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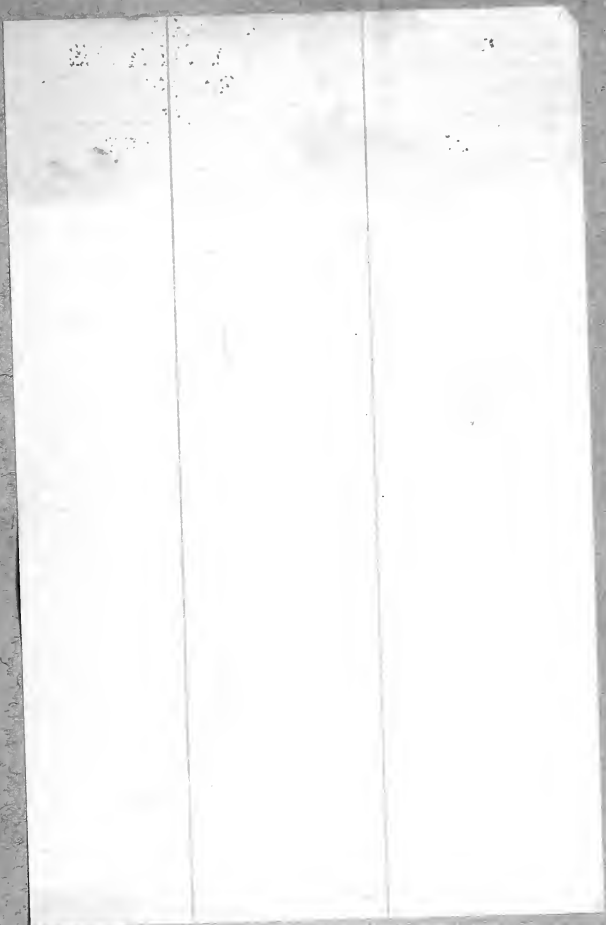
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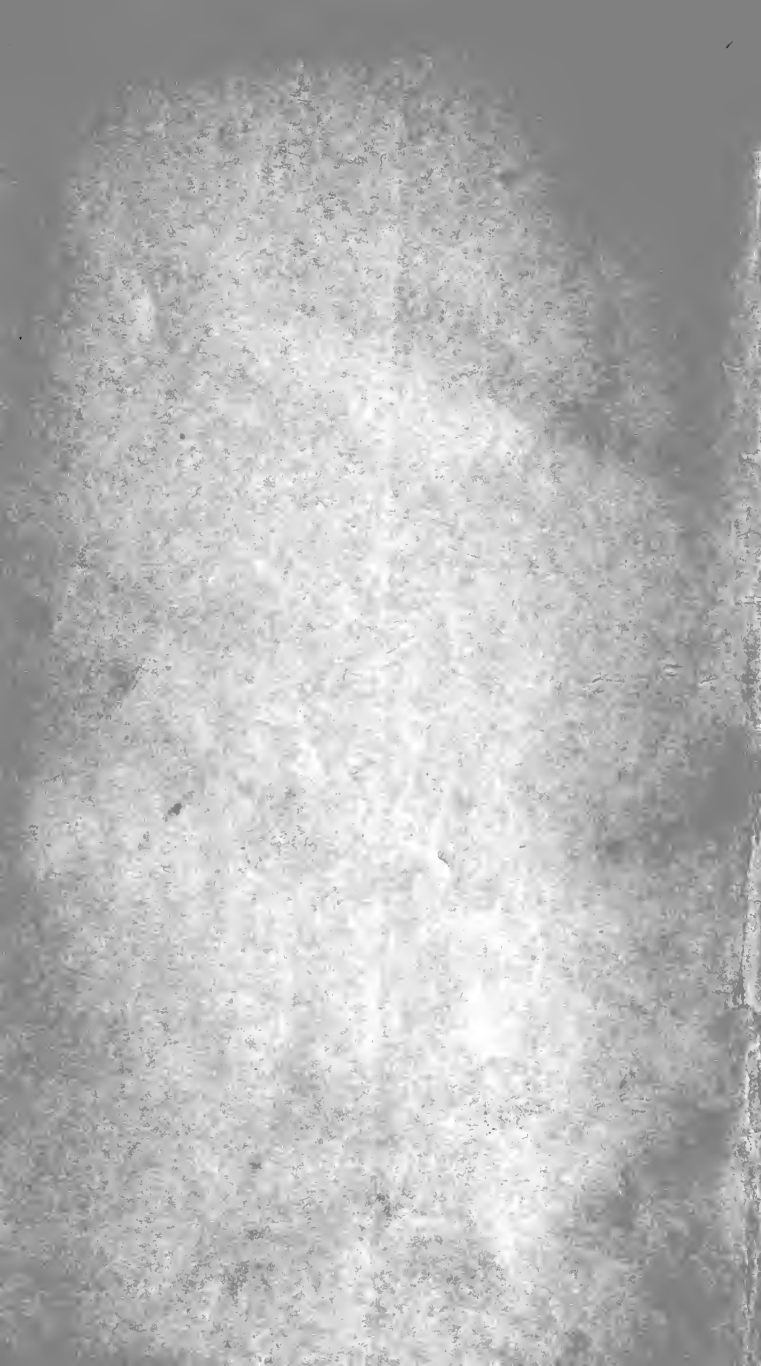


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FIRST LINES

OF THE

PRACTICE OF PHYSIC,

For the USE of STUDENTS in the UNI-
VERSITY of EDINBURGH.

BY WILLIAM CULLEN, M. D.

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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

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fer 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 acquainted 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.

In this third edition, I have endeavoured to render the following work more correct, and somewhat more complete than in any of the former.

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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

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,

cine,

cine, that is, 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

RIENCE 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.

PART



PART I.

OF PYREXIÆ,

OR

FEBRILE DISEASES.

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A

PHYSICS

CHAPTER

PRACTICE OF PHYSICS
OF PHYSICS

INTRODUCTION

THE OBJECT OF THIS BOOK
IS TO TEACH THE STUDENT
THE PRACTICE OF PHYSICS
IN A CLEAR AND CONCISE MANNER
AND TO SHOW THE CONNECTION
BETWEEN THEORY AND PRACTICE
IN THE MOST EFFECTIVE MANNER
POSSIBLE.

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CAMBRIDGE.

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, the interruption and disorder of several functions, and particularly 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, Edit. 3. 1780,

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, which the other orders of the pyrexiae always have.

IX.

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. It is our business especially to investigate these; and we expect to find them as they occur 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, with frequent yawning and stretching. At the same time, the face and extremities become pale, the features shrink, 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 a bystander. At length, the patient himself feels the cold, commonly first in his back, but, from thence, passing over the whole body; and now 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 are alternated with warm flushings. By degrees, the cold goes off entirely, and a heat, greater than natural, prevails, and continues

continues over the whole body. With this heat, the colour of the skin returns, and a preternatural redness appears, especially in the face. Whilst the heat and redness come on, 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,

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.

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.

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

often increase to a vomiting of a matter for the most part bilious. This vomiting commonly puts an end to the cold stage, and brings on the hot. As the hot stage advances, the nausea and vomiting abate, and, when the sweat breaks out, they generally cease altogether.

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 over the whole body; 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.

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 diarrhoea.

XVIII.

Analogous to these changes in the state of the secretions, it frequently happens, that
tumours,

tumours, subsisting on the surface of the body, suffer, during the cold stage of fevers, a sudden and considerable detumescence, but generally, though not always, the tumours return to their former size, 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

tinue 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 increase 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

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freely,

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 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 a fever consists of a single paroxysm, such as we have now described;

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 such 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

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 the appearance of this is pretty frequent. 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 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,

ever,

ever, 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 it does 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, but chiefly by the aggravation or EXACERBATION of a hot stage, the disease is called a CONTINUED FEVER.

XXVIII.

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 most violent cold stage ; but, upon the whole, the shortest paroxysm : That the tertian having a shorter interval than the quartan, has, at
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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

and differs from others chiefly 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.

OF THE PROXIMATE CAUSE OF FEVER.

XXXII.

The proximate cause of fever seems hitherto to have eluded the research of physicians; and we shall not pretend to ascertain it in a manner that may remove every difficulty;

difficulty ; but we 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 fever 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. See Boerh. Aph. 756.

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, sufficient-

ly 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

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, 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.

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 oeconomy, 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 naturae*, has been long a common opinion among physicians; and

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 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

ex-

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

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 naturae*.

XLI.

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

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.)

These

These symptoms, in many cases, manifestly depend upon a state of debility or loss of tone in the muscular fibres of the stomach, and therefore may be presumed to shew the same in the case of fever.

But, further, 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.

And, lastly, that the debility of the stomach which produces vomiting, actually 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

of

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 anorexia, nausea, and vomiting, depend upon, and
are

are a proof of 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, whatever difficulty there may be in accounting for this, we consider it as a matter of fact, and we shall therefore employ it in explaining the nature of fever.

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

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,

posed, 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.

Upon the whole, our doctrine of fever is explicitly this. The remote causes (XXXV.)
are

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 oeconomy, (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 cases 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 on, renders

renders it more likely that the phenomena depend upon some cause acting upon the nervous system, or the primary moving powers of the animal oeconomy. See Van Swieten apud Boerh. Aph. 755.

XLIX.

Another opinion, which has been almost 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 naturae* 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 could not 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

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 that by remedies which do not seem to operate upon the fluids, or to produce any evacuation.

L.

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 deny 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.

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. These considerations will, in some measure, account for the appearance of an unusual quantity of bile in intermittent fevers ; but the circumstance 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. 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, from 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
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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

ges 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 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

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ver which has its full course, we suppose, that, in consequence of the constitution of the animal oeconomy, there are certain motions excited, which have a tendency to obviate the effects of the noxious power, or to correct and remove them. 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 naturae*, 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 produce the chief differences of fevers.

LV.

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 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 distinctly observe any number of separate paroxysms, we constantly find that every paro-

xyfm 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 oeconomy. Such a law seems to be that which subjects the oeconomy, 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 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,

cases, the daily exacerbations and remissions are with difficulty distinguished, we may still presume, that the general tendency of the oeconomy 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

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 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,

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

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, therefore, 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 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
conti-

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 those continued fevers, which are formed from intermittents, and those which we have
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distinguished in our Nosology, as more especially entitled to the appellation of Continued. See Syn. Nos. Meth. P. V. Ch. I. Sect. II.

LXVI.

The characters of intermittent and of continued fevers given in the second edition of our Synopsis, were not sufficient; and I have endeavoured to render them more so in the third edition, published last year; and, for such persons as may not look into that work, I think it necessary to say here,

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 pre-

vailing 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 their shewing little tendency to become intermittent or remittant 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 ope-

rate 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.

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 whether these names be authorized 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.

Beside these differences of continued fever, now mentioned, we are not certain of
having

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, assigned; and we are disposed 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

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 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, to be hereafter mentioned (CIV.), we have now no doubt that real putrescency of the fluids takes place in fevers. This putrescency, however, often attends intermit-

con-

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.

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

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 ; both because we cannot assign the causes of the differences which appear, and because we suppose that the differences which, in fact, occur, may be readily understood from what is said above, (XXV. XXVI. and XXVII.) and more fully from the Methodical Nosology, P. V. 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. 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

duces a disease different from what is strictly called a fever. (VIII.)

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 **CONTAGION**, or as **MIASMATA**.

LXXXI.

LXXXI.

Contagions have been supposed to be of great variety ; and it is possible that 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 pyrexiae, 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 Phlegmasiae, is doubtful ; and, though it should be supposed, it will not much increase the number of contagious pyrexiae. 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 general character, and to differ only in circumstances, which may be imputed to season,
climate,

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.

LXXXII.

While the contagious exanthemata and profluvia are thus limited, if we should suppose the contagious pyrexiae 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, (LXVIII.—LXXII.) 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.

LXXXIII.

LXXXIII.

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.

LXXXIV.

LXXXIV.

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 substances 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.

LXXXV.

Miasmata are next to be considered. These 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.

LXXXVI.

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,
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and foil, 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.

LXXXVII.

We have now rendered it probable, that the remote causes of fevers (VIII.) are chiefly Contagions or Miasmata, 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

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notion

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 fomites, 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 *Human Marsh* or *Effluvia*, rather than the general ones of Contagion, or Miasma.

LXXXVIII.

To render our doctrine of fever consistent and complete, it is necessary to add here, that those remote causes of fever, human and marsh effluvia, seem to be of a debilitating or sedative quality. They arise from a putrescent matter. Their production is favoured, and their power increased by circumstances which favour putrefaction ;
and

and they often prove putrefactive ferments with respect to the animal fluids. As putrid matter, therefore, is always, with respect to animal bodies, a powerful sedative, it can hardly be doubted that human and marsh effluvia are of the same quality. It is confirmed by this, that the debility which is always induced seems to be in proportion to the other marks we have of the power of those causes.

LXXXIX.

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 these causes ; and the first to be taken notice of is, the power of cold applied to the human body.

XC.

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

by 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.

XCI.

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.

XCII.

XCII.

The morbid effects of cold seem to be chiefly the following: 1. A general inflammatory disposition of the system, which is commonly accompanied with rheumatism, or other phlegmasia; 2. A catarrhal affection; 3. A gangrene of particular parts; 4. A palsy of a single member; 5. A proper fever, which it often produces by its own power alone; but more commonly it is an exciting cause of fever, by concurring with the operation of human or marsh effluvia.

XCIII.

Cold is often applied to the human body without producing any morbid effects, and it is difficult to determine in what circumstances it especially operates to produce those. It appears to me, that the morbid effects of cold depend partly upon certain
circumstances

circumstances of the cold that is applied, and partly upon certain circumstances of the person to whom it is applied.

XCIV.

The circumstances of the cold applied, which seem to give it effect, are, 1. The intensity or degree of cold applied; 2. The length of time during which it is applied; 3. The degree of moisture at the same time applied; 4. Its being applied by a wind or current of air; 5. Its being a vicissitude, or sudden change of temperature, to a considerable degree, from heat to cold.

XCV.

The circumstances of persons rendering them more liable to be affected by cold, seem to be, 1. The weakness of the system, and particularly the lessened vigour of the circulation occasioned by fasting, by evacuations,

cuations, by fatigue, by a last night's debauch, by excess in venery, by long watching, by much study, by rest immediately after great exercise, by sleep, and by preceding disease. 2. The body, or its parts, being deprived of their accustomed coverings. 3. One part of the body being exposed to cold, while the rest of the body is kept in its usual, or a greater warmth.

XCVI.

The power of these circumstances (XCV.) is demonstrated by the circumstances enabling persons to resist cold. These are, exercise, a certain vigour of constitution, cordials, active passions, passions engaging attention and diminishing sensibility, habit diminishing sensibility, and increasing the power of generating heat; and, lastly, a state of the body in which sensibility is greatly diminished, as in mania.

XCVII.

Befide cold, there are other powers which feem to be the remote caufes of fever, as Fear; Intemperance in Drinking, Excefs in Venery, and other caufes, which evidently weaken the fyftem. But, whether any of thefe fedative powers be alone the remote caufe of fever, or if they only operate either as they concur with the operation of marfh or human effluvia, or as they give an opportunity to the operation of cold, are queftions not to be pofitively answered.

XCVIII.

As we have now mentioned the chief of the remote caufes of fevers, we can further obferve, that thefe will arife more or lefs readily, according as miasmata and contagions are more or lefs powerful, or as they are more or lefs favoured by the concurrence of cold, and other fedative powers.

C H A P. V.

OF THE PROGNOSIS OF FEVERS.

XCIX.

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 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 reaction, or salutary efforts of nature, in curing fevers, is still involved in so much obscurity,

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,

C.

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 organization of the brain immediately necessary to the action of the vital principle,

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

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 that power; 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

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cent state in it, and in the fluids derived from it.

CI.

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.

CII.

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

of violent re-action ; that is, of a strong spasm, appearing in the suppression of excretions.

CHIL.

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

the sphincters; 3. difficult deglutition, depending upon a palsy of the muscles of the fauces.

CIV.

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 petechiae, maculae, and vibices; D. effusions of a yellow serum under the cuticle.

3. In the state of the excretions; frequent, loose and foetid stools; high coloured turbid urine; foetid sweats; and the foetor of blisters.

4. The cadaverous smell of the whole body.

CV.

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

CVI.

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
antient

antient 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.

CVII.

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.

CVIII.

I am of this opinion, *first*, because I observe, that the animal oeconomy 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

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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.

CIX.

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.

CX.

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.

CXI.

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,

eighth, tenth, twelfth, fifteenth, sixteenth, eighteenth, and nineteenth, there are but eighteen instances of termination, or one ninth of the whole.

CXII.

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 happen 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.

CXIII.

CXIII.

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 oeconomy is to observe the critical days, and that it is by the operation of some violent and irregular cause, the course of things is sometimes turned to the non-critical.

CXIV.

What has been said, renders it sufficiently probable, that it is the general tendency of the animal oeconomy to determine the periodical movements in fevers to be chiefly on
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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 them which proves finally of a 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.

CXV.

The doctrine of critical days has been much embarrassed by some dissonant accounts of it, which appear in the writings
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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.

CXVI.

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 doctrine 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,

deed, as Asclepiades and Celsus have observed, are inconsistent with one another.

CXVII.

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

CXVIII.

From the universality of tertian or quartan periods in intermittent fevers, we cannot doubt of there being, in the animal oeconomy, a tendency to observe such periods; and the critical days above mentioned are consistent with this tendency of the oeconomy, 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 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.

CXIX.

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
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of the Aphorisms, taken from an erroneous manuscript, which Celfus also seems to have copied.

CXX.

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 deny its being naturally a critical day, and to think, that the instances of terminations, which have really occurred on the fourth
day,

day, are to be reckoned among the other irregularities which happen in this matter.

CXXI.

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.

CXXII.

With respect to the opinions of many moderns who deny 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

larity of that course may have often escaped inattentive and prejudiced observers.

CXXIII.

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

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 constiterit 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.

CXXIV.

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

rations of nature are very precarious, and are not so 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.

CXXV.

The plan which to me appears to be most suitable, is that which forms the indications of cure with the view of obviating the tendency to death ; while, at the same time, the means of executing these indications are directed by a proper attention to the proximate cause of fevers.

Upon this plan, in consequence of what has been laid down above 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

ployed as the circumstances of the fever (CII. CIII. or CIV.) 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.*

CXXVI.

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.

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CXXVII.

CXXVII.

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

CXXVIII.

The irritations (CXXVII. 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.

CXXIX.

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

mine 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, 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

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 choosing 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 spiritous 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.

CXXX.

Beside 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 faeces in the intestines; and ought to be removed by frequent laxative glysters.

A fourth stimulus to be constantly suspected in fevers is, a general acrimony of the fluids, as produced by the increase of motion and heat, joined with an interruption
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of the excretions. This acrimony is to be obviated or removed by the taking in of large quantities of mild antiseptic liquors.

CXXXI.

The avoiding of irritation in all these particulars, (CXXVIII. and CXXIX.) 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 due measure of the application of those above mentioned is not easily ascertained.

CXXXII.

A second head of the means (CXXVI. 1.) of moderating the violence of re-action, comprehends certain sedative powers, which may be employed to diminish the activity
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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,

peration, to what circumstances of fever it is peculiarly adapted, or what limitations it requires, we shall not venture to determine, till we shall be more particularly instructed by further experience.

CXXXIII.

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.

CXXXIV.

Another set of refrigerants are, the Neutral Salts, formed of the vitriolic, nitrous,

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or

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.

CXXXV.

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.

CXXXVI.

CXXXVI.

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

CXXXVII.

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

CXXXVIII.

CXXXVIII.

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 reaction 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.

CXXXIX.

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.

CXL.

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 reaction is to be succeeded, sooner or later, by a state of debility, from the excess of
which

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.

CXLI.

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

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.

CXLII.

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

CXLIII.

CXLIII.

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

CXLIV.

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 applied to the intestines 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.

CXLV.

CXLV.

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.

CXLVI.

At the same time, the evacuation may induce a considerable degree of debility ; and, therefore, in those cases in which a dangerous state of debility is likely to occur, purging is to be employed with a great deal of caution ; and here the due measure

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is

is more difficult to be observed than in the case of blood-letting.

CXLVII.

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.

CXLVIII.

If, notwithstanding these doubts, (CXLV. CXLVI. and CXLVII.) it shall be asserted, that purging, even 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

in-

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 faeces, 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.

CXLIX.

Another set of means, (CXXVI. 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.

CL.

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

CLI.

CLI.

The internal means (CL.) 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.

CLII.

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

1. DILUENTS.

2. NEUTRAL SALTS.

3. SUDORIFICS.

4. EMETICS.

CLIII.

CLIII.

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.

CLIV.

Water may be said to be the vehicle of the several matters which ought to be excreted; and, in a healthy state, the fullness of the extreme vessels, and the quantity of excretions are 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

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.

CLV.

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.

CLVI.

Accordingly, the throwing in of a large quantity of watery fluids has been, at all times,

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*.

CLVII.

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.

CLVIII.

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

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.

CLIX.

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.

CLX.

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. (CXXXIV.) What is the effect of the neutral salts, given when they are forming, and in a state of effervescence?

CLXI.

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. (CLII. 3.)

CLXII.

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,

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 manifestly useful, at certain periods, and in certain species of fever.

CLXIII.

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

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.

CLXIV.

From these considerations, it is very doubtful, if the practice of sweating can be admitted

mitted 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.

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 soon 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.

CLXV.

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.

CLXVI.

Though the doubts started (CLXIII.) are to be attended to; and though the practices (CLXIV.) 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, even after pyrexiae 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 powerfully sedative contagion, have been generally treated most successfully by sweating.

CLXVII.

These instances (CLXVI.) 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, providing that it proceeds without the circumstances. (CLXIV. 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.

CLXVIII.

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 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.

CLXIX.

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

CLXX.

CLXX.

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.

CLXXI.

Vomiting is, in many respects, useful in fevers; as it evacuates the contents of the stomach; as it emulges the biliary and pancreatic ducts; as it 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, expedes the circulation in them, and promotes their several secretions; and, lastly as agitating

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.

CLXXII.

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

CLXXIII.

That such is the power of emetics, will appear from the several considerations mentioned

tioned above (XLIII.); and, therefore, that they are remedies well suited to the cure of fevers.

CLXXIV.

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.

CLXXV.

Full vomiting is best suited to the several purposes mentioned (CLXXI.); 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

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.

CLXXVI.

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.

CLXXVII.

It is seldom, however, that vomiting is found to produce a final solution of fevers; and, after they are once formed, it is commonly

monly 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 often 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.

CLXXVIII.

For these reasons, after fevers are fully formed, physicians have thought proper to employ emetics in nauseating 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.

CLXXIX.

CLXXIX.

These are the advantages to be procured by nauseating 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.

CLXXX.

The emetics chiefly in use at present are, Ipecacuanha and Antimony. The first may be employed for every purpose of emetics, particularly those mentioned (CLXXI.); 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 nauseating only; and, however employed, there is reason to suspect, that its effects are less permanent, and less powerfully communicated
from

from the stomach to the rest of the system, than those of Antimony.

CLXXXI.

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:

CLXXXII.

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,

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.

CLXXXIII.

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

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

CLXXXIV.

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 intervals at which it is given. If it be intended that

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the

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, and the intervals shorter.

CLXXXV.

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 purgings, does harm, by weakening the patient.

CLXXXVI.

The other set of internal medicines, which we suppose may be useful in taking off the
spasm

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 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.

CLXXXVII.

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

CLXXXVIII.

What are the effects of blistering, so frequently employed in fevers, is not yet agreed upon

upon among physicians; and many different opinions have been maintained on this subject, drawn not only from reasoning, but also from presumed experience. We must not, however, enter into controversy; but shall deliver our own opinion in a few words.

CLXXXIX.

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.

CXC.

The inflammation produced by the application of cantharides to the skin, affords a
certain

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 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.

CXCI.

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
 revul-

revulsion, affect the general distribution of the fluids.

CXCII.

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 affecting that joint.

CXCIII.

Analogous to this, we think the good effect of blistering in continued fevers, arises from its relaxing the spasm of the extreme vessels,

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.

CXCIV.

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 reaction being weaker, all ambiguity from the stimulant power of blistering is removed, and when it may best concur with other circumstances tending to a final solution of the spasm.

CXC.V.

From the view of this matter, given in (CXCI. CXCII.) it will appear, that the part of the body to which blisters ought to be applied, is indifferent, except
upon

upon the fufpicion of topical affection, when the bliftering is to be made as near as poffible to the part affected.

CXCVI.

Whether SINAPISMS, and other RUBEFACIENTIA, act in a manner analogous to what we have fupposed of bliftering, may be doubtful; but their effects in rheumatifm and other inflammatory difeafes, render it probable.

CXCVII.

The other external mean of taking off the fpafm of the extreme veffels, is Warm Bathing. This was frequently, and in different circumftances, employed by the antients; but has, till very lately, been neglected by modern phyficians. As the heat of the bath ftimulates the extreme veffels, and, with the concurrence of moifture, alfo relaxes them, it feems to be a fafe ftimulus, and
well

well suited to take off the spasm affecting these vessels.

CXCVIII.

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

CXCIX.

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

CC.

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

CCI.

Most of the sedative powers inducing debility, soon after they have been first applied, cease to act; 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 of 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 putrefaction in the fluids. The obviating the
latter

latter will be considered under our third general indication, and the former only is to be considered here.

CCII.

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

CCIII.

CCIII.

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.

CCIV.

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

CCV.

As we have said above, that the tonic power of cold can be communicated from
any

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.

CCVI.

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.

CCVII.

CCVII.

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 (CXXXII.); but probably it may here be considered also properly as a tonic, and useful in cases of debility.

CCVIII.

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.

CCIX.

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.

CCX.

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,

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 use of arsenic and of alum, in intermittent fevers, seems manifestly to depend upon their tonic power. And, upon the whole, there 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.

CCXI.

A great variety of these has been employed in the cure of intermittent 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

with respect to the most celebrated of these tonics, the Peruvian bark.

CCXII.

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.

CCXIII.

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.

tem. 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 intermittent 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.

CCXIV.

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,

tions, 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.

CCXV.

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.

CCXVI.

Another set of medicines to be employed for obviating debility and its effects, are the direct stimulants (CCII.). 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

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.

CCXVII.

What are the stimulants which may be most properly employed, we are uncertain, as the use of them, in this age, has been rare; but we are disposed to think that, of all kinds, wine is the best.

CCXVIII.

Wine has the advantage of being grateful to the palate and stomach, and of having its stimulant parts so much diluted, that it
can

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.

CCXIX.

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.

CCXX.

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

CCXXI.

CCXXI.

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.

4. By supporting the tone of the vessels, and thereby resisting further putrefaction, or obviating its effects.

5. By moderating the violence of reaction, considered as a means of increasing putrefaction.

CCXXII.

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

1. By removing the patient from places filled with corrupted air.

2. By

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.

CCXXIII.

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.

CCXXIV.

The putrid or putrescent matter, remaining in the body, may be rendered more mild and innocent, by the use of diluents; or may
be

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, neutral salts, and fixed air.

CCXXV.

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. (CCXIV. —CCXV.)

CCXXVI.

The violence of re-action increasing the tendency to putrefaction, may be moderated
by

by the several means fully treated of above.
(CXXVI.—CXXX.)

CCXXVII.

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 reaction,*

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,

α. Increased heat, whether arising from

αα. External heat, or,

ββ. 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 aliment.

e. Particular irritations arising from

α. The sense of thirst,

β. Crudities, or corrupted humours in the stomach,

γ. The

- γ . The preternatural retention of faeces.
- δ . A general acrimony of the fluids.
- B. Employing certain sedative powers, as
 - a. Cold.
 - b. Refrigerants, the chief of which are,
 - α . Acids of all kinds,
 - β . Neutral salts,
 - γ . Metallic salts.
- C. Diminishing the tension and tone of the arterial system, by
 - a. Blood-letting,
 - b. Purgings.
- 2. Taking off the spasm of the extreme vessels, by
 - A. Internal means, which are
 - a. Those remedies which determine to the surface, as,
 - α . Diluents.
 - β . Neutral salts,
 - γ . Sudorifics,
 - δ . 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,

- A. Tonics, as,
 - a. Cold,
 - b. Tonic medicines, which are either
 - α.* Fossil, as,
 - αα.* Saccharum saturni, &c. or,
 - β.* Vegetable, as,
 - αα.* 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 the accumulation of the patient's own effluvia, by
 - a. A constant ventilation.
 - b. Frequently changing the bed-clothes 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. Sup-

- 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 reaction, considered as a means of increasing putrefaction. as in I.
- A. B. C.

S E C T.

S E C T. II.

OF THE CURE OF INTERMITTENT
FEVERS.

CCXXVIII.

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.*

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.*

CCXXIX.

The first indication may be answered in two ways ;

I. By

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

CCXXX.

For the purpose mentioned in (CCXXIX. 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

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, for the same time, supporting and increasing the tone and action of the extreme vessels.

CCXXXI.

The tone of the extreme vessels may be supported without increasing the action of the heart and arteries, (CCXIX. 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 deal of exercise, and as a full diet as the condition of the patient's appetite and digestion may allow of, will be proper during

ring the time of intermission, and may be considered as belonging to this head.

CCXXXII.

Of all the tonic remedies mentioned, (CCXXXI.) the most celebrated, and perhaps the most certainly effectual, is the Peruvian bark, the tonic power of which we have endeavoured to demonstrate above, (CCXIII.) and have, at the same time, explained its use in continued fevers. In intermittents, the same observation, as made in (CCXV.) 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.

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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.

2. In remittents, though no entire 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

should be prevented by the exhibition of the bark, repeated at proper intervals.

CCXXXIII.

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.

CCXXXIV.

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

dominal viscera. The first must be removed by blood-letting and the antiphlogistic regimen ; the second, by vomiting and purging.

BOOK

B O O K II.

OF INFLAMMATIONS,
OR PHLEGMASIÆ.

C H A P. I.

OF INFLAMMATION IN GENERAL.

S E C T. I.

OF THE PHENOMENA OF INFLAMMATION.

CCXXXV.

WHEN any part upon the surface of the body is affected with unusual redness, heat, pain, and tumour, we name the
the

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.

CCXXXVI.

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

CCXXXVII.

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 ;

mentum ; 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.

CCXXXVIII.

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

We proceed, therefore, to inquire into the proximate cause of inflammation in general.

S E C T. II.

OF THE PROXIMATE CAUSE OF INFLAMMATION.

CCXXXIX.

The phenomena of inflammation (CCXXXV.), 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.

CCXL.

The cause of this increased action in the vessels of a particular part is, therefore, what we are to inquire 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.

CCXLI.

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

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tion: 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 of 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 oeconomy. While motion continues to prevent any separation of parts, and heat continues to preserve the fluidity of the more viscid,

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

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 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.

CCXLII.

Obstruction, therefore, is not to be considered as the primary cause of inflammation; but, at the same time, it is sufficiently probable,

bable,

bable, 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.

CCXLIII.

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

seems probable from hence, that every considerable inflammation is introduced by a cold stage, and is accompanied with that and 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.

CCXLIV.

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

CCXLV.

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.

CCXLVI.

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-distension in vessels previously constricted. Hence, the disease especially appears at seasons liable to frequent and considerable vicissitudes of heat and cold.

To

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

CCXLVII.

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 produced in other parts beside that first affected. This general affection is well known to physicians, under the name of the *DIATHESIS PHLOGISTICA*. It appears most commonly in persons

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 seems often to arise, and subsist for some time, without the apparent inflammation of any particular part ; but such a state of the system renders it probable, that a spasm may, at the same time, readily arise in any of the extreme vessels, and particular inflammation be produced. It, however, appears also, that the general diathesis frequently arises from inflammation begun in a particular part.

CCXLVIII.

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.

OF THE TERMINATIONS OF INFLAMMATION.

CCXLIX.

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

This happens when the 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 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.

CCL.

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 exhaling 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 reabsorbed ; 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, mode-

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

CCLI.

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 of distension; 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,

mined, 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.

CCLII.

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

ticular 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.

CCLIII.

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.

CCLIV.

CCLIV.

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.

CCLV.

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*.

CCLVI.

A gangrene, and its consequences, may arise from a putrid ferment diffused in the mass of blood, and poured out with the serum effused, which it operates upon more powerfully while the serum is stagnant; 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.

CCLVII.

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.

CCLVIII.

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 upon the nature of inflammation, as upon the circumstances of the part affected. It is in glandular parts chiefly that schirrosity is observed, and it is probably owing to the parts readily admitting a stagnation of the fluids. We have observed, that inflammation seldom induces

duces 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.

CCLIX.

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 pneumonic inflammation most commonly proves fatal.

CCLX.

Another kind of termination is, that of certain inflammations on the surface of the body, 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.

CCLXI.

Beside 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, which appears partly in a viscid concretion upon their surface, and partly in a thin serous fluid, effused into the cavities in which the inflamed viscera are placed,

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. IV.

OF THE REMOTE CAUSES OF INFLAMMATION.

CCLXII.

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.

CCLXIII.

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

tend 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.

CCLXIV.

The indications of cure in inflammation are different, according as it may be still capable of resolution, or may have taken a
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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 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.

CCLXV.

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,

D d by

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.

CCLXVI.

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

CCLXVII.

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 (CXLIX.) to (CXCIX.) Only it is to be observed, that
topical

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.

CCLXVIII.

When a tendency to suppuration (CCLI.) 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 is always to promote the production of a perfect pus as quickly as possible.

CCLXIX.

CCLXIX.

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.

CCLXX.

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

degree of increased impetus, or of the original circumstances 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 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.

CCLXXI.

When an inflammation has taken a tendency to gangrene, that event is to be prevented by every possible means; and these must

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 too, 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

the wounds made there, to excite the sup-
puration required. By the same incisions
also, we give access to antiseptics, which
may both prevent the progress of the pu-
trefaction in the dead, and excite the in-
flammation necessary on the verge of the
living part.

CCLXXII.

When the gangrene proceeds from a loss
of tone, and when this, communicated to the
neighbouring parts, prevents that inflamma-
tion 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 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 (CCXIII.);
and, from what is said in (CCXIV.) the limits
of its use also may be learned. When the
gangrene

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 oedema, or in those cases of inflammation where a loss of tone takes place, while the original inflammatory symptoms are removed.

CCLXXIII.

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

We have hinted above, that the difference of inflammation arises chiefly from the difference of the part affected; and we have, therefore, in the first place, arranged them, as they are cutaneous, visceral, or articular; in which order we are now to consider them.

E e

CHAP.

C H A P. II.

OF INFLAMMATION, MORE STRICTLY CUTANEOUS.

CCLXXIV.

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,

system, we shall then name the disease
ERYSIPELAS.

CCLXXV.

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; See Syn. Nosol. Meth. vol. II. pag. 83. & 85. 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 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.

CCLXXVI.

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

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.

C H A P. III.

OF OPHTHALMIA, OR INFLAMMATION OF THE EYE.

CCLXXVII.

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

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.

CCLXXVIII.

CCLXXVIII.

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.

This 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 palpebrae; 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,

derable, 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.

CCLXXIX.

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, 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.

CCLXXX.

CCLXXX.

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.

CCLXXXI.

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.

CCLXXXII.

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

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

CCLXXXIII.

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.

CCLXXXIV.

Ophthalmia, as an external inflammation, admits of topical applications. All these, however, which increase 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.

CCLXXXV.

CCLXXXV.

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.

CCLXXXVI.

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

generally adapted to the evacuation of acrimony, such as mercury, may be employed.

CCLXXXVII.

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.

CCLXXXVIII.

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. IV.

OF PHRENSY, OR PHRENITIS.

CCLXXXIX.

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.

CCXC.

An idiopathic phrensy is a rare occurrence, a sympathy 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 shown, that the brain had been inflamed, when few of the peculiar symptoms of inflammation had appeared before.

CCXCI.

The symptoms by which it may be most certainly known are, an acute pyrexia, a violent headach, 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

mation 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.

CCXCII.

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.

CCXCIII.

CCXCIII.

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

CCXCIV.

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.

CCXCV.

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

CCXCVI.

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.

CCXCVII.

It appears certain, that opiates are hurtful in every inflammatory state of the brain ;
and

and it is to be observed, that, from the ambiguity mentioned in (CCXC.) the accounts of practitioners, with regard to the juvantia and laedentia in this disease, are very uncertain.

CHAP.

C H A P. V.

OF THE QUINSY, OR CYNANCHE.

CCXCVIII.

This name is applied to every inflammation of the internal fauces; but these inflammations are different according to the part of the fauces which may be affected, and to 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 X .

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 C .

The disease appears by some tumour and redness of the parts, is attended with a painful and difficult deglutition; a troublesome clammyness

clammynefs of the mouth and throat ; a frequent, but difficult, excretion of mucus ; and the whole is accompanied with pyrexia.

CCCI.

This fpecies of quinfy is never contagious ; it terminates frequently by refolution, fometimes by fuppuration, but hardly ever by gangrene, although in this difeafe fome floughy fspots fometimes appear upon the fauces.

CCCII.

This difeafe is commonly occafioned by cold externally applied, particularly about the neck. It affects efpecially the young and fanguine, and a difpofition to it is often acquired by habit. It occurs efpecially in fpring and autumn, when viciffitudes of heat and cold frequently take place. The inflammation and tumour are commonly at firft
moft

most considerable in one tonsil, and afterwards abating in that, increase in the other.

CCCIII.

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.

CCCIV.

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

CCCV.

CCCV.

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

CCCVI.

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

CCCVII.

When this disease shall have taken a tendency to suppuration, 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

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. II.

OF THE GYNANCHE MALIGNA.

CCCVIII.

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

H h

exposed

exposed to the contagion, but most readily the weak and infirm.

CCCIX.

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

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.

CCCX.

With these symptoms, the pyrexia proceeds with a small, frequent, and irregular pulse, and there occurs 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.

CCCXI.

On the second day, or sometimes later, efflorescences appear upon the skin, which
are

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.

CCCXII.

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

livid and black colour, by the foetor 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 oesophagus, and sometimes through the whole of the alimentary 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 infection is communicated to
them.

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.

CCCXIII.

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 a 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

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.

CCCXIV.

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, 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

fore 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.

OE THE CYNANCAE TRACHEALIS.

CCCXV.

This name has been given to an inflammation of the glottis, larynx, or upper part
of

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 tonsillaris or maligna spreading into them.

CCCXVI.

In either way it has been a rare occurrence, and a 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 about the larynx, and by a pyrexia attending it.

CCCXVII.

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.

CCCXVIII.

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.

CCCXIX.

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 with regard to 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 skillful persons in this neighbourhood.

CCCXX.

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 ;

vanced; 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.

CCCXXI.

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,

tion, 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 in the fauces 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.

CCCXXII.

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 bronchia, sometimes in considerable quantity.

CCCXXIII.

From the remote causes of this disease; from the catarrhal symptoms commonly attending it; from the pyrexia constantly present

sent 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.

CCCXXIV.

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.

CCCXXV.

CCCXXV.

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.

CCCXXVI.

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 bronchiae.

CCCXXVII.

As we suppose the disease to be an inflammatory affection, so we attempt the cure of
it

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 antispasmodic medicines to be of any use.

S E C T. IV.

OF THE CYNANCHE PHARYNGÆA.

CCCXXVIII.

In the Cynanche tonsillaris, the inflammation of the mucous membrane often spreads upon the pharynx, and into the beginning of the oesophagus, 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

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.

CCCXXIX.

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

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.

CCCXXX.

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.

CHAP.

C H A P. VI.

OF PNEUMONIC INFLAMMATION.

CCCXXXI.

Under this title, I mean to comprehend the whole of the inflammations 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.

CCCXXXII.

CCCXXXII.

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.

CCCXXXIII.

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

the most part, the 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.

CCCXXXIV.

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.

CCCXXXV.

CCCXXXV.

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.

CCCXXXVI.

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

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back,

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 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.

CCCXXXVII.

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

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king 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.

CCCXXXVIII.

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

symptoms supposed to belong to what has been called the Pleuritis vera.

CCCXXXIX.

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 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.

CCCXL.

CCCXL.

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.

CCCXLI.

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.

CCCXLII.

The remote causes 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 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
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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.

CCCXLIII.

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, (CCLIX.) and which is, when it is attended with an effusion of blood into the cellular texture

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.

CCCXLIV.

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.

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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.

CCCXLV.

It seems probable also, that a like effusion is sometimes made into the cavity of the bronchiae; for, in some persons who have died after labouring under a pneumonic inflammation for a few days only, the bronchiae 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.

CCCXLVI.

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 bronchiae, 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 bronchiae. It seems probable that a great part of them may proceed from the effused serous fluid we have been

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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 bronchiae, which the learned Mr de Haen says he had often observed, when there was no ulceration of the lungs ; and this explanation is at least more probable than Mr de Haen's supposition of a pus formed in the circulating blood.

CCCXLVII.

To conclude this subject, we are of opinion, that the effusion into the bronchiae, which we have mentioned (CCCXLV.) often concurs with the effusion of red blood (CCCXLIII.) 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

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 bronchiae 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.

CCCXLVIII.

Pneumonic inflammation seldom terminates by resolution, without being attended with

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 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 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.

CCCXLIX.

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

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 formerly described (CCCXLVIII.) 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 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.

CCCL.

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.

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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.

CCCLI.

Pneumonia, like other inflammations, often ends in suppuration or gangrene.

CCCLII.

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.

CCCLIII.

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.

CCCLV.

That, in a pneumonia, the effusion is made, which may lay the foundation of a
suppuration,

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.

CCCLV.

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, and 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.

CCCLVI.

That a suppuration is already formed, we conclude from there being a considerable remission of the pain which had before

fore subsisted, while, at the same time, the cough, and especially the dyspnoea 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.

CCCLVII.

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

CCCLVIII.

The cure of pneumonic inflammation must proceed upon the general plan (CCLXIV);

(CCLXIV); but the importance of the part affected, and the danger to which it is exposed, requires that the remedies be fully, as well as early, employed.

CCCLIX.

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

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.

CCCLX.

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 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.

CCCLXI.

CCCLXI.

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.

CCCLXII.

CCCLXII.

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 it can be conveniently done.

CCCLXIII.

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 dis-

ease, 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.

CCCLXIV.

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 serous effusion into the bronchiae, (CCCXLV.) and thereby preventing it.

CCCLXV.

CCCLXV.

While the bleedings we have mentioned shall be employed, it will be necessary to employ also every part of the antiphlogistic regimen (CXXVIII. CXXIX.), 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.

CCCLXVI.

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

perly 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 cough so considerable or troublesome as to prevent our seeking the advantages otherwise to be obtained from these medicines.

CCCLXVII.

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 glysters.

CCCLXVIII.

CCCLXVIII.

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.

CCCLXIX.

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 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
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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 plaisters 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.

CCCLXX.

As this disease often terminates by an expectoration, some means of promoting
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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.

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But, of all other remedies, the most powerful for this purpose, are antimonial medicines, given in nauseating doses, as in (CCCLXVIII.) 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.

CCCLXXI.

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,

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it will be very dangerous to encourage them.

CCCLXXII.

Physicians have differed much in opinion with regard to the use of opiates in pneu-
monic 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 diffi-
culty of breathing, opiates have a very bad
effect by their increasing the difficulty of
breathing, and other inflammatory symp-
toms. 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 con-
tinuance 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 oc-
casion, is for a short time only; and they

seem often to promote it, as they occasion a stagnation of what was by frequent coughing dissipated insensibly, and therefore give the appearance of what physicians have called Concocted Matter.

CCCLXXIII.

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 pneumonic 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
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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,

INFLAMMATION OF THE STOMACH.

CCCLXXIV.

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 peritoneum 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

they do not require any remedies beside 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.

CCCLXXV.

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 peritonaeum investing it. The second is always seated in the Villous coat and cellular texture immediately subjacent.

CCCLXXVI.

The phlegmonic inflammation of the stomach, or what has been commonly treated

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ed 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.

CCCLXXVII.

This inflammation may be produced by various causes ; as, by external contusion ; by acrids 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-distension, 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

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 pyrexiae, in which we have found, upon dissection, the stomach to have been affected with inflammation.

CCCLXXVIII.

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,

duced, may be attended with fatal consequences. 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.

CCCLXXIX.

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.

CCCLXXX.

CCCLXXX.

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

CCCLXXXI.

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.

CCCLXXXII.

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.

CCCLXXXIII.

It is only in the case of phlegmonic inflammation, as characterised in (CCCLXXVI.),
that

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 glysters.

CCCLXXXIV.

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 glysters. 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.

CCCLXXXV.

CCCLXXXV.

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 glysters may be cautiously tried, and sometimes have been employed with advantage.

CCCLXXXVI.

A tendency to suppuration in this disease is to be obviated by the means just now proposed. 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.

CCCLXXXVII.

CCCLXXXVII.

A tendency to gangrene is to be obviated only by the same means employed early in the disease ; and, when it does actually supervene, admits of no remedy.

CCCLXXXVIII.

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 or 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

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.

CCCLXXXIX.

From what has been said, it must appear, that an erysipelatous inflammation of the stomach may frequently occur, but will not always discover itself, as it sometimes takes place without pyrexia, pain, or vomiting.

CCCXC.

There are cases, however, in which it may be discovered. The affection of the stomach sometimes spreads into the oesophagus, and appears in the pharynx, and on the whole
internal

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, an 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,

Thus, we have known such an inflammation spread successively along the whole length of the alimentary canal, occasioning in the intestines diarrhoea, and in the stomach vomitings, the diarrhoea ceasing when the vomitings came on, and the vomitings on the coming on of the diarrhoea.

CCCXCI.

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 exciting 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

some general demulcents should be employed.

CCCXCII..

These measures, however, are more suited to prevent than to cure the 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 (CCCLXXXIII. *et seq.*) are to be more or less employed.

CCCXCIII.

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,

R r

bleeding

bleeding is not admiffible, all that can be done being to avoid irritation, and to throw into the ftomach what quantity of acids, and of acefcent aliments, it fhall be found to bear. In fome conditions of the body, in which this difeafe arifes, the Peruvian bark and bitters may feem to be indicated; but an eryfipelatous ftate of the ftomach does not commonly allow of them.

C H A P.

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.

CCCXCIV.

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.

CCCXCV.

This inflammation may be known to be present by a fixed pain in the abdomen, attended

tended 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.

CCCXCVI.

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.

CCCXCVII.

Inflammations of the intestines have the same terminations as those of the stomach,
and,

and, in both cafes, the feveral tendencies are to be difcovered by the fame fymptoms (CCCLXXIX. CCCLXXX. CCCLXXXI.)

CCCXCVIII.

The cure of the enteritis is, in general, the fame with that of the gaftritis (CCCLXXXIII. *et feq.*); but, in the former, there is commonly more accefs to the introduction of liquids, of acid, acefcant, and other cooling remedies, and even of laxatives; but, as a vomiting fo 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 ftomach.

CCCXCIX.

Under the title of *Enteritis*, it has been common with practical writers to treat of the remedies proper for the colic, and its
higher

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 in its place.

CCCC.

What occurs to be said with respect to the suppuration, 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.

C H A P. X.

O F T H E H E P A T I T I S,

O R

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

CCCCI.

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

CCCCII.

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

CCCCIII.

CCCCIII.

The chronic hepatitis very often exhibits none of these symptoms, (CCCCII.) 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 previous 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.

CCCCIV.

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. The disease is sometimes
also

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.

CCCCV.

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

S f

pneumonic

pneumonic inflammation is joined with the hepatitis.

CCCCVI.

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.

CCCCVII.

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,

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

CCCCXVIII.

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 (CCXLIX. CCL. CCLI. CCLV. CCLVI. CCLVII. CCCLXXIX. CCCLXXX. CCCLXXXI.)

CCCCIX.

The resolution of hepatitis is often the consequence of, or is attended with evacuations of different kinds. A hemorrhagy
sometimes

sometimes from the nose, and sometimes from the haemorrhoidal 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.

CCCCX.

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

ing

ing 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 peritonaeum 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, 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.

CCCCXI.

The prognostics in this disease are established upon the general principles relating to inflammation, upon the particular circumstances

stances of the liver, and upon the particular state of its inflammation.

CCCCXII.

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 glysters ; by frequently opening the belly by means of gentle laxatives ; and by diluent and refrigerant remedies.

CCCCXIII.

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.

CCCCXIV.

CCCCXIV.

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, as well as the practice it requires, may be understood from what has been said above on the inflammations of the other abdominal viscera.

CHAP.

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 X 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 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

drawing up of the testicle, and with a numbness of the limb on the side affected; although, 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.

CCCCXVI.

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 mat-

ter

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

CCCCXVII.

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

CCCCXVIII.

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.

CCCCXIX.

CCCCXIX.

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

CCCCXX.

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.

CCGXXI

CCCCXXI.

Of the visceral inflammations, there remains to be considered the inflammation of the uterus; but we omit it here, because the consideration of it cannot be separated from that of the diseases of child-bearing women.

CHAP.

C H A P. XI.

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

CCCCXXII.

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

CCCCXXIII.

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.

CCCCXXIV.

This disease is frequent in cold, and more uncommon in warm climates. It appears most frequently

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.

CCCCXXV.

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

CCCCXXVI.

These causes may affect persons of all ages; but the rheumatism seldom appears
either.

either in very young or in elderly persons, and most commonly occurs from the age of puberty to that of thirty-five years.

CCCCXXVII.

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

CCCCXXVIII.

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.

CCCCXXIX.

CCCCXXIX.

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.

CCCCXXX.

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

CCCCXXXI.

CCCCXXXI.

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.

CCCCXXXII.

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.

CCCCXXXIII.

A joint, after having been for some time affected with pain, commonly becomes affected also with some redness and swelling, 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.

CCCCXXXIV.

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

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

CCCCXXXV.

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.

CCCCXXXVI.

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

CCCCXXXVII.

CCCCXXXVII.

The acute rheumatism, though it has so much of the nature of the other phlegmasiae, 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,

CCCCXXXVIII.

CCCCXXVIII.

In the circumstances mentioned from (CCCCXXVIII. to CCCCXXXV.) the disease often continues for 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.

CCCCXXXIX.

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,

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.

CCCCXL.

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

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.

CCCCXLI.

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 are employed in the most constant and vigorous exertions. Such is the case of the vertebrae of the loins, the affection of which is named Lumbago, or of the hip-joint, when the disease is named Ischias, or Sciatica.

CCCCXLII.

Violent strains and spasms occurring on sudden, and somewhat violent exertions, bring

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 those 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.

CCCCXLIII.

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 siphylis 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 under-

understood, from what is to be delivered in the following chapter.

CCCCXLIV.

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 symptoms, and cure of the disease, renders the supposition very improbable. The cause of an *Ischias nervosa* assigned by *COTUNNIUS*, appears to me hypothetical, and is not supported by either the phaenomena 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 toothach, 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 (CCCCXXXVII.) we judge it to be at leaſt improbable, that a genuine lumbago or iſchias ſhould ever end in ſuppuration.

CCCCXLV.

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 conſideration as in (CCXLI.) 2, 3, 4, and 5, will apply equally here for rejecting the ſuppoſition of a lentor.

CCCCXLVI.

While we cannot, therefore, find either evidence or reaſon for ſuppoſing that the
rheu-

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.

CCCCXLVII.

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

the

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.

CCCCXLVIII.

According to this explanation, the cause of acute rheumatism appears to be exactly analagous to that of the 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.

It is also an affection of these fibres which gives an opportunity to the propagation of pains from one joint to another, along the course of the muscles, and which pains are more severely felt in the extremities of the
muscles

muscles terminating in the joints, because, beyond these, the oscillations are not propagated.

This affection of the muscular fibres attending rheumatism, shews well why 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.

CCCCXLIX.

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

CCCCL.

Whatever difficulty may occur with respect to the explanation given (CCCCXLVII. CCCCXLVIII.) this remains certain, that
in

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 of.

CCCCLI.

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

CCCCLII.

Upon the same principle (CCCCL.) 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,

fullness,

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.

CCCCLIII.

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 such bleedings; but, as the continuance of the disease seems to depend more upon the phlogistic diathesis of the whole system, than upon the affection of particular parts, so topical bleedings will

will not supply the place of the general bleedings proposed above.

CCCCLIV.

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, and 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.

CCCCLV.

In acute rheumatism, applications to the pained parts are of little service. Fomentations, in the beginning of the disease, rather
aggravate

aggravate than relieve the pains. The rubefacients and camphire are more effectual in relieving the pains ; but generally they only shift the pain from one part into another, 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.

CCCCLVI.

The several remedies mentioned from (CCCCLI. to CCCCLV.) 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 CXXXIX.); and the most effectual and safe method of curing this disease, is, after some general bleedings for taking

Y y

off,

off, or at least diminishing the phlogistic diathesis, to employ sweating, conducted by the rules laid down CLXVII. and CLXVIII.

CCCCLVII.

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

CCCCLVIII.

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 is already much abated, and, at the same time, that the exacerbations of the disease are manifestly periodical, with considerable remissions interposed.

CCCCLIX.

CCCCLIX.

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.

CCCCLX.

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.

CCCCLXI.

The phenomena of the purely chronic rheumatism mentioned in (CCCCXXXIX. and CCCCXL.) lead me to conclude, that its proximate cause is an atony, both of the blood-vessels and of the muscular fibres of the
part

part affected, together with such a degree of rigidity, and contraction in the latter, as frequently attend them in a state of atony.

CCCCLXII.

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.

CCCCLXIII.

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

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 of exercise, either of the part itself, so far as it can easily bear; or by riding, or other mode of gestation.

CCCCLXIV.

The internal remedies are, 1. Large doses of essential oil 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, (CLXVIII.) and, lastly, calomel, or other preparation of mercury, in small doses, continued for some time.

CCCCLXV.

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

C H A P. XII.

O F T H E G O U T.

CCCCLXVI.

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 given in the last edition of our Nosology :

GEN.

GEN. XXIII. PODAGRA.

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

CCCCLXVII.

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

CCCCLXVIII.

This disease attacks the male sex especially ; but it sometimes, though more rarely, attacks

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.

CCCCLXIX.

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

CCCCLXX.

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.

CCCCLXXI.

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 *cholerico-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.

CCCCLXXII.

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

CCCCLXXIII.

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 ;

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.

CCCCLXXIV.

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.

CCCCLXXV.

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

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.

CCCCLXXVI.

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.

CCCCLXXVII.

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

doubt as to their effects in producing it, the fact, however, will be rendered sufficiently probable by what has been observed in (CCCCLXXII.)

CCCCLXXVIII.

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.

CCCCLXXIX.

The first (CCCCLXXVII.) seem to act by increasing the predisposition. The last (CCCCLXXVIII.)

(CCCCLXXVIII.) are commonly the exciting causes, both of the first attacks, and of the repetitions of the disease.

CCCCLXXX.

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.

CCCCLXXXI.

While these symptoms take place in the lower extremities, the whole body is affected

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ted 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 (CCCCLXXX.) 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.

CCCCLXXXII.

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.

CCCCLXXXIII.

CCCCLXXXIII.

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 stage 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

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

CCCCLXXXIV.

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.

CCCCLXXXV.

When the disease, after having thus remained for some time in a joint, ceases very

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entirely,

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.

CCCCLXXXVI.

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.

CCCCLXXXVII.

CCCCLXXXVII.

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 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, at any one time, it is 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.

CCCCLXXXVIII.

CCCCLXXXVIII.

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.

CCCCLXXXIX.

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.

CCCCXC.

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.

CCCCXCI.

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

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.

CCCCXCII.

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

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*.

CCCCXCIII.

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

CCCCXCIV.

CCCCXCIV.

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

est 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 headaches, giddiness, apoplectic and paralytic affections.

CCCCXCV.

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 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.

CCCCXCVI.

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.

CCCCXCVII.

CCCCXCVII.

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

CCCCXCVIII.

CCCCXCVIII.

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.

CCCCXCIX.

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 vesicae: 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,

trocedent, or to the misplaced gout, I will not presume to determine.

D.

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.

DI.

With respect to the gout, our next business is to investigate its proximate cause,
which

which must be a difficult task, and I attempt it with some diffidence.

DII.

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.

DIII.

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

are in any respect different from those of other persons. 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, (CCCCXC.); 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, (CCCCLXXVIII.) 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, the suppositions concerning the particular nature of the matter producing the
gout,

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 oeconomy, 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

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, but exceptionable, and the negative observations are 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, ap-

pear 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 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

explains every circumstance without the supposition of a morbid matter ; and, to this purpose, it may be observed, that many of the causes (CCCCLXXVIII.) 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 the animal oeconomy, 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.

DIV.

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 (CCCCLXVII.

to CCCCLXXIII.). 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.

DV.

My second observation is, that the gout is manifestly an affection of the nervous system; in which the primary moving powers of the whole system are lodged. The occasional or exciting causes (CCCCLXXVIII.) 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. (CCCCXCIV. CCCCXCVI.). 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.

DVI.

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 (CCCCLXXXI.); many of the exciting causes (CCCCLXXVIII.) act first upon the stomach; and the symptoms of the atonic and retrocedent gout (CCCCXCIV. CCCCXCVI.) are most 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.

DVII.

DVII.

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 (CCCCLXXVIII.), which at a certain period of life, is liable to a loss of tone in the extremities (CCCCLXXX.). This is in some measure communicated to the whole system, but appears more especially in the functions of the stomach (CCCCLXXXI.). When this loss of tone occurs while the energy of the brain still retains its vigour, the vis medicatrix naturae is excited 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 (CCCCLXXXV.).

DVIII.

DVIII.

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 (CCCCLXXX. CCCCLXXXI.) has taken place, if the reaction (DVII.) 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.

DIX.

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

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. Hence the stomach, and other internal parts, relapse into the state of atony; and perhaps have this increased by the atony communicated from the extremities: All which appears in what we have termed the retrocedent state of the Gout.

DX.

A third case of variation from the ordinary course of the gout, is, when to the atony usually preceding, an inflammatory re-action fully succeeds: But has its usual determination to the joints by some circumstances prevented; and is therefore directed to an internal part, where it produces an inflammatory affection, and that state of things which we have named the Misplaced Gout.

DXI.

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 oeconomy. 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.

DXII.

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.

DXIII.

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

posed to believe the impossibility of a cure of 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.

DXIV.

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 (CCCCLXXII.), 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

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.

DXV.

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.

DXVI.

In the intervals of paroxysms, the indications are, to prevent altogether the return
of

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.

DXVII.

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.

DXVIII.

DXVIII.

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 a 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.

DXIX.

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.

DXX.

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 exercise must be in some measure that of the body, and must be moderate, but, at the same time, constant, and continued through life.

DXXI.

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

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.

DXXII.

Abstinence, the other part of our regimen (DXIV.) 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.

DXXIII.

DXXIII.

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.

DXXIV.

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 feeds are next to be chosen, and are the food most proper to be joined with milk.

DXXV.

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,

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.

DXXVI.

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 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

livered 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.

DXXVII.

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.

DXXVIII.

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
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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 (CCCCLXXVIII.) 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.

DXXIX.

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

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.

DXXX.

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

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.

DXXXI.

One of these is what has been named in England, the Portland Powder. This is not a new medicine, but is mentioned by GALLEN, 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; 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

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.

DXXXII.

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
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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.

DXXXIII.

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 of sulphur, may be employed, as the one or the other may happen to be best suited to particular persons.

DXXXIV.

These are the several measures from (DXVI. to DXXXIII.) to be pursued in the intervals of the paroxysms; and we are next to mention the measures proper during the time of them.

DXXXV.

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, (CXXIX. CXXX.) 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.

DXXXVI.

DXXXVI.

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
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of it may answer the purpose : And it is even probable, that, in many cases, 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.

DXXXVII.

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,

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.

DXXXVIII.

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.

DXXXIX.

Blistering is a very effectual means of relieving and discussing a paroxysm of the
gout;

gout; but has also frequently had the effect of rendering it retrocedent.

DXL.

The stinging with nettles I consider as analogous to blistering; and I think it probable that it would be attended with the same danger.

DXLI.

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.

DXLII.

Camphire, and some aromatic oils, have the power of allaying the pain, and of removing

moving 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.

DXLIII.

From these reflections (DXLI 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.

DXLIV.

Opiates give the most certain relief from pain, but, when given in the beginning of gouty paroxysms, occasion these to return
with

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 with safety and advantage, especially in the case of persons advanced in life, and who have been often affected with the disease.

DXLV.

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.

DXLVI.

Purgings, immediately after a paroxysm, will be always employed with the hazard of bringing it on again.

DXLVII.

DXLVII.

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.

DXLVIII.

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.

DXLIX.

For the avoiding debilitating causes, I must refer to the doctrines of the Hygiene, as in (DXXVIII.)

DL.

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 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.

DLI.

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.

DLII.

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.

DLIII.

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.

DLIV.

A second case of the irregular gout, is that which I have named the retrocedent.

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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 volat. 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.

DLV.

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.

DLVI.

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
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the extremities, blisters may be applied to these also. Together with these blisterings, aromatics, and the volatile alkali, may be thrown into the stomach.

DLVII.

The third case of the irregular gout is what I named 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.

DLVIII.

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,

fore, 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 otherwise sometimes necessary in that disease, arising from other causes than the gout.

End of the FIRST VOLUME.

