony, be of that kind. It seems probable, that every acute inflammation begins in membranous parts; and, in every dissection of persons dead of peripneumony, the external membrane of the lungs, or some part of the pleura, has appeared to have been considerably affected.

CCCXXXV.

An inflammation of the pleura covering the upper surface of the diaphragm, has been distinguished by the appellation of Paraphrenitis, as supposed to be attended with the peculiar symptoms of delirium, risus sardonius, and other convulsive motions; but it is certain, that an inflammation of that portion of the pleura, and affecting also even the muscular substance of the diaphragm, has often taken place without any of the symptoms mentioned; and I have met neither with dissections, nor any accounts of dissections, which support the opinion, that an inflammation of the pleura covering the diaphragm, is attended with delirium more commonly than any other pneumonic inflammation.

CCCXXXVI.

With respect to the seat of pneumonic inflammation, we must observe further, that, although it may arise and subsist chiefly in one part of the pleura only, it is however frequently communicated to other parts of the same, and commonly communicates a morbid affection to the whole extent of it.

CCCXXXVII.

The remote cause of pneumonic inflammation is, commonly, cold applied to the body, obstructing perspiration, and determining to the lungs, while at the same time the lungs themselves are exposed to the action
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of cold. These circumstances operate especially when an inflammatory diathesis prevails in the system; and, therefore, upon persons of the greatest vigour; in cold climates; in the winter-season; and particularly in the spring, when vicissitudes of heat and cold are frequent. The disease, however, may arise in any season when such vicissitudes take place.

Other remote causes also may have a share in this matter, such as every means of obstructing, straining, or otherwise injuring the pneumonic organs.

The pneumonic inflammation has been sometimes so much an epidemic, as to occasion a suspicion of its depending upon a specific contagion; but we have not met with any evidence in proof of this. See Morgagni de causis et sedibus morborum, epist. 21. art. 26.

CCCXXXVIII.

The pneumonic, like other inflammations, may terminate by resolution, suppuration, or gangrene; but it has also a termination peculiar to itself, as has been hinted above, (CCLIV.) and which is, when it is attended with an effusion of blood into the cellular texture of the lungs, which soon interrupting the circulation of the blood through this viscus, produces a fatal suffocation. This indeed seems to be the most common termination of pneumonic inflammation, when it ends fatally; for, upon the dissection of almost every person dead of that disease, it has appeared that such an effusion had happened.

CCCXXXIX.

From the same dissections, we learn, that pneumonic inflammation commonly produces an exudation from the internal surface of the pleura, which appears partly as a soft viscid crust, often of a compact membranous form, covering every where the surface of the pleura, and particularly those parts where the lungs adhere to the pleura costalis, or mediastinum; and this crust seems always to be the cement of such adhesions.

The same exudation shews itself also by a quantity of a serous fluid commonly found in the cavity of the thorax; and some exudation or effusion is usually found to have been made also into the cavity of the pericardium.

CCCXL.

It seems probable also, that a like effusion is sometimes made into the cavity of the bronchiæ; for, in some persons who have died after labouring under a pneumonic inflammation for a few days only, the bronchiæ have been found filled with a considerable quantity of a serous and thickish fluid, which I think must be considered rather as the effusion above mentioned, having had its thinner parts taken off by respiration, than as a pus so suddenly formed in the inflamed part.

CCCXLI.

It is, however, not improbable, that this effusion, as well as that made into the cavities of the thorax and pericardium, may be a matter of the same kind with that which, in other inflammations, is poured into the cellular texture of the parts inflamed, and there converted into pus; but, in the thorax and pericardium, it does not always put on that appearance, because the crust covering the surface prevents the absorption of the thinner part. This absorption, however, may be compensated in the bronchiæ, by the drying power of the air; and therefore the effusion into them may put on a more purulent appearance. In many cases of pneumonic inflammation, when the SPUTA are very copious, it is difficult to suppose, that the whole of them proceed from the mucous follicles of the bronchiæ. It seems probable that a great part of them may proceed from the effused serous fluid we have been mentioning; and this too will account for the sputa being so often of a purulent appearance. Perhaps the same thing will account for that purulent expectoration, and that purulent matter found in the bronchiæ, which the learned Mr. de Haen says he had often observed, when there was no ulceration of the lungs; and this explanation is

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at least more probable than Mr. de Haen's supposition of a pus formed in the circulating blood.

CCCXLII.

To conclude this subject, we are of opinion, that the effusion into the bronchiæ, which we have mentioned (CCCXL.) often concurs with the effusion of red blood (CCCXXXVIII.) in occasioning the suffocation which fatally terminates pneumonic inflammation; that the effusion of serum alone may have this effect; and, that the serum poured out in a certain quantity, rather than any debility in the powers of expectoration, is the cause of that ceasing of expectoration which precedes the fatal event; for, in many cases, the expectoration has ceased, when no other symptoms of debility have appeared, and when, upon dissection, the bronchiæ have been found full of liquid matter. Nay, it is even probable, that, in some cases, such an effusion may take place, without any symptoms of violent inflammation; and, in other cases, the effusion taking place may seem to remove the symptoms of inflammation which had appeared before, and thus account for those unexpected fatal terminations which have sometimes happened. Perhaps this effusion will account also for many of the phenomena of the Peripneumonia Notha.

CCCXLIII.

Pneumonic inflammation seldom terminates by resolution, without being attended with some evident evacuation. An hemorrhage from the nose happening on some of the first days of the disease, has sometimes put an end to it; and it is said, that an evacuation from the hemorrhoidal veins, a bilious evacuation by a stool, and an evacuation of urine, with a copious sediment, have severally had the same effect; but such occurrences have been rare and unusual.

The evacuation most frequently attending, and seeming to have the greatest effect in promoting resolution, is an expectoration of a thick white or yellowish matter,
a little

a little streaked with blood, copious, and brought up without much or violent coughing.

Very frequently the resolution of this disease is attended with, and perhaps produced by a sweat, which is warm, fluid, copious, over the whole body, and attended with an abatement of the frequency of the pulse, of the heat of the body, and of other febrile symptoms.

CCCXLIV.

The prognostics in this disease are formed from the state of the principal symptoms. (CCCXXVII.)

A violent pyrexia is always dangerous.

The danger, however, is chiefly denoted by the difficulty of breathing. When the patient can lie on one side only; when he can lie on neither side, but upon his back only; when he cannot breathe with tolerable ease, except when the trunk of his body is erect; when, even in this posture, the breathing is very difficult, and attended with a turgescence and flushing of the face, with partial sweats about the head and neck, and an irregular pulse; these circumstances mark the difficulty of breathing in different degrees, and, consequently, in proportion, the danger of the disease.

A frequent violent cough aggravating the pain, is always the symptom of an obstinate disease.

As we believe that the disease is hardly ever resolved, without some expectoration, so a dry cough must be always an unfavourable symptom.

As the expectoration described (CCCXLIII.) is a mark that the disease is proceeding to a resolution, so an expectoration, which has not these conditions, must denote at least a doubtful state of the disease; but the marks taken from the colour of the matter are for the most part fallacious.

An acute pain, very much interrupting inspiration, is always the mark of a violent disease, but not of a more dangerous disease than an obtuse pain, attended with very difficult respiration.

When the pains which at first had affected one side only, shall afterwards spread into the other, or, when
leaving

leaving the side first affected, they entirely pass into the other, these are always marks of a dangerous disease.

A delirium coming on during a pneumonic inflammation, is always a symptom denoting much danger.

CCCXLV.

When the termination of this disease proves fatal, it is on one or other of the days of the first week, from the third to the seventh. This is the most common case; but, in a few instances, death has happened at a later period of the disease.

When the disease is violent, but admitting of resolution, this also happens frequently in the course of the first week; but, in a more moderate disease, the resolution is often put off to the second week.

The disease generally suffers a remission on some of the days from the third to the seventh; which, however, may be often fallacious, as the disease sometimes returns again with as much violence as before, and in such case with great danger.

Sometimes the disease disappears on the second or third day, while an erysipelas makes its appearance on some external part; and, if this continues fixed, the pneumonic inflammation does not recur.

If the disease continue beyond the fourteenth day, it generally terminates in a suppuration.

CCCXLVI.

The consideration of this termination by suppuration, is referred to our chapter on Phthisis.

The termination by gangrene is much more rare than has been imagined; and, when it does occur, it is usually joined with the termination by effusion, (CCCXXXVIII.) and the symptoms of the one are hardly to be distinguished from those of the other.

CCCXLVII.

The cure of pneumonic inflammation must proceed upon the general plan (CCLIX); but the importance
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of the part affected, and the danger to which it is exposed, requires that the remedies be fully, as well as early, employed.

CCCXLVIII.

The remedy chiefly to be depended upon is that of bleeding at the arm, which will be performed with most advantage in the arm of the side affected, but may be done in either arm, as may be most convenient for the patient or the surgeon. The quantity must be suited to the violence of the disease, and the vigour of the patient; and, generally, ought to be as large as this last circumstance will allow. The remission of pain, and the relief of respiration, during the flowing of the blood, may limit the quantity to be then drawn; but, if these symptoms of relief do not appear, the bleeding should be continued till the symptoms of a beginning syncope come on. It is seldom that one bleeding, however large, will prove a cure of this disease; and, though the pain and difficulty of breathing may be much relieved by the first bleeding, these symptoms commonly, and after no long interval, recur; often with as much violence as before. In the event of such recurrence, the bleeding is to be repeated, even in the course of the same day, and perhaps to the same quantity as before.

Sometimes the second bleeding may be larger than the first. There are persons who, by their constitution, are ready to faint even upon a small bleeding; and, in such persons, this may prevent the drawing so much blood at first as a pneumonic inflammation may require; but, as the same persons are sometimes found to bear after-bleedings better than the first, this allows the second and subsequent bleedings to be larger, and to such a quantity as the symptoms of the disease may seem to require.

CCCXLIX.

It is according to the state of the symptoms, that bleedings are to be repeated; and they will be more effectual when practised in the course of the first three days than afterwards; but they are not to be omitted, although

although four days of the disease may have already elapsed. If the physician shall not have been called in sooner, or if the bleedings shall not have been large enough during the first days, or even although these bleedings shall have procured some remission; yet, upon the recurrence of the urgent symptoms, bleeding should be repeated at any period of the disease, especially within the first fortnight; and even afterwards, if a tendency to suppuration be not evident, or if, after a seeming solution, the disease shall have again returned.

CCCL.

With respect to the quantity of blood which ought, or which with safety may be taken away, no general rules can be delivered, as it must be very different, according to the state of the disease, and the constitution of the patient. In an adult male of tolerable strength, a pound of blood, Averdupois, is a full bleeding. Any quantity above twenty ounces is a large, and any quantity below twelve, a small bleeding. A quantity of from four to five pounds, in the course of two or three days, is generally as much as such patients will safely bear; but, if the intervals between the bleedings, and the whole of the time during which the bleedings have been employed has been long, the quantity taken upon the whole may be greater.

CCCLI.

When a large quantity of blood has been already taken from the arm, and it is doubtful if more can be taken with safety in that manner, some blood may still be taken by cupping and scarifying. Such a measure will be especially proper, when the continuance or recurrence of pain, rather than the difficulty of breathing, becomes the urgent symptom; and then the cupping and scarifying should be made as near to the pained part as can conveniently be done.

CCCLII.

CCCLII.

An expectoration takes place sometimes very early in this disease; but if, notwithstanding thereof, the urgent symptoms should still continue, the expectoration must not supersede the bleedings we have mentioned; and, during the first days of the disease, its solution is not to be trusted to the expectoration alone. It is in a more advanced state only, and when the symptoms have suffered a considerable remission, that we may trust the entire cure to a copious and free expectoration.

CCCLIII.

During the first days of the disease, we do not find that bleeding stops expectoration. On the contrary, we have often found bleeding promote it; and it is in a more advanced state of the disease only, when the patient, by large evacuations, and the continuance of the disease, has been already exhausted, that bleeding seems to stop expectoration. We are of opinion, that even then bleeding does not stop expectoration, so much by weakening the powers of expectoration, as by favouring the ferous effusion into the bronchiæ, (CCCXL.) and thereby preventing it.

CCCLIV.

While the bleedings we have mentioned shall be employed, it will be necessary to employ also every part of the antiphlogistic regimen, (CXXIII. CXXIV.) and particularly to prevent the irritation which might arise from any increase of heat. For this purpose, it will be proper to keep the patient out of bed, while he can bear it easily, and, when he cannot, to cover him very lightly while he lies in bed. The temperature of his chamber ought not to exceed sixty degrees of Fahrenheit's thermometer; and whether it may be at any time colder, I am uncertain.

CCCLV.

CCCLV.

Mild and diluent drinks, moderately tepid, at least never cold, given by small portions at a time, ought to be administered plentifully. These drinks may be impregnated with vegetable acids. They may be properly accompanied also with nitre, or some other neutrals; but these salts should be given separately from the drink.

It has been alledged, that both acids and nitre are ready to excite coughing, and in some persons they certainly have this effect; but, except in persons of a peculiar habit, we have not found their effects in exciting coughs so considerable or troublesome as to prevent our seeking the advantages otherwise to be obtained from these medicines.

CCCLVI.

Some practitioners have doubted, if purgatives can be safely employed in this disease; and indeed a spontaneous diarrhoea occurring in the beginning of the disease has seldom proved useful; but we have found the moderate use of cooling laxatives generally safe; and we have always found it useful to keep the belly open by frequent emollient clysters.

CCCLVII.

To excite vomiting by emetics, we judge to be a dangerous practice in this disease; but we have found it useful to exhibit nauseating doses; and, in a somewhat advanced state of the disease, we have found such doses have proved the best means of promoting expectoration.

CCCLVIII.

Fomentations and poultices applied to the pained part have been recommended, and may be useful; but the application of them is often inconvenient, and we omit it entirely

entirely for the sake of the more effectual remedy, blistering.

Very early in the disease, a blister should be applied as near to the pained part as possible. But as, when the irritation of a blister is present, it renders bleeding less effectual; so the application of the blister should be delayed till a bleeding shall have been employed. If the disease be moderate, the blister may be applied immediately after the first bleeding; but, if the disease be violent, and it is presumed that a second bleeding may be necessary soon after the first, it will then be proper to delay the blister till after the second bleeding, when it may be supposed that any farther bleeding may be postponed till the irritation arising from the blister shall have ceased. It may be frequently necessary in this disease to repeat the blistering, and, in that case, the plasters should always be applied somewhere on the thorax; for, when applied to more distant parts, they have little effect. The keeping the blistered parts open, and making what is called a perpetual blister, has much less effect than a fresh blistering.

CCCLIX.

As this disease often terminates by an expectoration, some means of promoting this have been often proposed; but none of them appear to be very effectual, and some of them, being acrid stimulant substances, cannot be very safe.

The gums usually employed seem too heating; squills seem to be less so; but they are not very powerful, and sometimes inconvenient, by the constant nausea they induce.

The volatile alkali may be of service as an expectorant; but it should be reserved for an advanced state of the disease.

Mucilaginous and oily demulcents appear to be useful, by allaying that acrimony of the mucus which occasions too frequent coughing; and which coughing prevents the stagnation and thickening of the mucus, and thereby its becoming mild.

The receiving the steams of warm water into the lungs, impregnated with vinegar, has often proved useful in promoting expectoration.

But, of all other remedies, the most powerful for this purpose, are antimonial medicines, given in nauseating doses, as in (CCCLVII.) Of these, however, we have not found the kermes mineral more efficacious than emetic tartar, or antimonial wine; and the dose of the kermes is much more uncertain than that of the others.

CCCLX.

Though a spontaneous sweating often proves the crisis of this disease, it ought not to be excited by art, unless with much caution. At least, we have not yet found it either so effectual or safe as some writers have alledged. When, after some remission of the symptoms, spontaneous sweats of a proper kind arise, they may be encouraged; but it ought to be without much heat, and without stimulant medicines. If, however, the sweats be partial and clammy only, and a great difficulty of breathing still remain, it will be very dangerous to encourage them.

CCCLXI.

Physicians have differed much in opinion with regard to the use of opiates in pneumonic inflammations. To me it appears, that, in the beginning of the disease, and before bleeding and blistering have produced some remission of the pain, and of the difficulty of breathing, opiates have a very bad effect by their increasing the difficulty of breathing, and other inflammatory symptoms. But, in a more advanced state of the disease, when the difficulty of breathing has abated, and when the urgent symptom is a cough, proving the chief cause of the continuance of the pain, and of the want of sleep, opiates may be employed with great advantage and safety. The interruption of the expectoration, which they seem to occasion, is for a short time only; and they seem often to promote it, as they occasion a
 stagnation

stagnation of what was by frequent coughing dissipated insensibly, and therefore give the appearance of what physicians have called Concocted Matter.

CCCLXII.

We might here give a section on the Carditis and Pericarditis, or the inflammations of the Heart and Pericardium; but they hardly require a particular consideration. An acute inflammation of the Pericardium is almost always a part of the same pleuritic affection we have been treating of, and is not always distinguished by any different symptoms; or, if it be, does not require any different treatment. The same may be said of an acute inflammation of the heart itself; and, when it happens that the one or other is discovered by the symptoms of palpitation or syncope, no more is implied, than that the remedies of pneumonic inflammation should be employed with greater diligence.

From dissections, which shew the heart and pericardium affected with erosions, ulcerations, and abscesses, we discover, that these parts had before been affected with inflammation; and while, at the same time, no symptoms of pneumonic inflammation had appeared, it may be alledged, that those inflammations of the heart and pericardium should be considered as diseases independent of the pneumonic. This indeed is just; but the history of such cases proves, that the inflammation had been of a chronic kind, and hardly discovering themselves, by any peculiar symptoms, or, if attended with such as marked an affection of the heart, these are, at the same time, such as have been known frequently to arise from other causes than inflammation. There is, therefore, upon the whole, no room for our treating more particularly of the inflammation of the heart or pericardium.

C H A P. VII.

OF THE GASTRITIS, OR INFLAM-
MATION OF THE STOMACH.

CCCLXIII.

Among the inflammations of the abdominal region, we have given a place in our Nosology to the Peritonitis, comprehending under this title, not only the inflammations affecting the peritonæum lining the cavity of the abdomen, but those also affecting the extensions of this membrane in the omentum and mesentery. We are not, however, to treat of them here, because we cannot say by what symptoms they are always to be known; and farther, because, when known, they do not require any remedies besides those of inflammation in general. We proceed, therefore, to treat of those inflammations which, affecting viscera of peculiar functions, both give occasion to peculiar symptoms, and require some peculiarities in the method of cure. We begin with the inflammation of the stomach.

CCCLXIV.

The inflammation of the stomach is of two kinds, Phlegmonic, or Erysipelatous. The first may be seated in what is called the Nervous Coat of the stomach, or in the peritonæum investing it. The second is always seated in the Villous coat and cellular texture immediately subjacent.

CCCLXV.

CCCLXV.

The phlegmonic inflammation of the stomach, or what has been commonly treated of under the title of Gastritis, is known by an acute pain in some part of the region of the stomach, attended with pyrexia, frequent vomiting, especially upon any thing being taken down into the stomach, and frequently with hiccup. The pulse is commonly small and hard, and there is a greater loss of strength in all the functions than in the case of almost any other inflammation.

CCCLXVI.

This inflammation may be produced by various causes; as, by external contusion; by acids of various kinds taken into the stomach; frequently by very cold drink taken into it, while the body is very warm, and sometimes by over-distention, from the having taken in a large quantity of food of difficult digestion. All these may be considered as external causes; but the disease sometimes arises also from internal causes not so well understood. It may arise from inflammations of the neighbouring parts communicated to the stomach, and then is to be considered as a symptomatic affection. It may arise also from various acrimony generated within the body, either in the stomach itself, or in other parts, and poured into the cavity of the stomach. These are causes more directly applied to the stomach; but there are others originating perhaps elsewhere, and affecting the stomach only sympathically. Such seem to have acted in the case of putrid fevers and exanthematic pyrexia, in which we have found, upon dissection, the stomach to have been affected with inflammation.

CCCLXVII.

From the sensibility of the stomach, and its communication with the rest of the system, it will be obvious, that the inflammation of this organ, by whatever causes produced, may be attended with fatal consequences.
Particularly,

Particularly, by the great debility which it suddenly produces, it may prove suddenly fatal, without running the common course of inflammations.

When it lasts long enough to follow the ordinary course of other inflammations, it may terminate by resolution, gangrene, or suppuration. The schirrosities which are often found to affect the stomach, are seldom known to be the consequences of inflammation.

CCCLXVIII.

The tendency of this disease to admit of resolution, may be known by its having arisen from no violent cause, by the moderate state of the symptoms, and by a gradual remission of these symptoms in the course of the first, or, at most, of the second week of the disease.

CCCLXIX.

The tendency to gangrene may be suspected from the violence of the symptoms not yielding to the remedies employed during the first days of the disease; and that a gangrene has already begun, may be known from the sudden remission of the pain, while the frequency of the pulse continues, and, at the same time, becomes weaker, accompanied with other marks of the increasing debility of the whole system.

CCCLXX.

The tendency to suppuration may be known by the symptoms continuing, but in a moderate degree, for more than one or two weeks, and by a considerable remission of the pain, while a sense of weight and an anxiety still remain.

When an abscess has been formed, the frequency of the pulse is at first abated; but soon after it is again increased, with frequent cold shiverings, and with marked exacerbations in the afternoon and evening, followed by night sweatings, and other symptoms of hectic fever. These at length prove fatal, unless the abscess

abscess open into the cavity of the stomach, the pus be evacuated by vomiting, and the ulcer soon healed.

CCCLXXI.

It appears, from the dissection of dead bodies, that the stomach very often has been affected with inflammation, when the characteristic symptoms of it had not appeared; and therefore we cannot lay down any general rules for the cure of this disease.

CCCLXXII.

It is only in the case of phlegmonic inflammation, as characterised in (CCCLXV.), that we can advise the cure or resolution to be attempted by large and repeated bleedings employed early in the disease; and from these we are not to be deterred by the smallness of the pulse; for, after bleeding, it commonly becomes fuller and softer. After bleeding, a blister ought to be applied to the region of the stomach, and the cure will be assisted by fomentations of the whole abdomen, and by frequent emollient and laxative clysters.

CCCLXXIII.

The irritability of the stomach, in this disease, will admit of no internal medicines being thrown into it; and, if any can be supposed necessary, they must be exhibited in clysters. The giving of drink may be tried; but it ought to be of the very mildest kind, and in very small quantities at a time.

CCCLXXIV.

Opiates, in whatever manner exhibited, are very hurtful during the first days of the disease; but, when the violence of the disease shall have abated, and when the violence of the pain and vomiting recur at intervals only, opiates given in clysters may be cautiously tried, and sometimes have been employed with advantage.

CCCLXXV.

CCCLXXV.

A tendency to gangrene in this disease is to be obviated only by the means just now proposed; and, when it does actually supervene, admits of no remedy.

CCCLXXVI.

A tendency to suppuration is only to be obviated by the same means employed early in the disease. After a certain period, it cannot be prevented by any means whatever; and, when actually begun, must be left to nature; the only thing that can be done by art, being to avoid all irritation.

CCCLXXVII.

Erysipelatous inflammations of the stomach, are more frequent than those of the phlegmonic kind. It appears, at least, from dissections, that the stomach has often been affected with inflammation, when neither pain nor pyrexia had before given any notice of it; and such we judge to have been chiefly of the erysipelatous kind. This kind of inflammation also, is especially to be expected from acrimony of any kind applied to the stomach, and would certainly occur more frequently from such a cause, were not the interior surface of this organ commonly defended by mucus exuding in large quantity from the numerous follicles placed immediately under the villous coat. On many occasions, however, the exudation of mucus is prevented, or the liquid poured out is of a less viscid kind, so as to be less fitted to defend the subjacent nerves; and it is in such cases that acrid matters may readily produce an erysipelatous affection of the stomach.

CCCLXXVIII.

From what has been said, it must appear, that an erysipelatous inflammation of the stomach may frequently occur,

occur, but will not always discover itself, as it sometimes takes place without pyrexia, pain, or vomiting.

CCCLXXIX.

There are cases, however, in which it may be discovered. The affection of the stomach sometimes spreads into the œsophagus, and appears in the pharynx, and on the whole internal surface of the mouth. When, therefore, an erysipelatous inflammation affects the mouth and fauces, and there shall be at the same time in the stomach an unusual sensibility to all acrids, and also a frequent vomiting, there can be little doubt of the stomach's being affected with the same inflammation that has appeared in the fauces. Even when no inflammation appears in the fauces, if some degree of pain be felt in the stomach, if there be a want of appetite, an anxiety, and frequent vomiting, and unusual sensibility with respect to acrids, some thirst, and frequency of pulse, there will then be room to suspect an inflammation of the stomach; and we have known such symptoms, after some time, discover their cause more clearly by the inflammation's appearing in the fauces or mouth.

Erysipelatous inflammation is often disposed to spread from one place to another on the same surface, and, in doing so, to leave the place it had at first occupied. Thus, we have known such an inflammation spread successively along the whole length of the alimentary canal, occasioning in the intestines diarrhœa, and in the stomach vomitings, the diarrhœa ceasing when the vomitings come on, and, on the other hand, the vomitings on the coming on of the diarrhœa.

CCCLXXX.

When an erysipelatous inflammation of the stomach is discovered, it is to be treated differently according to the difference of its causes and symptoms.

When it is owing to acrid matters taken in by the mouth, and these may be supposed still present in the stomach, they are to be washed out by throwing in a large quantity of warm and mild liquids, and by ex-

T

citing

citing vomiting. At the same time, if the nature of the acrimony and its proper corrector be known, this should be thrown in ; or, if a specific corrector be not known, some general demulcents should be employed.

CCCLXXXI.

These measures, however, are more suited to prevent than to cure inflammation, after it has taken place. When this last may be supposed to be the case, if it be attended with a sense of heat, with pain and pyrexia, according to the degree of these symptoms, the measures proposed in (CCCLXXII. *et seq.*) are to be more or less employed.

CCCLXXXII.

When an erysipelatous inflammation of the stomach has arisen from internal causes, if pain and pyrexia accompany the disease in persons not otherwise weakened, some bleeding may be employed ; but, as the affection often arises in putrid diseases, and in convalescents from fever, in such cases, bleeding is not admissible, all that can be done being to avoid irritation ; and only throwing into the stomach what quantity of acids, and of acescent aliments, it shall be found to bear. In some conditions of the body, in which this disease arises, the Peruvian bark and bitters may seem to be indicated ; but an erysipelatous state of the stomach does not commonly allow of them.

C H A P. VIII.

O F T H E E N T E R I T I S, O R I N F L A M -
M A T I O N O F T H E I N T E S T I N E S.

CCCLXXXIII.

The inflammation of the intestines, like that of the stomach, may be either phlegmonic, or erysipelatous; but, on the subject of the latter, I have nothing to add to what I have said in the last chapter; and shall here therefore treat of the phlegmonic inflammation only.

CCCLXXXIV.

This inflammation may be known to be present by a fixed pain in the abdomen, attended with a pyrexia, costiveness, and vomiting. Practical writers mention the pain in this case as felt in different parts of the abdomen, according to the different seat of the inflammation; and so indeed it sometimes happens, but very often the pain spreads over the whole belly, and is felt more especially about the navel.

CCCLXXXV.

The enteritis and gastritis arise from like causes; but, the former, more readily than the latter, from cold applied to the lower extremities, or to the belly itself. The enteritis has likewise its peculiar causes, as supervening upon the spasmodic colic, incarcerated hernia, and volvulus.

CCCLXXXVI.

CCCLXXXVI.

Inflammations of the intestines have the same terminations as those of the stomach, and, in both cases, the several tendencies are to be discovered by the same symptoms (CCCLXVIII. CCCLXIX. CCCLXX.)

CCCLXXXVII.

The cure of the enteritis is in general the same with that of the gastritis (CCCLXXII. *et seq.*); but, in the former, there is commonly more access to the introduction of liquids, of acid, acescent, and other cooling remedies, and even of laxatives; but, as a vomiting so frequently attends the enteritis, care must be taken not to excite that vomiting by either the quantity or the quality of any thing thrown into the stomach.

CCCLXXXVIII.

Under the title of *Enteritis*, it has been common with practical writers to treat of the remedies proper for the colic, and its higher degree, named *Ileus*; but, though it be true that the enteritis and colic frequently accompany each other, we still hold them to be distinct diseases, to be often occurring separately, and accordingly to require and admit of different remedies. We shall therefore delay speaking of the remedies proper for the colic till we shall come to treat of this disease.

CCCLXXXIX.

What occurs to be said with respect to the supuration, or gangrene, occurring in the enteritis, may be sufficiently understood from what has been said on the same subjects with respect to the gastritis.

C H A P. IX.

OF THE HEPATITIS, OR INFLAMMATION OF THE LIVER.

CCCXC.

The inflammation of the liver seems to be of two kinds, the one acute, the other chronic.

CCCXCI.

The acute is attended with pungent pain, considerable pyrexia, a frequent, strong, and hard pulse, and high coloured urine.

CCCXCII.

The chronic hepatitis very often exhibits none of these symptoms, (CCCXCI.) and we only discover it to have happened by our finding large abscesses in the liver, which are presumed to be the effect of some degree of inflammation. As this chronic inflammation is not to be certainly known, and therefore does not lead to any certain practice, we omit treating of it here, and shall only treat of what relates to the acute species of the hepatitis.

CCCXCIII.

The acute hepatitis may be known by a pain more or less acute in the right hypochondrium, increased by pressing upon the part. The pain is very often in such a part of the side as to make it appear as that of a pleurisy; and frequently, like that, is increased on inspiration.

ration. The disease is sometimes also attended with a cough, which is commonly dry, but sometimes humid. When the pain thus resembles that of a pleurisy, the patient cannot lie easily except upon the side affected. In every kind of acute hepatitis, the pain is often extended to the clavicle, and to the top of the shoulder. The disease is attended sometimes with hiccup, and sometimes with vomiting. Many practical writers have mentioned the jaundice, or a yellow colour of the skin and eyes, as a very constant symptom of the hepatitis; but experience hath shown, that the disease may often occur without any such symptom.

CCCXCIV.

The remote causes of hepatitis are not always to be discerned, and many have been assigned on a very uncertain foundation. It is to be observed, that, in many cases of pneumonic inflammation, the liver appears considerably enlarged, and sometimes the pneumonic inflammation is joined with the hepatitis.

CCCXCV.

It has been supposed that the hepatitis may be an affection either of the extremities of the hepatic artery, or those of the vena portarum; but of the last supposition there is neither evidence nor probability.

CCCXCVI.

It seems probable that the acute hepatitis is always an affection of the external membrane of the liver, and that the parenchymatic is of the chronic kind. The acute disease may be seated either on the convex or on the concave surface of the liver. In the former case, a more pungent pain and hiccup may be produced, and the respiration is more considerably affected. In the latter, there occurs less pain, and a vomiting is produced, commonly by some inflammation communicated to the stomach. The inflammation of the concave surface of the liver may be readily communicated to the
gall-

gall-bladder and biliary ducts; and this perhaps is the only case of idiopathic hepatitis attended with jaundice.

CCCXCVII.

The hepatitis, like other inflammations, may end by resolution, suppuration, or gangrene; and the tendency to the one or the other of these events may be known from what has been delivered above (CCXLIV. CCXLV. CCXLVI. CCL. CCLI. CCLII. CCCLXVIII. CCCLXIX. CCCLXX.)

CCCXCVIII.

The resolution of hepatitis is often the consequence of, or is attended with evacuations of different kinds. A hemorrhagy sometimes from the nose, and sometimes from the hemorrhoidal vessels, gives a solution of the disease. Sometimes a bilious diarrhoea contributes to the same event; and the resolution of the hepatitis, as of the other inflammations, is attended with sweating, and with an evacuation of urine, depositing a copious sediment. Can this disease be resolved by expectoration? It would seem to be sometimes cured by an erysipelas appearing in some external part.

CCCXCIX.

When this disease has ended in suppuration, the pus collected may be discharged by the biliary ducts; or, if the suppurated part does not any where adhere closely to the neighbouring parts, the pus may be discharged into the cavity of the abdomen; but if, during the first state of inflammation, the affected part of the liver shall have formed a close adhesion to some of the neighbouring parts, the discharge of the pus after suppuration may be various, according to the different seat of the abscess. When seated on the convex part of the liver, if the adhesion be to the peritonæum lining the common teguments, the pus may make its way through these, and be discharged outwardly; or, if the adhesion shall have been to the diaphragm, the pus may penetrate through
this,

this, and into the cavity of the lungs; and through this may be discharged by coughing. When the abscess of the liver is seated on its concave part, in consequence of adhesions, the pus may be discharged into the stomach or intestines; and into these last, either directly, or by the intervention of the biliary ducts.

CCCC.

The prognostics in this disease are established upon the general principles relating to inflammation, upon the particular circumstances of the liver, and upon the particular state of its inflammation.

CCCCI.

The cure of this disease must proceed upon the general plan, by bleeding, more or less, according to the urgency of pain and pyrexia; by the application of blisters; by fomentations of the external parts in the usual manner, and of the internal parts by frequent emollient clysters; by frequently opening the belly by means of gentle laxatives; and by diluent and refrigerant remedies.

CCCCII.

When a suppuration has been formed, and the abscess points outwardly, the part must be opened, the pus evacuated, and the ulcer healed, according to the ordinary rules for cleansing and healing such abscesses and ulcers.

CCCCIII.

We might here consider the splenitis, or inflammation of the spleen. It does not, however, seem necessary, because the disease very seldom occurs. When it does, it may be readily known by the character given in our Nosology; and its various event, and the practice it requires, may be understood from what has been said above on the inflammations of the other abdominal viscera.

C H A P.

C H A P . X .

O F T H E N E P H R I T I S , O R I N F L A M -
M A T I O N O F T H E K I D N E Y S .

C C C C I V .

This disease, like other internal inflammations, is always attended with pyrexia, and is especially known from the region of the kidney being affected by a pain, commonly obtuse, sometimes pungent. This pain is not increased by the motion of the trunk of the body so much as a pain of the rheumatic kind affecting the same region. The pain of the nephritis may be often distinguished by its shooting along the course of the ureter, and is frequently attended with a drawing up of the testicle, and with a numbness of the limb on the side affected; altho', indeed, these symptoms most commonly attend the inflammation arising from a calculus in the kidney or in the ureter. The nephritis is almost constantly attended with frequent vomiting, and often with costiveness and colic pains. The state of the urine is commonly changed; it is most commonly of a deep red colour, is voided frequently, and in a small quantity, at a time. In more violent cases, the urine is sometimes colourless.

C C C C V .

The remote causes of this disease may be various; as external contusion; violent or long continued riding; strains of the muscles of the back incumbent on the kidneys; various acrids in the course of the circulation conveyed to the kidney; and perhaps some other internal causes not yet well known. The most frequent is that

of calculous matter obstructing the tubuli uriniferi, or calculi formed in the pelvis of the kidneys, and either sticking there, or fallen into the ureter.

CCCCVI.

The various event of this disease may be understood from what has been delivered on the subject of other inflammations.

CCCCVII.

Writers, in treating of the cure of nephritis, have commonly at the same time delivered the cure of the Calculus renalis; but, though this may often produce nephritis, it is to be considered as a distinct and separate disease; and the treatment of it must be reserved to its proper place. Here we shall treat of the cure of the nephritis vera, or idiopathica only.

CCCCVIII.

The cure of this proceeds upon the general plan, by bleeding, external fomentation, frequent emollient clysters, antiphlogistic purgatives, and by the free use of mild and demulcent liquids. The use of blisters is hardly admissible, or, at least, will require great care to avoid any considerable absorption of the cantharides.

CCCCIX.

The cystitis, or inflammation of the bladder, is seldom a primary disease, and is therefore not to be treated of here. The treatment of it, so far as necessary to be explained, may be readily understood from what has been already delivered.

CCCCX.

Of the visceral inflammations, there remains to be considered the inflammation of the uterus; but we omit
it

it here, because the consideration of it cannot be separated from that of the diseases of child-bearing women.

C H A P. XI.

O F T H E R H E U M A T I S M.

CCCCXI.

Of this disease there are two species, the one named the acute, the other the chronic rheumatism.

CCCCXII.

It is the acute rheumatism which especially belongs to this place, as, from its causes, symptoms, and methods of cure, it will appear to be a species of phlegmasia or inflammation.

CCCCXIII.

This disease is frequent in cold, and more uncommon in warm climates. It appears most frequently in autumn and spring, less frequently in winter, while the frost is constant, and very seldom during the heat of summer. It may occur, however, at any season, if vicissitudes of heat and cold be for the time frequent.

CCCCXIV.

For the most part, the acute rheumatism arises from the application of cold to the body when any how unusually warm; or when the cold is applied to one part of the body, whilst the other parts are kept warm; or, lastly, when the application of the cold is long continued,

tinued, as it is when wet or moist cloaths are applied to any part of the body.

CCCCXV.

These causes may affect persons of all ages; but the rheumatism seldom appears either in very young or in elderly persons, and most commonly occurs from the age of puberty to that of thirty-five years.

CCCCXVI.

These causes (CCCCXIV.) may also affect persons of any constitution, but they most commonly affect those of a sanguine temperament.

CCCCXVII.

This disease is particularly distinguished by pains affecting the joints, for the most part the joints alone, but sometimes affecting also the muscular parts. Very often the pains shoot along the course of the muscles, from one joint to another, and are always much increased by the action of the muscles belonging to the joint, or joints affected.

CCCCXVIII.

The larger joints are most frequently affected, such as the hip-joint and knees of the lower, and the shoulders and elbows of the upper extremities. The ankles and wrists are also frequently affected; but the smaller joints, such as those of the toes or fingers, seldom suffer.

CCCCXIX.

This disease, although sometimes confined to one part of the body only, yet very often affects many parts of it; and then it begins with a cold stage, which is immediately succeeded by the other symptoms of pyrexia, and particularly by a frequent, full, and hard pulse.

Sometimes

Sometimes the pyrexia is formed before any pains are perceived, but more commonly pains are felt in particular parts, before any symptoms of pyrexia appear.

CCCCXX.

When no pyrexia is present, the pain may be confined to one joint only; but, when any considerable pyrexia is present, although the pain may be chiefly in one joint, yet it seldom happens but that the pains affect several joints, often at the very same time, but for the most part shifting their place, and, having abated in one joint, become more violent in another. They do not commonly remain long in the same joint, but frequently shift from one to another, and sometimes return to joints formerly affected; and in this manner the disease often continues for a long time.

CCCCXXI.

The pyrexia attending this disease has an exacerbation every evening, and is most considerable during the night, when the pains also become more violent; and it is at the same time that the pains shift their place from one joint to another. The pains seem to be also increased during the night, by the body being covered more closely, and kept warmer.

CCCCXXII.

A joint, after having been for some time affected with pain, commonly becomes affected also with some swelling and redness, which is painful to the touch. It seldom happens, that a swelling coming on does not alleviate the pain, which had been before in the joint; but the swelling does not always take off the pain entirely, nor secure the joint against a return of it.

CCCCXXIII.

This disease is commonly attended with some sweating, which occurs early in the course of the disease, but is seldom

feldom free or copious, and seldom either relieves from the pains, or proves critical.

CCCCXXIV.

In the course of this disease the urine is high coloured, and in the beginning without sediment; but, as the disease advances, and the pyrexia has more considerable remissions, the urine deposits a lateritious sediment. This, however, does not prove entirely critical; for the disease often continues long after such a sediment has appeared in the urine.

CCCCXXV.

When blood is drawn in this disease, it always exhibits the appearance mentioned (CCXXXII.)

CCCCXXVI.

The acute rheumatism, though it has so much of the nature of the other phlegmasiæ, differs from all these hitherto mentioned, in this, that it is not liable to terminate in suppuration. This almost never happens in rheumatism; but the disease sometimes produces effusions of a transparent gelatinous fluid into the sheaths of the tendons. If we may be allowed to suppose that such effusions are frequent, it must also happen, that the effused fluid is commonly re-absorbed; for it has seldom happened, and never, indeed to my observation, that considerable or permanent tumours have been produced, or such as required to be opened, and to have the contained fluid evacuated. Such tumours have indeed occurred to others, and the opening made in them has produced ulcers difficult to heal. Vide Storck. Ann. Med. II.

CCCCXXVII.

In the circumstances mentioned from (CCCCXXVII, to CCCCXXIV.), the disease often continues for several

several weeks. It seldom, however, proves fatal; and it rarely happens that the pyrexia continues to be considerable for more than two or three weeks. While the pyrexia abates in its violence, if the pains of the joints continue, they are less violent, more limited in their place, being confined commonly to one or a few joints only, and are less ready to change their place.

CCCCXXVIII.

When the pyrexia attending rheumatism has entirely ceased, when the swelling, and particularly the redness of the joints, are entirely gone, but there are pains which still continue to affect certain joints, which remain stiff, which feel uneasy upon motion, on changes of weather, or in the night time only, the disease is named the Chronic Rheumatism, as it very often continues for a long time. As the chronic is commonly the sequel of the acute rheumatism, we think it proper to treat of the former also in this place.

CCCCXXIX.

The limits between the acute and chronic rheumatisms, are not always exactly marked.

When the pains are still ready to shift their place, when they are especially severe in the night-time, when, at the same time, they are attended with some degree of pyrexia, and with some swelling, and especially some redness of the joints; the disease is to be considered as partaking of the nature of the acute rheumatism.

But, when there is no degree of pyrexia remaining, when the pained joints are without redness, when they are cold and stiff, when they cannot easily be made to sweat, or when, while a free and warm sweat is brought out on the rest of the body, it is only clammy and cold on the pained joints; and when, further, the pains of these are increased by cold, and relieved by heat applied to them, the case is to be considered as that of a purely chronic rheumatism.

CCCCXXX.

CCCCXXX.

The chronic rheumatism may affect different joints, but is especially ready to affect those joints which are surrounded with many muscles, and those of which the muscles are employed in the most constant and vigorous exertions. Such is the case of the vertebræ of the loins, the affection of which is named Lumbago, or of the hip-joint, when the disease is named Ischias, or Sciatica.

CCCCXXXI.

Violent strains and spasms occurring on sudden and somewhat violent exertions, bring on rheumatic affections, which at first partake of the acute, but very soon change into the nature of the chronic rheumatism. Such are frequently the lumbago, and other affections which seem to be more seated in the muscles, than in the joints, as the torticollis or obstipitas catarrhalis of Sauvages, and the pleuritis spuria, or the pleurodyne plethorica and rheumatica of the same author.

CCCCXXXII.

We have thus delivered the history of rheumatism, and suppose that, from what has been said, the remote causes, the diagnosis, and prognosis of the disease, may be understood. The distinction of the rheumatic pains from those resembling them, which occur in the syphilis and scurvy, will be obvious, either from the seat of those pains, or from the concomitant symptoms peculiar to these diseases. The distinction of rheumatism from gout will be more fully understood from what is to be delivered in the following chapter.

CCCCXXXIII.

With respect to the proximate cause of rheumatism, there have been various opinions. It has been imputed to a peculiar acrimony; of which, however, I can find no evidence; and the consideration of the remote causes, the

the symptoms, and cure of the disease, renders the supposition very improbable. The cause of an *Ischias nervosa* assigned by Cotunnus, appears to me hypothetical, and is not supported by either the phænomena or method of cure. That, however, a disease of a rheumatic nature may be occasioned by an acrid matter applied to the nerves, is evident from the tooth-ach, a rheumatic affection generally arising from a carious tooth.

That pains resembling those of rheumatism may arise from deep seated suppurations, we know from some cases depending on such a cause, and which, in their symptoms, resemble the lumbago or ischias. We believe, however, that, by a proper attention, these cases depending on suppuration, may be commonly distinguished from the genuine cases of lumbago and ischias, and, from what is said in (CCCCXXVI.), we judge it to be at least improbable, that a genuine lumbago or ischias should ever end in suppuration.

CCCCXXXIV.

The proximate cause of rheumatism has been by many supposed to be a lentor of the fluids obstructing the vessels of the part; but the same considerations as in CCXXXVI. 2, 3, 4, and 5, will apply equally here for rejecting the supposition of a lentor.

CCCCXXXV.

While we cannot, therefore, find either evidence or reason for supposing that the rheumatism depends upon any change in the state of the fluids, we must conclude that the proximate cause of acute rheumatism, is the same with that of other inflammations not depending upon a direct stimulus.

CCCCXXXVI.

In the case of rheumatism we suppose, that the most common remote cause of it, that is, cold applied, operates especially on the vessels of the joints, these being

less covered by a cellular texture than those of the intermediate parts of the limbs. We suppose farther, that the application of cold produces a constriction of the extreme vessels, and at the same time, an increase of tone or phlogistic diathesis, in the course of them, from which arises an increased impetus of the blood, and, at the same time, a resistance to the free passage of it, and consequently inflammation and pain. Further, we suppose, that the resistance formed, excites the vis medicatrix to a further increase of the impetus of the blood; and, to support this, a cold stage arises, a spasm is formed, and a pyrexia and phlogistic diathesis are produced in the whole system.

CCCCXXXVII.

According to this explanation, the cause of acute rheumatism appears to be exactly analogous to that of inflammations depending on an increased afflux of blood to a part, while it is exposed to the action of cold.

But there seems to be further, in the case of rheumatism, some peculiar affection of the fibres of the muscles. These fibres seem to be under some degree of rigidity, and therefore less easily admit of motion, and are pained upon the exertions of it. This also seems to be the affection which gives opportunity to the propagation of pains from one joint to another, and which are most severely felt in the extremities terminating in the joints, because, beyond these, oscillations are not propagated.

This affection of the muscular fibres, explains well in what manner strains and spasms produce rheumatic affections; and, upon the whole, shews, that, with an inflammatory affection of the sanguiferous system, there is also in rheumatism a peculiar affection of the muscular fibres, which has a considerable share in producing the phenomena of the disease.

CCCCXXXVIII.

Having thus given our opinion of the proximate cause of rheumatism, we proceed to treat of the cure.

CCCCXXXIX.

CCCCXXXIX.

Whatever difficulty may occur with respect to the explanations given (CCCCXXXVI. CCCCXXXVII.) this remains certain, that in acute rheumatism, there is an inflammatory affection of the parts, and a phlogistic diathesis in the whole system, and upon these is founded the method of cure, which frequent experience has approved.

CCCCXL.

The cure therefore requires, in the first place, an antiphlogistic regimen, and, particularly, a total abstinence from animal food, and from all fermented or spirituous liquors; substituting a mild vegetable or milk diet, and the plentiful use of bland diluent drinks.

CCCCXLI.

Upon the same principle (CCCCXXXIX) blood-letting is the chief remedy of acute rheumatism. The blood is to be drawn in large quantity, and the bleeding is to be repeated in proportion to the frequency, fullness, and hardness of the pulse, and the violence of the pain. For the most part, large and repeated bleeding, during the first days of the disease, seem to be necessary, and accordingly have been very much employed; but to this some bounds are to be set; for very profuse bleedings occasion a slow recovery, and, if not absolutely effectual, are ready to produce a chronic rheumatism.

CCCCXLII.

To avoid that debility of the system, which general bleedings are ready to occasion, the urgent symptom of pain may be often relieved, by topical bleedings; and, when any swelling and redness have come upon a joint, the pain of it may be very certainly relieved by topical bleedings; but, as the continuance of the disease seems to depend more upon the phlogistic diathesis of the whole system,

system, than upon the affection of particular parts, so topical bleedings will not supply the place of the general bleedings proposed above.

CCCCXLIII.

To take off the phlogistic diathesis prevailing in this disease, purging may be useful, if procured by medicines which do not stimulate the whole system, such as the neutral salts, which have in some measure a refrigerant power. Purging, however, is not so powerful as bleeding in removing phlogistic diathesis; and, when the disease has become general and violent, frequent stools are inconvenient, and even hurtful, by the motion and pain which they occasion.

CCCCXLIV.

In acute rheumatism, applications to the pained parts are of little service. Fomentations, in the beginning of the disease, rather aggravate than relieve the pains. The rubefacients and camphire are more effectual in relieving the pains; but generally they only shift the pain into another part, and do not prove any cure of the general affection. Blistering also may be very effectual in removing the pain from a particular part; but will be of little use, except where the pains are much confined to one part.

CCCCXLV.

The several remedies mentioned from (CCCCXXXIX, to CCCCXLIV.) moderate the violence of the disease, and sometimes remove it entirely; but they sometimes fail in this, and leave the cure imperfect. The attempting a cure by large and repeated bleedings, is attended with many inconveniences (see CXXXIV.); and the most effectual and safe method of curing this disease, is, after some general bleedings for taking off, or at least diminishing the phlogistic diathesis, to employ sweating, conducted by the rules laid down (CLXII. and CLXIII.)

CCCCXLVI.

CCCCXLVI.

Opiates, except where they are directed to procure sweat, always prove hurtful in every stage of this disease.

CCCCXLVII.

The Peruvian bark has been supposed a remedy in some cases of this disease; but we have seldom found it useful, and, in some cases, hurtful. It appears to me to be fit in those cases only in which the phlogistic diathesis has much abated, and, at the same time, the exacerbations of the disease are manifestly periodical, with considerable remissions interposed.

CCCCXLVIII.

Calomel, and some other preparations of mercury, have been recommended in the acute rheumatism; but I believe they are useful only in cases approaching to the nature of the chronic.

CCCCXLIX.

Having now treated fully of the cure of the acute rheumatism, we proceed to treat of the cure of the chronic, which is so frequently a sequel of the former.

CCCCL.

The phenomena of the purely chronic rheumatism mentioned in (CCCCXXVIII. and CCCCXXIX.) lead me to conclude, that its proximate cause is an atony, both of the blood-vessels and of the muscular fibres of the part affected, together with such a degree of rigidity, and contraction in the latter, as frequently attend them in a state of atony.

CCCCLI.

CCCCLI.

Upon this view of the proximate cause, the general indication of cure must be to restore the activity and vigour of the vital principle in the part; and the remedies for this disease, which experience has approved of, are chiefly such as are manifestly suited to the indication proposed.

CCCCLII.

These remedies are either external or internal.

The external are, the supporting the heat of the part, by keeping it constantly covered with flannel; the increasing the heat of the part by external heat, applied either in a dry or in a humid form; the diligent use of the flesh-brush, or other means of friction; the application of electricity in sparks or shocks; the application of cold water by affusion or immersion; the application of essential oils of the most warm and penetrating kind; the application of salt brine; and, lastly, the employment either of exercise, of the part itself, so far as it can easily bear; or by riding, or other mode of gestation.

CCCCLIII.

The internal remedies are, 1. large doses of essential oils drawn from resinous substances, such as turpentine; 2. substances containing such oils, as guaiac; 3. volatile alkaline salts; 4. these, or other medicines directed to procure sweat, (CLXIII.) and, lastly, calomel, or other preparation of mercury, in small doses, continued for some time.

CCCCLIV.

These (CCCCLII. and CCCCLIII.) are the remedies successfully employed in the purely chronic rheumatism; and there are still others recommended, as bleeding, general and topical, burning, blistering, and issues;

issues; but these appear to me to be chiefly, perhaps only, useful when the disease still partakes of the nature of acute rheumatism.

C H A P. XII.

O F T H E G O U T.

CCCCLV.

The Gout, not only as it occurs in different persons, but even as it occurs in the same person at different times, is a disease of such various appearance, that it is difficult to render the history of it complete and exact, or to give a character of it that will universally apply. However, I shall endeavour to describe the disease as it most commonly appears, and to mark the varieties of it as well as I can. From such a history we expect, that a general character may be given, and such we think is the following, as intended for the next edition of our Nosology.

GEN. XXIII. P O D A G R A.

Morbus hæreditarius, oriens sine causa externa evidente, sed præeunte plerumque ventriculi affectione insolita; pyrexia; dolor ad articulum et plerumque pedis pollicis, certe pedum et manuum juncturis, potissimum infestus; per intervalla revertens, et sæpe cum ventriculi et internarum partium affectionibus alternans.

CCCCLVI.

The Gout is generally a hereditary disease; but some persons, without hereditary disposition, seem to acquire it;

it; and, in some, a hereditary disposition may be counteracted by various causes. These circumstances may occasion exceptions to our general position; but the facts supporting it are very numerous.

CCCCLVII.

This disease attacks the male sex especially; but it sometimes, though more rarely, attacks also the female. The females liable to it are those of the more robust and full habits; and it very often happens to such before the menstrual evacuation has ceased. I have found it occurring in several females, whose menstrual evacuations were more abundant than usual.

CCCCLVIII.

This disease seldom attacks Eunuchs; and, when it does, seems to be those who happen to be of a robust habit, to lead an indolent life, and to live very full.

CCCCLIX.

The gout attacks especially men of robust and large bodies, men of large heads, of full and corpulent habits, and men whose skins are covered with a thicker *rete mucosum*, which gives a coarser surface.

CCCCLX.

If, with the antients, we might ascertain, by certain terms, the temperaments of men, I would say, that the gout attacks especially men of a *choleric-sanguine* temperament, and that it very seldom attacks the purely sanguine or melancholic. It is, however, very difficult to treat this matter with due precision.

CCCCLXI.

The gout seldom attacks persons employed in constant bodily labour, or persons who live much upon vegetable aliment.

CCCCLXII.

CCCCLXII.

The gout does not commonly attack men, till after the age of five and thirty; and generally not till a still later period. There are indeed instances of the gout occurring more early; but these are few, in comparison of the numbers which agree with what we have given as the general rule. When the disease does appear early in life, it seems to be in those in whom the hereditary disposition is very strong, and to whom the remote causes, to be hereafter mentioned, have been applied in a considerable degree.

CCCCLXIII.

As the gout is a hereditary disease, and affects especially men of a particular habit, its remote causes may be considered as predisponent and occasional.

CCCCLXIV.

The predisponent cause, so far as expressed by external appearances, we have already marked; and physicians have been very confident in assigning the occasional causes; but, in a disease depending so much upon a predisposition, the assigning occasional causes must be uncertain; as, in the predisposed, the occasional causes may not always appear, and, in persons not predisposed, they may appear without effect. This uncertainty must particularly affect the case of the gout; but I shall offer what appears to me most probable on the subject.

CCCCLXV.

The occasional causes of the gout seem to be of two kinds. First, those which induce a plethoric state of the body. Secondly, those which, in plethoric habits, induce a state of debility.

CCCCLXVI.

Of the first kind are, a sedentary indolent manner of life, and a full diet of animal food. These circumstances commonly precede the disease, and if there should be any doubt as to their effects in producing it, the fact, however, will be rendered sufficiently probable by what has been observed in (CCCCLXI.)

CCCCLXVII.

Of the second kind of occasional causes which induce debility are, excess in venery; intemperance in the use of intoxicating liquors; indigestion produced either by the quantity or the quality of aliments; much application to study or business; night watching; excessive evacuations; the ceasing of usual labour; the sudden change from a very full, to a very spare diet; the large use of acids and acescents; and, lastly, cold applied to the lower extremities.

CCCCLXVIII.

The first (CCCCLXVI.) seem to act by increasing the predisposition. The last (CCCCLXVII.) are commonly the exciting causes, both of the first attacks, and of the repetitions of the disease.

CCCCLXIX.

It is an inflammatory affection of some of the joints which especially constitutes what we call a paroxysm of the gout. This sometimes comes on suddenly, without any warning, but is generally preceded by several symptoms; such as the ceasing of a sweating which the feet had been commonly affected with before; an unusual coldness of the feet and legs; a frequent numbness, alternating with a sense of prickling along the whole of the lower extremities; frequent cramps of the muscles of the legs; and an unusual turgescence of the veins.

CCCCLXX.

CCCCLXX.

While these symptoms take place in the lower extremities, the whole body is affected with some degree of torpor and languor, and the functions of the stomach, in particular, are more or less disturbed. The appetite is diminished, and flatulency, or other symptoms of indigestion, are felt. These symptoms, and those of (CCCCLXIX.) take place for several days, sometimes for a week or two, before a paroxysm comes on; but commonly, upon the day immediately preceding it, the appetite becomes greater than usual.

CCCCLXXI.

The circumstances of paroxysms are the following. They come on most commonly in the spring, and sooner or later, according as the vernal heat succeeds sooner or later to the winter's cold; and, perhaps, sooner or later also, according as the body may happen to be more or less exposed to vicissitudes of heat and cold.

CCCCLXXII.

The attacks are sometimes felt first in the evening, but more commonly about two or three o'clock of the morning. The paroxysm begins with a pain affecting one foot, most commonly in the ball or first joint of the great toe, but sometimes in other parts of the foot. With the coming on of this pain, there is commonly more or less of a cold shivering, which, as the pain increases, gradually ceases, and is succeeded by a hot stage of pyrexia, which continues for the same time with the pain itself. From the first attack, the pain becomes, by degrees, more violent, and continues in this state with great restlessness of the whole body, till next midnight, after which it gradually remits; and, after it has continued for twenty-four hours from the commencement of the first attack, it commonly ceases very entirely, and, with the coming on of a gentle sweat, allows the patient to fall asleep. The patient, upon coming out of his
sleep

sleep in the morning, finds the pained part affected with some redness and swelling, which, after having continued for some days, gradually abate.

CCCCLXXIII.

When a paroxysm has thus come on, although the violent pain after twenty-four hours be considerably abated, the patient is not entirely relieved from it. For some days he has every evening a return of more considerable pain and pyrexia, and which continue with more or less violence till morning. After continuing in this manner for several days, the disease sometimes goes entirely off, not to return till after a long interval.

CCCCLXXIV.

When the disease, after having thus remained for some time in a joint, ceases very entirely, it generally leaves the person in very perfect health, enjoying greater ease and alacrity in the functions of both body and mind, than he had for a long time before experienced.

CCCCLXXV.

At the beginning of the disease, the returns of it are sometimes only once in three or four years; but, as it advances, the intervals become shorter, and at length, the attacks are annual; afterwards come twice each year, and at length recur several times during the whole course of autumn, winter, and spring; and as, when the fits are frequent, the paroxysms become also longer, so, in the advanced state of the disease, the patient is hardly ever tolerably free from it, except perhaps for two or three months in summer.

CCCCLXXVI.

The progress of the disease is also marked by the parts which it affects. At first, it commonly affects one foot only, afterwards, every paroxysm affects both feet, the one after the other; and, as the disease proceeds,
it

it not only affects both feet once, but after having ceased in the foot which was secondly attacked, returns again into the first, and perhaps a second time also into the other. Its changes of place are not only from one foot to another, but from the feet into other joints, especially those of the upper and lower extremities; so that there is hardly a joint of the body that, on one occasion or other, is not affected. It sometimes affects two different joints at the very same time, but more commonly is at any one time severe in a single joint only, and passes successively from one joint to another; so that the patient's affliction is often protracted for a long time.

CCCCLXXVII.

When the disease has often returned, and the paroxysms have become very frequent, the pains are commonly less violent than they were at first; but the patient is more affected with sickness, and the other symptoms of the atonic gout, which shall be hereafter mentioned.

CCCCLXXVIII.

After the first paroxysms of the disease, the joints which have been affected are entirely restored to their former suppleness and strength; but, after the disease has recurred very often, the joints affected do neither so suddenly nor entirely recover their former state, but continue weak and stiff, and these effects at length proceed to such a degree, that the joints lose their motion entirely.

CCCCLXXIX.

In many persons, but not in all, after the disease has frequently recurred, concretions of a chalky nature are formed upon the outside of the joints, and for the most part immediately under the skin. The matter seems to be deposited, at first, in a fluid form, afterwards becoming dry and firm. In their firm state, these concretions are a friable earthy substance, very entirely soluble in acids. After they have been formed, they contribute, with other circumstances, to destroy the motion of the joint.

CCCCLXXX.

CCCCLXXX.

In most persons who have laboured under the gout for many years, a nephritic affection comes on, and discovers itself by all the symptoms which usually attend calculous concretions in the kidneys, and which we shall have occasion to describe in another place. All that is necessary to be observed here is, that the nephritic affection alternates with paroxysms of the gout, and that the two affections, the nephritic and the gouty, are hardly ever present at the same time. This also may be observed, that children of gouty or nephritic parents, commonly inherit one or other of these diseases; but which ever may have been the principal disease of the parent, some of the children have the one, and some the other. In some of them, the nephritic affection occurs alone, without any gout supervening; and this happens to be frequently the case of the female children of gouty parents.

CCCCLXXXI.

In the whole of the history already given, we have described the most common form of the disease, and which therefore, however diversified in the progress of it, may be still called the regular state of the gout. Upon occasion, however, the disease assumes different appearances; but, as we suppose the disease to depend always upon a certain diathesis, or disposition of the system; so every appearance which we can perceive to depend upon that same disposition, we still consider as a symptom and case of the gout. The principal circumstance, in what we term the *Regular Gout*, is the inflammatory affection of the joints; and, whatever symptoms we can perceive to be connected with, or to depend upon, the disposition which produces that inflammatory affection, but without its taking place, or being present at the same time, we name the *Irregular Gout*.

CCCCLXXXII.

CCCCLXXXII.

Of such irregular gout there are three different states, which we name the *atonic*, the *retrocedent*, and the *misplaced* gout.

CCCCLXXXIII.

The first is when the gouty diathesis prevails in the system, but, from certain causes, does not produce the inflammatory affection of the joints. In this case, the morbid symptoms which appear, are chiefly affections of the stomach, such as loss of appetite, indigestion, and its various circumstances of sickness, nausea, vomiting, flatulency, acid eructations, and pains in the region of the stomach. These symptoms are frequently accompanied with pains and cramps in several parts of the trunk, and the upper extremities of the body, which are relieved by the discharge of wind from the stomach. Together with these affections of the stomach, there commonly occurs a costiveness; but sometimes a looseness, with colic pains. These affections of the alimentary canal are often attended with all the symptoms of hypochondriasis, as dejection of mind, a constant and anxious attention to the slightest feelings, an imaginary aggravation of these, and an apprehension of danger from them.

In the same atonic gout, the viscera of the thorax also are sometimes affected, and palpitations, faintings, and asthma, occur.

In the head also, occur headachs, giddiness, apoplectic and paralytic affections.

CCCCLXXXIV.

When the several symptoms now mentioned, occur in habits having the marks of a gouty disposition, this may be suspected to have laid the foundation of them; and especially, when, either in such habits, a manifest tendency to the inflammatory affection has formerly appeared; or when the symptoms mentioned are intermixed

mixed with, and are relieved by some degree of the inflammatory gout. In such cases there can be no doubt of considering the whole as a state of the gout.

CCCCLXXXV.

Another state of the disease we name the retrocedent gout. This occurs when an inflammatory state of the joints has, in the usual manner, come on, but without arising to the ordinary degree of pain and inflammation, or at least, without these continuing for the usual time, or without their receding gradually in the usual manner; these affections of the joint suddenly, and entirely cease, while some internal part becomes affected. The internal part most commonly affected is the stomach, which then is affected with anxiety, sickness, vomiting, or violent pain; but sometimes the internal part is the heart, which gives occasion to a syncope; sometimes it is the lungs, which are affected with asthma; and sometimes it is the head, giving occasion to apoplexy or palsy. In all these cases there can be no doubt of the symptoms being all a part of the same disease, however different the affection may seem to be in the parts which it attacks.

CCCCLXXXVI.

The third state of irregular gout, which we name the misplaced, is when the gouty diathesis, instead of producing the inflammatory affection of the joints, produces an inflammatory affection of some internal part, and which appears from the same symptoms that attend the inflammations of those parts, arising from other causes.

Whether the gouty diathesis does ever produce such inflammation of the internal parts, without having first produced it in the joints, or, if the inflammation of the internal part be always a translation from the joints previously affected, we dare not determine; but, even supposing the latter to be always the case, we think the difference of the affection of the internal part must still distinguish

distinguish the misplaced from what we have named the retrocedent gout.

CCCCLXXXVII.

What internal parts may be affected by the misplaced gout, I cannot precisely say, because I have never met with any cases of the misplaced gout in my practice; and I find no cases of it distinctly marked by practical writers, except that of a pneumonic inflammation.

CCCCLXXXVIII.

There are two cases of a translated gout; the one of which is an affection of the neck of the bladder, producing pain, strangury, and a catarrhus vesicæ: The other is an affection of the rectum, sometimes by pain alone in that part, and sometimes by hemorrhoidal symptoms. In gouty persons, I have known such affections alternate with inflammatory affections of the joints: But whether to refer those affections to the retrocedent, or to the misplaced gout, I will not presume to determine.

CCCCLXXXIX.

From the history which I have now delivered of the gout, I think it may be discerned under all its various appearances. It is, however, commonly supposed, that there are cases in which it may be difficult to distinguish gout from rheumatism, and it is possible there may be such cases; but, for the most part, the two diseases may be distinguished with great certainty, by observing the predisposition, the antecedents, the parts affected, the recurrences of the disease, and its connection with the system; which circumstances, for the most part, appear very differently in the two diseases.

CCCCXC.

With respect to the gout, our next business is to investigate its proximate cause, which must be a difficult task, and I attempt it with some diffidence.

CCCCXCI.

Upon this subject, the opinion which has generally prevailed is, that the gout depends upon a certain morbid matter, always present in the body; and that this matter, by certain causes, thrown upon the joints or other parts, produces the several phenomena of the disease.

CCCCXCII.

This doctrine, however antient and general, appears to me very doubtful; for,

First, there is no direct evidence of any morbid matter being present in persons disposed to the gout. There are no experiments or observations which shew that the blood, or other humours of gouty persons, are in any respect different from those of others. Previous to attacks of the gout, there appear no marks of any morbid state of the fluids; for the disease generally attacks those persons who have enjoyed the most perfect health, and appear to be in that state when the disease comes on. At a certain period of the disease, a peculiar matter indeed appears in gouty persons, (CCCC-LXXIX.) ; but this, which does not appear in every instance, and which appears only after the disease has subsisted for a long time, seems manifestly to be the effect, not the cause of the disease. Further, though there be certain acrids which, taken into the body, seem to excite the gout, (CCCCLXVII.) it is probable, that these acrids operate otherwise in exciting the disease, than by affording the material cause of it. In general, therefore, there is no proof of any morbid matter being the cause of the gout.

Secondly,

Secondly, the suppositions concerning the particular nature of the matter producing the gout, have been so various, and so contradictory to each other, as to allow us to conclude, that there is truly no proof of the existence of any of them. With respect to many of these suppositions, they are so inconsistent with chemical philosophy, and with the laws of the animal œconomy, that they must be entirely rejected.

Thirdly, the supposition of a morbid matter, as the cause is not consistent with the phenomena of the disease, particularly with its frequent and sudden translations from one part to another.

Fourthly, the supposition is further rendered improbable by this, that, if a morbid matter did exist, its operation should be similar in the several parts which it attacks; whereas it seems to be very different, being stimulant, and exciting inflammation in the joints, but sedative and destroying the tone in the stomach: Which, upon the supposition of particular matter acting in both cases, is not to be explained by any difference in the part affected.

Fifthly, some facts, alledged in proof of a morbid matter, are not sufficiently confirmed, such as those which would prove the disease to be contagious. There is, however, no proper evidence of this, the facts given being not only few, and exceptionable, and the negative observations innumerable.

Sixthly, some arguments brought in favour of a morbid matter, are founded upon a mistaken explanation. The disease has been supposed to depend upon a morbid matter, because it is hereditary. But the inference is not just; for most hereditary diseases do not depend upon any morbid matter, but upon a particular conformation of the structure of the body, transmitted from the parent to the offspring; and this last appears to be particularly the case in the gout. It may be also observed, that hereditary diseases, depending upon a morbid matter, appear always much more early in life than the gout commonly does.

Seventhly, the supposition of a morbid matter being the cause of the gout, has been hitherto useless, as it has not suggested any successful method of cure. Particular

ticular suppositions have often corrupted the practice, and have frequently led from those views which might be useful, and from that practice which experience had approved. Further, though the supposition of a morbid matter has been generally received, it has been as generally neglected in practice. When the gout has affected the stomach, nobody thinks of correcting the matter supposed to be present there, but merely of restoring the tone of the moving fibres.

Eighthly, the supposition of a morbid matter is quite superfluous; for it explains nothing, without supposing that matter to produce a change in the state of the moving powers, and a change in the state of the moving powers, produced by other causes, explains every circumstance without the supposition of a morbid matter; and, to this purpose, it may be observed, that many of the causes (CCCCLXVII.) exciting the gout, do not operate upon the state of the fluids, but directly and solely upon that of the moving powers.

Lastly, the supposition of a morbid matter is superfluous; because, without that, the disease can be explained in a manner more consistent with its phenomena, with the laws of animal œconomy, and with the method of cure which experience has approved. We now proceed to give this explanation; but, before entering upon it, we must premise some general observations.

CCCCXCIII.

The first observation is, that the gout is a disease of the whole system, or depends upon a certain general conformation and state of the body, which manifestly appears from the facts mentioned from (CCCCLVI. to CCCCLXII.). But the general state of the system depends chiefly upon the state of its primary moving powers; and therefore the gout may be supposed to be an affection of these chiefly.

CCCCXCIV.

My second observation is, that the gout is manifestly an affection of the nervous system; in which the primary
moving

moving powers of the whole system are lodged. The occasional or exciting causes (CCCCLXVII.) are almost all, such as act directly upon the nerves and nervous system; and the greater part of the symptoms of the atonic or retrocedent gout are manifestly affections of the same system. (CCCCLXXXIII. CCCCLXXXV.) This leads us to seek for an explanation of the whole of the disease in the laws of the nervous system, and particularly in the changes which may happen in the balance of its several parts.

CCCCXCV.

My third observation is, that the stomach, which has so universal a consent with the rest of the system, is the internal part that is the most frequently, and often very considerably, affected by the gout. The paroxysms of the disease are commonly preceded by an affection of the stomach (CCCCLXX.); many of the exciting causes (CCCCLXVII.) act first upon the stomach; and the symptoms of the atonic and retrocedent gout (CCCCLXXXIII. CCCCLXXXV.) are almost commonly and chiefly affections of the same organ. This observation leads us to remark, that there is a balance subsisting between the state of the internal, and that of the external parts; and, in particular, that the state of the stomach is connected with that of the external parts, (XLIII.) so that the state of tone in the one, may be communicated to the other.

CCCCXCVI.

These observations being premised, I shall now offer the following pathology of the gout.

In some persons there is a certain vigorous and plethoric state of the system (CCCCLXVII.), which at a certain period of life, is liable to a loss of tone in the extremities (CCCCLXIX.). This is in some measure communicated to the whole system, but appears more especially in the functions of the stomach (CCLXX). When this loss of tone occurs while the energy of the brain still retains its vigour, the vis medicatrix naturæ is excited

to

to restore the tone of the parts; and accomplishes it, by exciting an inflammatory affection in some part of the extremities. When this has subsisted for some days, the tone of the extremities, and of the whole system, are restored, and the patient returns to his ordinary state of health (CCCCLXXIV.).

CCCCXCVII.

This is the course of things, in the ordinary form of the disease, which we name the regular gout; but there are circumstances of the body, in which this course is interrupted or varied. Thus, when the atony (CCCCLXIX. CCCCLXX.), has taken place, if the reaction (CCCCXCVI.) do not succeed, the atony continues in the stomach, or perhaps in other internal parts, and produces that state which we have, for reasons now obvious, named the atonic gout.

CCCCXCVIII.

A second case of variation in the course of the gout, is, when to the atony, the reaction and inflammation have to a certain degree succeeded, but from causes either internal or external, the tone of the extremities, and perhaps of the whole system, is weakened; so that the inflammatory state, before it had either proceeded to the degree, or continued for the time requisite for restoring the tone of the system, suddenly and entirely ceases; Whence the stomach, and other internal parts, relapse into the state of atony; and perhaps have that increased by the atony communicated from the extremities: All which appears in what we have termed the retrocedent state of the gout.

CCCCXCIX.

A third case of variation from the ordinary course of the gout, is, when to the atony usually preceding, an inflammatory reaction fully succeeds: But has its usual determination to the joints by some circumstances prevented; and is therefore directed to some internal part,
where

where it produces an inflammatory affection, and that state of things which we have named the Misplaced Gout.

D.

We have thus offered an explanation of the circumstances of the system in the several states of the gout; and this explanation we suppose to be consistent with the phenomena of the disease, and with the laws of the animal œconomy. There are indeed several questions which might be put with respect to the theory of the disease; any answers to which we have not given. But, though we could perhaps give an answer to many of these questions, it does not here appear necessary, as at present we intend only to establish such general facts with regard to this disease, as may lay a foundation for the cure of it, so far as experience has enabled us to prosecute it. Proceeding, therefore, upon the several parts of the pathology given, as so many matters of fact we shall now consider what may be attempted towards the cure of the disease.

DI.

In entering upon this, we must observe, in the first place, that a cure has been commonly thought impossible; and we acknowledge it to be very probable, that the gout, as a disease of the whole habit, and very often depending upon original conformation, cannot be cured by medicines, the effects of which are always very transitory, and seldom extend to the producing any considerable change of the whole habit.

DII.

It would perhaps have been happy for gouty persons, if this opinion had been implicitly received by them; as it would have prevented their having been so often the dupes of self-interested pretenders, who have either amused them with inert medicines, or have rashly employed those of the most pernicious tendency. I am much disposed to believe the impossibility of a cure of the

the gout by medicines; and more certainly still incline to think, that, whatever may be the possible power of medicines, yet no medicine for curing the gout has hitherto been found. Although almost every age has presented a new remedy, all hitherto offered have, very soon after, been either neglected as useless, or condemned as pernicious.

DIII.

Though unwilling to admit the power of medicines, yet I contend, that a great deal can be done towards the cure of the gout, by a regimen: And from what has been observed (CCCCLXI.), I am firmly persuaded, that any man who, early in life, will enter upon the constant practice of bodily labour, and of abstinence from animal food, will be preserved entirely from the disease.

Whether there be any other means of radically curing the gout, I am not ready to determine. There are histories of cases of the gout, in which it is said, that, by great emotions of mind, by wounds, and by other accidents, the symptoms have been suddenly relieved, and never again returned; but how far these accidental cures might be imitated by art, or would succeed in other cases, is at least extremely uncertain.

DIV.

The practices proper and necessary in the treatment of the gout, are to be considered under two heads: *First*, As they are to be employed in the intervals of paroxysms; or, *secondly*, As during the time of these.

DV.

In the intervals of paroxysms, the indications are, to prevent altogether the return of paroxysms, or at least to render them less frequent, and more moderate. During the time of paroxysms, the indications are, to moderate the violence, and shorten the duration of them as much as can be done with safety.

DVI.

DVI.

It has been already observed, that the gout may be entirely prevented by constant bodily exercise, and by a low diet; and I am of opinion, that this prevention may take place even in persons who have a hereditary disposition to the disease. I must add here, that even when the disposition has discovered itself by several paroxysms of inflammatory gout, I am persuaded, that labour and abstinence will absolutely prevent any returns of it for the rest of life. These, therefore, are the means of answering the first indication to be pursued in the intervals of paroxysms; and I must here offer some remarks upon the proper use of these remedies.

DVII.

Exercise in persons disposed to the gout, is directed to two purposes: One of these is the strengthening of the tone of the extreme vessels, and the other, the guarding against the plethoric state. For the former, if exercise be employed early in life, and before intemperance has weakened the body, a very moderate degree of it will answer the purpose; and, for the latter, if abstinence be at the same time observed, little exercise will be necessary.

DVIII.

With respect to exercise, this in general is to be observed, that it should never be violent; for, if violent, it cannot be long continued, and must always endanger the bringing on an atony in proportion to the violence of the preceding exercise.

DIX.

It is also to be observed, that the exercise of gestation, though considerable and constant, if it be entirely without bodily exercise, will not answer the purpose in preventing the gout. For this end, therefore, the

A a

exercise

exercise must be in some measure that of the body, and must be moderate, but, at the same time, constant and continued thro' life.

DX.

In every case and circumstance of the gout in which the patient retains the use of his limbs, bodily exercise, in the intervals of paroxysms, will always be useful; and, in the beginnings of the disease, when the disposition to it is not yet strong, exercise may prevent a paroxysm which otherwise might have come on. In more advanced states of the disease, however, when there is some disposition to a paroxysm, much walking will bring it on; either as it weakens the tone of the lower extremities, or as it excites an inflammatory disposition in them; and thus it seems to be, that strains or contusions often bring on a paroxysm of the gout.

DXI.

Abstinence, the other part of our regimen (DIII.) for preventing the gout, is of more difficult application. If an abstinence from animal food be entered upon early in life, while the vigour of the system is yet entire, we have no doubt of its being both safe and effectual; but, if the motive for this diet shall not have occurred till the constitution shall have been broken by intemperance, or by the decline of life, a low diet may then endanger the bringing on an atonic state.

DXII.

Further, if a low diet be entered upon only in the decline of life, and be at the same time a very great change in the former manner of living, the withdrawing of an accustomed stimulus of the system may readily throw this into an atonic state.

DXIII.

DXIII.

The safety of an abstemious course may be greater or less according to the management of it. It is animal food which especially disposes to the plethoric and inflammatory state, and that food is to be therefore especially avoided; but, on the other hand, it is vegetable aliment of the lowest quality that is in danger of weakening the system too much, by not affording sufficient nourishment, and more particularly, of weakening the tone of the stomach by its acescency. It is therefore a diet of a middle nature that is to be chosen; and milk is precisely of this kind, as containing both animal and vegetable matter.

As approaching to the nature of milk, and as being a vegetable matter containing the greatest portion of nourishment, the farinaceous seeds are next to be chosen, and are the food most proper to be joined with milk.

DXIV.

With respect to drink, fermented liquors are useful only when they are joined with animal food, and that by their acescency; and their stimulus is only necessary from custom. When, therefore, animal food is to be avoided, fermented liquors are unnecessary; and, by increasing the acescency of vegetables, these liquors may be hurtful. The stimulus of fermented, or spirituous liquors, is not necessary to the young and vigorous, and, when much employed, impairs the tone of the system. These liquors, therefore, are to be avoided, except so far as custom and the declining state of the system may have rendered them necessary. For preventing or moderating the regular gout, water is the only proper drink.

DXV.

With respect to an abstemious course, it has been supposed, that an abstinence from animal food and fermented liquors, or the living upon milk and farinacea
alone

alone for the space of one year, might be sufficient for a radical cure of the gout: And it is possible that, at a certain period of life, in certain circumstances of the constitution, such a measure might answer the purpose. But this is very doubtful; and it is more probable, that the abstinence must, in a great measure, be continued, and the milk diet be persisted in for the rest of life. It is well known, that several persons who had entered on an abstemious course, and had been thereby delivered from the gout, have, however, upon returning to their former manner of full living, had the disease return upon them with as much violence as before, or in a more irregular, and more dangerous form.

DXVI.

It has been alledged, that, for preventing the return of the gout, blood-letting, or scarifications of the feet frequently repeated, and at stated times, may be practised with advantage; but of this I have had no experience.

DXVII.

Exercise and abstinence are the means of avoiding the plethoric state which gives the disposition to the gout, and are therefore the means proposed for preventing paroxysms, or at least for rendering them less frequent, and more moderate. But many circumstances prevent the steadiness necessary in pursuing these measures; and, therefore, in such cases, unless great care be taken to avoid the exciting causes, the disease may frequently return; and, in many cases, the preventing of paroxysms is chiefly to be obtained by avoiding those exciting causes enumerated in (CCCCLXVII.). The conduct necessary for avoiding them, will be sufficiently obvious to persons acquainted with the doctrines of the Hygiene, which we suppose to have been delivered in another place.

DXVIII.

DXVIII.

A due attention in avoiding those several causes, will certainly prevent fits of the gout; and the taking care that those exciting causes be never applied in a great degree, will certainly render fits more moderate when they do come on. But, upon the whole, it will appear, that a strict attention to the whole conduct of life, is in this matter necessary; and, therefore, when the predisposition has taken place, it will be extremely difficult to avoid the disease.

DXIX.

I am indeed firmly persuaded, that, by obviating the predisposition, and by avoiding the exciting causes, the gout may be entirely prevented: But, as the measures necessary for this purpose will, in most cases, be pursued with difficulty, and even with reluctance, men have been very desirous to find a medicine which might answer the purpose, without any restraint on their manner of living. To gratify this desire, physicians have proposed, and to take advantage of it, empirics have feigned many remedies, as we have already observed. Of what nature several of these remedies have been, I cannot certainly say; but, of those which are unknown, we conclude, from their having been only of temporary fame, and from their having soon fallen into neglect, that they have been either inert or pernicious, and therefore I make no inquiry after them; and shall now remark only upon one or two known remedies for the gout which have been lately in vogue.

DXX.

One of these is what has been named in England, the Portland Powder. This is not a new medicine, but is mentioned by Galen, and, with some little variation in its composition, has been mentioned by the writers of almost every age since that time. It appears to have been at times in fashion, and to have again fallen into neglect;

neglect ; and I think that this last has been owing to its having been found to be, in many instances, pernicious. In every instance which I have known of its exhibition for the length of time prescribed, the persons who had taken it were indeed afterwards free from any inflammatory affection of the joints ; but they were affected with many symptoms of the atonic gout ; and all, soon after finishing their course of the medicine, have been attacked with apoplexy, asthma, or dropsy, which proved fatal.

DXXI.

Another remedy which has had the appearance of preventing the gout, is, an alkali in various forms, such as the fixed alkali, both mild and caustic, lime-water, soap, and absorbent earths. Since it became common to exhibit these medicines in nephritic and calculous cases, it has often happened, that they were given to those who were at the same time subject to the gout ; and it has been observed, that, under the use of these medicines, gouty persons have been longer free from the fits of their disease. That, however, the use of these medicines has entirely prevented the returns of gout, I do not know ; because I never pushed the use of those medicines for a long time, being apprehensive that the long continued use of them might produce a hurtful change in the state of the fluids.

DXXII.

With respect to preventing the gout, I have only one other remark to offer. As the preventing the gout depends very much on supporting the tone of the stomach, and avoiding indigestion ; so costiveness, by occasioning this, is very hurtful to gouty persons. It is therefore necessary for such persons to prevent or remove costiveness, and, by a laxative medicine, when needful ; but it is at the same time proper, that the medicine employed should be such as may keep the belly regular, without much purging. Aloetics, rhubarb, magnesia alba, or
flowers

flowers of sulphur, may be employed, as the one or the other may happen to be best suited to particular persons.

DXXIII.

These are the several measures from (DV. to DXXII.) to be pursued in the intervals of the paroxysms; and we are next to mention the measures proper during the time of them.

DXXIV.

As during the time of paroxysms the body is in a feverish state, no irritation should then be added to it; and every part, therefore, of the antiphlogistic regimen, (CXXIV. CXXV.) except the application of cold, ought to be strictly observed.

Another exception to the general rule may occur, when the tone of the stomach is weak, and when the patient has been before much accustomed to the use of strong drink; for then it may be allowable, and even necessary, to give some animal food, and a little wine.

DXXV.

That no irritation is to be added to the system during the paroxysms of gout, except in the cases mentioned, is entirely agreed upon among physicians: But it is a more difficult matter to determine, whether, during the time of paroxysms, any measures may be pursued to moderate the violence of reaction and of inflammation. Dr. Sydenham has given it as his opinion, that the more violent the inflammation and pain, the paroxysms will be the shorter, as well as the interval between the present and next paroxysm longer; and, if this opinion be admitted as just, it will forbid the use of any remedies which might moderate the inflammation; which is, to a certain degree, undoubtedly necessary for the health of the body. On the other hand, acute pain presses for relief; and, although a certain degree of inflammation may seem absolutely necessary, it is not certain but that a moderate degree of it may answer the purpose: And
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it is even probable, that, in many cafes, the violence of inflammation may weaken the tone of the parts, and thereby invite a return of paroxysms. It seems to me to be in this way, that, as the disease advances, the paroxysms become more frequent.

DXXVI.

From these last considerations, it seems probable, that, during the time of paroxysms, some measures may be taken to moderate the violence of the inflammation and pain, and particularly, that in first paroxysms, and, in the young and vigorous, blood-letting at the arm may be practised with advantage: But I am persuaded, that this practice cannot be repeated often with safety, because blood-letting not only weakens the tone of the system, but may also contribute to produce Plethora. I believe, however, that bleeding by leeches on the foot, and upon the inflamed part, may be practised, and repeated with greater safety; and I have known instances of its having been practised with safety, to moderate and shorten paroxysms; but how far it may be carried, we have not had experience enough to determine.

DXXVII.

Besides blood-letting, and the antiphlogistic regimen, it has been proposed to employ remedies for moderating the inflammatory spasm of the part affected, such as warm bathing and emollient poultices. These have sometimes been employed with advantage and safety; but, at other times, have been found to give occasion to a retrocession of the gout.

DXXVIII.

Blistering is a very effectual means of relieving and discussing a paroxysm of the gout; but has also frequently had the effect of rendering it retrocedent.

DXXIX.

DXXIX.

The stinging with nettles I consider as analogous to blistering; and I think it probable that it would be attended with the same danger.

DXXX.

The burning with moxa, or other substances, I consider as a remedy of the same kind. I have had, indeed, no evidence of this proving hurtful; but neither have I had any proper evidence of its having proved a radical cure.

DXXXI.

Camphire, and some aromatic oils, have the power of allaying the pain, and of removing the inflammation from the part affected; but these remedies commonly make the inflammation only shift from one part to another, and therefore with the hazard of its falling upon a part where it may be more dangerous, and they have sometimes rendered the gout retrocedent.

DXXXII.

From these reflections (DXXX et seq.) it will appear, that some danger must attend every external application to the parts affected, during a paroxysm; and that therefore the common practice of committing the person to patience and flannel alone, is established upon the best foundation.

DXXXIII.

Opiates give the most certain relief from pain, but, when given in the beginning of gouty paroxysms, occasion these to return with greater violence. When, however, the paroxysms shall have abated in their violence, but still continue to return, so as to occasion painful and restless nights, opiates may be then given

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with

with safety and advantage, especially in the case of persons advanced in life, and who have been often affected with the disease.

DXXXIV.

When, after paroxysms have ceased, some swelling and stiffness shall remain in the joints, these symptoms are to be discussed by the diligent use of the flesh-brush.

DXXXV.

Purging, immediately after a paroxysm, will be always employed with the hazard of bringing it on again.

DXXXVI.

I have now finished what has occurred to be said upon the means of preventing and curing the regular gout; and shall now consider its management when it has become irregular, of which I have observed there are three different cases.

DXXXVII.

In the first case, which I have named the atonic gout, the cure is to be accomplished by carefully avoiding all debilitating causes, and by employing, at the same time, the means of strengthening the system in general, and the stomach in particular.

DXXXVIII.

For the avoiding debilitating causes, I must refer to the doctrines of the Hygiene, as in (DXVII.).

DXXXIX.

For strengthening the system in general, I must recommend frequent exercise on horseback, and moderate walking. Cold bathing also may answer the purpose, and may be safely employed, if it appear to be powerful
in

in stimulating the system, and be not applied when the extremities are threatened with any pain.

For supporting the tone of the system in general, when threatened with atonic gout, some animal food ought to be employed, and the more acescent vegetables ought to be avoided. In the same case, some wine also may be necessary; but it should be in moderate quantity, and of the least acescent kinds; and, if every kind of wine shall be found to increase the acidity of the stomach, ardent spirits and water must be employed.

DXL.

For strengthening the stomach, bitters and the Peruvian bark may be employed; but care must be taken that they be not constantly employed for any great length of time.

The most effectual medicine for strengthening the stomach is iron, which may be employed under various preparations; but, to me, the best appears to be the rust in fine powder, which may be given in very large doses.

For supporting the tone of the stomach, aromatics may be employed; but should be used with caution, as the frequent and large use of them may have an opposite effect, and they should therefore be given only in compliance with former habits, or for palliating present symptoms.

When the stomach happens to be liable to indigestion, gentle vomits may be frequently given, and proper laxatives should be always employed to obviate, or to remove costiveness.

DXLI.

In the atonic gout, or in persons liable to it, to guard against cold is especially necessary; and the most certain means of doing this, is by repairing to a warm climate during the winter season.

DXLII.

DXLII.

In the more violent cases of the atonic gout, blistering the lower extremities may be useful; but that remedy should be avoided when any pain threatens the extremities. In persons liable to the atonic gout, issues may be established in the extremities, as, in some measure, a supplement to the disease.

DXLIII.

A second case of the irregular gout, is that which I have named the Retrocedent.

When this affects the stomach and intestines, relief is to be instantly attempted by the free use of strong wines, joined with aromatics, and given warm; or, if these shall not prove powerful enough, ardent spirits must be employed, and are to be given in a large dose. In moderate attacks, ardent spirits, impregnated with garlic, or with asa foetida, may be employed; or, even without the ardent spirits, a solution of asa foetida, with the volatile alkali, may answer the purpose. Opiates are often an effectual remedy, and may be joined with aromatics, as in the Electuarium Thebaicum; or they may be usefully joined with volatile alkali and camphire. Musk has likewise proved useful in this disease.

When the affection of the stomach is accompanied with vomiting, this may be encouraged, by taking draughts of warm wine, at first with water, and afterwards without it; having at length recourse, if necessary, to some of the remedies above mentioned, and particularly the opiates.

In like manner, if the intestines be affected with diarrhoea, this is to be at first encouraged, by taking plentifully of weak broth; and when this shall have been done sufficiently, the tumult is to be quieted by opiates.

DXLIV.

DXLIV.

When the retrocedent gout shall affect the lungs, and produce asthma, this is to be cured by opiates, by antispasmodics, and, perhaps, by blistering on the breast or back.

DXLV.

When the gout, leaving the extremities, shall affect the head, and produce pain, vertigo, apoplexy, or palsy, our resources are very precarious. The most probable means of relief is, blistering the head; and, if the gout shall have receded very entirely from the extremities, blisters may be applied to these also. Together with these blisterings, aromatics, and the volatile alkali, may be thrown into the stomach.

DXLVI.

The third case of the irregular gout is what I name the Misplaced, that is, when the inflammatory affection of the gout, instead of falling upon the extremities, falls upon some internal part. In this case, the disease is to be treated by blood-letting, and by such other remedies as would be proper in an idiopathic inflammation of the same parts.

DXLVII.

Whether the translation so frequently made from the extremities to the kidneys, is to be considered as an instance of the misplaced gout, seems, as we have said before, uncertain; but I am disposed to think it something different; and therefore am of opinion that, in the *Nephralgia Calculosa* produced upon this occasion, the remedies of inflammation are to be employed no farther than they may be otherways sometimes necessary in that disease, arising from other causes than the gout.

B O O K III.

O F EXANTHEMATA, OR ERUP-
TIVE FEVERS.

DXLVIII.

THE diseases comprehended under this title, which make the third order of Pyrexiaë in our Nosology, are generally such as do not arise but upon occasion of a specific contagion applied, which first produces fever, and then an eruption upon the surface of the body; and, in respect of both, a disease, which, for the most part, affects persons but once in the course of their lives.

DXLIX.

Whether the character of the order may be thus limited, or if the order may be allowed to comprehend the eruptive fevers produced by a matter generated in the body itself, as also those cases of eruption which do not depend upon contagion, or upon a matter generated before the fever, but are symptoms only of certain conditions of fever, we shall not determine here. We leave these questions for a nosological discussion, to be entered into in another place; and proceed now to consider the particular diseases which are commonly enumerated under the title of Exanthemata, or Eruptive Fevers.

C H A P. I.

OF ERYSIPELAS, OR ST. AN-
THONY'S FIRE.

DL.

In (CCLXIX.) I mentioned the distinction which I proposed to make between the diseases to be named the Erythema and Erysipelas; and from thence it will appear, that Erysipelas, as an Erythema following fever, may have its place here.

DLI.

We suppose the erysipelas to depend on a matter generated within the body, and which, analogous to the other cases of exanthemata, is, in consequence of fever, thrown out upon the surface. We own it may be difficult to apply this to every particular case of erysipelas; but we take the case in which it is generally supposed to apply, that is, the case of the erysipelas of the face; which we now, therefore, proceed to treat of.

DLII.

The erysipelas of the face comes on with a cold shivering, and other symptoms of pyrexia. The hot stage of this is frequently attended with a confusion of head, and some degree of delirium; and almost always with drowsiness, or perhaps coma. The pulse is always frequent, and commonly full and hard.

DLIII.

DLIII.

When these symptoms have continued for one, two, or at most three days, there appears, on some part of the face, a redness, such as that described under the title of Erythema (see Synops. Nosolog.). This redness, at first, is of no great extent, but gradually spreads from the part it first occupied to the other parts of the face, till it has affected the whole; and frequently from the face, it spreads over the hairy scalp, or descends on some part of the neck. As the redness spreads, it commonly leaves, or at least is abated in, the parts it had before occupied. All the parts which the redness affects are, at the same time, affected with some swelling, which continues sometimes after the redness has abated. The whole face becomes considerable turgid; and the eye-lids are often so much swelled, as entirely to shut up the eyes.

DLIV.

When the redness and swelling have proceeded for some time, there commonly arise, sooner or later, blisters of a larger or smaller size, on several parts of the face. These contain a thin colourless liquor, which sooner or later runs out. The surface of the skin, in the blistered places, sometimes becomes livid and blackish; but this livor seldom goes deeper than the surface, or discovers any degree of gangrene affecting the skin. On the parts of the face not affected with blisters, the cuticle suffers, towards the end of the disease, a considerable desquamation.

Sometimes the tumour of the eye-lids ends in a supuration.

DLV.

The inflammation coming upon the face does not produce any remission of the fever which had before prevailed; and sometimes the fever increases with the spreading and increasing inflammation.

DLVI.

DLVI.

The inflammation commonly continues for eight or ten days ; and, for the same time, the fever and symptoms attending it also continue.

DLVII.

In the progress of the disease, the delirium and coma attending it sometimes go on increasing, and the patient dies apoplectic on the seventh, ninth, or eleventh day of the disease. In such cases, it has been commonly supposed, that the disease is translated from the external to the internal parts. But I have not seen a case, in which it did not appear to me, that the affection of the brain was merely a communication from the external affection, as this continued increasing at the same time with the internal.

DLVIII.

When the fatal event does not take place, the inflammation, after having affected the whole of the face, and, perhaps, the other external parts of the head, ceases ; and with that the fever also ; and, without any other crisis, the patient returns to his ordinary state of health.

DLIX

This disease is not commonly contagious ; but, as the disease may arise from an acrid matter externally applied, so, it is possible, that the disease may sometimes be communicated from one person to another.

Persons who have once laboured under this disease are liable to returns of it.

DLX.

The event of this disease may be foreseen from the state of the symptoms which denote more or less affection of the brain. If neither delirium nor coma come on,

the disease is seldom attended with any danger; but, when these symptoms appear early in the disease, and are in a considerable degree, the utmost danger is to be apprehended.

DLXI.

As this disease often arises in the part, at the same time with the coming on of the pyrexia; as we have known it, with all its symptoms, to arise from an acrimony applied to the part; as it differs from pure Erythema, by being attended with a full, and frequently with a hard pulse; as the blood drawn in this disease shews the same crust upon its surface, as appears in the phlegmasiæ; and, *lastly*, as the swelling of the eye-lids, in this disease, frequently ends in a suppuration; so, from all these considerations, it seems doubtful, if this disease be properly, in Nosology, separated from the Phlegmasiæ. At any rate, I take the disease we have described, to be what physicians have named the Erysipelas Phlegmonodes, and that it partakes a great deal of the nature of the Phlegmasiæ.

DLXII.

Upon this conclusion, the erysipelas of the face is to be cured very much in the same manner as phlegmonic inflammations, by blood-letting, cooling purgatives, and by employing every part of the antiphlogistic regimen; and our experience has confirmed the fitness of this method of cure.

DLXIII.

The evacuations of blood-letting and purging, are to be employed more or less, according to the urgency of symptoms, particularly those of the pyrexia, and of those which mark an affection of the brain. As the pyrexia continues, and often increases with the inflammation of the face; so the evacuations mentioned may be employed at any time in the course of the disease.

DLXIV.

DLXIV.

In this, as in other diseases of the head, it is proper to put the patient, as often as he can easily bear it, into somewhat of an erect posture.

DLXV.

As, in this disease, there is always an external affection, and as, in many cases, there is no other; so various external applications have been proposed to be made to the part affected; but almost all of them are of doubtful effect. The narcotic, refrigerant, and astringent applications, are suspected of disposing to gangrene. Spirituous applications seem to increase the inflammation; and all oily or watery applications seem to occasion its spreading. The application which seems to be the most safe, and what is now most commonly employed, is that of a dry mealy powder, frequently sprinkled upon the inflamed parts.

DLXVI.

An erysipelas phlegmonodes frequently appears on other parts of the body, besides the face; and such other erysipelatous inflammations frequently end in suppuration. These cases are seldom dangerous. At coming on, they are sometimes attended with drowsiness, and even with some delirium; but this seldom happens; and these symptoms do not continue after the inflammation is formed. I have never seen an instance of the translation of an inflammation from the limbs to an internal part; and, though these inflammations of the limbs be attended with pyrexia, they seldom require the same evacuations as the erysipelas of the face. At first they are to be treated by dry mealy applications only; and all humid applications, as fomentations, or poultices, are not to be applied, till, by the continuance of the disease, by the increase of swelling, or by a throbbing felt in the part, it appears that the disease is proceeding to suppuration.

DLXVII.

DLXVII.

We have hitherto considered erysipelas as in a great measure of a phlegmonic nature; and, agreeably to that opinion, we have proposed our method of cure. But, it is probable, that an erysipelas is sometimes attended with, or is a symptom of a putrid fever; and, in such cases, the evacuations proposed above may be improper, and the use of the Peruvian bark may be necessary; but I cannot be explicit upon this subject, as such putrid cases have not come under my observation.

C H A P. II.

O F T H E P L A G U E.

S E C T. I.

O F T H E P H E N O M E N A O F T H E
P L A G U E.

DLXVIII.

The plague is a disease which always arises from contagions; which affects many persons about the same time; proves fatal to great numbers; generally produces fever; and, in most persons, is attended with buboes or carbuncles.

DLXIX.

DLXIX.

These are the circumstances which, taken together, give the character of the disease ; but it is attended with many symptoms almost peculiar to it, which, in different persons, are greatly diversified in number and degree, and should be particularly studied. We should wish to lay a foundation for this ; but we think it unfit for a person who has never seen the disease to attempt a particular history of it. For this, therefore, we must refer to the authors who have written on the subject ; but we allow only those to be consulted, who have themselves seen and treated the disease in all its different forms.

DLXX.

From the accounts of such authors, it appears to me, that the circumstances which particularly distinguish this disease, and especially the more violent and dangerous states of it, are, *1st*, The great loss of strength in the animal functions, which often appears early in the disease.

2^{dly}, The stupor, giddiness, and consequent staggering, which resembles drunkenness, or the head-ach, and various delirium, all of which symptoms denote a great disorder in the functions of the brain.

3^{dly}, The anxiety, palpitation, syncope, and especially the weakness and irregularity of the pulse, which denote a considerable disturbance in the action of the heart.

4^{thly}, The nausea and vomiting, particularly the vomiting of bile, which shews an accumulation of vitiated bile in the gall-bladder, and biliary ducts, and from thence derived into the intestines and stomach ; all of which symptoms we suppose to denote a considerable spasm, and loss of tone in the extreme vessels on the surface of the body.

5^{thly}, The buboes or carbuncles, which denote an acrimony prevailing in the fluids ; and, *lastly*, The petechiæ, hemorrhagies, and colliquative diarrhœa, which

which denote a putrescent tendency prevailing to a great degree in the mass of blood.

DLXXI.

From the consideration of all these symptoms, it appears, that the plague is especially distinguished by a specific contagion, often suddenly producing the most considerable symptoms of debility in the nervous system, or moving powers, and of a general putrescency in the fluids; and it is from the consideration of these circumstances as the proximate cause, that I think both the prevention and cure of the plague must be directed.

DLXXII.

If this disease should revisit the northern parts of Europe, it is probable, that, at the same time, there will not be a physician alive, who, at the first appearance of the disease, can be guided by his former experience, but must be guided by his study of the writers on this subject, and by analogy. It is, therefore, I hope, allowable for me, upon the same grounds, to give here my opinion with respect to both the prevention and cure of this disease.

S E C T. II.

OF THE PREVENTION OF THE
P L A G U E.

DLXXIII.

With respect to the prevention: As we are firmly persuaded that the disease never arises in the northern parts

parts of Europe, but in consequence of its being imported from some other country, so the first measure necessary, is the Magistrate's taking care to prevent the importation; and this may generally be done by a due attention to bills of health, and to the proper performance of quarantains.

DLXXIV.

With respect to the latter, we are persuaded, that the quarantain of persons may, safely, be much less than forty days; and, if this were allowed, the execution of the quarantain would be more exact and certain, as the temptation to break it would be, in a great measure, avoided.

DLXXV.

With respect to the quarantain of goods; it cannot be perfect, unless the suspected goods be unpacked, duly ventilated, and other means be employed for correcting the infection they may carry; and, if all this be properly done, it is probable, that the time commonly prescribed for the quarantain of goods might also be shortened.

DLXXVI.

A second measure, in the way of prevention, is required, when an infection has reached and prevailed in any place, to prevent that infection from spreading into other places. This can be done only by preventing the inhabitants, or the goods of any infected place, from going out of it, till they have undergone a proper quarantain.

DLXXVII.

The third measure for prevention, to be employed with great care, is to prevent the infection from spreading among the inhabitants of the place in which it has arisen; and the measures necessary for this are to be directed

rected by the doctrine laid down in (LXXXVI.); and from that doctrine we infer, that all persons who can avoid any near communication with infected persons, or goods, may be saved from the infection.

DLXXVIII.

For avoiding such communication, a great deal may be done by the Magistrate. 1. By allowing as many of the inhabitants as are free from infection, and are not necessary to the service of the place, to go out of it. 2. By discharging all assemblies, or unnecessary intercourse of the people. 3. By rendering some necessary communications to be performed without contact. 4. By making such arrangements and provisions as may render it easy for the families remaining to shut themselves up in their own houses. 5. By allowing persons to quit houses in which an infection appears, upon condition that they go into lazarettos. 6. By ventilating and purifying, or destroying, at the public expence, all infected goods. *Lastly*, By avoiding hospitals, and providing separate apartments for infected persons.

The execution of these measures will require a great authority, and much vigilance and attention on the part of the magistrate; but it is not our province to enter into any detail on this subject of the public police.

DLXXIX.

The *fourth* and *last* part of the business of prevention, respects the conduct of persons necessarily remaining in infected places, especially those obliged to have some communication with persons infected.

DLXXX.

Of those obliged to remain in infected places, but not obliged to have any near communication with the sick, they may be preserved by avoiding all near communication with other persons, or their goods; and, it is probable, that a small distance will serve, if, at the
same

same time, there be no stream of air to carry the effluvia of persons, or goods, to some distance.

DLXXXI.

For those who are necessarily obliged to have a near communication with the sick, it is proper to let them know, that some of the most powerful contagions do not operate but when the bodies of men exposed to it are in certain circumstances, which render them more liable to be affected by it; or, when certain causes concur to excite the power of it; and, therefore, by avoiding these circumstances and causes, they may often escape infection.

DLXXXII.

The bodies of men are especially liable to be affected by contagions, when they are any how considerably weakened, as they may be by want of food, and even by a scanty diet, or one of little nourishment; by intemperance in drinking, which, when the stupor of intoxication is over, leaves the body in a weakened state; by excess in venery; by great fatigue; or, by any considerable evacuation.

DLXXXIII.

The causes which, concurring with contagion, render it more certainly active, are cold, fear, and full living.

The several means, therefore, of avoiding or guarding against the action of cold, are to be carefully studied.

DLXXXIV.

Against fear the mind is to be fortified as well as possible; by giving them a favourable idea of the power of preservative means; by destroying the opinion of the incurable nature of the disease; by occupying mens minds with business or labour; and, by avoiding all objects of

fear, as funerals, passing bells, and any notice of the death of particular friends.

DLXXXV.

A full diet of animal food increases the irritability of the body, and favours the operation of contagion; and indigestion, whether from the quantity or quality of food, is very favourable to the same.

DLXXXVI.

Besides giving attention to the several means (DLXXXI. DLXXXII.) which favour the operation of contagion, it is probable, that some means may be employed for strengthening the bodies of men, and thereby enabling them to resist contagion.

For this purpose, it is probable, that the moderate use of wine, or of spirituous liquors, may have a good effect.

It is probable also, that exercise, when it can be employed, if it be so moderate as to be neither heating nor fatiguing to the body, may be employed with advantage.

Persons who have tried cold bathing, and commonly feel the invigorating effects of it, if they are any ways secure against their having already received infection, may possibly be enabled to resist it by the practice of cold bathing.

It is probable, that some medicines, also, may be useful in enabling men to resist infection, but, among these, we can hardly admit the numerous alexipharmics formerly proposed, or, at least, very few of them, and those only of tonic power; among which we reckon the Peruvian bark; and it is, perhaps, the most effectual. If any thing is to be expected from antiseptics, I think camphire, whether internally or externally employed, is one of the most promising.

Every person is to be indulged in the use of any means of preservation, which he has conceived a good opinion of, whether it be a charm or a medicine, if the latter be not directly hurtful.

Whether

Whether issues be useful in preserving from the effects of contagion, or in moderating these, I cannot determine from the observations I have yet read.

DLXXXVII.

As the atmosphere, in general, or any considerable portion of it, is not tainted or impregnated with the matter of contagions, so the lighting of fires over a great part of the infected city, or other general fumigations in the open air, are of no use for preventing the disease, and may be perhaps hurtful.

DLXXXVIII.

It would probably contribute much to check the progress of infection, if the poor were enjoined to make a frequent change of cloathing, and were provided for that purpose; and if they were, at the same time, engaged to make a frequent ventilation of their houses and furniture.

S E C T. III.

O F T H E C U R E O F T H E P L A G U E.

DLXXXIX.

In the cure of the plague, the indications are the same as those of fever in general; (CXX.) but they are not all equally necessary and important here.

DXC.

The measures for moderating the violence of reaction, which operate by diminishing the action of the heart
and

and arteries, (CXXI. 1.) have seldom any place here, excepting so far as the antiphlogistic regimen is generally proper. Some physicians, indeed, have recommended bleeding, and there may be cases in which bleeding may be useful; but, for the most part, it is unnecessary, and in many cases it might be very hurtful.

Purging has also been recommended; and, in some degree, it may be useful in drawing off the bile, or other putrescent matters frequently present in the intestines; but a large evacuation this way may certainly be hurtful.

DXCI.

The moderating the violence of reaction, so far as it can be done by taking off the spasm of the extreme vessels, (CXXI. 2.) is a measure of the utmost necessity in the cure of the plague; and the whole of the means (CXLVI. 1. CXLVII.) suited to this indication, are extremely proper.

DXCII.

The giving an emetic at the very first approach of the disease, would probably be of great service; and, it is probable, that, at some other periods of the disease, emetics might be useful, both by evacuating bile, abundant in the alimentary canal, and by taking off the spasm of the extreme vessels.

DXCIII.

From some principles with respect to fever in general, and with respect to the plague in particular, I am of opinion, that, after the exhibition of the first vomit, the body should be disposed to sweat, which should be raised to a moderate degree only, but continued for at least twenty-four hours, or more, if the patient bears it easily.

DXCIV.

This sweating should be excited and conducted agreeably to the rules laid down in (CLXII.). It is to be promoted

promoted by the plentiful use of diluents, rendered more grateful by vegetable acids, or more powerful, by being impregnated with some portion of neutral salts.

DXCV.

To support the patient under the continuance of the sweat, a little weak broth, acidulated with juice of lemons, may be given frequently, and sometimes a little wine, if the heat of the body is not considerable.

DXCVI.

If sudorific medicines are judged to be necessary, opiates are the most effectual and safe; but they should not be combined with aromatics; and, probably, may be more effectual, if joined with a portion of emetics, and of neutral salts.

DXCVII.

If, notwithstanding the use of emetics and sudorifics in the beginning, the disease should still continue, the cure must turn upon the use of means for obviating debility and putrescency; and, for this purpose, the various remedies proposed above, (CXCIV. to CCXXI) may all be employed, but especially the tonics; and of these the chief are cold drink, and the Peruvian bark.

DXCVIII.

In the cure of the plague, some attention is due to the management of buboes and carbuncles; but we do not touch this, as belonging to the province of surgery.

C H A P. III.

O F T H E S M A L L - P O X .

DXCIX.

The small-pox is a disease arising from a contagion of a specific nature, which first produces a fever, and, on the third or fourth day of that, produces an eruption of small inflamed pimples. They are afterwards formed into pustules, containing a matter, which, in the course of eight days from the eruption, is changed into pus. After this the matter is dried, and falls off in crusts.

DC.

This is a general idea of the disease; but there are two particular forms, or varieties of it, well known under the appellations of the Distinct and Confluent, which require to be specially described.

DCI.

In the former, or distinct small-pox, the eruptive fever is moderate, and appears to be evidently of the inflammatory kind, or what we name a synocha. It generally comes on about mid-day, with some symptoms of a cold stage, and commonly with a considerable languor and drowsiness. A hot stage is soon formed, and becomes more considerable on the second and third day. During this course, children are liable to frequent startings from their slumbers; and adults, if they are kept-a-bed, are disposed to much sweating. On the third day children are sometimes affected with one or two epileptic fits. Towards the end of the third day, the eruption commonly appears, and gradually increases during

during the fourth; appearing first upon the face, and successively on the inferior parts, so as to be compleated over the whole body on the fifth day. From the third day the fever abates, and against the fifth it entirely ceases. The eruption appears first in small red spots, hardly eminent, but by degrees rising into pimples. These are generally upon the face in small number; but, even when more numerous, they are separate and distinct from one another. On the fifth or sixth day, a small vesicle, containing an almost colourless, or whey-coloured fluid, appears upon the top of each pimple. For two days these vesicles increase in breadth only, and there is a small hollow pit in their middle, so that it is only against the eighth day that they are raised into spheroidal pustules. These vesicles or pustules, from their first formation, continue to be surrounded with an exactly circular inflamed margin, which, when the pustules are numerous, diffuses some inflammation over the neighbouring skin, so as to give somewhat of a damask rose colour to the spaces between the pustules. As the pustules increase in size, if they be numerous on the face, the whole of the face, against the eighth day, becomes considerably swelled; and, in particular, the eye-lids are so much swelled, as entirely to shut the eyes. As the disease thus proceeds, the matter in the pustules becomes, by degrees, more opaque and white, and at length of a yellowish colour. On the eleventh day, the swelling of the face is abated, and the pustules seem quite full. On the top of each a darker spot appears; and at this place the pustule, on the eleventh day, or soon after, is spontaneously broken, and a portion of the matter oozes out; in consequence of which, the pustule is shrivelled, and subsides, while the matter oozing out dries, and forms a crust upon its surface. Sometimes a little only of the matter oozes out, and what remains in the pustule becomes thick, and even hard. After some days, both the crusts and the hardened pustules fall off, leaving the skin which they covered of a brown red colour; and it is only after many days that this part resumes its natural colour. In some cases, where the matter of the pustules has been more liquid, the crusts formed by it are later in falling off, and the part they

they covered suffers some desquamation, and a small hollow or pit is left in it.

This is the course of things on the face; and successively, the pustules on the rest of the body take the same. The matter of the pustules, on the arms and hands, is frequently absorbed; so that, at the height of the disease, these pustules appear as empty vesicles. On the tenth and eleventh days, as the swelling of the face subsides, a swelling arises in the hands and feet; but which again subsides, as the pustules come to maturity.

When the pustules on the face are numerous, some degree of pyrexia appears on the tenth and eleventh days, but disappears again after the pustules are fully ripened; or, perhaps, remains in a very slight degree till the pustules on the feet have finished their course. It is seldom that any fever continues longer in the distinct small-pox.

When the pustules on the face are numerous upon the sixth or seventh day, some uneasiness in the throat, with a hoarseness of the voice, comes on, and a thin liquid is poured out from the mouth. These symptoms increase with the swelling of the face; and the liquids of the mouth and throat becoming thicker, are more difficultly thrown out; and there is, at the same time, some difficulty of swallowing, so that liquids taken in to be swallowed are frequently rejected, or thrown out by the nose. But all these affections of the fauces are abated, as the swelling of the face subsides.

DCII.

In the other form of small-pox, or what is called the Confluent, the course of the disease is, in general, the same with that we have described; but the symptoms of every stage are more violent, and several of the circumstances are different.

The eruptive fever is particularly more violent; the pulse is more frequent and more contracted, approaching to that state of pulse which is found in the typhus. The coma is more considerable, and there is frequently a delirium. Vomiting, also, is a common symptom, especially

cially at the coming on of the disease. In very young infants, epileptic fits are sometimes frequent on the first days of the disease, and sometimes prove fatal before any eruption appears; or they usher in a very confluent and putrid small-pox.

DCIII.

The eruption appears more early on the third day, and it is frequently preceded, or accompanied, with an erysipelatous efflorescence. Sometimes the eruption appears in clusters, like that of the measles. When the eruption is completed, the pimples are always more numerous upon the face, and, at the same time, smaller and less eminent. Upon the eruption, the fever suffers some remission, but never goes off entirely; and, after the fifth or sixth day, it increases again, and continues considerable through the remaining course of the disease.

The vesicles formed on the top of the pimples appear sooner; and, while they increase in breadth, they do not retain a circular, but are every way of an irregular figure. Many of them run into one another, insomuch that very often the face is covered rather with one vesicle than with a number of pustules. The vesicles, so far as they are any ways separated, do not arise to a spheroidal form, but remain flat, and sometimes the whole of the face is of an even surface. When the pustules are in any measure separated, their circumference is not bounded by an inflamed margin, and the part of the skin that is free from pustules is commonly pale and flaccid.

The liquor that is in the pustules changes from a clear to an opaque appearance, and becomes whiteish or brownish, but never acquires the yellow colour and thick consistence that appears in the distinct small-pox.

The swelling of the face which attends the distinct pox when they are numerous, and almost then only, always attends the confluent, comes on more early, and arises to a greater degree, but abates on the tenth day, and on the eleventh still more. At this time the pustules or vesicles break, and shrivelling pour out a liquor, which is formed into brown or black crusts, which do not fall off for many days after. Those of the face, in falling off, leave the parts they covered subject to a desquamation, which pretty certainly produces pittings.

On the other parts of the body, the pustules of the confluent pox are more distinct than upon the face, but never acquire the same maturity and consistence of pus, as in the properly distinct kind.

The salivation, which sometimes only attends the distinct small pox, very constantly attends the confluent; and both the salivation, and the affection of the fauces above mentioned, are, especially in adults, in a higher degree. In infants, a diarrhœa comes frequently in place of the salivation.

In the confluent pox, there is often a considerable putrescency of the fluids, as appears from petechiæ, from serous vesicles, under which the skin shews a disposition to gangrene, and from bloody urine, or other hæmorrhagy, all of which symptoms frequently accompany this disease.

In the confluent small-pox, the fever, which had only suffered a remission from the eruption to the maturation, at, or immediately after this period, is often renewed again with considerable violence. This is what has been called the secondary fever, and is, in different cases, of various duration and event.

DCIV.

We have thus endeavoured to describe the various circumstances of the small-pox; and, from the difference of these circumstances, the event of the disease may be determined. The whole of the prognosis may be nearly comprised in the following propositions.

The more exactly the disease retains the form of the distinct kind, it is the safer; and the more compleatly the disease takes the form of the confluent kind, it is the more dangerous.

It is only when the distinct kind shews a great number of pustules on the face, or otherwise, by fever or putrescency, approaches to the circumstances of the confluent, that the distinct kind is attended with any danger.

In the confluent small-pox there is always danger; and this is always more considerable and certain, as the fever is more violent and permanent, and especially as the marks and symptoms of putrescency are more evident.

When

When the putrid disposition is very great, the disease sometimes proves fatal before the eighth day; but in most cases it is on the eleventh that death happens; and sometimes it is put off till the fourteenth or seventeenth day.

Though the small-pox be not immediately fatal, the more violent kinds are often followed by a morbid state of the body, of various kind and event. These consequences, as I judge, may be imputed sometimes to an acrid matter produced by the preceding disease, and deposited in different parts; and sometimes to an inflammatory diathesis produced and determined to particular parts of the body.

DCV.

It is, I think, agreed among practitioners, that, in the different cases of small-pox, the difference chiefly depends upon the appearance of distinct or confluent; and, from the above description of these kinds, it will appear, that they chiefly differ in the time of eruption, in the number of pustules produced, in the form of the pustules, in the state of the matter contained in them, in the continuance of the fever, and, *lastly*, in the danger of the disease.

DCVI.

In inquiring into the causes of these differences, we might readily suspect, that it depended upon a difference of the contagion producing the disease; but this is not probable; for there are innumerable instances of the contagion arising from a person labouring under the small-pox, of the distinct kind, producing the confluent; and, on the contrary. Since the practice of inoculation became frequent, we have known the same variolous matter, in one person, produce the distinct, and, in another, the confluent small-pox. It is, therefore, highly probable, that the difference of the small-pox does not depend upon any difference of the contagion, but upon some difference in the state of the persons to whom

whom it is applied, or in the state of certain circumstances concurring with the application of the contagion.

DCVII.

To find out wherein the difference in the state of the persons to whom the contagion of the small-pox is applied, consists, I observe, that the difference between the distinct and confluent small-pox consists especially in the number of pustules produced, which, in the distinct, are generally few; in the confluent always many; if, therefore, we can find what, in the state of different persons, can give occasion to more or fewer pustules, we shall probably be able to account for all the other differences of the distinct and confluent small-pox.

DCVIII.

It is evident that the contagion of the small-pox is a ferment, with respect to the human fluids, and assimilates a great part of them to its own nature; and, it is probable, that the quantity thus assimilated is, in proportion to their several bodies, nearly the same in different persons. This quantity passes again out of the body, partly by insensible perspiration, and partly by being deposited in pustules; but, if the quantities generated be nearly equal, the quantities passing out of the body by the two ways mentioned, are very unequal in different persons; and, therefore, if we can find the causes which determine more to pass by the one way than by the other, we may thereby find the causes which give occasion to more pustules in one person than in another,

DCIX.

The causes which determine more of the variolous matter to pass by perspiration, or to form pustules, are probably certain circumstances of the skin, which determine more or less of the variolous matter to stick in it, or to pass freely through it.

DCX.

DCX.

The circumstance of the skin, which seems to determine the variolous matter to stick in it, is a certain state of inflammation, depending much upon the heat of it: Thus we have many instances of parts of the body, from being more heated, having a greater number of pustules than other parts. In the present practice of inoculation, in which few pustules are produced, much seems to be owing to the care that is taken to keep the skin cool. Parts covered with plasters, especially with those of a stimulant kind, have more pustules than other parts. Further, certain circumstances, such as adult age, and full living, determining to a phlogistic diathesis, seem to produce a greater number of pustules; and on the contrary,

DCXI.

It is, therefore, probable, that an inflammatory state of the whole system, and more particularly of the skin, gives occasion to a greater number of pustules; and the causes of this may produce most of the other circumstances of the confluent small-pox; such as the time of eruption; the continuance of the fever; the effusion of a more putrescent matter, and less fit to be converted into pus; and, what arises from this, the form and other circumstances of the pustules.

DCXII.

Having thus attempted to account for the chief difference which occurs in the state of the small-pox, we shall now try the truth of our doctrine, by its application to practice.

DCXIII.

In considering the practice, we consider it first in general, as suited to render the disease more generally benign and safe, and this by the practice of inoculation.

DCXIV.

DCXIV.

It is not necessary here to describe the operation of inoculating ; and what we name the practice of inoculation, comprehends all the several measures which precede or follow that operation, and are supposed to produce its salutary effects.

These measures are chiefly the following :

1. The choosing for the subject of inoculation persons otherwise free from disease, and not liable, from their age, or otherwise, to any incidental disease.

2. The choosing a person at a time of life the most favourable to a mild disease.

3. The choosing for the practice, a season the most favourable to a mild disease.

4. The preparing the person to be inoculated, by enjoining abstinence from animal food for some time before inoculation.

5. The preparing the person by courses of mercurial and antimonial medicines.

6. The taking care at the time of inoculation to avoid cold, intemperance, fear, or other circumstances which might aggravate the future disease.

7. After these preparations and precautions, the choosing a fit matter to be employed in inoculation, by taking it from a person of a sound constitution, and free from any disease, or suspicion of it ; by taking it from a person who has had the small-pox of the most benign kind ; and, *lastly*, by taking the matter from such persons, as soon as it has appeared in the pustules, either on the part inoculated, or on other parts of the body.

8. The introducing, by inoculation, but a small portion of the contagious matter.

9. After inoculation, the continuing the vegetable diet, and the employment of mercurial and antimonial medicines, and, at the same time, employing frequent purging.

10. Both before and after inoculation, taking care to avoid external heat, either from the sun, artificial fires, warm chambers, much clothing, or being much in bed ;
and,

and, on the contrary, exposing the person to a free and cool air.

11. Upon the appearance of the eruptive fever, the rendering that moderate by the employment of purgatives, by the use of cooling and antiseptic acids; and especially, by exposing the person frequently to a cool, and even a cold air, at the same time giving freely of cold drink.

12. After the eruption, the continuing the application of cold air, and the use of purgatives, during the course of the disease, till the pustules are fully ripened.

DCXV.

These are the measures proposed and practised in the latest and most improved state of inoculation; and the advantages obtained by the whole of the practice, or at least by most of the measures above mentioned, are now ascertained by a large experience; but it will still be useful, for the proper conduct of inoculation, to consider the importance and utility of the several measures above mentioned, that we may thereby more exactly determine upon what the advantages of inoculation more certainly depend.

DCXVI.

As the common infection may often seize persons under a diseased state, which may render the small-pox more violent, it is evident, that inoculation must have a great advantage, by avoiding such concurrence. But, as the avoiding of such concurrence may often, in the mean time, leave persons exposed to the common infection, it is worth our pains to inquire what are the diseased states which should restrain from the practice of inoculation. This is not yet sufficiently ascertained by observation; and we have frequently observed, that the small-pox have often occurred with a diseased state of the body, without being thereby rendered more violent; particularly, we have observed, that a scrophulous habit, or even the presence of scrophula, did not render the
small-pox.

small-pox more violent; we have observed also, that several diseases of the skin are equally innocent. I am of opinion, that they are the diseases of the febrile kind, or ailments ready to induce or aggravate a febrile state, that especially give the concurrence which is most dangerous with the small-pox. I dare not attempt any general rules; but, I am disposed to maintain, that, though a person be in a diseased state, if that state be of uncertain nature and effect, and, at the same time the small-pox be exceedingly rife, so that it be extremely difficult to guard against the common infection, we judge it will always be safer to give the small-pox by inoculation, than to leave the person to take them by the common infection.

DCXVII.

Though inoculation has been practised with safety upon persons of all ages; yet, from what has happened in fact, in the cases of common infection, and from several other considerations, we have reason to conclude, that adults are more liable to a violent disease than persons of younger years. At the same time, it is observed, that children, in the time of their first dentition, are liable, from the irritation of that, to have the small-pox rendered more violent; and that infants, before the time of dentition, upon receiving the contagion of the small-pox, are liable to be affected with epileptic fits, which frequently prove fatal; it is, therefore, upon the whole, evident, that, though circumstances may admit, and approve of inoculation at any age; yet, for the most part, the practice will have advantage, in choosing persons at an age, after the first dentition is over, and before the time of puberty.

DCXVIII.

Though inoculation has been practised with safety at every season of the year; yet, as it is certain, that the cold of winter may increase the inflammatory, and the heats of summer increase the putrescent state of the small-pox, it is highly probable that inoculation may have

have some advantage, from avoiding the extremes either of cold or heat.

DCXIX.

As the use of animal food may increase both the inflammatory and putrescent state of the human body, so it must render persons, in receiving the contagion of the small-pox, less secure against a violent disease; and, therefore, that inoculation may derive some advantage by enjoining abstinence from animal food for some time before the inoculation is performed; but, I am of opinion, that a longer time is necessary than is commonly prescribed.

DCXX.

I cannot deny that mercurial and antimonial medicines may have some effect in determining to a more free perspiration, and, therefore, may be of some use in preparing a person for the small-pox; but there are many observations which render their effect doubtful. The quantities of both these medicines, particularly the antimony, commonly employed, is too inconsiderable to have any effects. It is true, that the mercurials have often been employed more freely; but even their salutary effects have not been evident, and their mischievous effects have sometimes been more so. I doubt, therefore, upon the whole, if inoculation derives any advantage from these pretended preparatory courses.

DCXXI.

As it has been often observed, in the case of almost all contagions, that cold, intemperance, fear, and some other circumstances, concurring with the application of the contagion, have greatly aggravated the future disease, so it must be the same in the case of the small-pox; and, it is undoubted, that inoculation must derive a great, and perhaps its principal advantage, by avoiding the concurrences above mentioned.

DCXXII.

It has been commonly supposed that inoculation has derived some advantage from the choice of the matter that is employed in it ; but, from what was observed in (DCV.), it is very doubtful if any choice is necessary, or can give any benefit in determining the state of the disease.

DCXXIII.

It has been supposed, by some persons, that inoculation has an advantage, by introducing a small portion only of the contagious matter ; but this rests upon an uncertain foundation. It is not known what quantity is introduced by the common infection, and it may be a small quantity only. Although it were larger than that thrown in by inoculation, it is not known that it would have any effect. A certain quantity of ferment may be necessary to excite fermentation in a given mass ; but that quantity given, the fermentation and assimilation are extended to the whole mass ; and we do not find that a greater quantity than is just necessary, either increases the activity of the fermentation, or more certainly secures the assimilation of the whole. In the case of the small-pox, a considerable difference in the quantity of contagion introduced, has not shewn any effects in modifying the disease.

DCXXIV.

Purging has the effect of diminishing the activity of the sanguiferous system, and of obviating the inflammatory state of it ; and, therefore, it is probable, that the frequent use of cooling purgatives is a practice attending that of inoculation which may give considerable advantage ; and, probably, it does this also by diminishing the determination to the skin. And, it appears to me, that mercurials and antimonials, as they are commonly managed, are only useful as they make a part of the purging course.

DCXXV.

DCXXV.

It is probable, that the state of the small-pox depends very much upon the state of the eruptive fever, and particularly in avoiding the inflammatory state of the skin; and, therefore, it is probable, that the measures taken for moderating the eruptive fever, and inflammatory state of the skin, afford the greatest improvement which has been made in the practice of inoculation. The tendency of purging, and the use of acids, to this purpose, is sufficiently obvious; and, upon the same grounds we should suppose, that blood-letting might be useful; but, probably, this has been omitted; and, perhaps, other remedies might also be so, since we have found a more powerful and effectual one in the application of cold air, and the use of cold drink. Whatever doubts or difficulties our theory might present to us on this subject, they may be entirely neglected, as the practice of Indostan had long ago, and the practice of this country has lately, by a large and repeated experience, ascertained the safety and efficacy of this remedy; and as it may, and can be more certainly employed with the practice of inoculation, than it can be in cases of common infection, it must give a singular advantage to the former.

DCXXVI.

The continuing, after the eruption, the application of cold air, and the use of purgatives, has been especially the practice of inoculators; but it cannot be otherwise said to give any peculiar advantages to inoculation; and, if I mistake not, the employment of purgatives has often led to an abuse. When the state of the eruption is determined, when the number of pustules is very small, and the fever has entirely ceased, I suppose that the safety of the disease is absolutely ascertained, and further remedies absolutely superfluous; and, therefore, that, in such cases, the use of purgatives is unnecessary, and may often be hurtful.

DCXXVII.

DCXXVII.

We have thus considered the several circumstances and practices accompanying inoculation, and have endeavoured to ascertain the utility and importance of each. Upon the whole, we hope, we have sufficiently ascertained the utility and great advantage of this practice, particularly consisting in this, that, if certain precautions, preparations, and remedies are of importance, all of them can be employed more certainly with the practice of inoculation, than in the case of common infection.

It remains now that we should make some remarks on the conduct of the small-pox, as received by infection, or even when, in consequence of inoculation, the symptoms shall prove violent. The latter sometimes happens, although every precaution and remedy have been employed. The cause of this is not well known; but, it appears to me, to be commonly owing to a disposition of the fluids to putrescency. But, however this may be, it will appear, that, not only in the case of common infection, but even in that of inoculation, there may be occasion for studying the conduct of this disease, in all the possible varying circumstances of it.

DCXXVIII.

When, from the prevailing of small-pox as an epidemic, and, more especially, when it is known, that a person not formerly affected with the disease has been exposed to the infection, if such person should be affected with the symptoms of fever, there can be little doubt of its being an attack of the small-pox; and, therefore, he is to be treated, in every respect, as if the disease had been received by inoculation. He is to be freely exposed to a cool air, to be purged, and to have cooling acids given liberally.

DCXXIX.

If these measures moderate the fever, nothing more is necessary; but, if the nature of the fever attacking a person

person be uncertain, or if, with suspicions of the small-pox, the symptoms of the fever be violent, or even if, knowing the disease to be small-pox, the measures mentioned (DCXXIV.) do not moderate the fever sufficiently, it will be proper to let some blood; and, it will be more especially proper, if the person be an adult of a plethoric habit, and accustomed to full living.

DCXXX.

In the same circumstances, we judge it will be always proper to give a vomit, as useful in the beginning of all fevers, and more especially in this, where a determination to the stomach appears by pain, and spontaneous vomiting.

DCXXXI.

It frequently happens, especially in infants, that, during the eruptive fever of the small-pox, convulsions occur. Of these, if only one or two fits appear on the evening preceding the eruption, they give a favourable prognostic of a mild disease, and require no remedy; but, if they occur more early, and be violent, and frequently repeated, they are very dangerous, and require a speedy remedy. For this purpose, bleeding is hardly ever of service; blistering always comes too late; and the only remedy I have found effectual, is an opiate given in a large dose.

DCXXXII.

These are the remedies necessary during the eruptive fever; and if, upon the eruption, the number of the pimples upon the face be very few and distinct, the disease is no further of any danger, requires no remedies, and the purgatives which are continued, as was said before, by some practitioners, are often hurtful.

But when, upon the eruption, the pimples on the face are very numerous, when they are not distinct, and especially, if upon the fifth day the fever does not suffer
a considerable

a considerable remission, the disease will still require a great deal of attention.

DCXXXIII.

If, after the eruption, the fever shall still continue, the avoiding of heat, and the continuing to expose the body to a cool air, will still be proper. If the fever is considerable, with a full and hard pulse, in an adult person, a bleeding will be necessary; and, more certainly, a cooling purgative. It is, however, seldom that a repetition of the bleeding is necessary, as a loss of strength commonly very soon comes on; but the repetition of a purgative, or the frequent use of laxative clysters, is commonly useful.

DCXXXIV.

When a loss of strength, with other marks of a putrescent tendency of the fluids, appears, it will be necessary to exhibit the Peruvian bark in substance, and in large quantity. In the same case, the free use of acids, and of nitre, is useful; and, it is commonly proper, also, to give wine very freely.

DCXXXV.

From the fifth day of the disease, onward through the whole course of it, it is proper to give an opiate once or twice a day, taking care, at the same time, to obviate costiveness, by purgatives, or laxative clysters.

DCXXXVI.

In a violent disease, from the eighth to the eleventh day of it, it is proper to lay on blisters successively, on different parts of the body, and that without regard to the parts being covered with pustules.

DCXXXVII.

DCXXXVII.

If, in this disease, the tumour of the fauces is considerable, the deglutition difficult, the saliva and mucus viscid, and with difficulty thrown out, it will be proper to apply blisters to the external fauces, and to employ diligently detergent gargles.

DCXXXVIII.

During the whole course of the disease, when any considerable fever is present, the frequent exhibition of antimonial medicines, in nauseating doses, has been found useful; and these, commonly, sufficiently answer the purpose of purgatives.

DCXXXIX.

The remedies mentioned (from DCXXXI. to DCXXXVI.) are those frequently necessary, from the fifth day, till the suppuration is finished. But as, after that period, the fever is sometimes continued and increased; or, as sometimes, when there was little or no fever before, a fever now arises, and continues with considerable danger; this is what is called the Secondary fever, and requires particular treatment.

DCXL.

When the secondary fever follows the distinct small-pox, and the pulse is full and hard, the case is to be treated as an inflammatory affection, by bleeding and purging. But, if the secondary fever follows the confluent small-pox, and is a continuance or exacerbation of the fever which had subsisted before, it is to be considered as of the putrid kind; and in that case, bleeding is improper. Some purging may be necessary; but the remedies to be chiefly depended on, are the Peruvian bark and acids.

When the secondary fever first appears, whether it is after a distinct or a confluent small-pox, it is useful to exhibit

exhibit an antimonial emetic in nauseating doses, but in such manner as to produce some vomiting.

DCXLI.

For avoiding the pits which frequently follow the small-pox, many different measures have been proposed, but none of them appear to be sufficiently certain.

C H A P. IV.

OF THE CHICKEN - P O X.

DCXLII.

This disease seems to depend upon a specific contagion, and to affect persons but once in their lives. It is hardly ever attended with any danger; but, as it seems frequently to have given occasion to the supposition of a person's having the small-pox twice, it is proper to study this disease, and to distinguish it from the genuine small-pox.

DCXLIII.

This may be commonly done by attending to the following circumstances.

The eruption of the chicken-pox comes on with very little fever, or with one of no determined duration preceding it.

The pimples of the chicken-pox, more quickly than those of the small-pox, are formed into little vesicles or pustules.

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The matter in these pustules remains fluid, and never acquires the colour or consistence of the pus which appears in the pustules of the small-pox.

The pustules of the chicken-pox are always, in three or four days from their first appearance, formed into crusts.

See Doctor Heberden in Med. Transact. vol. i. art. xvii.

C H A P. V.

O F T H E M E A S L E S.

DCXLIV.

This disease also depends upon a specific contagion, and affects persons but once in their lives.

DCXLV.

It appears most frequently in children; but no age is exempted from it, if the persons have not been subjected to it before.

DCXLVI.

It commonly appears as an epidemic, first in the month of January, and ceases soon after the summer solstice; but various accidents, introducing the contagion, may produce the disease at other times of the year.

DCXLVII.

The disease always begins with a cold stage, which is soon followed with a hot, with the ordinary symptoms

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of thirst, heat, anorexia, anxiety, sickness and vomiting; and these are more or less considerable in different cases. Sometimes from the beginning, the fever is sharp and violent; often, for the first two days, it is obscure and inconsiderable, but always becomes violent before the eruption, which commonly happens on the fourth day.

DCXLVIII.

This eruptive fever, from the beginning of it, is always attended with hoarseness, a frequent hoarse dry cough, and frequently with some difficulty of breathing. At the same time, the eye-lids are somewhat swelled, the eyes are a little inflamed, and pour out tears; and, with this, there is a coryza, and frequent sneezing. For the most part, a constant drowsiness attends the beginning of this disease.

DCXLIX.

The eruption, as we have said, commonly appears upon the fourth day, first on the face, and successively on the lower parts of the body. It appears first in small red points; but, soon after, a number of these appear in clusters, which do not arise in visible pimples, but, by the touch, are found to be a little prominent. This is the case on the face; but, in other parts of the body, the prominency, or roughness, is hardly to be perceived. On the face, the eruption retains its redness, or has it increased for two days; but, on the third, the vivid redness is changed to a brownish red; and, in a day or two more, the eruption entirely disappears, while a mealy desquamation takes place. During the whole time of the eruption, the face is somewhat turgid, but seldom considerably swelled.

DCL.

Sometimes after the eruption has appeared, the fever ceases entirely; but this is seldom the case; and more commonly the fever continues, or is increased after the eruption,

eruption, and does not cease till after the desquamation. Even then, the fever does not always cease, but continues with various duration and effect.

DCLI.

Though the fever happens to cease upon the eruption's taking place, it is common for the cough to continue till after the desquamation, and sometimes much longer.

In all cases, while the fever continues, the cough also continues, generally with an increase of the difficulty of breathing; and both of these symptoms sometimes arise to a degree which denotes a pneumonic affection. This may arise at any period of the disease; but very often it does not come on till after the desquamation of the eruption.

After the same period, also, a diarrhœa frequently comes on, and continues for some time.

DCLII.

It is common for the measles, even when they have not been of a violent kind, to be followed by inflammatory affections, particularly ophthalmia and phthisis.

DCLIII.

If the blood be drawn from a vein, in the measles, with the circumstances necessary to favour the separation of the gluten, this always appears separated, and lying on the surface of the crassamentum, as in inflammatory diseases.

DCLIV.

For the most part, the measles, even when violent, are without any putrid tendency; but, in some cases, such a tendency appears both in the course of the disease, and especially after the ordinary course of it is finished. See Dr. Watson, in London Med. Observations, vol. iv. art. xi.

DCLV.

DCLV.

From what is delivered (from DCXLIV. to DCLIII.) it will appear, that the measles are distinguished by a catarrhal affection, and by an inflammatory diathesis, to a considerable degree; and, therefore, the danger attending them arises chiefly from the coming on of a pneumonic inflammation.

DCLVI.

From this consideration, it will be obvious, that the remedies especially necessary, are those which may obviate and diminish the inflammatory diathesis; and, therefore, in a particular manner, blood-letting. This remedy may be employed at any time in the course of the disease, or after the ordinary course of it is finished.

It is to be employed more or less, according to the urgency of the symptoms of fever, cough, and dyspnoea; and generally may be employed very freely. But, as the symptoms of pneumonic inflammation seldom come on during the eruptive fever; and, as this is sometimes violent, immediately before the eruption, though a sufficiently mild disease be to follow, bleeding is seldom very necessary during the eruptive fever, and may often be reserved for the times of greater danger, which are perhaps to follow.

DCLVII.

In all cases of measles, where there are no marks of putrescency, and where there is no reason, from the known nature of the epidemic, to apprehend putrescency, bleeding is the remedy to be depended upon; but, assistance may also be drawn from cooling purgatives; and particularly from blistering on the sides, or between the shoulders.

DCLVIII.

DCLVIII.

The dry cough may be alleviated by the large use of demulcent pectorals, mucilaginous, oily, or sweet. It may, however, be observed, with respect to these demulcents, that they are not so powerful in involving and correcting the acrimony of the mass of blood as has been imagined, and that their chief operation is by besmearing the fauces, and thereby defending them from the irritation of acrids, either arising from the lungs, or distilling from the head.

DCLIX.

For moderating and quieting the cough in this disease, opiates certainly prove the most effectual means, whenever they can be safely employed. In the measles, in which an inflammatory state prevails in a considerable degree, opiates may be supposed to be inadmissible; and, in those cases in which a high degree of pyrexia and dyspnoea shew either the presence, or at least the danger of pneumonic inflammation, we think that opiates might be very hurtful; but, in cases in which the dyspnoea is not considerable, and in which bleeding, to obviate or abate the inflammatory state, has been duly employed, in such cases, while the cough and watchfulness are the urgent symptoms, we think that opiates may be safely exhibited, and with great advantage. I think, further, that, in all the exanthemata, there is an acrimony diffused over the system, which gives a considerable irritation; and, for obviating the effects of this, opiates are useful, and always proper, when no particular contra-indication prevails.

DCLX.

When the desquamation of the measles is finished, though then there should be no disorder remaining, physicians have thought it necessary to purge the patient several times, with a view to draw off the dregs of this disease, that is, a portion of the morbid matter which
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is supposed to remain long in the body. We cannot reject this supposition, but, at the same time, cannot believe that the remains of the morbid matter, diffused over the whole mass of blood, can be wholly drawn off by purging; and, we think, that, to avoid the consequence of the measles, it is not the drawing off the morbid matter which we need to study, so much as to obviate and remove the inflammatory state of the system which had been induced by the disease. With this last view, indeed, purging may still be a proper remedy; but bleeding, in proportion to the symptoms of inflammatory disposition, is still more so.

DCLXI.

From our late experience of the use of cold air in the eruptive fever of the small-pox, some physicians have been of opinion, that the practice may be transferred to the measles; but we have not yet had experience to determine this. We are certain, that external heat may be very hurtful in the measles, as in most other inflammatory diseases; and, therefore, that the body ought to be kept in a moderate temperature during the whole course of the measles; but how far, at any period of the disease, cold air may be applied with safety, we are uncertain. Analogy, though so often the resource of physicians, is, in general, fallacious; and, further, though the analogy with the small-pox might lead to the application of cold air during the eruptive fever of the measles, the analogy with catarrh seems to be against the practice. When the eruption is upon the skin, we have had many instances of cold air making it disappear, and thereby producing much disorder in the system; and, we have also had frequent instances of these disorders being removed by restoring the heat of the body, and thereby again bringing out the eruption.

C H A P. VI.

O F T H E S C A R L E T F E V E R.

DCLXII.

It may be doubted if the scarlet fever be a disease specifically different from the cynanche maligna above described. The latter is almost always attended with a scarlet eruption; and, in all the instances I have seen of what may be called the scarlet fever, the disease has, in almost every person affected, been attended with an ulcerous fore throat.

DCLXIII.

This view of the matter may give some doubt; but I am still of opinion that there is a scarlet fever, which is a disease specifically different from the cynanche maligna.

Doctor Sydenham has described a scarlet fever, which he had seen prevailing as an epidemic, with all the circumstances of the fever and eruption, without its being accompanied with any affection of the throat; he at least does not take notice of any such affection, which such an accurate observer could not miss to have done, if any such symptom, as we have commonly seen making a principal part of the disease, had attended those cases which he had observed. Several other writers have described the scarlet fever in the same manner; and I know physicians who have seen the disease in that form; so that there can be no doubt of there being a scarlet fever not necessarily connected with an ulcerous fore throat, and therefore a disease different from the cynanche maligna.

DCLXIV.

DCLXIV.

But, further, although in all the instances of scarlet fever which I have seen, and in the course of forty years I have seen it five or six times prevailing as an epidemic in Scotland, the disease, in almost all the persons affected, was attended with an ulcerous sore throat, or was what Sauvages names the *Scarlatina Anginosa* ; that, even in some instances, the ulcers of the throat were of a putrid and gangrenous kind, and, at the same time, the disease, in all its symptoms, resembled, very exactly, the *Cynanche Maligna* ; yet, I am still persuaded, that not only the *Scarlatina* of Sydenham, but that even the *Scarlatina Anginosa* of Sauvages, is a different disease from the *Cynanche Maligna* ; and I have formed this opinion from the following considerations.

DCLXV.

There is a scarlet fever entirely free from any affection of the throat, which sometimes prevails as an epidemic ; and, therefore, that there is a specific contagion producing a scarlet eruption without any determination to the throat.

Even the *Scarlatina*, which, from its matter being generally determined to the throat, may be properly termed *Anginosa*, has, in many cases of the same epidemic, been without any affection of the throat ; and, therefore, the contagion, may be supposed to be more especially determined to produce the eruption only.

Though in all the epidemics which I could alledge were those of the *Scarlatina Anginosa*, there have been some cases which, in the nature of the ulcers, and in other circumstances, exactly resembled the cases of the *Cynanche Maligna* ; yet, I have as constantly observed, that these cases have not been above one or two in a hundred, while the rest have all of them been with ulcers of a benign kind, and with circumstances hereafter to be described, somewhat different from those of the *Cynanche Maligna*.

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On the other hand, as I have two or three times seen the Cynanche Maligna epidemically prevailing, so, among the persons affected, I have seen instances of cases as mild as the cases of the Scarlatina Anginosa commonly are; but here the proportion was reversed; and these mild cases were not one fifth of the whole, while the rest were of the putrid and malignant kind.

It applies to the same purpose to observe, that, of the Cynanche Maligna, most of the instances prove fatal, and, of the Scarlatina Anginosa, a very few of the cases prove so.

DCLXVI.

From these considerations, though it may appear that there is some affinity between the Cynanche Maligna and Scarlatina Anginosa, it will still remain probable, that the two diseases are specifically different. I have been at some pains to establish this opinion; for, from all my experience, I find, that those two diseases require a different treatment; and I therefore, also, now proceed to mention more particularly the circumstances of the Scarlatina Anginosa.

DCLXVII.

The disease commonly appears about the beginning of winter, and continues through that season; it comes on with some cold shivering, and the other symptoms of the fever which commonly introduces the other exanthemata. But here there is no cough, nor the other catarrhal symptoms which attend the measles; nor is there here that anxiety and vomiting which commonly introduce the confluent small-pox, and which still more certainly introduce the Cynanche Maligna.

Early in the disease, some uneasiness is felt in the throat, and frequently the deglutition is difficult, generally more so than in the Cynanche Maligna. Upon looking into the fauces, a redness and swelling appear, in colour and bulk approaching to the state of these symptoms in the Cynanche Tonsillaris; but here, in the Scarlatina, there is always more or less of sloughs,

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which seldom appear in the Cynanche Tonfillaris; but the sloughs are commonly whiter than those in the Cynanche Maligna.

While these circumstances are seen in the fauces, on the third or fourth day a scarlet eruption appears on the skin, in the same form as described in (CCCVI.). This eruption is commonly more considerable and universal here than in the Cynanche; but it seldom produces a remission of the fever; the eruption is commonly steady to the third or fourth day after its first appearance, but then goes off, ending in a mealy desquamation. At this time the fever commonly subsides; and, generally, at the same time, some degree of sweat comes on.

The sloughs in the fauces, which appeared early in the disease, continue for some days; but then falling off, discover the swelling abated, and an ulcer formed on one or both tonsils, shewing a laudable pus; and soon after the fever has subsided, these ulcers heal up entirely. For the most part, this disease has much less of coryza attending it than the Cynanche Maligna; and, when there is a coryza attending Scarlatina, the matter discharged is less acrid, and has not the foetid smell which it has in the other disease.

In the Scarlatina, when the eruption has entirely disappeared, it frequently happens, that, a few days after, the whole body is affected with an anasarctous swelling, which, however, in a few days more, gradually subsides.

We have thus described the most common circumstances of the Scarlatina Anginosa; and have only to add, that, during the time of its being epidemic, and especially upon its first setting in, there are always a few cases, in which the circumstances of the disease approach very nearly to those of the Cynanche Maligna and it is only in these circumstances that the disease is attended with any danger.

DCLXVIII.

With respect to the cure of this disease, when the symptoms of it are nearly the same with those of the Cynanche Maligna, it requires exactly the same treatment as directed in (CCCIX.)

DCLXIX.

DCLXIX.

When the scarlet fever appears, without any affection of the throat, the treatment of it is very simple, and is delivered by Dr. Sydenham. An antiphlogistic regimen is commonly all that is necessary, avoiding, on one hand, the application of cold air, and, on the other, any increase of external heat.

DCLXX.

In the ordinary state of the Scarlatina Anginosa, the same treatment is commonly sufficient; but as here the fever is commonly more considerable, and there is an affection of the throat, some remedies may be often necessary.

DCLXXI.

When there is a somewhat high degree of fever, with a full pulse, and a considerable swelling of the tonsils, bleeding is very proper, especially in adults; and it has been frequently practised with advantage; but, as even in the Cynanche Tonsillaris, much bleeding is seldom necessary, (CCXCVIII.) so, in the Scarlatina, when the state of the fever, and the appearances of the fauces render the nature of the disease ambiguous, bleeding may be omitted, and, if not altogether, it at least should not be large, nor be repeated.

DCLXXII.

Vomiting, and especially nauseating doses of emetics, notwithstanding the inflamed state of the fauces, have been found very useful in this disease. An open belly is proper in every form of this disease; and when the nauseating doses of emetics operate a little downwards, they are more serviceable.

DCLXXIII.

DCLXXIII.

In every form of the Scarlatina Anginosa, through the whole course of it, detergent gargles should be employed, and more or less as the quantity of sloughs, and the viscid mucus in the fauces may seem to require.

DCLXXIV.

Even in the milder states of the Scarlatina Anginosa, it has been common with practitioners to exhibit the Peruvian bark through the whole course of the disease; but we are assured, by much experience, that, in such cases, it may be safely omitted, though in cases any ways ambiguous it may not be prudent to do so.

DCLXXV.

The anasarcaous swelling which frequently follows the Scarlatina Anginosa, seldom requires any remedy; and, at least, the purgatives so much inculcated, and so commonly practised, soon take off the anasarca.

C H A P. VII.

OF THE MILIARY FEVER.

DCLXXVI.

This disease is said to have been unknown to the antients, and that it appeared, for the first time, in Saxony about the middle of the last century. It is said to have since spread from thence into all the other countries

tries of Europe ; and, since the period mentioned, to have appeared in many countries in which it had never appeared before.

DCLXXVII.

From the time of its having been first taken notice of, it has been described and treated of by many different writers, and by all of them, till very lately, has been considered as a peculiar idiopathic disease.

It is said to have been constantly attended with peculiar symptoms. It comes on with a cold stage, which is often considerable. The hot stage, which follows, is attended with great anxiety, and frequent sighing. The heat of the body becomes great, and soon produces profuse sweating, preceded, however, with a sense of pricking, as of pin points in the skin ; and the sweat is of a peculiarly rank and disagreeable odour. The eruption appears, sooner or later, in different persons, but at no determined period of the disease. It seldom or never appears upon the face ; but appears first upon the neck and breast, and from thence often spreads over the whole body.

DCLXXVIII.

The eruption named miliary is said to be of two kinds, the one named the Red, the other the White Miliary. The former, which in English is strictly named a Rash, is commonly allowed to be a symptomatic affection ; and, as the latter is the only one that has any pretensions to be considered as an idiopathic disease, it is this only that we shall more particularly describe and treat of in this chapter.

DCLXXIX.

What is then called the White Miliary eruption, appears at first like the red, in very small red pimples, for the most part distinct, but sometimes clustered together. Their little prominence is better distinguished by the finger than by the eye. Soon after the appearance of this eruption, and, at least, on the second day, a small vesicle

vesicle appears upon the top of the pimples. At first the vesicle is whey coloured, but soon becomes white, and stands out like a little globule on the top of the pimple. In two or three days, these globules break, or are rubbed off, and are succeeded by small crusts, which soon after fall off in small scales. While one set of pimples take this course, another set arise to run the same, so that the disease often continues upon the skin for many days together. Sometimes when one crop of this eruption has disappeared, another, after some interval, is produced. And, it has been further observed, that, in some persons, there is such a disposition to this disease, that they have been affected with it several times in the course of their lives.

DCLXXX.

This disease is said to affect both sexes, and persons of all ages and constitutions, but it has been observed, at all times, to affect especially, and most frequently, lying-in women.

DCLXXXI.

This disease is often accompanied with violent symptoms, and has frequently proved fatal. The symptoms, however, attending it are very various; and they are, upon occasion, every one attending febrile diseases; but I cannot find that any symptom, or concurrence of symptoms, are steadily the same in different persons, so as to give any specific character to the disease. When the disease is violent, the most common symptoms are phrenetic, comatose, and convulsive affections, which are also symptoms of all fevers treated by a very warm regimen.

DCLXXXII.

While there is such a variety of symptoms appearing in this disease, it is not to be expected that any one particular method of cure can be proposed; and, accordingly, we find, in different writers, different methods and remedies prescribed; frequent disputes about the
most

most proper, and those received and practised by some, opposed and deserted by others.

DCLXXXIII.

I have now given an account of what I have found delivered by authors who have considered the white miliary fever as an idiopathic disease; but, now, after having often observed the disease, I doubt much if it ever be such an idiopathic as has been supposed; and I suspect that there is much fallacy in what has been delivered on the subject.

DCLXXXIV.

It appears to me very improbable that this was really a new disease, when it was first considered as such. There appear to me very clear traces of it in authors who wrote long before that period; and, though there were not, we know, that antient descriptions were inaccurate and imperfect, particularly with respect to cutaneous affections; and we know very well, that those affections which commonly appeared as symptomatic only, were commonly neglected, or confounded together under a general appellation.

DCLXXXV.

The antecedent symptoms of anxiety, sighing, and pricking of the skin, which have been spoken of as peculiar to this disease, are, however, common to many others, and, perhaps, to all those in which sweatings are forced out by a warm regimen.

Of the symptoms said to be concomitant of this eruption, there are none which can be said to be constant and peculiar but that of sweating. This, indeed, always precedes and accompanies the eruption; and, while the miliary eruption attends many different diseases, it never, however, appears in any of these, but after sweating; and, in persons labouring under the same diseases, it does not appear, if in such persons sweating is avoided. It is, therefore, probable, that the eruption is the effect
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of sweating, and that it is the effect of a matter not before prevailing in the mass of blood, but generated, under particular circumstances, in the skin itself. That it depends upon particular circumstances of the skin, appears further from hence, that the eruption seldom or never appears upon the face, although it affects the whole of the body besides; and that it comes upon those places especially which are more closely covered; and that it can be brought out upon particular places by external applications.

DCLXXXVI.

It is to be observed, that this eruptive disease differs from the other exanthemata in many circumstances; in its not being contagious, and therefore never epidemic; in this that the eruption appears at no determined period of the disease; that the eruption has no determined duration; that successive eruptions frequently appear in the course of the same fever; and that such eruptions frequently recur in the course of the same person's life.

All this renders it very probable, that, in the miliary fever, the morbid matter is not a subsisting contagion communicated to the blood, and thence, in consequence of fever and assimilation, thrown out upon the surface of the body, but a matter occasionally produced in the skin itself by sweating.

DCLXXXVII.

This conclusion is further rendered probable from hence, that, while the miliary eruption has no peculiar symptoms, or concurrence of symptoms belonging to it, it, upon occasion, accompanies almost every febrile disease, whether inflammatory or putrid, if these happen to be attended with sweating; and from thence it may be presumed, that the miliary eruption is a symptomatic affection only, produced in the manner we have said.

DCLXXXVIII.

DCLXXXVIII.

But, as this symptomatic affection does not always accompany every instance of sweating, it may be proper to inquire, what are the circumstances which especially determine this eruption to appear? and to this I can give no full and proper answer. I cannot say that there is any one circumstance which in all cases gives occasion to this eruption; nor can I say what different causes, in different cases, may give occasion to it. There is only one observation I can make to the purpose of this inquiry; and it is, that these persons sweating, under febrile diseases, are especially liable to the miliary eruption, who have been previously weakened by large evacuations, particularly of blood. This will explain why it happens to lying-in women more frequently than to any other persons; and to confirm this explanation, I have observed, that the eruption has happened to other women, though not in child-bed, but who had been much subjected to a frequent and copious menstruation, and to an almost constant *fluor albus*. I have also observed it to have happened to men in fevers, after wounds, from which they had suffered a great loss of blood.

Further, that this eruption is produced by a certain state of debility, will appear probable, from its so often attending fevers of the putrid kind, which are always attended with great debility. It is true, that it also sometimes attends inflammatory diseases, when it may not be accounted for in the same manner; but I believe it may be observed, that it especially attends those inflammatory diseases in which the sweats have been long protracted, or frequently repeated, and which have thereby produced a debility, and, perhaps, a debilitating putrid diathesis.

DCLXXXIX.

It appears so clearly to me that this eruption is always a symptomatic and factitious affection, that I am persuaded it may be, in most cases, prevented merely by

avoiding sweats. Spontaneous sweatings, in the beginning of diseases, are very rarely critical; and all sweatings, not evidently critical, should be prevented; and the promoting them, by increasing external heat, is commonly very pernicious. Even critical sweats should hardly be encouraged by such means. If, therefore, spontaneous sweats arise, they are to be checked by the coolness of the chamber; by the lightness and looseness of the bed-clothes; by the persons laying out their arms and hands; and by their taking cold drink; and, in this way, I think I have frequently prevented miliary eruptions, which were otherwise likely to have appeared, particularly in lying-in women,

DCXC.

But, it may happen, when these precautions have been neglected, or from other circumstances, that a miliary eruption does actually appear; and the question will then be put, how the case is to be treated? It is a question of consequence, as I believe that the matter here generated is often of a virulent kind; it is often the offspring of putrescency; and, when treated by increasing the external heat of the body, it seems to acquire a virulence which produces those symptoms mentioned in (DCLXXXI.), and proves certainly fatal.

It has been an unhappy opinion with most physicians, that eruptive diseases were ready to be hurt by cold, and that it was therefore necessary to cover up the body very closely, and thereby increase the external heat. We now know that this is a mistaken opinion; that increasing the external heat of the body is very generally mischievous; and that several eruptions not only admit, but require the application of cold air. We are persuaded, therefore, that the practice which formerly prevailed, in the case of miliary eruptions, of covering up the body close, and both by external means, and internal remedies, encouraging the sweatings which accompany this eruption, was highly pernicious, and commonly fatal. I am therefore of opinion, that, even when a miliary eruption has appeared, in all cases in which

which the sweating is not manifestly critical, we should employ all the several means of stopping the sweating that are mentioned above; and I have sometimes had occasion to observe, that even the admission of cool air was safe and useful.

DCXCI.

This is, in general, the treatment of miliary eruptions; but, at the same time, the remedies suited to the primary disease are to be employed; and, therefore, when the eruption happens to accompany inflammatory affections, and the fulness and hardness of the pulse, or other symptoms, shew an inflammatory state present, the case is to be treated by blood-letting, purging, and other antiphlogistic remedies. Upon the other hand, when the miliary eruption attends diseases, in which debility and putrescency prevail, it will be proper to avoid all evacuations, and to employ tonic and antiseptic remedies, particularly the Peruvian bark, cold drink, and cold air.

We shall conclude this subject with observing, that the venerable octogenarian practitioner, de Fischer, when treating of this subject, in laying down the indications of cure, has given this as one of them: ‘*Excretionis periphericæ non primariam habere rationem.*’

C H A P. VIII.

OF THE REMAINING EXANTHEMATA.

URTICARIA, PEMPHIGUS, AND APHTHA.

DCXCII.

The Nettle Rash is a name applied to two different diseases. The one is the chronic eruption, described by Dr. Herberden in the Medical Transactions, vol. I. art. xvii. which, as not being a febrile disorder, does not belong to this place. The other is the Urticaria of our Synopsis, which, as taken into every system of Nosology as one of the Exanthemata Febrilia, is properly to be treated of here.

DCXCIII.

I have never seen this disease as contagious and epidemic; and the few sporadic cases of it which I have seen, have seldom taken that regular course described by authors. At the same time, as the accounts of different authors are not very uniform, and hardly consistent, I cannot enter further into the consideration of this disease; and, I hope, it is not very necessary, as on all hands it is agreed, that this disease is a mild one, and seldom requires the use of remedies. It is generally sufficient to observe an antiphlogistic regimen, and to keep the patient in a temperature that is neither hot nor cold.

DCXCIV.

DCXCIV.

The Pemphigus, or Vesicular fever, is a rare and uncommon disease, and very few instances of it are recorded in the writings of physicians. I have never had occasion to see it, and, therefore, it would be improper for me to treat of it myself, and I don't choose to repeat after others, while the disease has yet been little observed, and its character does not yet seem to be exactly ascertained. Vid. Acta Helvetica, vol. 2. p. 260.

DCXCV.

The Aphtha, or Thrush, is a disease better known; and, as it commonly appears in infants, it is so well known as not to need our treating of it here. As an idiopathic disease, affecting adults, we have not seen it; but it seems to be more frequent in Holland; and, therefore, for the study of it, we refer to Dr. Boerhaave, and his commentator Van Swieten, whose works are in every body's hands.

DCXCVI.

The Petechia has been, by all our Nosologists, enumerated amongst the exanthemata; but as we judge it, and as we believe that most other physicians judge it, to be always a symptomatic affection only, we cannot give it a place here.

B O O K I V.

O F H E M O R R H A G I E S.

C H A P. I.

O F H E M O R R H A G Y I N G E N E R A L.

DCXCVII.

I N establishing a class, or order of diseases, under the title of HEMORRHAGIES, the Nosologists have employed the single circumstance of an effusion of red blood, as the character of such a class or order. By these means, they have associated diseases, which in their nature are very different; but, in every methodical distribution, such arbitrary and unnatural associations should be avoided as much as possible. Further, by that management, the Nosologists have suppressed or lost sight of an useful distinction before established, and very well founded, which is that of *Active* and *Passive* Hemorrhagies.

DCXCVIII.

We mean to restore this distinction; and, therefore, here, under the title of Hemorrhagies, we comprehend those only which have been commonly called *Active*, that is, those which are attended with some degree of pyrexia; which seem always to depend upon an increased impetus of the blood in the vessels pouring it out, and which chiefly arise from an internal cause. In this matter we follow

follow Dr. Hoffman, who joins the Active Hemorrhagies with the febrile diseases; and we have accordingly established these hemorrhagies as an order in the class of pyrexia. From this order we exclude all those effusions of red blood which are owing entirely to external violence; and all those which, though from internal causes, are however, without pyrexia, and seem to be owing to a putrid fluidity of the blood, to the weakness, or to the erosion of the vessels, rather than to any increased impetus of the blood in them.

DCXCIX.

With a view to treat of those proper hemorrhagies of which we have formed an order in our Nosology, we shall first treat of active hemorrhagy in general; and we judge the several genera and species, to be treated of particularly afterwards, to have so many circumstances in common with one another, that the general consideration is both proper, and may be very useful.

S E C T. I.

O F T H E P H E N O M E N A O F H E -
M O R R H A G Y.

DCC.

We begin first with marking the phenomena of Hemorrhagy, which are generally the following.

Hemorrhagies happen especially in plethoric habits, and in persons of a sanguine temperament; they appear most commonly in the spring, or in the beginning of summer.

For

For some time, longer or shorter in different cases, before the blood flows, there are some symptoms of fullness and tension about the part from which the blood is to issue. In such parts as fall under our view, there are some redness, swelling, and sense of heat, or of itching; and, in the internal parts, from which blood is to flow, there is a sense of weight and heat; and, in both cases, various pains are often felt in the neighbouring parts.

DCCI.

When these symptoms have subsisted for some time, some degree of a cold stage of fever comes on, and a hot stage is formed, during which the blood flows of a florid colour, in a greater or less quantity, and continues to flow for a longer or shorter time; but commonly, after some time, the effusion spontaneously ceases, and with that the fever also.

DCCII.

During the hot stage which precedes a hemorrhagy, the pulse is frequent, quick, full, and often hard; but, as the blood flows, the pulse becomes softer, and less frequent.

DCCIII.

In hemorrhagies, blood drawn from a vein, upon its concreting, commonly shews the gluten separated, or a crust formed, as in the cases of phlegmasiæ.

DCCIV.

Hemorrhagies, from internal causes, having once happened, are apt, after a certain interval, to return; sometimes very often, and frequently at stated periods.

DCCV.

DCCV.

These are, in general, the phenomena of hemorrhagy; and if, in some cases, all of them be not exquisitely marked; or if, perhaps, some of them do not at all appear, it imports only, that, in different cases, the system is more or less generally affected; and that, in some cases, there are purely topical hemorrhagies, as there are purely topical inflammations.

S E C T. II.

O F T H E P R O X I M A T E C A U S E O F
H E M O R R H A G Y.

DCCVI.

The pathology of hemorrhagy seems to be sufficiently obvious. Some inequality in the distribution of the blood, occasions a congestion in particular parts of the sanguiferous system; that is, a greater quantity of blood is poured into certain vessels than their natural capacity is suited to receive. These vessels become, thereby, preternaturally distended; and this distention proves a stimulus to them, exciting their action to a greater degree than usual, which, pushing the blood with unusual force into the extremities of these vessels, opens them by Anastomosis, or rupture; and, if these extremities be loosely situated on external surfaces, or on the internal surfaces of certain cavities opening externally, a quantity of blood flows out of the body.

DCCVII.

This will, in some measure, explain the production of hemorrhagy; but, it appears to me, that, in most cases, there is something more to be taken into the account; for it is probable, that, in consequence of congestion, a sense of resistance arises, and excites the action of the *Vis Medicatrix Naturæ*; and the exertions of this are usually made by the formation of a cold stage of fever, inducing a more vigorous action of the vessels; and the concurrence of this exertion more effectually opens the extremities, and occasions the flowing out of the blood.

DCCVIII.

What is delivered in the two preceding paragraphs, seems to explain the whole phenomena of hemorrhagy, except the circumstance of its frequent recurrence, which we apprehend may be explained in the following manner. The congestion and consequent irritation are taken off by the flowing of the blood; which, therefore, after some time, spontaneously ceases; but, at the same time, the internal causes which before produced the unequal distribution of the blood, commonly remain, and must now operate the more readily, as the overstretched and relaxed vessels of the part will now more readily admit of a congestion of blood in them, and, consequently produce the same series of phenomena as before.

DCCIX.

This may sufficiently explain the ordinary return of hemorrhagy; but there is still another circumstance, which, as commonly concurring, is to be taken notice of; that is, the general Plethoric state of the system, which renders every cause of unequal distribution of more considerable effect. Though hemorrhagy may often depend upon the state of the vessels of a particular part, favourable to a congestion's being formed in them; yet,

yet, in order to that state's producing its effect, it is necessary that the whole system be in its natural plethoric condition ; and, if this should be in any degree beyond what is natural, it will more certainly determine the effects of topical conformation to take place. The return of hemorrhagy, therefore, will be more certainly occasioned, if the system becomes preternaturally plethoric ; but hemorrhagy has always a tendency to increase the plethoric state of the system, and, consequently, to occasion its own return.

DCCX.

To shew that Hemorrhagy does contribute to produce or increase the plethoric state of the system, it is only necessary to observe, that the quantity of serous fluids being given, the state of the excretions depends upon a certain balance between the force of the larger arteries, propelling the blood, and the resistance of the excretories ; but the force of the arteries depends upon their fullness and distention, chiefly given to them by the quantity of red globules and gluten, which are, for the greatest part, confined to the red arteries ; and, therefore, the *spoliation* made by a hemorrhagy, being chiefly of red globules and gluten, the effusion of blood must leave the red arteries more empty and weak. In consequence of the weaker action of the red arteries, the excretions are in proportion diminished ; and, therefore, the *ingesta* continuing the same, more fluids will be accumulated in the vessels. It is by these means that the loss of blood by hemorrhagies, whether artificial or spontaneous, if within certain bounds, is commonly so soon recovered ; but, as the diminution of the excretions, from a less quantity of fluid being impelled into the excretories, gives occasion to these vessels to fall into a contracted state ; so, if this shall continue long, these vessels will become more rigid, and will not yield to the same impelling force as before. Though the arteries, therefore, by new blood collected in them, shall have recovered their former fullness, tension, and force, yet this force will not be in balance with the resistance of the more rigid excretories, so as to restore the

the former state of excretion; and, therefore, a further accumulation will take place in the arteries, and an increase of their plethoric state be thereby induced. In this manner we perceive more clearly, that hemorrhagy, as producing a more plethoric state of the system, has a tendency to occasion its own recurrence with greater violence; and, as the renewal and further accumulation of blood require a determined time, so, in the several repetitions of hemorrhagy, that time will be nearly the same; and, therefore, the returns of hemorrhagy will be commonly at stated periods, as has been observed frequently to happen.

DCCXI.

We have thus explained the nature of hemorrhagy in general, as depending upon some inequality in the distribution of the blood, occasioning a congestion of it in particular parts of the sanguiferous system. It is indeed probable, that, in most persons, the several parts of the sanguiferous system are in balance with one another, and that the density, and consequently the resistance, in the several vessels, is in proportion to the quantity of blood that each should receive; and hence it frequently happens, that no inequality in the distribution of the blood shall appear in the course of a long life. But, if we consider that the sanguiferous system is constantly in a plethoric state, that is, that the vessels are constantly distended beyond that size which they would be of, if they were free from any distending force, we shall perceive, that this state may be readily changed. For as, on one hand, the vessels are elastic, and therefore under a constant tendency to contract farther upon the withdrawing of any part of the distending force; and, on the other hand, they are not so rigid but that, by an increase of the impetus of the blood in them, they may be more than ordinarily distended; so we can perceive, that, in most persons, causes of an increased contraction or distention may arise in one part or other of the system, or that an unequal distribution may take place; and, in an exquisitely distended or plethoric system, a small inequality in the distribution

distribution of the blood may form those congestions which give occasion to hemorrhagy.

DCCXII.

In this manner we explain how hemorrhagy may be occasioned at any period of life, or in any part of the body; but hemorrhagies happen in certain parts more frequently than in others, and at certain periods of life more readily than at others; and therefore, it may be required, in delivering the general doctrine of hemorrhagy, that we should explain those circumstances which produce the specialities mentioned; and we attempt it as follows.

DCCXIII.

The human body, from being of a small bulk at its first formation, grows afterwards to a considerable size. This increase of bulk consists, in a great measure, in the increase of the quantity of fluids, and a proportional enlargement of the containing vessels. But, at the same time, the quantity of solid matter is also gradually increased; and, in whatever manner we may suppose this to be done, it is probable that the progress, in the whole of the growth of animal bodies, depends upon the extension of the arterial system.

DCCXIV.

If this be so, it will be equally manifest, that the extension of the arterial system depends upon the quantity of fluids accumulated in it, and upon the force of the heart impelling the fluids, being such as to keep the arteries constantly in a distended state, and, therefore, always with a tendency to be extended in every dimension.

DCCXV.

As the state of the animal solid is, at the first formation of the body, very lax and yielding, so the extension of the system proceeds, at first, very fast; but,

as

as the extension gives occasion to the apposition of more matter to the solid parts, these are, in proportion to their extension, constantly acquiring a greater density, and therefore giving more resistance to their further extension and growth. Accordingly, we observe, that, as the growth of the body advances, the increase of it, in any given time, becomes proportionally less and less, till at length it ceases altogether,

DCCXVI. —

This is the general idea of the growth of the human body, till it attains the utmost bulk which it is capable of acquiring; but, it is to be observed, that this growth does not proceed equally in every part of the body, as it is for the purpose of the œconomy that certain parts should be first evolved, and that these also should acquire their full bulk sooner than others. This appears particularly with respect to the head, the parts of which appear to be first evolved, and soonest to acquire their full size.

DCCXVII.

To favour this unequal growth, it is presumed, that the dimensions or the laxity of the vessels of the head, or that the direction of the force of the blood, are suited to the purpose; but, it will also certainly follow, that, as the vessels of the head grow fastest, and soonest acquire their full size, so they will soonest, also, acquire that density which will prevent their further extension. While, however, the force of the heart, and the quantity of the fluids, with respect to the whole system, remain the same, the distending and extending powers will be directed to such parts as have not yet acquired the same density and dimensions as those first formed; and thus the distending and extending powers will proceed to operate till every part of the system, in respect of density and resistance, shall be brought to be in balance with every other, and till the whole be in balance with the force of the heart, so that there can be no further growth in any particular part, unless some preternatural circumstance shall happen to arise.

DCCXVIII.

DCCXVIII.

In this process of the growth of the body, as in general it seems to depend upon a certain balance between the force of the heart, or distending power, and the resistance of the solids; so it will appear, that, while the solids remain very lax and yielding, some occasional increase of the distending power may arise without producing any very perceptible disorder in the system. But, it will also appear, that, in proportion as the distending power and resistance of the solids come to be more nearly in exact balance with one another, so any increase of the distending power will more readily produce a rupture of vessels which do not readily yield to extension.

DCXIX.

From all this, it must appear, that the effects of any unusually plethoric state of the system, will be different according as they shall occur at different periods of the growth of the body. It is, therefore, evident, that, if the plethoric state arises while the head is yet growing, and the determination of the blood be still more to the head than to the other parts, the increased quantity of the blood will be especially determined to the head; and as there also, at the same time, the balance between the distending and extending powers is most nearly adjusted, so the determination of the blood will most readily produce, in that part, a rupture of the vessels, or a hemorrhagy. Hence it is, that hemorrhagies of the nose so frequently happen in young persons, and in these more readily, as they approach nearer to their acmé, or full growth; or, it may be said, perhaps more properly, as they approach nearer to the age of puberty, when, perhaps, in both sexes, but especially in the female, a new determination arises in the system.

DCCXX.

The determination of a greater quantity of blood to the vessels of the head, might be supposed to occasion a
rupture

rupture of vessels in other parts of the head, as well as in the nose; but such a rupture does not commonly happen; because, in the nose, for the purpose of sense, there is a considerable net-work of blood vessels expanded on the internal surface of the nostrils, and covered only with thin and weak teguments. From this circumstance it is, that, upon any increased impetus of the blood, in the vessels of the head, those of the nose are most easily broken; and the effusion from the nose being made, not only relieves the other extremities of the external carotid, to which those of the nose chiefly belong, but relieves also, in a great measure, the system of the internal carotid; for, from the internal carotid, certain branches are sent to the nose, are expanded on its internal surface, and probably inosculated with the extremities of the external carotid; so that whichever of the extremities are broken, the *vis derivationis* of Haller will take place; the effusion will relieve the whole sanguiferous system of the head; and the same effusion will also commonly prevent a hemorrhagy happening in any other part of the body.

DCCXXI.

From these principles, it will appear why hemorrhagies of the nose, so frequent before the period of puberty, or of the acmé, seldom happen after these periods; and we must observe further, that, though they should happen, they would not afford any objection to our principles, as such hemorrhagies might be imputed to a peculiar laxity, and perhaps to a habit acquired, with respect to the vessels of the nose, while the balance of the system might be otherwise duly adjusted.

DCCXXII.

When the process of the growth of the body goes on regularly, and the balance of the system is properly adjusted to the gradual growth of the whole, as well as to the successive growth of the several parts, even a plethoric state does not produce any hemorrhagy, or at least any after that of the nose; but if, while the plethoric

thoric state continues, any inequality also shall subsist in any of the parts of the system, congestions hemorrhagic, or inflammatory, may readily be formed.

DCCXXIII.

In general, it may be observed, that, when the several parts of the system of the aorta have attained their full growth, and are duly balanced with one another, if then any considerable degree of plethora remain or arise, the nicety of the balance will be between the systems of the aorty and pulmonary artery, or between the vessels of the lungs, and those of all the rest of the body : And though the lesser capacity of the vessels of the lungs is commonly compensated by the greater velocity of the blood in them ; yet, if this velocity be not always adjusted to the necessary compensation, it is probable that a plethoric state of the whole body will always be especially felt in the lungs ; and, therefore, that a hemorrhagy, as the effect of a general plethora, might be frequently occasioned in the lungs, even though there were no fault in their conformation.

DCCXXIV.

In some cases, perhaps, a hemorrhagy from the lungs, or a hemoptysis, does arise from the general plethoric state of the body ; but a hemoptysis more frequently does, and may be expected to happen, from a faulty proportion between the capacity of the lungs and that of the rest of the body.

DCCXXV.

When such a disproportion takes place, it will be evident, that a hemoptysis will especially happen about the time that the body is approaching to its acmé ; that is, when the system of the aorta has arrived at its utmost extension and resistence, and when, therefore, the plethoric state of the whole must especially affect the lungs.

DCCXXVI.

Accordingly, it has been constantly observed, that, in fact, the hemoptysis especially happens about the time of the body's arriving at its acmé; but we say also, that the hemorrhagy may happen sooner or later, as the balance between the vessels of the lungs, and those of the system of the aorta, happen to be more or less exactly adjusted to one another; and it may often occur much later than the period mentioned, when that balance, though not quite even, is not, however, so ill adjusted, but that some other concurring causes are necessary to give it effect.

DCCXXVII.

It was antiently observed by Hippocrates, and has been confirmed by modern observation, that the hemoptysis generally happens to men between the age of fifteen and that of five and thirty; that it may happen at any time between these two periods; but that it seldom happens before the former, or after the latter; and it is proper for us here to inquire into the reason of these two limitations.

DCCXXVIII.

With respect to the first, the reason of it has been already explained in (DCCXVIII. and DCCXIX.).

With respect to the second limitation, we expect that the reason of it will be understood from the following considerations.

We have said already, that the extension and growth of the body requires the plethoric state of the arterial system; and nature has provided for this, partly by giving a certain density and resistance to the several exhalants and excretories through which the fluids might pass out of the red arteries; partly by the constitution of the blood being such, that a great portion of it is unfit to pass into the exhalants and excretories; and partly,

partly, but especially, by a resistance in the veins to the free passage of the blood into them from the arteries.

DCCXXIX.

With respect to this last, and chief circumstance, it appears from the experiments of Sir Clifton Wintrig-ham, in his *Experimental Inquiry*, that the proportional density of the coats of the veins to that of the coats of the arteries is greater in young animals than in old; and, therefore, it may be presumed, that the resistance to the passage of the blood from the arteries into the veins is greater in young animals than in old; and, while this resistance continues, the plethoric state of the arteries must be constantly continued and supported. But, as the density of the coats of the vessels, consisting chiefly of a cellular texture, is increased by pressure, so, in proportion as the coats of the arteries are more exposed to pressure by distension than those of the veins, the former, in the progress of the growth of the body, must increase much more in density than the latter; and, therefore, the coats of the arteries, in respect of density and resistance, must come, in time, not only to be in balance with those of the veins, but to prevail over them; and the experiments of the above mentioned ingenious author sufficiently shew that this truly happens. By these means, the proportional quantities of blood in the arteries and veins must change, in the course of life. In younger animals, the quantity of blood in the arteries must be proportionally greater than in old ones; but, by the increasing density of the arteries, the quantity of blood in them must be continually diminishing, and that of the veins be proportionally increasing, and at length be in a proportionally greater quantity than that of the arteries. When this change happens in the proportional quantities of the blood in the arteries and veins, it is evident that the plethoric state of the arteries must be in a great measure taken off; and, therefore, that the arterial hemorrhagy is no longer likely to happen, and that, if a general plethoric state afterwards take place in the system, it must especially appear in the veins.

DCCXXX.

DCCXXX.

The change we have mentioned to happen in the state of the arterial and venous systems, is properly supposed to take place in the human body about the age of thirty-five, when it is manifest that the vigour of the body, which depends so much on the fullness and tension of the arterial system, no longer increases; and therefore it is, that the same age is the period after which the arterial hemorrhagy, hemoptysis, hardly appears. It is true, there are instances of the hemoptysis happening at a later period, but it is for the reasons given, (DCCXI.), which shew that a hemorrhagy may happen at any period of life, from accidental causes forming congestions, independent of the state of the balance of the system at particular periods of it.

DCCXXXI.

We have said, (DCCXXIX.) that, after the age of thirty-five, if a general and preternatural plethoric state occurs, it must especially appear in the venous system; and I must now observe, that this venous plethora may also give occasion to hemorrhagy.

DCCXXXII.

If a plethoric state of the venous system takes place, it is presumed, that it will especially, and, in the first place, affect the system of the vena portarum, in which the motion of the venous blood is more slow than elsewhere; in which the motion of the blood is little assisted by external compression; and in which, from the want of valves in the veins which form the vena portarum, the motion of the blood is little assisted by the compression that is applied; while, from the same want of valves in those veins, the blood is more ready to regurgitate in them. Whether any regurgitation of the blood can produce any action in the veins, and which inverted, or directed towards their extremities, can force these, and occasion hemorrhagy, may perhaps be disputed; but

but we think that a hemorrhagy produced by a plethoric state of the veins may be explained in another and more probable manner. If the blood is accumulated in the veins, from any resistance to its proper course, this resistance, and consequent fullness, must also resist the free passage of the blood from the arteries into the veins. This again must produce some congestion in the extremities of the red arteries, and, therefore, some increased action in them, which must be determined with more than usual force, both upon the extremities of the arteries, and upon the exhalants proceeding from them; and this force may occasion an effusion of blood, either by anastomosis, or rupture.

DCCXXXIII.

This is the account we would give of the hemorrhoidal flux, so far as it is depending upon the state of the whole system. This flux appears most commonly to be from the extremities of the hemorrhoidal vessels, which are the most dependent and distant branches of those veins which form the vena portarum; and, therefore, the most readily affected by every accumulation of blood in that system of veins, and, consequently, by any general plethora in the venous system.

DCCXXXIV.

It is here to be observed, that we have spoken of this hemorrhagy as proceeding only from the hemorrhoidal vessels, as it commonly does; but it will be readily understood, that the same accumulation and resistance to the venous blood may, from various causes, affect many of the extremities of the vena portarum, which lie very superficially upon the internal surface of the alimentary canal, and give occasion to what has been called the *Morbus Niger*. or *Melæna*.

DCCXXXV.

Another part in which an unusually plethoric state of the veins may have particular effects, and occasion hemorrhagy,

morrhagy, is the head. In this the venous system is of a peculiar conformation, and such as seems intended by nature to give a slower motion to the venous blood there. If, therefore, the plethoric state of the venous system in general, which seems to increase as life advances, should at length increase to a great degree, it may very readily affect the venous vessels of the head, and give there such a resistance to the arterial blood, as to determine this to be poured out from the nose, or into the cavity of the cranium. The special effect of the latter effusion is to produce the disease named Apoplexy, and which, therefore, is properly named, by Doctor Hoffman, Hemorrhagia Cerebri; and the explanation of its cause, which we have now given, explains well why it happens, especially to men of large heads and short necks, and to men in the decline of life, when the powers, promoting the motion of the blood, are much weakened.

DCCXXXVI.

We have thus attempted to give the history of the plethoric and hemorrhagic states of the human body, as they occur at the different periods of life, and hope we have thereby explained not only the nature of hemorrhagy in general, but also of the particular hemorrhagies which most commonly appear, and as they occur successively at the different periods of life.

S E C T.

S E C T. III.

OF THE REMOTE CAUSES OF
HEMORRHAGY.

DCCXXXVII.

In the explanation given, we have especially considered the predisposition to hemorrhagy; but it is proper also, and even necessary, to take notice of the occasional causes, which not only concur with the predisponent, in exciting hemorrhagy, but may also sometimes be the sole causes of it.

DCCXXXVIII.

These occasional causes are,

1. External heat, which, rarefying the blood, gives or increases the plethoric state of the body; and the same heat, as giving a stimulus to the whole system, must urge any particular determinations before established, still further, or may urge any inequality, otherwise innocent, to excess; and, in either way, external heat may immediately excite hemorrhagies, to which there was a predisposition, or form congestions where there were none before, and thereby occasion hemorrhagy.

2. A considerable and sudden diminution of the weight of the atmosphere, which seems to produce the same effects with those of heat, by producing also an expansion of the blood.

3. Whatever increases the force of the circulation, and thereby the velocity of the blood, which may operate in the same manner as heat, in urging not only previous determinations with violence, but also in urging inequalities, otherwise innocent, to excess. All violent exercise,

exercise, therefore, and especially all violent efforts, which not only by a larger and longer inspiration, but also by the simultaneous action of many muscles interrupting the free motion of the blood, impel it with unusual force into the extreme vessels more generally, and, according to the different postures of the body, and mode of the effort, into certain vessels more particularly. Among the causes increasing the force of the circulation, anger, and other violent active passions, are to be reckoned.

4. The violent exercise of particular parts of the body, already affected with congestions, or liable to them, which exercise may be considered as a stimulus applied to the vessels of that particular part. Thus, any violent exercise of respiration may excite hemoptysis, or occasion its return.

5. The postures of the body increasing determinations, or ligatures occasioning accumulations of the blood in particular parts of the body.

6. External violence producing hemorrhagy, and, by being frequently repeated, giving an habitual determination into certain vessels.

7. Cold, externally applied, as changing the distribution of the blood, and determining it in greater quantity into the internal parts.

S E C T. IV.

OF THE CURE OF HEMORRHAGY.

DCCXXXIX.

Having thus considered the proximate and remote causes of hemorrhagy in general, our next business is to consider the cure in the same manner.

In

In entering upon this subject, the first question which presents itself is, Whether hemorrhagies may be cured by art, or should be left to the conduct of nature ?

DCCXL.

The latter opinion was the favourite doctrine of the celebrated Dr. Stahl, and his followers. They maintained that the human body is much disposed to a plethoric state ; and, in consequence, to many disorders which nature endeavours to obviate and relieve, by exciting hemorrhagy ; that this, therefore, is often necessary to the balance and health of the system ; that it is accordingly to be generally encouraged, and sometimes solicited, and is not to be suppressed, unless when it goes to great excess, or happens in parts in which it may be dangerous.

DCCXLI.

Much of this doctrine may be admitted. The human body, on many occasions, becomes preternaturally plethoric, and the dangerous consequences of this state, which might be apprehended, seem to be obviated by a hemorrhagy taking place ; and, further, the necessity of hemorrhagy often appears from hence, that the suppression of it seems to occasion many disorders.

All this is true ; but there is a fallacy in the conclusion drawn from it.

DCCXLII.

We maintain that hemorrhagy, either on its first attack, or on its after recurrence, is never necessary to the health of the body, but upon the supposition that we cannot otherwise prevent or remove the plethoric state which seems to require the evacuation ; but, as we judge it possible to prevent or remove a plethoric state, so we do not think that hemorrhagy is, in all cases, necessary. In general, we think that hemorrhagy is to be avoided,

1. Because it does not always happen in places where it is safe. 2. Because, often, while it may relieve a

M m

plethoric

plethoric state, it may, at the same time, induce a very dangerous disease.

3. Because it may often go to excess, and either endanger life, or induce a dangerous infirmity.

And, *lastly*, Because it has a tendency to increase the plethoric state it was meant to relieve, to occasion its own recurrence, and thereby to induce a habit, which, if left to the precarious and unequal operation of nature, may, from the frequent errors of this, be attended with much danger.

DCCXLIII.

It is further to be considered, that hemorrhagies do not always arise from the necessities of the system, but often proceed from incidental causes, more than from predisposition. We judge that all such hemorrhagies may be immediately suppressed, and the repetition of such, as it induces a plethora, and a habit not otherwise necessary, may be, with great advantage, prevented.

DCCXLIV.

Upon the whole of this subject, I conclude, that preternatural hemorrhagy, that is, every one but that of the menses in females, is to be avoided, and especially the returns of it prevented; and I therefore now proceed to say how hemorrhagy, and its recurrences, may, and should be prevented.

DCCXLV.

From the principles delivered above, it will immediately appear, that the prevention, either of the first attacks, or of the returns of hemorrhagy, will chiefly, and in the first place, depend upon the preventing or removing of any considerable degree of a plethoric state which may happen to prevail in the body. It is true, that, where the hemorrhagy depends upon the particular conformation of certain parts, rather than upon the general plethoric state of the whole, the measures for removing or preventing the latter may not always be sufficient for
preventing

preventing hemorrhagy; but, at the same time, it will be evident, that determinations, in consequence of the conformation of particular parts, will always be urged more or less, in proportion to the greater or lesser plethoric state of the whole system; and, therefore, that, even in the cases depending upon particular conformation, the preventing or removing of an unusually plethoric state, will always be a chief means of preventing hemorrhagy. It is to be taken notice of, further, that there may be several inequalities in the balance of the system, which may have little or no effect, unless when the system becomes preternaturally plethoric; and, therefore, that, in all cases, the preventing or removing of the plethoric state of the system will be a chief means of preventing the first attacks, or the returns of hemorrhagy. We are now, therefore, to say how the plethoric state of the system is to be avoided or removed.

DCCXLVI.

The fluids of the human body are in continual waste by the excretions, but are commonly replaced by the aliments taken in; and, if the quantity of aliments, in any measure, exceed that of the excretions, an increase of the quantity of the fluids of the body, or a plethoric state, must arise. This, to a certain degree, is necessary for the growth of the body; but, even then, if the proportion of the aliments to the excretions be greater than is suited to the growth of the body, and more certainly, if this disproportion continue after the growth is compleated, when an equality between the *ingesta* and the *excreta* should be established, a preternatural plethoric state must arise. In both cases, it is evident, that the plethora must be prevented or corrected by adjusting the *ingesta* and *excreta* to each other, which generally may be done, either by diminishing the *ingesta*, or increasing the *excreta*. The former may be effected by the management of diet, the latter by the management of exercise.

DCCXLVII.

DCCXLVII.

The ingesta may be diminished, either by giving aliment in less quantity than usual, or by giving aliments of a less nutritious quality; that is, aliments of a substance, which, under the same bulk and weight, contain less of a matter capable of being converted into animal fluids, and more of a matter ready to pass off by the excretions, and, consequently, less of a matter to be retained and accumulated in the vessels.

The choice of aliments suited to these purposes, must be left to be directed by the doctrines of the *Materia Medica*.

DCCXLVIII.

The increasing of the excreta, and thereby diminishing the plethoric state of the system, is to be obtained by increasing the exercise of the body; and generally for adjusting the balance between the ingesta and excreta, and thereby obviating the plethoric state, it is necessary that exercise, in a due measure, be very constantly employed.

DCCXLIX.

The observing of abstinence, and the employment of exercise, for obviating or removing the plethoric state of the body, we formerly, when treating of the gout, (DVI. DXV.) considered pretty fully, so that less is necessary to be said here; and, it is only now requisite to observe, that the same doubts, as in cases of the gout, do not arise here, with regard to the safety of those measures, which, in a plethoric state of the body disposing to hemorrhagy, are always admissible and proper. But here it is to be observed, that some choice of the mode of exercise is necessary, and that it should be different, according to the particular determinations which may happen to prevail in the system. In general, in the case of plethora disposing to hemorrhagy, bodily
exercise

exercise will always be hazardous, and gestation more generally safe.

DCCL.

Artificial evacuations may be employed to diminish the plethoric state of the body; and when, at any time, the plethoric state has become considerable, and immediately threatens a disease, these evacuations should be made to the quantity that the symptoms seem to require. But it is constantly to be attended to, that blood-lettings are improperly employed, to prevent a plethora, as they have a tendency to increase it, whereby they require to be often repeated, and induce a habit which may be attended with much danger.

DCCLI.

While a plethora is avoided or removed, and thereby the predisposition to hemorrhagy, the other measures necessary for preventing it, are those for avoiding the occasional causes. These are enumerated in (DCCXXXVIII.), and the means of avoiding them, so far as within our power, are sufficiently obvious.

DCCLII.

We have now mentioned the means of preventing either the first attacks, or the returns of hemorrhagy; and must next say how it is to be managed when it has come on.

DCCLIII.

When a hemorrhagy has come on, which appears to have arisen from a preternaturally plethoric state, or from some change in the balance of the sanguiferous system, no measures are to be immediately taken for suppressing it, as we may expect that, when the quantity of blood necessary for the relief of the system is poured out, the effusion will spontaneously cease.

DCCLIV.

DCCLIV.

In many cases, however, it may be suspected, that the quantity of blood poured out is not exactly in proportion to the necessities of the system, either for relieving a general plethora, or particular congestions, but that it is often to a greater quantity than these require. This we suppose to happen in consequence of an inflammatory diathesis prevailing, and of a febrile spasm being formed; and, therefore, in many cases, it is proper, as well as for the most part safe, to moderate the evacuation, and, when it threatens to go to excess, to suppress it altogether.

DCCLV.

A hemorrhagy may be moderated by avoiding any irritation that might concur to increase it; and, therefore, every part of the antiphlogistic regimen is to be observed; and, in particular, external heat, both as it rarefies the fluids, and stimulates the solids, is to be carefully avoided; and, it is probable, that, in all cases, a hemorrhagy may be moderated by cool air applied, and cold drink exhibited.

DCCLVI.

A second means for the same purpose, is the use of refrigerant medicines, and particularly of acids and nitre.

DCCLVII.

A third means which has been frequently employed, is that of blood-letting. The propriety of this practice may be doubtful, as the quantity of blood poured out by the hemorrhagy, may be supposed to answer the purpose of an evacuation in any other way; and we are ready to allow, that the practice has been often superfluous, and sometimes hurtful, by making a greater evacuation than was necessary or safe. At the same time,

time, we apprehend it is not for the mere purpose of evacuating, that blood-letting is to be practised in the cure of hemorrhagy; but that it is necessary for taking off the inflammatory diathesis which prevails, and the febrile spasm that has been formed. In the case of hemorrhagy, therefore, when the pulse is not only frequent, but quick and full, and does not become softer or slower upon the flowing of the blood, and that the effusion is profuse, and threatens to continue so, I think that blood-letting may be necessary, and that I have often found it useful. I believe further, that the particular circumstances of venesection may render it more powerful for taking off the tension and inflammatory irritation of the system, than any gradual flow from an artery.

DCCLVIII.

That a spasm of the extreme vessels has a share in supporting hemorrhagy, appears to me probable from hence, that blistering has been found often useful in moderating and suppressing hemorrhagy.

DCCLIX.

Do emetics and vomiting contribute to the cure of hemorrhagy? See Doctor Bryan Robertson on the virtues and power of medicines.

DCCLX.

When a hemorrhagy is very profuse, and seems to endanger life, or even threatens to induce a dangerous infirmity, it is agreed on all hands, that it is to be immediately suppressed by every means in our power; and particularly, that, besides the means above mentioned for moderating hemorrhagy, astringents, internal or external where they can be applied, are to be employed.

DCCLXI.

DCCLXI.

The internal astringents are either vegetable or fossil.

The vegetable astringents are seldom very powerful in the cure of any hemorrhagies, except those of the alimentary canal.

The fossil astringents are more powerful, but some choice of the different kinds may be proper.

The chalybeates, so frequently employed, do not appear to me to be very powerful.

The preparations of lead are certainly more so, but are otherwise of so pernicious a quality, that they should not be employed but in cases of the utmost danger.

The Tinctura Saturnina, or Antiphthifica, as it has been called, appears to be of little power; but whether from the small portion of lead which it contains, or from the state in which the lead is in it, I am uncertain.

The fossil astringent that appears to me the most powerful, and at the same time the most safe, is alum.

DCCLXII.

External astringents, when they can be applied, are more effectual than the internal. The choice of those is left to the surgeons.

DCCLXIII.

The most powerful of all astringents appears to me to be cold, which may be employed either by applying cold water to the surface of the body, or by throwing the same into the internal parts.

DCCLXIV.

For suppressing hemorrhagies, many superstitious remedies and charms have been recommended, and said to have been employed with success. We are of opinion, that the seeming success of these has been generally owing to the by-standers mistaking a spontaneous ceasing of the hemorrhagy for the effect of the remedy. But,
at

at the same time, I believe, that those remedies have been sometimes useful, by impressing the mind with horror, awe, or dread.

DCCLXV.

Upon occasion of profuse hemorrhagies, opiates have been employed with advantage; and, when the fullness and inflammatory diathesis of the system have been previously taken off by the hemorrhagy itself, or by blood-letting, I think opiates may be employed with safety.

DCCLXVI.

For restraining hemorrhagy, ligatures have been applied upon the limbs, for retarding the return of the venous blood from the extremities; but they appear to me to be of uncertain and ambiguous use.

DCCLXVII.

In the case of profuse hemorrhagies, no pains are to be taken to prevent a *Deliquium Animi*, or fainting, as this happening is often the most certain means of stopping the hemorrhagy.

DCCLXVIII.

We have thus delivered the general doctrine of hemorrhagy, and are now to consider the particular cases of it. It may appear, that we have marked fewer of these than are commonly enumerated by the nosologists; but our reason for differing from these authors, must be left to a nosological discussion, to be entered into in another place more properly than here.

C H A P. II.

OF THE EPISTAXIS,
OR HEMORRHAGY OF THE NOSE.

DCCLXIX.

The state of the vessels upon the internal surface of the nose being, such as mentioned (DCCXX.), renders a hemorrhagy from that more frequent than from any other part of the body.

DCCLXX.

The blood commonly flows from one nostril only, and probably because a hemorrhagy from one vessel relieves the congestion in all the neighbouring vessels. The blood flowing from both nostrils at the same time, shews a more considerable disease.

DCCLXXI.

This hemorrhagy may occur at any time of life, but most commonly happens to young persons, as mentioned in (DCCXIX.), owing to the state of the balance of the system peculiar to that age.

DCCLXXII.

Though it generally happens to persons before they have arrived at their full growth, and more rarely afterwards; yet sometimes it happens to persons after their acmé, and during the state of manhood; and it must then be imputed to a plethoric state of the system;

system; to a determination of the blood by habit to the vessels of the nose; or to the particular weakness of these.

DCCLXXIII.

In all these cases, the disease may be considered as an hemorrhagy purely arterial, and depending upon an arterial plethora; but, the disease sometimes occurs in the decline of life, when probably it depends upon, and may be considered as a mark of a venous plethora of the vessels of the head. See (DCCXXXV.)

DCCLXXIV.

This hemorrhagy happens at any period of life, in certain febrile diseases, which are altogether, or partly, of an inflammatory nature, and which shew a particular determination of the blood to the vessels of the head. These diseases often admit of a solution by this hemorrhagy, when it may be called *critical*.

DCCLXXV.

This hemorrhagy happens to persons of every constitution and temperament, but most frequently to those of a plethoric habit, and sanguine temperament. It happens to both sexes, but most frequently to the male.

DCCLXXVI.

The disease sometimes comes on without any previous symptoms; particularly, when some external violence has a share in bringing it on. But, when it proceeds entirely from an internal cause, it is commonly preceded by head-achs, redness of the eyes, a florid colour of the face, an unusual pulsation in the temples, a sense of fullness about the nose, and an itching of the nostrils. A bound belly, pale urine, coldness of the feet, and cold shivering over the whole body, are also sometimes among the preceding symptoms.

DCCLXXVII.

DCCLXXVII.

From the weakness of the vessels of the nose, the blood often flows from them without any considerable effort of the whole system; and, therefore, without any observable febrile disorder; which, however, in many cases, is, in all its circumstances, very discernible,

DCCLXXVIII.

A hemorrhagy of the nose happening to young persons, is, and may generally be, considered as a slight disease, of little consequence, and hardly requiring any remedy. But, even in young persons, when it recurs very frequently, and is very copious, it will require particular attention. It is to be considered as a mark of arterial plethora; as it may go to a dangerous excess; and, as frequently returning, it increases the plethoric state; which, in a more advanced stage of life, may give the blood a determination to parts from which the hemorrhagy would be more dangerous. All this will more particularly require attention, as the marks of plethora, and of particular congestion, preceding the hemorrhagy, are more considerable; and as the flowing of the blood is attended with a more considerable degree of febrile disorder,

DCCLXXIX.

When the epistaxis happens to persons after their acmè, returning frequently, and flowing copiously, it is always to be considered as a dangerous disease, and as more certainly threatening the consequences mentioned in the last paragraph.

DCCLXXX.

When this hemorrhagy happens in the decline of life, it may be considered as in itself very salutary, but, at the same time, as a mark of a very dangerous state of the system; that is, as a mark of a very strong tendency
to

to a venous plethora in the vessels of the head; and I have accordingly observed it often followed by apoplexy, palsy, or such like diseases.

DCCLXXXI.

When a hemorrhagy from the nose happens in febrile diseases, as mentioned in (DCCLXXXI.), and is in pretty large quantity, it may be considered as critical and salutary; but it is very apt to be profuse, and even in this way dangerous.

It sometimes occurs during the eruptive fever of several exanthemata, and is in such cases sometimes salutary; but if these exanthemata be accompanied with any putrid tendency, this hemorrhagy, like artificial blood-lettings, may have very bad effects.

DCCLXXXII.

Having thus explained the several circumstances of epistaxis, I proceed to consider the management and cure of it. I say the management, because it has been usually thought to require no cure, but that nature should be allowed to throw out blood in this way very frequently, and as often as it appears to arise from internal causes, that is, from a state of the system supposed to require such evacuation.

DCCXXXIII.

For the reasons given in (DCCLXXXVIII.), I am of opinion, that this disease is very seldom to be left to the conduct of nature; and that, in all cases, it should be moderated by keeping the patient in cool air; by giving cold drink; by keeping the body and head erect; by avoiding any blowing of the nose, speaking, or other irritation; and, when the blood has flowed for some time, and does not shew any tendency to cease, a profuse bleeding is to be prevented by measures employed to stop it, such as pressing the nostril from which the blood flows, washing the face with cold water, or applying this to some other parts of the body.

DCCLXXXIV.

DCCLXXXIV.

These measures we judge to be proper even in the case of young persons, in whom the disease is least hazardous, and even in first attacks; but these measures will be still more proper, if the disease frequently recurs, without any external violence; if the returns shall happen to persons of a habit disposed to be plethoric; and, more particularly, if the marks of a plethoric state appear in the preceding symptoms. (DCCLXXV.).

DCCLXXXV.

Even in young persons, if the bleeding be very profuse, and long continued, and more especially, if the pulse become weak, and the face pale, we judge it proper to suppress the hemorrhagy by every means in our power. See (DCCLIX.), and following paragraphs.

DCCLXXXVI.

In the same case of young persons, when the returns of this hemorrhagy become frequent, and especially with the marks of a plethoric habit, we think it necessary to advise such a regimen as may prevent a plethoric state. (DCCXLV.---DCCXLIX.). We would advise, at the same time, to avoid all circumstances which may determine the blood more fully to the vessels of the head, or prevent its free return from them; and, by keeping an open belly, to make some derivation from them.

DCCLXXXVII.

In adult persons, liable to frequent returns of the epistaxis, the whole of the measures proposed (DCCLXXXII.---DCCLXXXVI.), are more certainly and freely to be employed. When, with the circumstances mentioned in (DCCLXXXIV.), the tendency to a profuse hemorrhagy appears, even in young persons, a bleeding at the arm may be proper; but

but will be still more allowable, proper, and even necessary, in the case of adults here mentioned.

DCCLXXXVIII.

In persons of any age liable to frequent returns of this hemorrhagy, when the measures proposed in (DCCLXXXVI.) shall have been neglected, or from peculiar circumstances in the balance of the system, shall have proved ineffectual, and the symptoms threatening a hemorrhagy (DCCLXXXVI.) shall appear, it will then be proper, by blood-letting, cooling purgatives, and every part of the antiphlogistic regimen, to prevent the hemorrhagy; or, at least, to prevent its being profuse when it does happen.

DCCLXXXIX.

In the circumstances just now mentioned (DCC-LXXXVIII.), the measures proposed are proper, and even necessary; but it should, at the same time, be observed, that these are practised with much less advantage than those proposed in DCCLXXXVI.); because, though these proposed here may prevent the coming on of the hemorrhagy for the present, they certainly, however, dispose to the return of that plethoric state which required their being used, and there can be no proper security against returns of the disease, but by pursuing the means proposed in (DCCLXXXVI.)

DCCXC.

When the hemorrhagy of the nose happens to persons approaching to their full growth, and its returns have been preceded by the symptoms (DCCLXXXVI.), it may be supposed, that, if the returns can be prevented by the measures proposed in (DCCLXXXVIII.), these will be safely employed, as the plethoric state induced will be rendered safe, by the change which is soon to take place in the balance of the system. This, however, cannot be admitted, as the evacuations practised
upon

upon this plan will have all the consequences which we have said may follow the recurrence of the hemorrhagy itself.

DCCXCI.

When the hemorrhagy of the nose shall be found to make its returns at nearly stated periods, the measures for preventing it (DCCLXXXVIII) may be practised with greater certainty; and, upon every repetition of the evacuation by diminishing the quantity of it, its effects, in inducing a plethora, may be in some measure avoided. When, indeed, the repetition of evacuations is truly unavoidable, the diminishing of them upon every repetition is properly practised, but it is a practice of nice and precarious management, and should by no means be trusted, so far as to supersede the measures proposed in (DCCLXXXVI.), wherever these can be admitted.

DCCXCII.

When the hemorrhagy of the nose happens in consequence of a venous plethora in the vessels of the head, as in (DCCLXXI.), the flowing of the blood pretty largely may be allowed, especially when it happens after the suppression or ceasing of the menstrual or hemorrhoidal flux. But, though the flowing of the blood is, on its first occurring, to be allowed, there is nothing more proper than guarding against the returns of it. This is to be done not only by the measures proposed in (DCCLXXXVI.), but, as the effects of a plethoric state of the vessels of the head are very uncertain, so, upon any appearance of it, and especially upon any threatening of hemorrhagy, the plethora is to be removed, and the hemorrhagy to be obviated immediately by proper evacuations, as blood-letting, purging, and issues, or by restoring suppressed evacuations, where this can be done.

C H A P. III.

OF THE HEMOPTYSIS, OR HE-
MORRHAGY FROM THE LUNGS.

S E C T. I.

OF THE PHENOMENA AND CAUSES
OF HEMOPTYSIS.

DCCXCIII.

When blood thrown out from the mouth appears after some affection of the breast, and is brought out with more or less of coughing, we can have no doubt that it comes from the lungs, and this ascertains the disease we are now to treat of. But there are cases in which the source of the blood spit out is uncertain; and, therefore, some other considerations, to be mentioned hereafter, are often necessary to ascertain the existence of a hemoptysis.

DCCXCIV.

The blood-vessels of the lungs are more numerous than those of any other part of the body of the same bulk. These vessels of the largest size, as they arise from the heart, are more immediately, than in other parts, sub-divided into vessels of the smallest size; and these small vessels are spread out near to the internal

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surfaces

surfaces of the bronchial cavities, situated in a loose cellular texture, and covered by a tender membrane only; so that, considering how readily and frequently these vessels are gorged with blood, we may understand why a hemorrhagy from these vessels is, next to that of the nose, the most frequent of any; and particularly, why any violent shock given to the whole body so readily occasions a hemoptyfis.

DCCXCV.

A hemoptyfis may be occasioned by external violence at any period of life; and we have explained above (DCCXXIV.), why, in adult persons, while the arterial plethora, nicely adjusted, prevails in the system, that is, from the age of sixteen to that of five and thirty, a hemoptyfis may at any time be produced, merely by a plethoric state of the lungs.

DCCXCVI.

But, we have also observed above, (DCCXXIV.), that a hemoptyfis more frequently arises from a faulty proportion in the capacity of the vessels of the lungs to those of the rest of the body. Thus it is often a hereditary disease, which implies a peculiar and faulty conformation. The disease too, especially happens to persons who discover the smaller capacity of their lungs, by the narrowness of their chest, and by the prominency of their shoulders, which last is a mark of their having been long liable to a difficult respiration.

DCCXCVII.

In such cases too, the disease especially happens to persons of a sanguine temperament, in whom particularly the arterial plethora prevails. It happens, also, to persons of a slender delicate make, of which a long neck is a mark; to persons of much sensibility, and irritability, and, therefore, of quick parts; to persons who have been formerly liable to frequent hemorrhagies of the nose; to persons who have suffered a suppression
of

of any hemorrhagy they had formerly been liable to, the most frequent instance of which is in females, who have suffered a suppression of their menstrual flux; and, *lastly*, to persons who have suffered the amputation of any considerable limb.

DCCXCVIII.

In most of these cases, (DCCXCVII.), the disease especially happens to persons about the time of their coming to their full growth, or soon after it, and this for the reasons fully set forth above (DCCLXXV.)

DCCXCIX.

From all that has been said from (DCCXCIV. to DCCXCVIII.), the predisponent cause of hemoptysis will be sufficiently understood, and the disease may happen from merely the predisponent cause arising to a considerable degree. But, in the predisposed, it is often brought on by the concurrence of various occasional and exciting causes. One of these, and perhaps a frequent one, is external heat, which, even when in no great degree, brings on the disease in spring, and the beginning of summer, while the heat rarefies the blood more than it relaxes the solids, which had before been contracted by the cold of winter. Another exciting cause is a sudden diminution of the weight of the atmosphere, especially when concurring with any effort in bodily exercise. This effort, too, alone may often, in the predisposed, be the exciting cause; and, more particularly, any violent exercise of respiration. In the predisposed, any degree of external violence also may bring on the disease.

DCCC.

Occasioned by one or other of these causes (DCCXCIX.), the disease comes on with a sense of weight, and anxiety in the chest, some uneasiness in breathing, some pain of the breast, or other parts of the thorax, and some sense of heat under the sternum; and very often

often before the disease appears, a saltish taste is perceived in the mouth.

DCCCI.

Immediately before the appearance of blood, a degree of irritation is felt at the top of the larynx. To relieve this, a hawking is made, which brings up a little blood, of a florid colour, and somewhat frothy. The irritation returns; and, in the same manner, more blood of a like kind is brought up, with some noise in the wind-pipe, as of air passing through a fluid.

DCCCII.

This is commonly the manner in which the hemoptysis first begins; but sometimes, at the very first, the blood comes up by coughing, or at least somewhat of coughing accompanies the hawking mentioned.

DCCCIII.

The blood issuing is sometimes at first in very small quantity, and soon disappears altogether; but, in other cases, especially when it repeatedly occurs, it is in greater quantity, and frequently continues to appear at times for several days together. It is sometimes profuse, but rarely in such quantity as either by its excess, or by a sudden suffocation, to prove immediately mortal. It commonly either ceases spontaneously, or is stopped by the remedies employed.

DCCCIV.

When blood is thrown out from the mouth, it is not always easy to determine from what internal part it proceeds; whether from the internal surface of the mouth itself, from the fauces, or adjoining cavities of the nose, from the stomach, or from the lungs. It is, however, very necessary to distinguish the different cases; and, in most instances, it may be done by attending to the following considerations.

DCCCV.

DCCCV.

When the blood spit out proceeds from some part of the internal surface of the mouth itself, it comes out without any hawking or coughing; and generally, upon inspection, the particular source of it becomes evident.

DCCCVI.

When blood proceeds from the fauces, or adjoining cavities of the nose, it may be brought out by hawking, and sometimes by coughing, in the manner we have described in (DCCCI. and DCCCII.) ; and, in this way, a doubt may arise concerning its real source. A patient often lays hold of these circumstances, to please himself with the opinion of its coming from the fauces, and he may be allowed to do so ; but a physician cannot readily be deceived, if he consider, that a bleeding from the fauces is more rare than one from the lungs ; that the former seldom happens but in persons who have been before liable to a hemorrhagy of the nose, or to some evident cause of erosion ; and, in most cases, by looking into the fauces, the distillation of the blood from thence will be perceived.

DCCCVII.

When blood proceeds from the lungs, the manner in which it is brought up will commonly shew from whence it comes ; but, independent of that, there are many circumstances which may concur to point it out, such as the period of life, the habit of body, and other marks of a predisposition (DCCXCIV.---DCCXCVIII.) ; and together with these, the occasional causes (DCCXCIX.) having been immediately before applied.

DCCCVIII.

When vomiting accompanies the throwing out of blood from the mouth, as vomiting and coughing often mutually excite each other ; so they may be frequently joined;

joined, and render it doubtful, whether the blood thrown out, proceed from the lungs, or from the stomach. We may, however, generally decide, by considering that blood does not so frequently proceed from the stomach as from the lungs; that blood proceeding from the stomach commonly appears in greater quantity than when it proceeds from the lungs; that the blood proceeding from the lungs is usually of a florid colour, and mixed with a little frothy mucus only; whereas, the blood from the stomach is commonly of a darker colour, more grumous, and mixed with the other contents of the stomach; that the coughing or vomiting, as the one or the other first arises in the cases in which they are afterwards joined, may sometimes point out the source of the blood; and, *lastly*, that much may be learned from the circumstances and symptoms which have preceded the hemorrhagy. Those which precede the hemoptysis, enumerated (DCCC.), are most of them evident marks of an affection of the lungs. And, on the other hand, the hematemesis, or issuing of blood from the stomach, has also its peculiar symptoms and circumstances preceding it; as some morbid affection of this organ, and, at least, some pain, anxiety, and sense of weight, referred distinctly to the region of the stomach. To all this may be added, that the vomiting of blood happens more frequently to females than to males; and to the former, in consequence of a suppression of their menstrual flux. By attending to all these considerations (DCCCV.---DCCCVIII.), the presence of the hemoptysis may be commonly well ascertained.

S E C T. II.

O F T H E C U R E O F H E M O P T Y S I S.

DCCCIX.

This disease may sometimes be of not more danger than a hemorrhagy from the nose, as, when it happens to females, in consequence of a suppression of the menses; when, without any marks of a predisposition, it arises from external violence; or, from whatever cause arising, when it leaves no cough, dyspnœa, or other affection of the lungs, behind it. But, even in these cases, a danger may arise, from too large a wound being made in the vessels of the lungs, from any quantity of red blood being left to stagnate in the cavity of the bronchiæ, and particularly, from any determination of the blood being made into the vessels of the lungs, which, by renewing the hemorrhagy, may have these consequences. In every instance, therefore, of hemoptysis, the effusion is to be moderated by the several means mentioned (DCCLIV. DCCLVIII.).

DCCCX.

These measures are especially necessary when the hemoptysis arises in consequence of predisposition, and in all cases where there is the appearance of large effusion, or where the hemorrhagy frequently returns, the effusion is not only to be moderated, but to be entirely stopped, and the returns of it prevented by every means in our power. See DCCLIX. DCCLXV.

DCCCXI.

DCCCXI.

Two medicines have been frequently employed to stop a hemoptysis, or prevent the returns of it; neither of which I can approve of. These are chalybeates, and the Peruvian bark. As both of these contribute to increase the phlogistic diathesis of the system, they can hardly be safe in any case of active hemorrhagy, and I have frequently found them hurtful.

DCCCXII.

As the hemoptysis which happens in consequence of predisposition, is always attended with a phlogistic diathesis; and, as the bad consequences of the disease are especially to be apprehended from the continuance of that diathesis, so this is to be industriously taken off by blood-letting, in greater or smaller quantity, and more or less frequently repeated, according as the symptoms shall direct. At the same time, cooling purgatives are to be employed, and every part of the antiphlogistic regimen is to be strictly enjoined. The refrigerants may also be administered, taking care, however, that the acids, and more especially the nitre, do not excite coughing.

DCCCXIII.

The avoiding of motion is generally a proper part of the antiphlogistic regimen; and, in the hemoptysis, nothing is more necessary than avoiding bodily exercise; but some kinds of gestation, as sailing, and travelling in an easy carriage on smooth roads, have often proved a remedy.

DCCCXIV.

Such is the treatment we can propose for the hemoptysis, considered as merely a hemorrhagy; but when, in spite of all our precautions, it continues to recur, it is often followed by an ulceration of the lungs, and a
 phthisis

phthisis pulmonalis. This, therefore, we must consider here; but, as it proceeds also from other causes besides the h moptysis, we shall treat of it more generally.

C H A P. IV.

O F T H E P H T H I S I S P U L M O N A L I S,
O R
C O N S U M P T I O N O F T H E L U N G S.

S E C T. I.

O F T H E P H E N O M E N A, A N D C A U S E S
O F T H E P H T H I S I S P U L M O N A L I S.

DCCCXV.

We define the phthisis pulmonalis to be an expectoration of pus or purulent matter from the lungs, attended with a hectic fever.

As this is the principal species of phthisis, we shall frequently, in this chapter, employ the general term of phthisis, though we strictly mean the phthisis pulmonalis.

DCCCXVI.

We have met with some instances of an expectoration of purulent matter, continuing for many years, accompanied with very few symptoms of hectic, and, at least, without any hectic exquisitely formed; but, in none of these instances were the persons so entirely free from symptoms of hectic, as to form any exception to our general definition.

DCCCXVII.

In every instance of a phthisis pulmonalis, we suppose there is an ulceration of the lungs. The late Mr. de Haen is the only author that I know of who has advanced another opinion, and has supposed that pus may be formed in the blood-vessels, and be from thence poured into the bronchiæ. Admitting his fact, I have attempted an explanation of the appearance of pus without ulceration. (CCCXLI.) But, after all, I cannot help suspecting the accuracy of his observations, must entirely reject his explanation of it, must allow that we still want facts to support the explanation I had offered, and doubt much if it will apply to any case of phthisis. Therefore I still conclude, agreeably to the faith of all other dissections, and the opinion of all physicians, that the symptoms mentioned in our definition depend always upon an ulceration formed in the lungs.

DCCCXVIII.

It sometimes happens that a catarrh is attended with an expectoration of a matter so much resembling pus, that physicians have been often uncertain whether it was mucus or pus, and, therefore, whether the disease was a catarrh or a phthisis. It is often of consequence to determine these questions; and we are of opinion that it may be generally done, with sufficient certainty, from the following considerations, of which each particular is not always singly decisive, but, when they are taken together, can hardly deceive us.

I. From

1. From the colour of the matter, as mucus is naturally transparent, and pus always opaque. When mucus becomes opaque, as it sometimes does, it becomes white, yellow, or greenish, but the latter colour is hardly ever so considerable in mucus as in pus.

2. From the consistence, as mucus is more viscid, and coherent, and pus is less so, and may be said to be more friable. When mucus is thrown into water, it is not readily diffused, but remains united in uniform and circular masses; but pus, in the same circumstances, though not readily diffused, does not remain so uniformly united, and, by a little agitation, it is broken into ragged fragments.

3. From the odour, which is seldom perceived in mucus, but frequently in pus. It has been proposed to try the odour of the matter expectorated by throwing it upon live coals; but in such a trial, both mucus and pus give out a disagreeable smell, and it is not easy to distinguish between the two.

4. From the specific gravity compared with water; and it is usual for the mucus of the lungs to swim on the surface of water, and for pus to sink in it. But, in this, we may sometimes be deceived; as pus, which has entangled a great deal of air, may swim, and mucus, that is free from air, may sink.

5. From the mixture which is discernible in the matter brought up; for, if a yellow or greenish matter appears surrounded with a less quantity of transparent, or less opaque and coloured matter, the more strongly coloured matter may be generally considered as pus; as it is not easy to understand how one portion of the mucus of the lungs can be very considerably changed, while the rest of it is very little so, or remains in its ordinary state.

6. From the admixture of certain substances with the matter thrown out from the lungs. To this purpose, we are informed by the experiments of the late Mr. Charles Darwin: a. That the vitriolic acid dissolves both mucus and pus, but most readily the former: That, if water is added to such a solution of mucus, this is separated, and either swims on the surface, or, divided into flocculi, is suspended in the liquor; whereas, when water is added to a like solution of pus, this falls

to

to the bottom, or, by agitation, is diffused so as to exhibit an uniformly turbid liquor. b. That a solution of the caustic fixed alkali, after some time, dissolves mucus, and generally pus; and, if water be added to such solutions, the pus is precipitated, but the mucus is not. From such experiments, it is supposed that pus and mucus may be certainly distinguished from each other.

7. From the expectoration's being attended with a hectic fever. A catarrh, or expectoration of mucus, is often attended with fever, but never, so far as I have observed, with such a fever as we are presently to describe as a hectic. This, I am of opinion, is the most certain mark of a purulent state in some part of the body; and, if other persons have thought differently, I am persuaded that it has been owing to this, that, presuming upon the mortal nature of a confirmed or purulent phthisis, they have considered every case in which a recovery happened, as a catarrh only; but, that they may have been mistaken in this, we shall shew hereafter.

DCCCXIX.

Having thus considered the first part of the character of the phthisis pulmonalis as a mark of an ulceration of the lungs; and having just now said, that the other part of the character, that is, the hectic fever, is a mark of the same, it is proper now to consider this here, as I had omitted it before (LXXVI.).

DCCCXX.

A hectic fever has the form of a remittent, which has exacerbations twice every day. The first of these occurs about noon, sometimes a little sooner or later; and a slight remission of it happens about five afternoon. This is soon succeeded by another exacerbation, gradually increasing, till after midnight; but, after two o'clock of the morning, a remission takes place, which becomes more and more considerable as the morning advances. The exacerbations are frequently attended with some degree of cold shivering, or, at least, the patient is exceedingly

ceedingly sensible to any coolness of the air, seeks external heat, and often complains of a sense of cold, when, to the thermometer, his skin is preternaturally warm. Of these exacerbations, that of the evening is always the most considerable.

DCCCXXI.

It has commonly been given as a part of the character of a hectic fever, that an exacerbation of it commonly appears after the taking in of food; and it is true that dinner, which is taken at noon, or after it, does seem to occasion some exacerbation. But this must not make us judge the mid-day exacerbation to be the effect of eating only; for I have often observed it to come on an hour before noon, and often some hours before dinner, which, in this country now, is not taken till some time after noon. It is, indeed, to be observed, that, in almost every person, the taking in of food occasions some degree of fever; but I am persuaded this would not appear so considerable in a hectic, were it not that an exacerbation of fever is present from another cause, and accordingly the taking in of food in the morning has hardly any sensible effect.

DCCCXXII.

We have thus described the general form of hectic fever, but many circumstances attending it are further to be taken notice of.

The fever we have described does commonly not subsist long, till the evening exacerbations become attended with sweatings, which continue to recur, and to prove more and more profuse, through the whole course of the disease. Almost from the first appearance of the hectic, the urine is high coloured, and deposits a copious branny red sediment, which hardly ever falls close to the bottom of the vessel. In the hectic, the appetite for food is generally less impaired than in any other kind of fever. The thirst is seldom considerable; the mouth is commonly moist; and, as the disease advances, the tongue becomes free from all fur, appears very clean,
and,

and, in the advanced stages of the disease, the tongue and fauces appear to be somewhat inflamed, and become more or less covered with aphthæ. As the disease advances, the red vessels of the adnata of the eye disappear, and the whole of the adnata becomes of a pearly white. The face is commonly pale; but, during the exacerbations, a florid red, and an almost circumscribed spot, appear on the cheeks. For some time, in the course of a hectic, the belly is bound; but, in the advanced stages of it, a diarrhœa almost always comes on, and continues to recur frequently during the rest of the disease, alternating in some measure with the sweatings mentioned above. The disease is always attended with a debility, which gradually increases during the course of it. During the same course, an emaciation takes place, and goes to a greater degree than in almost any other case. The falling off of the hairs, and the adunque form of the nails, are also symptoms of the loss of nourishment. Towards the end of the disease, the feet are often affected with œdematous swellings. The exacerbations of the fever are seldom attended with any head-ach, and scarcely ever with delirium. The senses and judgment commonly remain entire to the very end of the disease; and the mind, for the most part, is confident, and full of hope. Some days before death, a delirium comes on, and commonly continues to the end.

DCCCXXIII.

The hectic fever now described, (DCCCXXI. DCCCXXII.) as accompanying a purulent state of the lungs, is perhaps the case in which it most frequently appears; but I have never seen it in any case, when there was not evidently, or when I had not ground to suppose, there was a permanent purulency or ulceration in some external or internal part. It was for this reason that, in (LXXVI.) I concluded it to be a symptomatic fever only. It appears to me to be always the effect of an acrimony absorbed from abscesses or ulcers; but it is not equally the effect of every sort of acrimony; for the scorbutic and cancerous often subsist long in the body without producing a hectic. What is the precise
state

state of the acrimony producing this, I cannot determine, but it seems to be chiefly that of a vitiated purulency.

DCCCXXIV.

However this may be, it appears that the hectic's depending in general upon an acrimony, explains its peculiar circumstances. The febrile state seems to be chiefly an exacerbation of that frequency of the pulse, which occurs twice every day to persons in health, and may be produced by acrimony alone. These exacerbations, indeed, do not happen without the proper circumstances of pyrexia; but, the spasm of the extreme vessels in a hectic does not seem to be so considerable as in other fevers; and hence the state of sweat and urine which appear so early and so constantly in hektics. Upon the same supposition, of an acrimony corrupting the fluids, and debilitating the moving powers, we think that most of the other symptoms may also be explained.

DCCCXXV.

Having thus considered the characteristical symptoms, and chief part of the proximate cause of the phtthis pulmonalis, we proceed to observe, that an ulcer of the lungs, and its concomitant circumstances of hectic fever, may again arise from different previous affections of the lungs; all of which, however, as we judge, may be referred to five heads, that is, 1. To a hemoptysis, 2. To a suppuration of the lungs, in consequence of pneumonia, 3. To a catarrh, 4. To an asthma, or, 5. To a tubercle. These several affections, as causes of ulcers, we shall now consider in the order mentioned.

DCCCXXVI.

It has been commonly supposed, that a hemoptysis was naturally, and almost necessarily, followed by an ulcer of the lungs; but we presume to say, that, in general, this is a mistake; for we have seen many instances of a hemoptysis occasioned by external violence,
without

without being followed by any ulcer of the lungs ; and we have also seen many instances of hemoptysis from an internal cause, without any consequent ulceration. And this, not only when the hemoptysis happened to young persons, and recurred for several times, but when it has often recurred during the course of a long life ; and it is easy to conceive that a rupture of the vessels of the lungs, like that of the vessels of the nose, may be often healed, as the surgeons speak, by the first intention. It is probable, therefore, that it is a hemoptysis in particular circumstances only, which is necessarily followed by an ulcer ; but what these circumstances are it is difficult to determine. It is possible, that merely the degree of rupture, or frequently repeated rupture, preventing the wound to heal by the first intention, may occasion an ulcer ; or it is possible that red blood effused, and not brought up entirely by coughing, may, by stagnating in the bronchiæ, become acrid, and erode the parts. These, however, are but suppositions, not supported by any clear evidence. And, if we consider that those cases of hemoptysis which follow the predisposition (DCCXCVI.---DCCXCVIII.) are these especially which end in a phtisis, we shall be led to suspect that some other circumstances concur here to determine the consequences of hemoptysis, as we shall hereafter endeavour to shew.

DCCCXXVII.

Any supposition, however, we can make, with respect to the innocence of a hemoptysis, must not supersede the measures proposed above for the cure of it ; both because we cannot certainly foresee what may be the consequences of such an accident, and because the measures proposed are safe, as, upon every supposition, it is a diathesis phlogistica, which may urge on every bad consequence that can be apprehended.

DCCCXXVIII.

The second cause of an ulceration of the lungs to be considered, is a suppuration formed in consequence of
pneumonia ;

pneumonia ; and we have reserved for this place, though perhaps not very properly, to explain upon what occasion, and with what symptoms, this suppuration occurs.

DCCCXXIX.

When a pneumonia, with symptoms neither very violent, nor very slight, has continued for many days, it is to be feared it will end in a suppuration ; but this is not to be determined by the number of days ; for, not only after the fourth, but even after the tenth day, there have been examples of a pneumonia ending by a resolution ; and, if the disease has suffered some intermission, and again recurred, there may be instances of a resolution happening at a much later period from the beginning of the disease, than that just now mentioned.

DCCCXXX.

But, if a moderate disease, in spite of proper remedies employed, be protracted to the fourteenth day, without any considerable remission, a suppuration is pretty certainly to be expected ; and it will be more certain still, if no signs of resolution have appeared, or if an expectoration which had appeared, shall have again ceased, and the difficulty of breathing has continued or increased, while the other symptoms have been rather abated.

DCCCXXXI.

That, in a pneumonia, the effusion is made, which may lay the foundation of a suppuration, we conclude from the difficulty of breathing becoming greater when the patient is in a horizontal posture, or when the patient can lie more easily on the affected side.

DCCCXXXII.

That, in such cases, a suppuration has actually begun, we conclude from the patient's being frequently

affected with slight cold shiverings, and with a sense of cold felt sometimes in one, sometimes in another part of the body. We form the same conclusion also from the state of the pulse, which is commonly less frequent and softer, but sometimes quicker than before.

DCCCXXXIII.

That a suppuration is already formed, we conclude from there being a considerable remission of the pain which had before subsisted, while, at the same time, the cough, and especially the dyspnœa, continue, and are rather increased. At the same time the frequency of the pulse is rather increased, the feverish state suffers considerable exacerbations every evening, and, by degrees, a hectic, in all its circumstances, comes to be formed.

DCCCXXXIV.

In this state of symptoms, we conclude very confidently, that an abscess, or, as it is called, a *vomica*, is formed in some part of the pleura, and most frequently in that portion of it investing the lungs. Here purulent matter frequently remains for some time, as if inclosed in a cyst; but commonly not long, before it comes to be either absorbed, and transferred to some other part of the body, or breaks through into the cavity of the lungs, or into that of the thorax. In the latter case, it produces the disease called *empyema*; but it is when the matter is poured into the cavity of the bronchiæ that it properly constitutes the phthisis pulmonalis. In the case of empyema, the chief circumstances of a phthisis are indeed also present; but we shall here consider only that case in which the abscess of the lungs gives occasion to a purulent expectoration.

DCCCXXXV.

An abscess of the lungs, in consequence of pneumonia, is not always followed by a phthisis; for sometimes a hectic fever is not formed; the matter poured into the bronchiæ is a proper and benign pus, which frequently

frequently is coughed up very readily, and spit out; and, though this purulent expectoration should continue for some time, if it be without hectic, the ulcer soon heals, and every morbid symptom disappears. This has so frequently happened, that we may conclude, that neither the access of the air, nor the constant motion of the lungs, will prevent an ulcer of these parts from healing, if the matter of it be well conditioned. An abscess of the lungs, therefore, does not necessarily produce the phthisis pulmonalis; and, if it is followed by such a disease, it must be in consequence of particular circumstances which corrupt the purulent matter produced, render it unsuitable to the healing of the ulcer, and, at the same time, make it afford an acrimony, which, absorbed, produces a hectic, and its consequences.

DCCCXXXVI.

The corruption of the matter of such abscesses may be owing to several causes, as, 1. That the matter effused, during the inflammation had not been a pure serum fit to be converted into a laudable pus, but had been joined with other matters which prevented that, and gave a considerable acrimony to the whole: Or, 2. That the matter effused, and converted into pus, merely by long stagnation in a vomica, or by its connection with an empyema, had been so corrupted, as to become unfit for the purpose of pus, in the healing of the ulcer. These seem to be possible causes of the corruption of matter in abscesses, so as to make it the occasion of a phthisis in persons otherwise sound; but, it is probable that a pneumonic abscess especially produces phthisis when it happens to persons previously disposed to that disease, and therefore only as concurring with some other causes of it.

DCCCXXXVII.

The third cause supposed to produce a phthisis is a catarrh, which, in many cases, seems, in length of time, to have the expectoration of mucus proper to it, gradually

gradually changed to an expectoration of pus ; and, at the same time, by the addition of a hectic fever, the disease, which was at first a pure catarrh, is changed into a phthisis. But this supposition is not easily to be admitted. The catarrh is properly an affection of the mucous glands of the trachea and bronchiæ analogous to the coryza, and less violent kinds of cynamche tonfillaris, which very seldom end in suppuration. And, although a catarrh should be disposed to do so, the ulcer produced might readily heal up, as it does in the case of a cynamche tonfillaris ; and therefore should not produce a phthisis.

DCCCXXXVIII.

Further, the catarrh, as purely the effect of cold, is generally a mild disease, as well as of short duration ; and there are, at most, but very few cases of the numerous instances of it, which can be said to have ended in a phthisis. In all these cases in which this seems to have happened, it is to me probable that the persons affected were peculiarly predisposed to phthisis. And the beginning of phthisis so often resembles a catarrh, that it may have been mistaken for such a disease. It often happens also, to increase the fallacy, that the application of cold, which is the most frequent cause of catarrh, is also frequently the exciting cause of the cough, which proves to be the beginning of a phthisis.

DCCCXXXIX.

It is to me, therefore, probable, that a catarrh is very seldom the foundation of a phthisis ; but I would not positively assert that it never is so ; for it is possible that the cases of more violent catarrh may have a pneumonic affection joined with them, which may end in a suppuration ; or it may happen that a long continued catarrh, by the violent agitation of the lungs in coughing, shall produce some of these tubercles which we are presently to mention as the most frequent cause of phthisis.

DCCCXL.

DCCCXL.

We would have it particularly to be observed here, that nothing we have said in (DCCCXXXIX.) should allow us to neglect any appearance of catarrh, as is too frequently done; for it may be either the beginning of a phthisis, which they mistake for a genuine catarrh, or that, even as a catarrh, continuing long, it may produce a phthisis, as in (DCCCXXXIX.)

DCCCXLI.

Many physicians have supposed that an acrimony of the fluids eroding some of the vessels of the lungs is a frequent cause of ulceration and phthisis; but this appears to me to be a mere supposition; for, in any of the instances of the production of the phthisis which I have seen, there was no evidence of any acrimony of the blood capable of eroding the vessels. It is true, indeed, that, in many cases, an acrimony subsisting in some part of the fluids is the cause of the disease; but it is, at the same time, probable, that this acrimony operates, by producing tubercles, rather than by any direct erosion.

DCCCXLII.

I have said (DCCCXXV.) that an asthma may be considered as one of the causes of phthisis; and, by asthma, I mean that species which has been commonly named the spasmodic. This disease frequently subsists very long without producing any other, and may have its own peculiar fatal termination, as we shall explain hereafter. But I have seen it frequently end in a phthisis; and, in such cases, I suppose that it operates in the manner I have alleged of catarrh, that is, by producing tubercles, and their consequences, which shall be presently mentioned.

DCCCXLIII.

DCCCXLIII.

We are now come to consider the fifth head of the causes of phthisis, and which we suppose to be the most frequent of any. This we have said, in general, to be tubercles; and, by this term, we mean certain small tumours, which have the appearance of indurated glands. Dissections have frequently shewn such tubercles formed in the lungs; and we suppose them to be at first indolent, but, at length, they become inflamed, and are thereby changed into little abscesses, or vomicæ, which breaking, and pouring their matter into the bronchiæ, give a purulent expectoration, and thus lay the foundation of a phthisis.

DCCCLXIV.

Though the matter expectorated on these occasions has the appearance of a pus, it is seldom that of a laudable kind; and, as the ulcers do not readily heal, but are attended with a hectic fever, for the most part ending fatally, we presume that the matter of the ulcers is imbued with a peculiarly noxious acrimony, which prevents their healing, and produces a phthisis, in all its circumstances, as mentioned above.

DCCCXLV.

It is very probable that the acrimony, which thus discovers itself in the ulcers, existed before, and produced the tubercles themselves; and it is to this acrimony that we must trace up the cause of the phthisis following these tubercles. This acrimony is probably in different cases of different kinds, and it will not be easy to determine its varieties; but, to a certain length, we shall attempt it.

DCCCXLVI.

In one case, and a very frequent one, of phthisis, it appears that the noxious acrimony is of the same kind
with

with that which prevails in the scrophula. We conclude this from observing, that a phthisis, at its usual periods, frequently attacks persons who had been born of scrophulous parents, that is, of parents who had been affected with scrophula in their younger years; that, very often, when the phthisis appears, there occur at the same time some lymphatic tumours in the external parts; and very often I have found the tabes mesenterica, which is a scrophulous affection, joined with the phthisis pulmonalis. To all this I would add, that, even when no scrophulous affection has either manifestly preceded or accompanied a phthisis, this last, however, most commonly affects persons of a habit resembling the scrophulous, that is, persons of a sanguine, or a sanguineo-melancholic temperament, who have very fine skins, rosy complexions, large veins, and soft flesh; and further, that in such persons the phthisis comes on in the same manner, as we shall explain immediately, it does in persons having tubercles.

DCCCXLVII.

Another species of acrimony producing tubercles of the lungs, and thereby phthisis, may be said to be the exanthematic. It is well known that the small-pox sometimes, and more frequently the measles, lay the foundation of a phthisis. It is probable, also, that other exanthemata have the same effect; and, from the phenomena of the disease, and the dissections of persons who have died of it, it is probable that all the exanthemata occasion a phthisis, by affording a matter which, in the first place, produces tubercles.

DCCCXLVIII.

Another acrimony, which seems sometimes to produce a phthisis, is the siphylitic; but whether such an acrimony produces phthisis in any other persons than the previously disposed, does not appear to me certain.

DCCCXLIX.

DCCCXLIX.

What other species of acrimony, as from scurvy, from pus absorbed from other parts of the body, from suppressed eruptions, or from other sources, may also produce tubercles and phthisis, we cannot now decide, but must leave it to be determined by persons who have had experience of such cases.

DCCCL.

There is one peculiar case of phthisis, which, from our own experience, we can take notice of. This is the case of phthisis from a calcareous matter formed in the lungs, and coughed up, frequently with a little blood, sometimes with mucus only, and sometimes with pus. How this matter is generated, or in what part of the lungs precisely it is seated, I acknowledge myself ignorant. In three cases of this kind which have occurred to me, there was, at the same time, no appearance of stony or earthy concretions in any other part of the body. In one of these cases, an exquisitely formed phthisis came on, and proved mortal; while, in the other two, the symptoms of phthisis were never fully formed, and, after some time, merely by a milk diet, and avoiding irritation, the patients entirely recovered.

DCCCLI.

Another foundation for phthisis, analogous, as I judge, to that of tubercles, is that which occurs to certain artificers, whose employments keep them almost constantly exposed to dust, such as stone-cutters, millers, flax-dressers, and some others. We have not observed, in this country, many cases of phthisis which could be referred to this cause; but, from Ramazzini, Morgagni, and some other writers, we must conclude such cases to be more frequent in the southern parts of Europe.

DCCCLII.

DCCCLII.

Besides these now mentioned, there are probably some other causes producing tubercles, which have not yet been ascertained by observation; and there is probably, in the state of tubercles, a variety not yet accounted for; but all this we must leave to future observation and inquiry.

DCCCLIII.

It has been frequently supposed by physicians, that the phthisis is a contagious disease, and I dare not assert that it never is contagious; but, in many hundred instances of the disease which I have seen, there has been hardly one I could judge to have arisen from contagion. It is possible that, in warmer climates, the effects of contagion may more readily appear.

After having said that a phthisis arises from tubercles more frequently than from any other cause, and after having attempted to assign the variety of these, I now proceed to mention the peculiar circumstances and symptoms which usually accompany the coming on of the disease from tubercles.

DCCCLIV.

A tuberculous and purulent state of the lungs has been observed in very young children, and in some others, at several different periods, before the age of puberty and full growth; but instances of this kind are rare; and the attack of a phthisis, which we have reason to impute to tubercles, usually happens at the same period which we have assigned for the coming on of the hemoptysis.

DCCCLV.

The phthisis from tubercles does also generally affect the same habits as the hemoptysis does, that is, persons of a slender make, of long necks, narrow chests, and

R r

prominent

prominent shoulders ; but very frequently the persons liable to tubercles have less of the florid countenance, and of the other marks of an exquisitely sanguine temperament, than the persons liable to hemoptysis.

7
DCCCLVI.

This disease, arising from tubercles, usually commences with a slight and short cough, which becoming habitual, is often little remarked by the persons affected, and sometimes so little as to be absolutely denied by them. At the same time, their breathing becomes easily hurried by any bodily motion, their body grows leaner, and they become languid and indolent. This state sometimes continues for a year, or even for two years, without the person's making any complaint of it, excepting only that they are affected by cold more readily than usual, which frequently increases their cough, and produces some catarrh. This, again, however, is sometimes relieved, is supposed to have arisen from cold alone, and therefore gives no alarm either to the patient, or to his friends, nor leads them to take any precautions.

DCCCLVII.

Upon one or other of these occasions of catching cold, as we commonly speak, the cough becomes more considerable, is particularly troublesome upon the patient's lying down at night, and, in this state, continues longer than is usual in the case of a simple catarrh. This is more especially to call for attention, if the increase and continuance of cough come on during the summer season.

DCCCLVIII.

The cough, which comes on as in (DCCCLVI.), is very often for a long time without any expectoration ; but, on the occasions, as in (DCCCLVII.), when it grows more constant, it comes to be, at the same time, attended with an expectoration, which is most considerable

derable in the mornings. The matter of this expectoration becomes, by degrees, more copious, more viscid, and more opaque; at length of a yellow or greenish colour, and of a purulent appearance. The whole of the matter, however, is not always at once entirely changed in the manner now mentioned; but, while one part of it retains the usual form of mucus, another suffers the changes we have described.

DCCCLIX.

When the cough increases, and continues very frequent through the night, and when the matter expectorated undergoes the changes we have mentioned, the breathing, at the same time, becomes more difficult, and the emaciation and weakness go on also increasing. In the female sex, according as the disease advances, and sometimes early in its progress, the menses cease to flow; and this circumstance we consider as commonly the effect of the disease, although the sex themselves, are ready to believe it to be the sole cause of the disorder.

DCCCLX.

When the cough comes on as in (DCCCLVI.), the pulse is often natural, and, for some time after, continues to be so; but the symptoms have seldom subsisted long before the pulse becomes frequent, and sometimes to a considerable degree, without much of the other symptoms of fever; but, at length, evening exacerbations become remarkable, and, by degrees, the fever assumes the exquisite form of hectic, as described in (DCCCXX.---DCCCXXII.).

DCCCLXI.

It is seldom that the cough, expectoration, and fever, go on increasing, in the manner we have described, without some pain being felt in some part of the thorax. It is usually, and most frequently, felt at first under the sternum, and that especially, or almost only, upon occasion of coughing; but very often, and that too, early
in

in the course of the disease, a pain is felt on one side, sometimes very constantly, and so as to prevent the person from lying easily upon that side; but at other times the pain is felt only upon a full breathing, or upon coughing. Even when no pain is felt, it generally happens that phthisical persons cannot lie easily on one or other side, without having their difficulty of breathing increased, and their cough excited.

DCCCLXII.

The phthisis begins, and sometimes proceeds to its fatal issue, in the manner described in (DCCCLVI.---DCCCLXI.), without any appearance of hemoptysis. Such cases are, indeed, rare; but it is very common for the disease to advance very far, and even to an evident purulency and hectic state, without any appearance of blood in the spitting; so that it may be affirmed, the disease is frequently not founded in hemoptysis. At the same time, we must allow not only that it sometimes begins with a hemoptysis, as said in (DCCCXIV.), but farther, that it seldom happens that, in the progress of the disease, more or less of a hemoptysis does not appear. Some degree of blood-spitting does, indeed, appear sometimes in the state mentioned (DCCCLVI. DCCCLVII.), but more commonly in the more advanced stages of the disease only, and, particularly, upon the first appearance of purulency. However this may be, in the phthisis from tubercles, it is seldom that the hemoptysis is considerable, or requires any remedies different from those which are otherways necessary for the state of the tubercles.

DCCCLXIII.

We have now described a succession of symptoms which, in different cases, occupies more or less time. In this climate, it very often takes up some years, the symptoms appearing especially in the winter and spring, commonly becoming easier, and sometimes almost disappearing, during the summer; but returning again in
winter,

winter, they at length, after two or three years, prove fatal, towards the end of spring, or beginning of summer.

DCCCLXIV.

In this disease, the prognosis is for the most part unfavourable. Of those affected with it, the greater number generally die; but there are also many of them who recover entirely, after having been in very unpromising circumstances. What are, however, the circumstances, more certainly determining to a happy or to a fatal event, I have not yet been able to ascertain.

DCCCLXV.

The following aphorisms are the result of my observations.

A phthisis pulmonalis from hemoptysis, is more frequently recovered than one from tubercles.

A hemoptysis is not only not always followed by a phthisis, as we have said above, (DCCCXXVI.) but, even when followed by an ulceration, the ulceration is sometimes attended with little of hectic, and frequently admits of being soon healed. Even when the hemoptysis and ulceration have happened to be repeated, we have had instances of persons recovering entirely after several such repetitions.

A phthisis from a suppuration in consequence of pneumonic inflammation, is that which most rarely occurs in this climate; and a phthisis does not always follow such a suppuration, when the abscess formed soon breaks and discharges a laudable pus; but, if the abscess continues long shut up, and till after a considerable degree of hectic has been formed, a phthisis is then produced, equally dangerous as that from other causes.

A phthisis from tubercles has, I think, been recovered; but it is of all others the most dangerous, and when arising from a hereditary taint, is almost certainly fatal.

The

The danger of a phthisis, from whatever cause it may have arisen, is most certainly to be judged of by the degree to which the hectic and its consequences have arrived. From a certain degree of emaciation, debility, profuse sweating, and diarrhœa, no person recovers.

A mania coming on has been found to remove all the symptoms, and sometimes has entirely cured the disease; but, in other cases, upon the going off of the mania, the phthisis has recurred, and proved fatal.

The pregnancy of women has often retarded the progress of a phthisis; but commonly it is only till after delivery, when the symptoms of phthisis return with violence, and soon prove fatal.

S E C T. II.

OF THE CURE OF PHTHISIS.

DCCCLXVI.

From what has been just now said, it will readily appear, that the cure of the phthisis pulmonalis is exceedingly difficult, and that the utmost care and attention in the employment of remedies have seldom succeeded. It may be doubtful whether this failure is to be imputed to the imperfection of our art, or to the absolutely incurable nature of the disease. I am extremely averse in any case to admit of the latter supposition, and can always readily allow of the former; but, in the mean time, we must mention here what has been attempted towards curing or moderating the violence of this disease.

DCCCLXVII.

It will be obvious, that, according to the different circumstances of this disease, the method of cure must be

be different. Our first attention should be employed in watching the approach of the disease, and preventing its proceeding to an incurable state.

In all persons of a phthical habit, and especially in those born of phthical parents, the slightest symptoms of the approach of phthisis, at the phthical period of life, ought to be attended to.

DCCCLXVIII.

When a hemoptysis occurs, though it be not always followed by ulceration and phthisis; these, however, are always to be apprehended; and every precaution is to be taken against them. This is especially to be done by employing every means of moderating the hemorrhagy, and of preventing the return of it, as directed in (DCCCX. *et seq.*); and these precautions are always to be continued for several years after the occurrence of the hemoptysis.

DCCCLXIX.

The phthisis which follows a suppuration from pneumonic inflammation, can only be prevented with certainty by obtaining a resolution of such inflammation. What may be attempted towards the cure of an abscess and ulcer which have taken place, we shall consider afterwards.

DCCCLXX.

We have said, it is doubtful if a genuine catarrh ever produces a phthisis; but we have allowed that it possibly may, and both upon this account, and upon account of the ambiguity which may arise, whether the appearing catarrh be a primary disease, or the effect of a tubercle, we consider it as of the utmost consequence to cure a catarrh as soon as possible after its first appearance. And more especially when it shall linger, and continue for some time, or shall, after some intermission, frequently return, the cure of it should be diligently attempted. The measures requisite for this purpose shall
be

be mentioned afterwards, when we come to treat of catarrh as a primary disease ; and, in the mean time, the means necessary for preventing its producing a phthisis, we shall mention immediately, as they are the same with those we shall point out, as necessary for preventing a phthisis from tubercles.

DCCCLXXI.

The preventing of a phthisis from asthma must be by curing, if possible, the asthma, or, at least, by moderating it as much as may be done ; and, as it is probable that asthma occasions phthisis, by producing tubercles, the measures necessary for preventing phthisis from asthma, will be the same with those necessary in the case of tubercles, which we are now about to mention.

DCCCLXXII.

We consider tubercles as by much the most frequent cause of phthisis ; and even in many cases, where this seems to depend on hemoptysis, catarrh, or asthma, it does, however, truly arise from tubercles. It is upon this subject, therefore, that I shall have occasion to treat of the measures most commonly requisite for curing phthisis.

DCCCLXXIII.

When, in a person born of phthisical parents, of a phthisical habit, at the phthisical period of life, the symptoms, in the spring, or beginning of summer, (DCCCLVI.) shall appear in the slightest degree, we may presume that a tubercle, or tubercles, have been formed or are forming in the lungs, and therefore, that every means that we can devise for preventing their formation, or for procuring their resolution, should be employed immediately, though the patient himself should overlook or neglect the symptoms, as imputing them to accidental cold.

DCCCLXXIV.

DCCCLXXIV.

This is certainly the general indication; but how it can be executed I cannot readily say. I do not know that, at any time, physicians have proposed any remedy capable of interrupting the formation of tubercles, or of resolving them when formed. The analogy of scrophula gives no assistance on this subject. In scrophula the remedy seemingly of most power is sea-water, or certain mineral waters; but these have generally proved hurtful in the case of tubercles of the lungs. I have known several instances of mercury very fully employed for certain diseases, at a time when it was to be suspected, that tubercles were formed, or forming in the lungs; but, though the mercury proved a cure for those other diseases, it was of no service in preventing a phtthisis; and, in some cases, it seemed to hurry it on.

DCCCLXXV.

Such appears to me to be the present state of our art with respect to the cure of tubercles; but I do not despair of a remedy for the purpose being found hereafter. In the mean time, all that at present seems to be within the reach of our art, is to take the measures proper for avoiding the inflammation of tubercles. It is probable that tubercles may subsist long without producing any disorder; and I am disposed to think, that nature sometimes resolves and discusses tubercles which have been formed, but that nature does this only while the tubercles remain in an uninflamed state; and, therefore, that, in the case of tubercles, the measures necessary are chiefly those for avoiding the inflammation of them.

DCCCLXXVI.

The inflammation of a tubercle of the lungs is to be avoided upon the general plan of avoiding inflammation, by blood-letting, and by an antiphlogistic regimen, the chief part of which, in this case, is the use of a low diet. This supposes a total abstinence from animal
S s food,

food, and the using of vegetable food almost alone ; but it has been found that it is not necessary for the patient to be confined to vegetables of the weakest nourishment, but that it is enough the farinacea be employed, and, together with these, milk.

DCCCLXXVII.

Milk has been generally considered as the chief remedy in pthifis, and in the case of every tendency to it ; but, whether from its peculiar qualities, or from its being of a lower quality, with respect to nourishment, than any food entirely animal, is not certainly determined. The choice and administration of milk will be properly directed, by considering the nature of the milk of the several animals from which it may be taken, and the particular state of the patient, with respect to the period and circumstances of the disease, and to the habits of his stomach, with respect to milk.

DCCCLXXVIII.

A second means of preventing the inflammation of the tubercles of the lungs, is, by avoiding any particular irritation of the affected part, which may arise from any violent exercise of respiration ; from any considerable degree of bodily exercise ; from any position of the body which straitens the capacity of the thorax ; and, lastly, from cold applied to the surface of the body, which determines the blood in greater quantity to the internal parts, and particularly to the lungs.

DCCCLXXIX.

From the last mentioned consideration, the application of cold is, in general, to be avoided ; and therefore the winter-season, in cold climates, as diminishing the cutaneous perspiration ; but, more particularly, is that application of cold to be avoided, which may suppress perspiration, to the degree of occasioning a catarrh, which consists in an inflammatory determination to the
lungs,

lungs, and therefore may most certainly produce an inflammation of the tubercles there.

By considering that the avoiding of heat is a part of the antiphlogistic regimen recommended above, and by comparing this with what has been just now said with respect to avoiding cold, the proper choice of climates and seasons for phthical patients will be readily understood.

DCCCLXXX.

A third means of avoiding the inflammation of the tubercles of the lungs consists in diminishing the determination of the blood to the lungs, by supporting and increasing the determination to the surface of the body; which is to be chiefly and most safely done by warm cloathing, and the frequent exercise of gestation.

DCCCLXXXI.

Every mode of gestation has been found of use in phthical cases; but riding on horseback, as being accompanied with a great deal of bodily exercise, is less safe in persons liable to a hemoptysis. Travelling in a carriage, unless upon very smooth roads, may also be of doubtful effect; and all the modes of gestation that are employed on land may fall short of the effects expected from them, because they cannot be rendered sufficiently constant; and it is therefore that sailing, of all other modes of gestation, is the most effectual in pneumonic cases, as being both the smoothest and most constant.

It has been imagined, that some benefit is derived from the state of the atmosphere upon the sea; but I cannot find that any impregnation of this which can be supposed to take place, can be of service to phthical persons. It is, however, probable, that frequently some benefit may be derived from the more moderate temperature of the air upon the sea.

DCCCLXXXII.

DCCCLXXXII.

For taking off any inflammatory determination of the blood into the vessels of the lungs, blisters, applied to some part of the thorax, may often be of service; and, for the same purpose, as well as for moderating the general inflammatory state of the body, issues of various kinds may be properly employed.

DCCCLXXXIII.

We have now mentioned the several measures to be pursued in the case of what is properly called an incipient phthisis; but they have seldom been employed, in such cases, in time, and have, therefore, perhaps, seldom proved effectual. It has more commonly happened, that, after some time, an inflammation has come upon the tubercle, and an abscess has been formed, which opening into the cavity of the bronchiæ has produced an ulcer, and a confirmed phthisis.

DCCCLXXXIV.

In this state of matters, some new indications different from the former may be supposed to arise; and indications for preventing absorptions, for preventing the effects of the absorbed matter upon the blood, and for healing the ulcer, have been actually proposed; but I cannot find that any of the means proposed for executing these indications are either probable, or have proved effectual. If, upon some occasions, they have appeared to be useful, it has been probably by answering some other intention.

While no antidote against the poison which especially operates here, seems to have been as yet found out, it appears to me, that too great a degree of inflammation has a great share in preventing the healing of the ulcer which occurs; and it is certainly what has a great share in urging on the fatal consequences of it. The only practice, therefore, which we can propose, is the same in the ulcerated as in the crude state of a tubercle, that
is,

is, the employment of means for moderating inflammation, which we have already mentioned (DCCC-LXXVI. *et seq.*)

DCCCLXXXV.

The balsamics, whether natural or artificial, which have been so commonly advised in cases of phthisis, appear to me to have been proposed upon no good ground, and commonly to have proved hurtful. The resinous and acrid substance of myrrh lately recommended, has not appeared to me to be of any service, and, in some cases, to have proved hurtful.

DCCCLXXXVI.

Mercury, so often useful in healing ulcers, has been speciously enough proposed in this case; but whether that it be not adapted to the particular nature of the ulcers of the lungs occurring in phthisis, or that because it cannot have effect here, without exciting such an inflammatory state of the whole system, as, in a hectic state, proves very hurtful, I cannot determine. Upon many trials which I have seen made, it has proved of no service, and commonly has appeared to be manifestly pernicious.

DCCCXXXVII.

The Peruvian bark has been recommended for several purposes in phthisical cases; and is said, on some occasions, to have been useful; but I have seldom found it to be so; and as, by its tonic power, it increases the phlogistic diathesis of the system, I have frequently found it hurtful. In some cases, where the morning remissions of the fever were considerable, and the noon exacerbations well marked, I have known the Peruvian bark given in large quantities, with the effect of stopping these exacerbations, and, at the same time, of relieving the whole of the phthisical symptoms; but, in these cases, the fever shewed a constant tendency to recur; and

and at length the phthifical fymptoms alfo returned, and proved quickly fatal.

DCCCLXXXVIII.

As antifeptic and refrigerant, acids of all kinds are ufeful in cafes of phthifis; but the native acid of vegetables is more ufeful than the foſſil, as it can be given in much larger quantities, and more fafely than vinegar, being lefs liable to excite coughing.

DCCCLXXXIX.

Though our art can do fo little towards the cure of this diſeaſe, we muſt, however, palliate the uneaſy fymptoms of it as well as we can. The fymptoms eſpecially urgent are the cough and diarrhœa. The cough may be in ſome meaſure relieved by demulcents, (DCXXXVIII) but the relief obtained by theſe is imperfect and tranſitory, and very often the ſtomach is diſturbed by the quantity of oily, mucilaginous, and ſweet ſubſtances, which are on theſe occaſions taken into it.

DCCCXC.

The only certain means of relieving the cough, is by employing opiates. Theſe, indeed, certainly increaſe the phlogiſtic diathefis of the ſyſtem, but commonly they do not ſo much harm in this way, as they do ſervice by quieting the cough, and giving ſleep. They are ſuppoſed to be hurtful, by checking expectoration; but they do it for a ſhort time only; and after a ſound ſleep, the expectoration in the morning is more eaſy than uſual. In the advanced ſtate of the diſeaſe, opiates ſeem to increaſe the ſweatings which occur; but they compensate this, by the eaſe they afford in a diſeaſe which cannot be cured.

DCCCXCI.

The diarrhœa which happens in the advanced state of this disease, is to be palliated by moderate astringents, mucilages, and opiates.

Rhubarb, so commonly prescribed in every diarrhœa, and all other purgatives, are extremely pernicious in the colliquative diarrhœa of hectics.

Fresh subacid fruits, supposed to be always laxative, are often in the diarrhœa of hectics, by their antiseptic quality, very useful.

C H A P. V.

OF THE HÆMORRHOIS,

O R

OF THE HÆMORRHOIDAL
SWELLING AND FLUX.

S E C T. I.

OF THE PHENOMENA AND CAUSES
OF THE HÆMORRHOIS.

DCCCXCII.

A discharge of blood from small tumours, on the verge of the anus, is the symptom which generally constitutes

stitutes the hæmorrhoids, or, as it is vulgarly called, the hæmorrhoidal flux. But a discharge of blood from within the anus, when the blood is of a florid colour, shewing it to have come from no great distance, is also considered as the same disease; and physicians have agreed in making two cases, or varieties of the same, under the names of external and internal hæmorrhoids.

DCCCXCIII.

In both cases it is supposed, that the flow of blood is from tumours, previously formed, which are named hæmorrhoids or piles; and it frequently happens, that the tumours exist without any discharge of blood, in which case, however, they are supposed to be a part of the same disease, and are, in that case, named Hæmorrhoides Cæcæ, or Blind Piles.

DCCCXCIV.

These tumours, as they appear without the anus, are sometimes separate, round, and prominent on the verge of the anus; but frequently the tumour is only one tumid ring, forming, as it were, the anus pushed without the body.

DCCCXCV.

These tumours, and the discharge of blood from them, sometimes come on as an affection purely topical, and without any previous disorder in other parts of the body; but it frequently happens, even before the tumours are formed, and more especially before the blood flows, that various disorders are felt in different parts of the body, as headach, vertigo, stupor, difficulty of breathing, sickness, cholic pains, pain of the back and loins; and often, together with more or fewer of these symptoms, there occurs a considerable degree of pyrexia.

The coming on of the disease with these symptoms is usually attended with a sense of fullness, heat, itching, and pain, in and about the anus.

Sometimes

Sometimes the disease is preceded by a discharge of ferous matter from the anus ; and sometimes this ferous discharge, accompanied with some swelling, seems to be in place of the discharge of blood, and to relieve the disorders of the system we have mentioned. This ferous discharge, therefore, has been named the Hæmorrhoids Alba.

DCCCXCVI.

In the hæmorrhoids, the quantity of blood discharged is different, upon different occasions. Sometimes the blood flows only upon the person's going to stool ; and, commonly, in larger or lesser quantity, follows the discharge of the fæces. In other cases, the blood flows without any discharge of fæces ; and then, generally, in consequence of the previous disorders above mentioned, when it is also commonly in larger quantity. This is often very considerable ; and, by the repetition, so great, as we could hardly suppose the body to bear but with the hazard of life. Indeed, though rarely, it has been so great as to prove suddenly fatal. These considerable discharges occur especially to persons who have been frequently liable to the disease. They often induce great debility ; and frequently a leucophlegmatia, or dropsy, which proves fatal.

The tumours and discharges of blood in this disease, often recur at exactly stated periods.

DCCCXCVII.

It often happens, in the decline of life, that the hæmorrhoidal flux, formerly frequent, ceases to flow ; and, upon that event, it generally happens that the persons are affected with apoplexy or palsy.

DCCCXCVIII.

Sometimes hæmorrhoidal tumours are affected with considerable inflammation, which, ending in suppuration, gives occasion to the formation of fistulous ulcers in those parts.

DCCCXCIX.

The hæmorrhoidal tumours have been often considered as varicous tumours, or dilatations of veins; and it is true, that in some cases varicous dilatations have appeared upon dissection. These, however, do not always appear; and, we presume, it is not the ordinary case, but that the tumours are formed by an effusion of blood into the cellular texture of the intestine near to its extremity. These tumours, especially when recently formed, frequently contain fluid blood; but, after they have remained for some time, they are commonly of a firmer substance.

DCCCC.

From a consideration of their causes, to be hereafter mentioned, it is sufficiently probable, that hæmorrhoidal tumours are produced by some interruption of the free return of blood from the veins of the lower extremity of the rectum; and it is possible, that a considerable accumulation of blood in these veins may occasion a rupture of their extremities, and thus produce the hæmorrhagy or tumours we have mentioned. But, considering that the hæmorrhagy occurring here is often preceded by pain, inflammation, and a febrile state, and with many other symptoms which shew a connection of the topical affection with the state of the whole system, it is probable that the interruption of the venous blood, which we have supposed, operates as in (DCCXXXII.) and, therefore, that the discharge of blood is here commonly from arteries.

DCCCCI.

Some physicians have been of opinion, that a difference of the hæmorrhoids, and of its effects upon the system, might arise from the difference of the hæmorrhoidal vessels from which the blood issued. But I am of opinion, that it is hardly in any case, we can distinguish the vessels from which the blood flows; and that

that the frequent inosculation, of both the arteries and veins, that belong to the lower extremity of the rectum, will render the effects of the hæmorrhagy nearly the same, from whichsoever of these vessels the blood proceeds.

DCCCCII.

In (DCCXXXII.) we have explained the manner in which a certain state of the sanguiferous system might give occasion to a hæmorrhoidal flux; and I have no doubt, that this flux may be produced in that manner. But I cannot by any means think, that the disease is so often produced in that manner, or that, on its first appearance, it is so frequently a systematic affection, as the Stahlians have imagined, and would have us to believe. It happens to many persons before the period of life at which the venous plethora takes place; it happens to females, in whom a venous plethora, determined to the hæmorrhoidal vessels, cannot be supposed; and it happens to both sexes, and to persons of all ages, from causes which do not affect the system, and are manifestly suited to produce a topical affection only.

DCCCCIII.

These causes of a topical affection are, in the first place, the frequent voiding of hard and bulky fæces, which, not only by their long stagnation in the rectum, but especially when voided, must press upon the veins of it, and interrupt the course of the blood in them. It is, for this reason, that the disease happens so often to persons of a slow and bound belly.

DCCCCIV.

From the causes just now mentioned, the disease happens especially to persons liable to some degree of prolapsus ani. Almost every person in voiding fæces has the internal coat of the rectum more or less protruded without the body; and this will be to a greater or lesser degree, according as the hardness and bulk of the fæces
occasion

occasion a greater or lesser effort or pressure upon the anus. While the gut is thus pushed out, it often happens, that the sphincter ani is contracted before the gut is replaced; and, in consequence thereof a strong constriction is made, which preventing the fallen out gut from being replaced, and, at the same time, preventing the return of blood from it, occasions its being considerably swelled, and its forming a tumid ring round the anus.

DCCCCV.

Upon the sphincter's being a little relaxed, as it is immediately after its strong contraction, the fallen out portion of the gut is commonly again taken within the body; but, by the frequent repetition of such an accident, the size and fullness of the ring formed by the fallen out gut is much increased. It is therefore more slowly and difficultly replaced; and in this consists the chief uneasiness of hæmorrhoidal persons.

DCCCCVI.

As the internal edge of the ring mentioned, is necessarily divided by clefts, the whole often puts on the appearance of a number of distinct swellings; and it also frequently happens, that some portions of it are more considerably swelled, become more protuberant, and form those small tumours more strictly called Hæmorrhoids or Piles.

DCCCCVII.

From considering that the pressure of fæces, and other causes interrupting the return of venous blood from the lower extremity of the rectum, may operate a good deal higher up than that extremity, we can understand, that tumours may be formed within the anus; and probably it also happens, that some of the tumours formed without the anus, as in (DCCCCV.) may continue when taken within the body, and even be increased by the causes just now mentioned. It is thus that we explain the production

production of internal piles, which, on account of their situation and bulk, are not protruded on the person's going to stool, and are often, therefore, more painful. The same internal piles are especially painful, when affected by the hæmorrhagic effort described in (DCCCXCV.).

DCCCCVIII.

The production of piles is particularly illustrated by this, that pregnant women are frequently affected with that disease. This is to be accounted for, partly by the pressure of the uterus upon the rectum, and partly by the costive habit to which pregnant women are usually liable. I have known many instances of piles happening for the first time during the state of pregnancy; and there are few women who have born children, who are afterwards entirely free from piles. The Stahlians have generally asserted, that the male sex is more frequently affected with this disease than the female; but I have constantly found it otherways in this country.

DCCCCIX.

It is commonly supposed that the frequent use of purgatives, of those especially of the more acrid kind, and more particularly of alætics, is apt to produce the hæmorrhoidal affection; and, as these purgatives stimulate particularly the great guts, it seems sufficiently probable that they excite this disease.

DCCCCX.

We have now mentioned several causes which may produce the hæmorrhoidal tumours and flux, as a topical affection only; but must observe farther, that, although the disease appears first as a purely topical affection, it may, by frequent repetition, become habitual, and, therefore, may become connected with the whole system, in the manner we have explained, with respect to hæmorrhagy in general, in (DCCVIII.---DCCX.).

DCCCCXI.

DCCCCXI.

The doctrine referred to, it is apprehended, will apply very fully to the case of the hæmorrhoidal flux; and more readily from the person who has been once affected being much exposed to a renewal of the causes which first occasioned the disease; from many persons being much exposed to a congestion in the hæmorrhoidal vessels, in consequence of their being often in an erect position of the body, and in an exercise which pushes the blood into the depending vessels, while, at the same time, the effects of these circumstances are much favoured by the abundance and laxity of the cellular texture about the rectum.

DCCCCXII.

It is thus that the hæmorrhoidal flux is so often artificially rendered an habitual and systematic affection; and I am persuaded, that it is this which has given occasion to the Stahlians to consider the disease as almost universally such.

DCCCCXIII.

It is to be particularly observed here, that when the hæmorrhoidal disease has either been originally, or has become, in the manner just now explained, a systematic affection, it then acquires a particular connection with the stomach, so that certain affections of the stomach excite the hæmorrhoidal disease, and certain states of the hæmorrhoidal affection excite disorders of the stomach.

It is perhaps owing to this connection, that the gout sometimes affects the rectum. See (CCCCLXXXVIII.)

S E C T. II.

OF THE CURE OF HÆMOR-
RHOIDAL AFFECTIONS.

DCCCCXIV.

Almost at all times, it has been an opinion amongst physicians, and from them spread amongst the people, that the hæmorrhoidal flux is a salutary evacuation, which prevents many diseases that would otherways have happened; and that it even contributes to give long life. This opinion, in latter times, has been especially maintained by Dr. Stahl, and his followers; and has had a great deal of influence upon the practice of physick in Germany.

DCCCCXV.

The question arises with respect to hæmorrhagy in general, and it has been extended so far by the Stahlians. We have accordingly considered it as a general question, (DCCXL---DCCXLIV.) but it has been more especially agitated upon the occasion of our present subject; and as to this, I am more particularly of opinion, that the hæmorrhoids may take place in consequence of the general state of the system, or, what is still more frequent, that by repetition, it may become connected with the general state of the system, and, in either case, cannot be suppressed without great caution. But notwithstanding I must maintain, that the first is a rare case; that generally the disease first appears as an affection purely topical; and that the allowing it to become habitual, is never proper. It is a nasty disagreeable

able disease, ready to go to excess, and to be thereby very hurtful, as well as sometimes very fatal. At best, it is liable to accidents, and thereby to unhappy consequences. I am, therefore, of opinion, that not only the first approaches of the disease are to be guarded against, but even that, when it has taken place for some time, from whatever cause this may have proceeded, the flux is always to be moderated, and the necessity of it, if possible, superseded.

DCCCCXVI.

Having delivered these general rules, I proceed to mention more particularly how the disease is to be treated, according to the different circumstances in which it may appear.

When we can manifestly discern the first appearance of the disease, to arise from causes acting upon the part only, we should employ the strictest attention in guarding against the renewal of these causes.

DCCCCXVII.

One of the most frequent of the remote causes of the hæmorrhoidal affection, is a slow and bound belly, (DCCCCIII.) and this is to be constantly obviated by a proper diet, which every individual's own experience must direct; or, if the management of diet be not effectual, the belly must be kept regular by medicines, which may prove gently laxative, without irritating the rectum. In most cases, it will be of advantage to acquire a habit with respect to time, and to observe it exactly.

DCCCCXVIII.

Another cause of hæmorrhoids to be especially attended to, is the prolapsus or protrusion of the anus, which is apt to happen on a person's having a stool, (DCCCCIV.) If it shall occur to any considerable degree, and be not at the same time easily and immediately replaced, it most certainly produces piles, or increases them when other-
ways

ways produced. Persons, therefore, liable to this prolapsus, should, upon their having been at stool, take great pains to have the gut immediately replaced, by lying down in a horizontal posture, and pressing gently upon the anus, till the reduction shall be completely obtained.

DCCCCXIX.

When the prolapsus we speak of is occasioned only by voiding hard and bulky fæces, it should be obviated by the means mentioned in (DCCCCXVII.) and may be thereby avoided. But in some persons, it is owing to a laxity of the rectum; and in such persons, it is often most considerable upon occasion of a loose stool. In such cases, the disease is to be treated by astringents, and by proper artifices for preventing the falling down of the gut.

DCCCCXX.

These are the means to be employed upon the first approaches of the hæmorrhoidal affection; and when from neglect it shall have frequently recurred, and has become in some measure established, they are no less proper; but, in the latter case, some other means are also necessary. It is particularly proper to guard against a plethoric state of the body; and, therefore, to avoid a sedentary life, a full diet, and particularly intemperance in the use of strong liquor, which I should have observed before, is, in all cases of hæmorrhagy, of the greatest influence in increasing the disposition to the disease.

DCCCCXXI.

I need hardly repeat here, that exercise of all kinds, is a chief means of obviating and removing a plethoric state of the body; but upon occasion of the hæmorrhoidal flux, when this is immediately to come on, both walking and riding, as increasing the determination of the blood into the hæmorrhoidal vessels, are to be avoided.

At other times, when no such determination is already formed, those modes of exercise may be very properly employed.

DCCCCXXII.

Cold bathing is another remedy that may be employed to obviate plethora, and prevent hæmorrhagy; but it is to be employed with caution. When the hæmorrhoidal flux is approaching, it may be dangerous to turn it suddenly aside, by cold bathing; but, during the intervals of the disease, this remedy may be employed with advantage; and in persons liable to a prolapsus ani, the frequent washing of the anus with cold water may be very useful.

DCCCCXXIII.

These are the means for preventing the recurrence of the hæmorrhoidal flux; and in all cases, when it is not immediately approaching, they are to be employed; and, when it has actually come on, means are to be employed for moderating it, as much as possible, by the person's lying in a horizontal position upon a hard bed, by avoiding exercise in an erect posture, by using a cool diet, and by avoiding external heat. From what has been said above, about being careful not to increase the determination of the blood into the hæmorrhoidal vessels, the propriety of these measures will sufficiently appear; and, if they were not so commonly neglected, many persons would escape the great trouble, and the many bad consequences which frequently attend this disease.

DCCCCXXIV.

With respect to the further cure of this disease, it is almost in two cases only, that hæmorrhoidal persons call for the assistance of the physician. The one is, when the affection is accompanied with much pain, and of this there are two cases, according as the pain happens to attend the external or the internal piles.

DCCCCXXV.

DCCCCXXV.

The pain of the external piles arises especially, when a considerable protrusion of the rectum has happened, and while it remains unreduced, it is strangled by the constriction of the sphincter; and, at the same time, no bleeding happens, to take off the swelling of the protruded portion of the intestine. Sometimes an inflammation supervenes, and greatly aggravates the pain. To relieve the pain in this case, emollient fomentations and poultices, are sometimes of service; but a more effectual relief is to be obtained by applying leeches to the tumid parts.

DCCCCXXVI.

The other case, in which hæmorrhoidal persons seek assistance, is that of excessive bleeding. Upon the opinion so generally received of this discharge being salutary, and from observing, that, upon the discharge occurring, persons have sometimes found relief from various disorders; the most part of persons liable to it are ready to let it go too far; and indeed, the Stahlians will not allow it to be a disease, unless when it has actually gone to excess. We are, however, well persuaded, that this flux ought always to be cured as soon as possible.

DCCCCXXVII.

When the disease occurs, as a purely topical affection, there can be no doubt of the propriety of our rule; and, even when the disease has occurred as a critical discharge in the case of a particular disease, if this disease shall be entirely cured and removed, the preventing any return of the hæmorrhoids seems to be safe and proper.

DCCCCXXVIII.

It is only when the disease arises from a plethoric state of the body, and from a stagnation of blood in the
hypochondriac

hypochondriac region, or when, though originally topical, the disease, by frequent repetition, has become habitual, and has thereby acquired a connection with the whole system, that any doubt can arise as to the safety of curing it entirely. In any of these cases, we judge it will be always proper to moderate the bleeding, lest by its continuance or repetition the plethoric state of the body, and the particular determination of the blood into the hæmorrhoidal vessels, be increased, and the recurrence of the disease, with all its inconveniences and dangers, be too much favoured.

DCCCCXXIX.

Even in the cases stated, (DCCCCXXVIII.) in so far as the plethoric state of the body, and the tendency to that state, can be obviated and removed, this is always to be diligently attempted; and if it can be executed with success, the flux may be entirely suppressed.

DCCCCXXX.

The Stahlian opinion, that the hæmorrhoidal flux is only in excess, when it occasions great debility, or a leucophlegmatia, is by no means safe; and we are of opinion, that the smallest approach towards producing either of these effects should be considered as an excess, which ought to be prevented from going farther.

DCCCCXXXI.

In all cases, therefore, of excess, or of any approach towards it, we are of opinion, that astringents, both internal and external, may be safely and properly applied; not indeed to induce an immediate and total suppression, but to moderate the hæmorrhagy, and, by degree, to suppress it altogether, while, at the same time, measures are taken for removing the necessity of its recurrence.

DCCCCXXXII.

DCCCCXXXII.

When the circumstances (DCCCCXIII.) marking a connection between the hæmorrhoidal affection, and the state of the stomach occur, the measures necessary are the same as in the case of atonic gout.

C H A P. VI.

OF THE MENORRHAGIA,

OR THE

IMMODERATE FLOW OF THE
MENSES.

DCCCCXXXIII.

The flow of the menses is considered as immoderate, when it recurs more frequently, when it continues longer, or when, during the ordinary continuance, it is more abundant than is usual with the same person at other times.

DCCCCXXXIV.

As the most part of women are liable to some inequality with respect to the period, the duration, and the quantity of their menses; so it is not every inequality in these respects that is to be considered as a disease; but only those deviations which are excessive in degree, which

which are permanent, and which induce a manifest state of debility.

DCCCCXXXV.

The circumstances (DCCCCXXXIII. DCCCCXXXIV.) are those which chiefly constitute the menorrhagia; but it is proper to observe, that, though we allow that the frequency, duration, and quantity of the menses are to be judged of by what is usual with the same individual at other times; yet we observe so much uniformity in these particulars, in the whole of the sex, that, in any individual in whom there occurs a considerable deviation from what is usual with the generality of the sex, such a deviation, constant in the same individual, may be considered as at least approaching to a morbid state, and as requiring most of the precautions which we shall hereafter mention as necessary to be attended to by persons who are actually in such a state.

DCCCCXXXVI.

Blood discharged from the vagina may proceed from different sources in the internal parts; but here we mean to treat of those discharges only in which the blood may be presumed to flow from the same sources from which the menses proceed, in their natural state, and which discharges alone are those properly comprehended under our title. The title of hæmorrhagia uteri might comprehend a great deal more.

DCCCCXXXVII.

The menorrhagia may be considered as of two kinds; either as it happens to pregnant and lying-in women, or as it happens to women who are neither pregnant nor have recently born children. The first kind, as connected with the circumstances of pregnancy and child-bearing, (which are not to be treated of in our present course) we are not to consider here, but confine ourselves to the consideration of the second kind of menorrhagia only.

DCCCCXXXVIII.

DCCCCXXXVIII.

We treat of menorrhagia here, as an active hæmorrhagy, because we consider menstruation, in its natural state, to be always of that nature; and though there should be cases of menorrhagia which might be considered as purely passive, I am of opinion they cannot be so properly considered in any other place.

DCCCCXXXIX.

However we may determine with respect to the circumstances, (DCCCCXXXIII---DCCCCXXXV.) we still allow that the immoderate flow of the menses is especially to be determined by the symptoms, affecting other functions, which accompany and follow the discharge.

When a larger flow of the menses has been preceded by head-ach, giddiness, or dyspnœa, and has been ushered in by a cold stage, and is attended with much pain of the back and loins, with a frequent pulse, heat, and thirst, it may then be considered as preternaturally large.

DCCCCXL.

When in consequence of the circumstances, (DCCCCXXXIII---DCCCCXXXV.) and the repetition of them, the face becomes pale; the pulse becomes weak; an unusual debility is felt in exercise; the breathing is hurried by moderate exercise; where farther the back becomes pained from any continuance in an erect posture, when the extremities become frequently cold, and when at night the feet appear affected with œdematous swelling; from these symptoms we may certainly conclude that the flow of the menses has been immoderate, and has already induced a dangerous state of debility.

DCCCCXLI.

DCCCCXLI.

The debility in this case induced, often appears also by affections of the stomach, an anorexia, and other symptoms of dyspepsia; by a palpitation of the heart, and frequent faintings; by a weakness of mind liable to strong emotions from slight causes, especially those presented by surprise.

DCCCCXLII.

That flow of the menses, (DCCCCXXXIII.) which is attended with barrenness in married women; may be generally considered as immoderate and morbid.

DCCCCXLIII.

Generally, also, that flow of the menses may be considered as immoderate, which is preceded and followed by a leucorrhœa.

DCCCCXLIV.

The menorrhagia (DCCCCXXXIII. *et seq.*) has for its proximate cause, either the hæmorrhagic effort of the uterine vessels preternaturally increased, or, a preternatural laxity of the extremities of the uterine arteries; the hæmorrhagic effort remaining as in the natural state.

DCCCCXLV.

The remote causes of the menorrhagia may be, 1st, Those which increase the plethoric state of the uterine vessels; as a full and nourishing diet, much strong liquor, and frequent intoxication. 2dly, Those which determine the blood more copiously and forcibly into the uterine vessels; as violent strainings of the whole body; violent shocks of the whole body from falls; violent strokes or contusions on the lower belly; violent exercise, particularly in dancing; and violent passions of the mind. 3dly, Those which particularly irritate the vessels
of

of the uterus ; as excess in venery ; the exercise of venery in the time of menstruation ; a costive habit, giving occasion to violent straining at stool ; and cold applied to the feet. 4thly, Those which have forcibly overstrained the extremities of the uterine vessels ; as frequent abortions ; frequent child-bearing without nursing ; and difficult tedious labours. Or, *lastly*, Those which induce a general laxity ; as living much in warm chambers, and drinking much of warm enervating liquors, such as tea and coffee.

DCCCCXLVI.

The effects of the menorrhagia are pointed out in (DCCCCXXXVIII.---DCCCCXLI.) where we have mentioned the several symptoms accompanying the disease, and from these the consequences to be apprehended will also readily appear.

DCCCCXLVII.

The treatment and cure of the menorrhagia, must be different according to the different causes of the disease.

In all cases, the first attention ought to be given to avoiding the remote causes, whenever that can be done, and by such attention the disease may be often entirely cured.

When the remote causes cannot be avoided, or when the avoiding them has been neglected, and a copious menstruation has come on ; it should be moderated as much as possible, by abstaining from all exercise at the coming on, or during the continuance of the menstruation ; by avoiding even an erect posture as much as possible ; by shunning external heat, and therefore warm chambers and soft beds ; by using a light and cool diet ; by taking cold drink, at least as far as former habits will allow ; by avoiding venery ; by obviating costiveness, or removing it by laxatives which give little stimulus.

The sex are commonly negligent, either in avoiding the remote causes, or in moderating the first beginnings of this disease. It is by such neglect that it so frequently becomes violent and of difficult cure ; and the

frequent repetition of a copious menstruation may be considered as a cause of great laxity in the extreme vessels of the uterus.

DCCCCXLVIII.

When the coming on of the menstruation has been preceded by some disorder in other parts of the body, and is accompanied with pains of the back, somewhat like parturient pains, with febrile symptoms, and when, at the same time, the flow seems to be copious, a bleeding at the arm may be proper; but is not often necessary; and it will in most cases be sufficient to employ, with great attention and diligence, those means for moderating the discharge which we have mentioned in the last paragraph.

DCCCCXLIX.

When the immoderate flow of the menses shall seem to be owing to a laxity of the vessels of the uterus, as may be concluded from the general debility and laxity of the person's habit; from the remote causes that have occasioned the disease; from the absence of the symptoms which denote increased action in the vessels of the uterus; from the frequent recurrence of the disease; and particularly from this, that the person in the intervals of menstruation is liable to a leucorrhœa, in such a case the disease is to be treated, not only by employing all the means mentioned in (DCCCCXLVII.) for moderating the hemorrhagy, but also by avoiding all irritation, every irritation having the greater effect, in proportion as the vessels are more lax and yielding. If, in such a case of laxity, it shall appear that some degree of irritation concurs, opiates may be employed to moderate the discharge; but in using these much caution is requisite.

If, notwithstanding these measures having been taken, the discharge shall prove very large, astringents, both external and internal, may be employed. In such cases, may small doses of emetics be of service?

DCCCCCL.

DCCCCL.

When the menorrhagia depends on the laxity of the uterine vessels, it will be proper, in the intervals of menstruation, to employ tonic remedies; as cold bathing and chalybeates. The exercises of gestation, also, may be very useful, both for strengthening the whole system, and for taking off the determination of the blood to the internal parts.

DCCCCLI.

The remedies mentioned in these two last paragraphs, may be employed in all cases of menorrhagia, from whatever cause it may have proceeded, if it shall have already induced a considerable degree of debility in the body.

C H A P. VII.

O F T H E L E U C O R R H E A , F L U O R
A L B U S , O R W H I T E S .

DCCCCLII.

Every serous or puriform discharge from the vagina may be, and has been comprehended under the appellations we have given to this chapter. Such discharges, however, may be various, and may proceed from various sources not yet well ascertained; but we confine ourselves here to that alone which we judge proper for this place, and that is, to treat of such discharges only, as

we

we presume to proceed from the same vessels which, in their natural state, pour out the menses.

DCCCCLIII.

We conclude a discharge from the vagina to be of this kind, 1. From its happening to women who are liable to an immoderate flow of the menses, and who are liable to this from causes weakening the vessels of the uterus. 2. From its appearing chiefly, and often only a little before, and immediately after, the flow of the menses. 3. From the flow of the menses being diminished in proportion as the leucorrhœa is increased. 4. From the leucorrhœa continuing after the menses have entirely ceased, and with some appearance of the leucorrhœa's observing a periodical movement. 5. From the leucorrhœa's being accompanied with the effects of the menorrhagia. (DCCCXLIV.) 6. From the discharge's neither having been preceded by, nor accompanied with, symptoms of any topical affections of the uterus. 7. From the leucorrhœa not having appeared soon after communication with a person who might be suspected of communicating infection, and from the first appearance of the disease not being accompanied with any inflammatory affection of the pudenda.

DCCCCLIV.

The appearance of the matter discharged in the leucorrhœa is very various in respect of consistence and colour; but from these appearances it is not always possible to determine concerning its nature, or the particular source from which it proceeds.

DCCCCLV.

The leucorrhœa, of which we are to treat, as ascertained by the several circumstances (DCCCCLIII.) proceeds from the same causes as the menorrhagia, that is, from the laxity of the extreme vessels of the uterus. This accordingly it often follows and accompanies; but, though the leucorrhœa depends chiefly upon the laxity
mentioned,

mentioned, it may have proceeded from irritations inducing that laxity, and it seems to be always increased by any irritations applied to the uterus.

DCCCCLVI.

Some authors have alleged that a variety of circumstances in other parts of the body may have a share in bringing on, and continuing the affection of the uterus we treat of; but I cannot discover the reality of those causes, and it seems to me that the leucorrhœa we treat of, excepting so far as it depends upon a general debility of the system, is always primarily an affection of the uterus; and the affections of other parts of the body which may chance to accompany that, are for the most part to be considered as effects, rather than causes.

DCCCCLVII.

The effects of the leucorrhœa are much the same with those of the menorrhagia; inducing a general debility, and, in particular, a debility in the functions of the stomach. But, if the leucorrhœa be moderate, and be not accompanied with any considerable degree of the menorrhagia, it may often last long without inducing any great degree of debility, and it is only when the discharge has been very copious as well as constant, that its effects in that way are very remarkable.

DCCCCLVIII.

But, even when its effects on the whole body are not very considerable, it may still be supposed to weaken the genital system; and it seems sufficiently probable that this discharge has often a share in occasioning barrenness.

DCCCCLIX.

The matter discharged in the leucorrhœa is, at first, generally mild; but, after some continuance of the disease, it sometimes becomes acrid, and by irritating, or perhaps

perhaps eroding the surfaces over which it passes, induces various painful disorders.

DCCCCLX.

As the leucorrhœa proceeds from the same causes as the menorrhagia, that is, chiefly from the laxity of the uterine vessels; the former is to be treated and cured very much in the same manner as the latter, and with less reserve in respect of the use of astringents.

DCCCCLXI.

As the leucorrhœa depends so often on a great loss of tone in the vessels of the uterus, the disease has been relieved, and sometimes cured, by certain stimulant medicines, which are naturally directed to the urinary passages, and from their vicinity are often communicated to the uterus. Such are cantharides, turpentine, and other balsams a-kin to it.

C H A P. VIII.

OF THE AMENORRHEA,

O R

INTERRUPTION OF THE MEN-
STRUAL FLUX.

DCCCCLXII.

Whatever may be the fittest place for the amenorrhœa, in a system of methodical nosology, it cannot be im-
proper

proper to treat of it here as an object of practice, immediately after treating of the menorrhagia.

DCCCCLXIII.

The interruption of the menstrual flux is to be considered as in two different states ; the one is, when the menses do not begin to flow at the period of life at which they may be expected ; and the other state is, when, after they have taken place for some time, they do, from other causes than conception, cease to return at their usual periods. The former of these cases we shall name the *retention*, and the latter the *suppression* of the menses.

DCCCCLXIV.

All the flowing of the menses depends upon the force of the uterine arteries impelling the blood into their extremities, and opening these so as to pour out red blood ; so the interruption of the menstrual flux must depend, either upon the want of due force in the action of the uterine arteries, or upon some preternatural resistance in their extremities. The former we suppose to be the most usual cause of *retention*, the latter the most common cause of the *suppression* of the menses. But of each of these now more particularly.

DCCCCLXV.

The retention of the menses, the *emansio* of Latin writers, is not to be considered as a disease, merely from the menses not flowing at the period which is usual with many other women. This period is so different in different women, that no time can be precisely assigned as proper to the sex in general. In this climate, the menses usually appear about the age of fourteen ; but in many, they appear more early, and in many not till the sixteenth year ; and in the latter case, it is often without any disorder being thereby occasioned. It is not therefore from the age of the person that the retention is to be considered as a disease ; and indeed it
is

is to be considered as such, only when, about the time the menses usually flow, some disorders arise which may be imputed to the retention; being such as we know from experience, when arising at the usual period, to be removed by the flowing of the menses.

DCCCCLXVI.

These disorders are a sluggishness and frequent sense of lassitude and debility, with various symptoms of dyspepsia, and sometimes with a preternatural appetite. At the same time the face loses its vivid colour, becomes pale, and sometimes of a yellowish colour; the whole body becomes pale and flaccid, and the feet, and perhaps also a great part of the body, become affected with œdematous swelling. The breathing is hurried by any quick or laborious motion of the body, and the heart is liable to palpitation and syncope. A head-ach sometimes occurs, but more certainly pains of the back, loins, and haunches.

DCCCCLXVII.

These symptoms, when in a high degree, constitute the *Chlorosis* of authors, hardly ever appearing separate from the retention of the menses; and from the consideration of these symptoms we are led to perceive the cause of this retention.

These symptoms manifestly shew a considerable laxity and flaccidity of the whole system, and lead us therefore to judge, that the retention of the menses accompanying them is owing to a weaker action of the vessels of the uterus; which therefore do not impel the blood into their extremities, with a force sufficient to open these and pour out blood by them.

DCCCCLXVIII.

How it happens that at a certain period of life a flaccidity of the system arises in young women not originally affected with any such weakness or laxity, and of which,

which, but a little time before, they gave no indication, may be difficult to explain; but we attempt it in this way.

As a certain state of the ovaria in females prepares and disposes them to the exercise of venery about the very period at which the menses first appear, it is presumed that the state of the ovaria and of the uterine vessels are some how connected together; and as generally symptoms of the former appear before those of the latter, it may be presumed that the state of the ovaria has a great share in exciting the action of the uterine vessels, and producing the menstrual flux. But, analogous to what happens in the male sex, it may be presumed that a certain state of the genitals in females, is necessary to give tone and tension to the whole system in them; and therefore that, if the stimulus arising from the genitals is wanting, the whole system may fall into a torpid and flaccid state, and from thence the chlorosis and retention of menses may arise.

DCCCCLXIX.

We are of opinion, therefore, that the retention of the menses is to be referred to a certain state or affection of the ovaria; but what is precisely the nature of this affection, or what are the causes of it, I will not pretend to explain, nor can I explain in what manner that primary cause of retention is to be removed. In this case, therefore, as in many others, where we cannot assign the proximate cause of diseases, our indications of cure must be formed for obviating and removing the morbid effects or symptoms which appear.

DCCCCLXX.

The effects, as we have said in (DCCCCLXVII.) consist in a general flaccidity of the system, and therefore in a weaker action of the vessels of the uterus; and these may be considered as the more immediate cause of the retention. This, therefore, is to be cured by restoring the tone of the system in general, and by exciting the action of the uterine vessels in particular.

DCCCCLXXI.

The tone of the system in general is to be restored by exercise, and, in the beginning of the disease, by cold bathing. At the same time, tonic medicines may be employed, and, of these, the chalybeates have been chiefly recommended.

DCCCCLXXII.

The action of the vessels of the uterus may be excited, 1st, By determining the blood into them more copiously, and this by determining the blood into the descending aorta; by purging; by the exercise of walking; by friction; by warm bathing of the lower extremities; and it is probable that the blood may be determined more copiously into the hypogastric arteries which go to the uterus, by a compression of the iliacs; but trials made of this kind have seldom succeeded.

DCCCCLXXIII.

2dly, The action of the uterine vessels may be excited by stimulants applied to them. Thus those purgatives which particularly stimulate the intestinum rectum, may also prove stimulant to the uterine vessels connected with those of the rectum. The exercise of venery certainly proves a stimulus to the vessels of the uterus, and therefore may be useful when it can be properly employed. The various medicines recommended as stimulants of the uterine vessels, under the title of emmenagogues, have never appeared to me, to be effectual; and I cannot perceive that any of them are possessed of a specific power in this respect. Mercury, as an universal stimulant, may act upon the uterus, but cannot be very safely employed in chlorotic persons. One of the most powerful means of exciting the action of the vessels in every part of the system is, the electrical shock, and it has often been employed with success for exciting the vessels of the uterus.

DCCCCLXXIV.

DCCCCLXXIV.

The remedies (DCCCCLXXI.--DCCCCLXXIII.) now mentioned, are those adapted to the retention of the menses; and we are next to consider the case of suppression. In entering upon this, we must observe, that every interruption of the flux, after it has once taken place, is not to be considered as a case of suppression. For the flux, upon its first appearance, is not immediately established in its regular course; and therefore, if an interruption happen soon after the first appearance, or even in the course of the first or perhaps second year after, it may often be considered as a case of retention, especially when the disease appears with the symptoms peculiar to retention.

DCCCCLXXV.

These which may be properly considered as cases of suppression, are such as occur after the flux had been for some time established in its regular course, and in which the interruption cannot be referred to the causes of retention (DCCCCLXVII.---DCCCCLXIX.) but must be imputed to some resistance in the extreme vessels of the uterus. Accordingly, we often find the suppression induced by cold, fear, and other causes which may produce a constriction of those extreme vessels. Some physicians have supposed an obstructing lentor of the fluids to occasion the resistance mentioned; but this is purely hypothetical, without any proper evidence of the fact which, from other considerations also, is improbable.

DCCCCLXXVI.

There are, indeed, some cases of suppression which seem to depend upon a debility of the system in general, and consequently of the vessels of the uterus. But in such cases the suppression always appears as symptomatic of other affections, and therefore not to be considered here.

DCCCCLXXVII.

DCCCCLXXVII.

The idiopathic cases of suppression, (DCCCC-LXXV.) are attended with various symptoms or disorders in different parts of the body; very commonly arising from the blood which should have passed by the uterus, being determined more copiously into other parts, and very often with such force as to produce hæmorrhagy. Hence hæmorrhagies from the nose, lungs, stomach, and other parts have appeared in consequence of suppressed menses. Besides these, there are commonly hysteric and dyspeptic symptoms produced by the same cause, and frequently cholic pains, with a bound belly.

DCCCCLXXVIII.

In those cases of suppression (DCCCCLXXV.) the indication of cure is to remove the constriction affecting the extreme vessels of the uterus; and for answering this purpose, the chief remedy is warm bathing applied to the region of the uterus. This, however, is not always effectual, and I don't know of any other remedy adapted to the indication. Besides this, we have, perhaps, no other means of removing the constriction in fault, but that of increasing the action and force of the vessels of the uterus, so as thereby to overcome the resistance or constriction of their extremities. This leads, therefore, to employ the same remedies in the case of suppression, as those prescribed above for the cases of retention (DCCCCLXXI.---DCCCCLXXIII.). The tonics, however, and cold bathing (DCCCCLXXI.) seem to be less properly adapted to the cases of suppression, and have appeared to me of ambiguous effect.

DCCCCLXXIX.

It commonly happens in the cases of suppression, that though the menses do not flow at their usual periods, there are often, at those periods, some marks of an effort having a tendency to produce the discharge. It is, therefore,

therefore, at those times especially when the efforts of the system are concurring, that we ought to employ the remedies for curing a suppression, and it is commonly fruitless to employ them at other times, unless they be such as require some continuance in the use to produce their effects.

DCCCCLXXX.

Nearly a-kin to the cases of suppression, are those cases in which the menses flow after longer intervals, and in lesser quantity than usual; and when these cases are attended with the disorders in the system, they are to be cured by the same remedies as the cases of entire suppression.

DCCCCLXXXI.

It may be proper in this place to take notice of the dysmenorrhœa, or cases of menstruation in which the menses seem to flow with difficulty, and are accompanied with much pain in the back, loins, and lower belly. We impute this disorder partly to some weaker action of the vessels of the uterus, and partly, perhaps more especially, to a spasm of its extreme vessels. We have commonly found the disease relieved by employing some of the remedies of suppression immediately before the approach of the period, and at the same time employing opiates.

B O O K V.

O F P R O F L U V I A ,

O R

F L U X E S W I T H P Y R E X I A .

DCCCCLXXXII.

FORMER nosologists have established a class of diseases under the title of Fluxes, or Profluvia; but, as in this class they have brought together a great number of diseases which have nothing in common, but the single circumstance of an increased discharge of fluids, and are in other respects very different from one another, we have avoided so improper an arrangement, and have distributed most of the diseases comprehended in that class by the nosologists into places more natural for them. We have, indeed, still employed here the general title; but we confine it to such fluxes only, as are constantly attended with pyrexia, and which therefore necessarily belong to the class of diseases we are now treating of.

Of the fluxes which may be considered as being very constantly febrile diseases, there are only two, namely, the catarrh and dysentery; and of these therefore we now proceed to treat.

C H A P.

C H A P. I.

O F T H E C A T A R R H.

DCCCCLXXXIII.

The catarrh is an increased excretion of mucus from the mucous membrane of the nose, fauces, and bronchiæ, attended with pyrexia.

Practical writers and nosologists, have distinguished the disease by different appellations, according as it happens to affect those different parts of the mucous membrane ; the one part more or less than the other ; but we are of opinion that the disease in those different parts is always of the same nature, and proceeds from the same cause in the one as in the other. Very commonly indeed those different parts are affected at the same time ; and therefore there is little room for the distinction mentioned.

The disease has been frequently treated of under the title of tussis, or cough ; and a cough, indeed, always attends the chief form of catarrh, that is, the increased excretion from the bronchiæ ; but it is so often also a symptom of many other affections, which are very different from one another, that it is improperly used as a generic title.

DCCCCLXXXIV.

The disease we are to treat of generally begins with some difficulty of breathing through the nose, and with a sense of some fullness stopping up that passage. This again is often attended with some dull pain and a sense of weight in the forehead, as well as some stiffness in the motion of the eyes. These feelings, sometimes at their very first beginning, and always soon after, are attended with the distillation of a thin fluid from the nose, and sometimes from the eyes, and these fluids are often

often found to be somewhat acrid, both by their taste, and by their fretting the parts over which they pass.

DCCCCLXXXV.

These symptoms constitute the coryza and gravedo of authors, and are commonly attended with a sense of lassitude over the whole body. Sometimes cold shiverings are felt; at least the body is more sensible than usual to the coldness of the air; and with all this the pulse is more frequent than ordinary, especially in the evenings.

DCCCCLXXXVI.

These symptoms have seldom continued long before they are accompanied with some hoarseness, and a sense of roughness and soreness in the trachea, with some difficulty of breathing, expressed by a sense of straitness in the chest, and with a cough which seems to arise from some irritation felt at the glottis. This cough is generally at first dry and painful, occasioning pains about the chest, and more especially in the breast; sometimes, together with these symptoms, pains resembling those of the rheumatism are felt in several parts of the body, particularly about the neck and head. With all these symptoms, the appetite is impaired; some thirst arises, and a feverish lassitude is felt all over the body.

DCCCCLXXXVII.

These symptoms (DCCCCLXXXVI.) mark the violence and height of the disease; but commonly it does not continue long. By degrees the cough becomes attended with a more copious excretion of mucus, which is at first thin, but gradually becoming thicker, is brought up with less frequent and less laborious coughing. The hoarseness and soreness of the trachea are also relieved or removed, and the febrile symptoms abating, the expectoration becomes again less, and the cough less frequent, till at length they cease altogether.

DCCCCLXXXVIII.

DCCCCLXXXVIII.

Such is generally the course of this disease, neither tedious nor dangerous; but it is sometimes in both respects otherwise. The body affected with catarrh seems to be more than usually liable to be affected by cold air; and if the body affected with catarrh be exposed to cold, the disease, which seemed to be yielding, is often brought back with greater violence than before, and is rendered not only more tedious than otherwise it would be, but also more dangerous, by the supervening of other diseases.

DCCCCLXXXIX.

Some degree of the cynanche tonsillaris often accompanies the catarrh; and, when this is aggravated by a fresh application of cold, the cynanche also becomes more violent and dangerous, from the cough, which is present at the same time.

DCCCCXC.

When a catarrh has been occasioned by a violent cause, when it has been aggravated by improper management, and especially when it has been rendered more violent by fresh and repeated applications of cold, it often passes into a pneumonic inflammation, attended with the utmost danger.

DCCCCXCI.

Unless, however, such accidents as those of (DCCCC-LXXXVIII.---DCCCCXC.) happen, a catarrh, in sound persons not far advanced in life, is, I think, always a slight and safe disease. But in persons of a phthical disposition, a catarrh may readily produce a hemoptysis, or perhaps form tubercles in the lungs; and, more certainly in persons who have tubercles already formed in the lungs, an accidental catarrh may

occasion the inflammation of these tubercles, and, in consequence, produce a phthisis pulmonalis.

DCCCCXCH.

In elderly persons, a catarrh sometimes proves a dangerous disease. Many persons, as they advance in life, and especially after they have arrived at old age, have the natural mucus of the lungs poured out in greater quantity, and requiring a frequent expectoration. If, therefore, a catarrh happen to such persons, and increase the afflux of fluids to the lungs, with some degree of inflammation, it may produce the peripneumonia notha, which in such cases is very often fatal. See (CCCXLII.)

DCCCCXCIII.

The proximate cause of catarrh seems to be an increased afflux of fluids to the mucous membrane of the nose, fauces, and bronchiæ, along with some degree of inflammation affecting the same. The latter circumstance is confirmed by this, that, in the case of catarrh, the blood drawn from a vein commonly exhibits the same inflammatory crust which appears in the case of phlegmasiæ.

DCCCCXCIV.

The remote cause of catarrh is, most commonly, cold applied to the body. This application of cold producing catarrh is generally evident and observed; and, I believe, it would always be so, were men acquainted with, and attentive to, the circumstances which determine cold to act upon the body. See (XCI.)

From the same paragraph we may learn what in some persons gives a predisposition to catarrh.

DCCCCXCV.

The application of cold, which occasions a catarrh, probably operates by stopping the perspiration usually made

made by the skin, and which is therefore determined to the mucous membrane of the parts above mentioned. As a part of the weight which the body daily loses by insensible evacuation, is owing to an exhalation from the lungs, there is probably a connection between this exhalation and the cutaneous perspiration; so that the one may be increased according as the other is diminished; and therefore, we may understand how the diminution of cutaneous perspiration by the application of cold, may increase the afflux of fluids to the lungs, and thereby produce a catarrh.

DCCCCXCVI.

There are some observations of Dr. James Keil which may render this matter doubtful; but there is a fallacy in those observations. The evident effects of cold in producing coryza, leave the matter, in general, without doubt; and there are several other observations which shew a connection between the lungs and the surface of the body.

DCCCCXCVII.

Whether from the suppression of perspiration, a catarrh be produced merely by an increased afflux of fluids, or whether further the matter of perspiration be at the same time determined to the mucous glands, and there excites a particular irritation, may be uncertain; but the latter supposition is sufficiently probable.

DCCCCXCVIII.

Although, in the case of a common catarrh, which is in many instances sporadic, it may be doubtful whether any morbid matter be applied to the mucous glands; we are, however, certain that the symptoms of a catarrh do frequently depend upon such a matter being applied to these glands, as appears from the case of measles, chincough, and especially from the frequent occurrence of contagious and epidemical catarrh.

DCCCCXCIX.

DCCCCXCIX.

The mention of this last leads me to observe, that there are two species of catarrh, as we have marked in our Synopsis of Nosology. One of these, as we suppose, is produced by cold alone, as has been explained above; and the other seems manifestly to be produced by a specific contagion.

Of such contagious catarrhs we have pointed out in the Synopsis many instances, occurring from the XIVth century, down to the present day. Of all these, the phenomena have been much the same; and the disease has always been particularly remarkable for this, that it has been the most widely and generally spreading epidemic known. It has seldom appeared in any one country of Europe, without appearing successively in every different part of it; and, in some instances, it has been also transferred to America, and has been spread there in like manner, so far as we have had opportunities of being informed.

M.

The catarrh from contagion, appears with nearly the same symptoms as those mentioned (DCCCCLXXXIV. ---DCCCCLXXXVII.). It seems often to come on in consequence of the application of cold. It comes on with more cold shivering, than the catarrh arising from cold alone; and the former does also not only sooner shew febrile symptoms, but to a more considerable degree. Accordingly, it more speedily runs its course, which is commonly finished in a few days. It sometimes ends by a spontaneous sweat; and this, in some persons, produces a miliary eruption. It is, however, the febrile state of this disease especially, that is finished in a few days; for the cough, and other catarrhal symptoms, do frequently continue longer; and often when they appear to be going off, they are renewed by any fresh application of cold.

M.

MI.

Considering the number of persons who are affected with catarrh, of either the one species or the other, and escape from it quickly without any hurt, it may be allowed to be a disease very free from danger; but it is not always to be treated as such, for in some persons it is accompanied with pneumonic inflammation. In the phthically disposed, it often accelerates the coming on of phthisis; and in elderly persons it often proves fatal in the manner (DCCCCXCII.) we have explained above.

MII.

The cure of catarrh is nearly the same, whether it proceeds from cold or contagion; only in the latter case remedies are commonly more necessary than in the former.

In the cases of a moderate disease, it is commonly enough to avoid cold, or to abstain from animal food for some days, or perhaps for the same time to lie a-bed, and by taking frequently some mild and diluent drink, a little warmed, to promote a very gentle sweat, and after this to take care to return very gradually only, to the use of the free air.

MIII.

When the disease is more violent, not only the anti-phlogistic regimen, exactly observed, but various remedies also, become necessary.

To take off the phlogistic diathesis, which always attends this disease, blood-letting, more or less, according as the symptoms shall require, is the proper remedy.

After blood-letting for restoring the determination of the fluids to the surface of the body, and, at the same time, for expediting the secretion of mucus in the lungs, which may take off the inflammation of its membrane, vomiting is the most effectual means.

For

For the last mentioned purpose, it has been supposed that squills, gum ammoniac, the volatile alkali, and some other medicines, might be useful; but their efficacy has never appeared to me to be considerable; and if squills have ever been very useful, it seems to have been rather by their emetic, than by their expectorant powers.

When the inflammatory affections of the lungs seem to be considerable, it is proper, besides blood-letting, to apply blisters to the back or sides.

As a cough is often the most troublesome circumstance of this disease, so demulcents may be employed to alleviate it. See (CCCLIX.)

But after the inflammatory symptoms are much abated, if the cough still remain, opiates afford the most effectual means of relieving it; and, in the circumstances just now mentioned, they may be very safely employed. See (CCCLXI.)

After the inflammatory and febrile states of this disease are very much gone, the most effectual means of discussing all remains of the catarrhal affection, is by some exercise of gestation diligently employed.

C H A P. II.

OF THE DYSENTERY.

MIV.

The dysentery is a disease in which the patient has frequent stools, accompanied with much griping, and followed by a tenesmus. The stools, though frequent, are generally in small quantity, and the matter voided is chiefly mucus, sometimes mixed with blood. At the same time, the natural fæces seldom appear, and, when they do, it is generally in a compact and hardened form.

MV.

MV.

This disease occurs especially in summer and autumn, at the same time with autumnal, intermittent, and remittent fevers; and with these it is often complicated.

MVI.

The disease comes on sometimes with cold shiverings, and other symptoms of pyrexia; but more commonly the symptoms of the topical affection appear first. The belly is costive, with an unusual flatulence in the bowels. Sometimes, though more rarely, some degree of diarrhoea is the first appearance. In most cases, the disease begins with griping, and a frequent inclination to go to stool. In indulging this, little is voided, but some tenesmus attends it. By degrees the stools become more frequent, the griping more severe, and the tenesmus more considerable. With these symptoms there is a loss of appetite, and frequently sickness, nausea, and vomiting, also affecting the patient. At the same time there is always more or less of pyrexia present. It is sometimes of the remittent kind, and observes a tertian period. Sometimes the pyrexia is manifestly inflammatory, and very often of a putrid kind. These febrile states continue to accompany the disease during its whole course, especially when it terminates soon in a fatal manner. In other cases, the febrile state almost entirely disappears, while the proper dysenteric symptoms remain for a long time after.

MVII.

In the course of the disease, whether for a shorter or a longer time, the matter voided by stool is very various. Sometimes it is merely a mucous matter, without any blood, exhibiting that disease which Dr. Rœderer has named the *morbus mucosus*, and others the *dysenteria alba*. For the most part, however, the mucus discharged, is more or less mixed with blood. This sometimes appears only in streaks amongst the mucus, but at other times

times is more copious, tinging the whole; and upon some occasions a pure and unmixed blood is voided in considerable quantity. In other respects the matter voided is variously changed in colour and consistence, and is commonly of a strong and unusually foetid odour. It is probable, that sometimes a genuine pus is voided, and frequently a putrid sanies, proceeding from gangrenous parts. There are very often mixed with the liquid matter, some films of a membranous appearance, and frequently some small masses of a seemingly sebaceous matter.

MVIII.

While the stools voiding these various matters are, in many instances, exceedingly frequent, it is seldom that natural faeces appear in them, and when they do appear, it is, as we have said, in the form of scybala, that is, in somewhat hardened, separate balls. When these are voided, whether by the efforts of nature, or, as solicited by art, they procure a remission of all the symptoms, and more especially of the frequent stools, griping, and tenesmus.

MIX.

Accompanied with these circumstances, the disease proceeds for a longer or a shorter time. When the pyrexia attending it is of a violent inflammatory kind, and more especially when it is of a very putrid nature, the disease often terminates fatally in a very few days, with all the marks of a supervening gangrene. When the febrile state is more moderate, or disappears altogether, the disease is often protracted for weeks, and even for months; but, even then, after a various duration, it often terminates fatally, and generally in consequence of a return and considerable aggravation of the inflammatory and putrid states. In some cases, the disease ceases spontaneously, the frequency of stools, the griping, and tenesmus gradually diminishing, while natural stools return. In other cases, the disease, with
moderate

moderate symptoms, continues long, and ends in a diarrhœa, sometimes accompanied with lienteric symptoms.

MX.

The remote causes of this disease have been variously judged of. It generally arises in summer or autumn, after considerable heats have prevailed for some time, and especially after very warm, and at the same time very dry states of the weather; and the disease is much more frequent in warm, than in cooler climates. It happens, therefore, in the same circumstances and seasons, which considerably affect the state of the bile in the human body; but the cholera is often without any dysenteric symptoms, and copious discharges of bile have been found to relieve the symptoms of dysentery: So that it is difficult to determine what connection the disease has with the state of the bile.

MXI.

It has been observed, that the effluvia from very putrid animal substances readily affect the alimentary canal, and, upon occasion, they certainly produce a diarrhœa; but, whether they ever produce a genuine dysentery, I have not learned with certainty.

MXII.

The dysentery does often manifestly arise from the application of cold, but the disease is always contagious; and, by the propagation of such contagion, independent of cold, or other exciting causes, it becomes epidemic in camps and other places. It is, therefore, to be doubted, if the application of cold ever produces the disease, unless where the specific contagion has been previously received into the body: And, upon the whole, it is probable that a specific contagion is to be considered as always the remote cause of this disease.

MXIII.

Whether this contagion, like many others, be of a permanent nature, and only shews its effects in certain circumstances which render it active, or if it be occasionally produced, we cannot determine. Neither, if the latter supposition be received, can we say by what means it may be generated. As little do we know any thing of its nature, considered in itself; or at most, only this, that, in common with many other contagions, it is very often somewhat of a putrid nature, and capable of inducing a putrescent tendency in the human body. This, however, does not at all explain the peculiar effect of inducing those symptoms which properly and essentially constitute the disease of dysentery (MIV.)

MXIV.

Of these symptoms the proximate cause is still obscure. The common opinion has been, that the disease depends upon an acrid matter thrown upon, or somehow generated in the intestines, exciting their peristaltic motion, and thereby producing the frequent stools which occur in this disease. But this supposition cannot be admitted; for, in all the instances known, of acrid substances applied to the intestines, and producing frequent stools, they at the same time produce copious stools, as might be expected from acrid substances applied to any length of the intestines. This, however, is not the case in dysentery, in which the stools, however frequent, are generally in very small quantity, and such as may be supposed to proceed from the lower parts of the rectum only. With respect to the superior portions of the intestines, and particularly those of the colon, it is probable they are under a preternatural and considerable degree of constriction: For, as we have said above, the natural fæces are seldom voided, and when they are, it is in a form which gives reason to suppose they have been long retained in the cells of the colon, and consequently that the colon had been affected with a preternatural constriction. This is confirmed by almost

almost all the dissections which have been made of the bodies of dysenteric patients, in which, when gangrene had not entirely destroyed the texture and form of the parts, considerable portions of the great guts have been found affected with a very considerable constriction.

MXV.

We judge, therefore, that the proximate cause of dysentery, or at least the chief part of the proximate cause, consists in a preternatural constriction of the colon, occasioning, at the same time, those spasmodic efforts which are felt in severe gripings, and which efforts propagated downwards to the rectum, occasion there the frequent mucous stools and tenesmus. But, whether this explanation shall be admitted or not, it will still remain certain, that hardened fæces retained in the colon, are the cause of the griping, frequent stools, and tenesmus; for the evacuation of these fæces, whether by nature or by art, gives relief from the symptoms mentioned; and it will be more fully and usefully confirmed by this, that the most immediate and successful cure of dysentery is obtained by an early and constant attention to the preventing the constriction, and the frequent stagnation of fæces in the colon.

MXVI.

We have thus endeavoured to ascertain the proximate cause of dysentery, and therefore to point out also the principal part of the cure, which, from want of the proper view of the nature of the disease, seems to have been, in several respects, fluctuating and undetermined among practitioners.

MXVII.

The most eminent of our late practitioners, and of greatest experience in this disease, seem to be of opinion, that the disease is to be cured most effectually by purging, assiduously employed. The means may be various; but the most gentle laxatives are usually sufficient; and,

as

as the medicine must be frequently repeated, these are the most safe ; the more especially as an inflammatory state so frequently accompanies the disease. Whatever laxatives produce an evacuation of natural fæces, and a consequent remission of the symptoms, will be sufficient to effectuate the cure. But, if the gentle laxatives shall not produce the evacuation now mentioned, somewhat more powerful must be employed ; and we have found nothing more proper or convenient than tartar emetic, given in small doses, and at such intervals as may determine their operation to be chiefly by stool. Rhubarb, so frequently employed, is, in several respects, amongst the most unfit purgatives.

MXVIII.

Vomiting has been held a principal remedy in this disease, and may be usefully employed in the beginning of the disease, with a view to both the state of the stomach, and of the fever ; but it is not necessary to repeat it often ; and, unless the emetics employed operate also by stool, they are of little service. Ipecacuanha is by no means a specific ; and it proves only useful, when so managed as to operate chiefly by stool.

MXIX.

For relieving the constriction of the colon, and evacuating the retained fæces, clysters may sometimes be useful, but they are seldom so effectual as laxatives, given by the mouth ; and acrid clysters, if they be not effectual in evacuating the colon, may prove hurtful by stimulating the rectum too much.

MXX.

The frequent and severe griping attending this disease, leads almost necessarily to the use of opiates, and they are very effectual for the purpose of relieving from the gripes ; but, by occasioning an interruption of the action of the small guts, they favour the constriction of the colon, and thereby aggravate the disease ; and if, at
the

the same time, the use of them supersede in any measure the employing purgatives, it is doing much mischief ; and we believe it to be only the neglect of purging that renders the use of opiates very necessary.

MXXI.

When the gripes are both frequent and severe, they may sometimes be relieved by the employment of semicupium, or by a fomentation of the abdomen, continued for some time. In the same case, the pains may be relieved, and, as I think, the constriction of the colon may be taken off, by blisters applied to the lower belly.

MXXII.

At the beginning of this disease, when the fever is any way considerable, blood-letting, in patients of tolerable vigour, may be proper and necessary ; and, when the pulse is full and hard, with other symptoms of an inflammatory disposition, blood-letting ought to be repeated. But, as the fever attending dysentery is often of a putrid kind, or does, in the course of the disease, become soon of that nature, blood-letting must be cautiously employed.

MXXIII.

From our account of the nature of this disease, it will be sufficiently obvious, that the use of astringents, in the beginning of it, must be absolutely pernicious.

MXXIV.

Whether an acrid matter be the original cause of this disease, may be uncertain ; but, from the indigestion and the stagnation of fluids which attend the disease, we may suppose that some acrid matters are constantly present in the stomach and intestines, and therefore that demulcents may be always usefully employed. At the same time, from this consideration that mild oily matters thrown into the intestines in considerable quantity,
always

always prove laxative, we are of opinion that the oleaginous demulcents are the most useful.

MXXV.

As this disease is so often of an inflammatory, or of a putrid nature, it is evident, that the diet employed in it should be vegetable and acescent. Milk, in its entire state, is of doubtful quality in many cases; but some portion of the cream is often allowable, and whey is always proper.

In the first stages of the disease, the sweet and subacid fruits are allowable, and even proper. It is in the more advanced stages only that any morbid acidity seems to prevail in the stomach, and to require some reserve in the use of acescents. At the beginning of the disease, absorbents seem to be superfluous; and, by their astringent and septic powers, they may be hurtful.

MXXVI.

When this disease is complicated with an intermittent fever, and is protracted from that circumstance chiefly, it is to be treated as an intermittent, by administering the Peruvian bark, which, in the earlier periods of the disease, is hardly to be admitted.

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N. B. *The Cyphers refer to the Numbers of the Paragraphs.*

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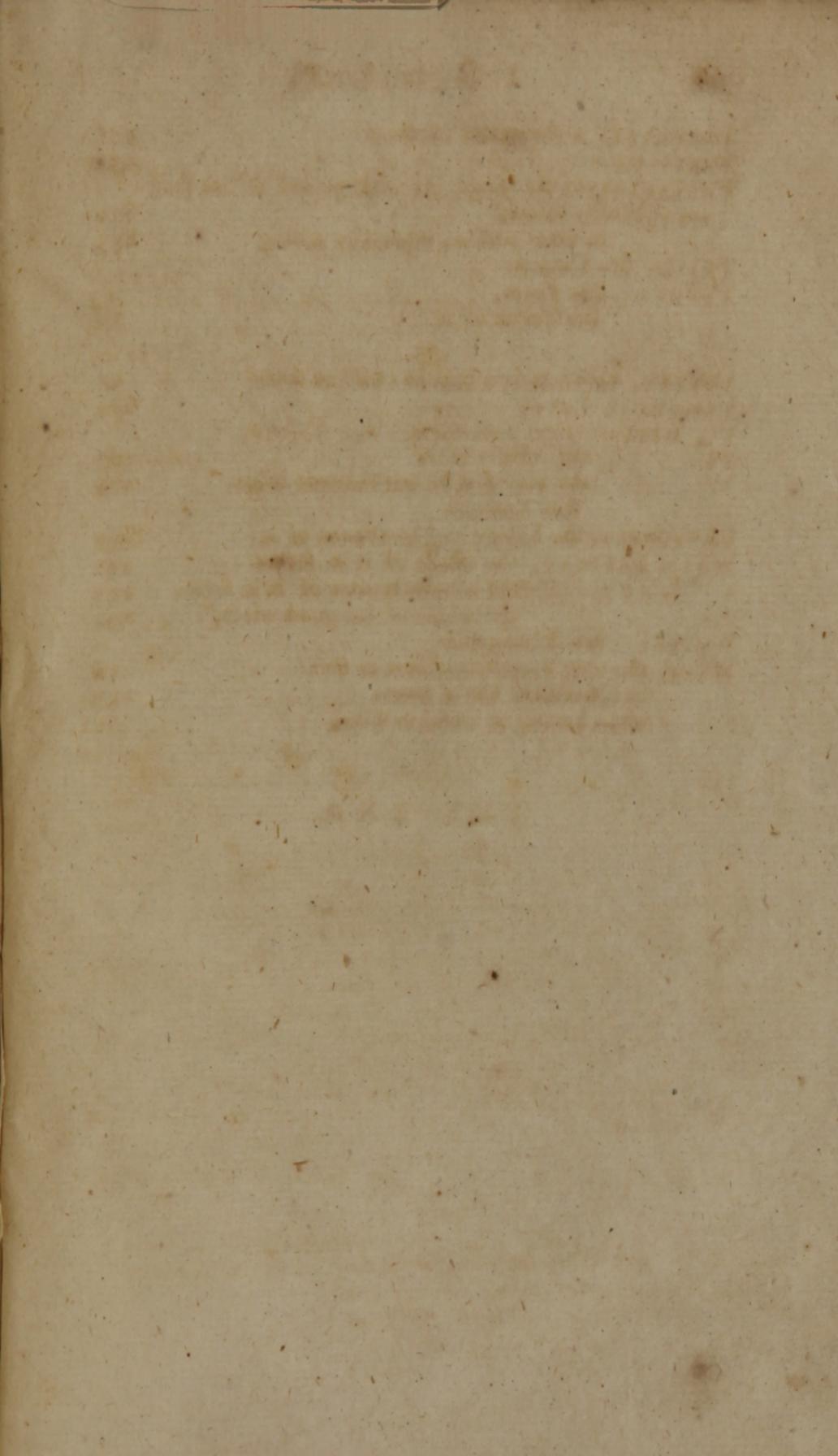
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