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FIRST LINES

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PRACTICE OF PHYSIC.

May 3rd BY 1811-

WILLIAM CULLEN, M. D.

Professor of the Practice of Physic in the University of Edinburgh;
First Physician to his Majesty for Scotland;
Fellow of the Royal College of Physicians of Edinburgh,
of the Royal Societies of London, of Edinburgh, &c. &c.

FOURTH EDITION,
CORRECTED AND ENLARGED.

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FIRST LINES

OF THE

PRACTICE OF PHYSIC

PART I. BOOK IV.

WILLIAM CULLEN, M.D.

Professor of the Practice of Physic in the University of Edinburgh.

CHAP. VI.

Of the Plethora in the Menstrual Period.

Of the Menstrual Plethora in the young.

Of the Plethora in the Menstrual Period.

FOURTH EDITION.

CORRECTED AND ENLARGED.

Of the Plethora in the Menstrual Period.

PLATE

VOL. III.

CHAP. VIII.

Of the Plethora in the Menstrual Period.

Of the Plethora in the Menstrual Period.

AND T. CADELL, London.

CHAP. IX.

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FIRST LINES
OF THE
PRACTICE OF PHYSIC.
PART I. BOOK IV.

C H A P. VI.

OF THE MENORRHAGIA,
OR THE
IMMODERATE FLOW OF THE MENSES.

DCCCCLXVI.

BLOOD discharged from the vagina
may proceed from different sources
in the internal parts: but I here mean

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B

to

to treat of those discharges only, in which the blood may be presumed to flow from the same sources that the menses in their natural state proceed from; and which discharges alone, are those properly comprehended under the present title. The title of *Metrorrhagia*, or *hemorrhagia uteri*, might comprehend a great deal more.

 DCCCCLXVII.

The menorrhagia may be considered as of two kinds; either as it happens to pregnant and lying-in women, or as it happens to women neither pregnant nor having recently born children. The first kind, as connected with the circumstances of pregnancy and child-bearing, (which are not to be treated of in the present course), I am not to consider here, but shall confine myself to the second kind of menorrhagia only.

DCCCCLXVIII.

DCCCCLXVIII.

The flow of the menses is considered as immoderate, when it recurs more frequently, when it continues longer, or when during the ordinary continuance it is more abundant, than is usual with the same person at other times.

DCCCCLXIX.

As the most part of women are liable to some inequality with respect to the period, the duration, and the quantity of their menses; so it is not every inequality in these respects that is to be considered as a disease; but only those deviations, which are excessive in degree, which are permanent, and which induce a manifest state of debility.

DCCCCLXX.

The circumstances (DCCCCLXVIII. DCCCCLXIX.) are those which chiefly constitute the menorrhagia: but it is proper to observe, that although I allow the frequency, duration, and quantity of the menses to be judged of by what is usual with the same individual at other times; yet there is, in these particulars, so much uniformity observable in the whole of the sex, that in any individual in whom there occurs a considerable deviation from the common measure, such a deviation, if constantly recurring, may be considered as at least approaching to a morbid state, and as requiring most of the precautions which I shall hereafter mention as necessary to be attended to by those who are actually in such a state.

DCCCCLXXI.

DCCCCLXXI.

However we may determine with respect to the circumstances DCCCCLXVIII. DCCCCLXIX. it must still be allowed, that the immoderate flow of the menses is especially to be determined by those symptoms affecting other functions of the body, which accompany and follow the discharge.

When a larger flow than usual of the menses has been preceded by headach, giddiness, or dyspnœa, and has been ushered in by a cold stage, and is attended with much pain of the back and loins, with a frequent pulse, heat and thirst, it may then be considered as preternaturally large.

DCCCCLXXII.

When, in consequence of the circumstances DCCCCLXVIII.—DCCCCLXXI. and the repetition of these, the face be-

comes pale; the pulse grows weak; an unusual debility is felt in exercise; the breathing is hurried by moderate exercise; when, also, the back becomes pained from any continuance in an erect posture; when the extremities become frequently cold; and when in the evening the feet appear affected with œdematous swelling; we may from these symptoms certainly conclude, that the flow of the menses has been immoderate, and has already induced a dangerous state of debility.

DCCCCLXXIII.

The debility thus induced, does often discover itself also by affections of the stomach, as anorexia and other symptoms of dyspepsia; by a palpitation of the heart, and frequent faintings; by a weakness of mind liable to strong emotions from slight causes, especially when suddenly presented.

DCCCCLXXIV.

DCCCCLXXIV.

That flow of the menses, which is attended with barrenness in married women, may be generally considered as immoderate and morbid.

DCCCCLXXV.

Generally, also, that flow of the menses may be considered as immoderate, which is preceded and followed by a leucorrhœa.

DCCCCLXXVI.

I treat of menorrhagia here as an active hemorrhagy, because I consider menstruation, in its natural state, to be always of that kind; and although there should be cases of menorrhagia which might be considered as purely passive, it appears to me

that they cannot be so properly treated of in any other place.

DCCCCLXXVII.

The menorrhagia (DCCCCLXVIII. *et seq.*) has for its proximate cause, either the hemorrhagic effort of the uterine vessels preternaturally increased, or a preternatural laxity of the extremities of the uterine arteries, the hemorrhagic effort remaining as in the natural state.

DCCCCLXXVIII.

The remote causes of the menorrhagia may be, *1st*, Those which increase the plethoric state of the uterine vessels; such as a full and nourishing diet, much strong liquor, and frequent intoxication. *2^{dly}*, Those which determine the blood more copiously and forcibly into the uterine vessels;

sels; as violent strainings of the whole body; violent shocks of the whole body from falls; violent strokes or contusions on the lower belly; violent exercise, particularly in dancing; and violent passions of the mind. *3dly*, Those which particularly irritate the vessels of the uterus; as excess in venery; the exercise of venery in the time of menstruation; a costive habit, giving occasion to violent straining at stool; and cold applied to the feet. *4thly*, Those which have forcibly overstrained the extremities of the uterine vessels; as frequent abortions; frequent child-bearing without nursing; and difficult tedious labours. Or, *lastly*, Those which induce a general laxity; as living much in warm chambers, and drinking much of warm enervating liquors, such as tea and coffee.

DCCCCLXXIX.

The effects of the menorrhagia are pointed out in DCCCCLXXII. DCCCCLXXIII. where I have mentioned the several symptoms accompanying the disease, and from these the consequences to be apprehended will also readily appear.

DCCCCLXXX.

The treatment and cure of the menorrhagia must be different, according to the different causes of the disease.

In all cases, the first attention ought to be given to avoiding the remote causes, whenever that can be done; and by that means the disease may be often entirely avoided.

When the remote causes cannot be avoided, or when the avoiding them has been neglected, and therefore a copious menstruation

struation has come on, it should be moderated as much as possible, by abstaining from all exercise, either at the coming on or during the continuance of the menstruation; by avoiding even an erect posture as much as possible; by shunning external heat, and therefore warm chambers and soft beds; by using a light and cool diet; by taking cold drink, at least as far as former habits will allow; by avoiding venery; by obviating costiveness, or removing it by laxatives that give little stimulus.

The sex are commonly negligent, either in avoiding the remote causes, or in moderating the first beginnings of this disease. It is by such neglect that it so frequently becomes violent, and of difficult cure; and the frequent repetition of a copious menstruation, may be considered as a cause of great laxity in the extreme vessels of the uterus.

DCCCCLXXXI.

When the coming on of the menstruation has been preceded by some disorder in other parts of the body, and is accompanied with pains of the back, resembling parturient pains, together with febrile symptoms, and when at the same time the flow seems to be copious, then a bleeding at the arm may be proper, but it is not often necessary; and it will in most cases be sufficient to employ, with great attention and diligence, those means for moderating the discharge which have been mentioned in the last paragraph.

DCCCCLXXXII.

When the immoderate flow of the menses shall seem to be owing to a laxity of the vessels of the uterus, as may be concluded from the general debility and laxity
of

of the person's habit; from the remote causes that have occasioned the disease (DCCCCLXXVIII.); from the absence of the symptoms which denote increased action in the vessels of the uterus (DCCCCLXXI.); from the frequent recurrence of the disease; and particularly from this, that in the intervals of menstruation the person is liable to a leucorrhœa; then in such case the disease is to be treated, not only by employing all the means mentioned in DCCCCLXXX. for moderating the hemorrhagy, but also by avoiding all irritation, every irritation having the greater effect in proportion as the vessels have been more lax and yielding. If, in such a case of laxity, it shall appear that some degree of irritation concurs, opiates may be employed to moderate the discharge; but in using these, much caution is requisite.

If, notwithstanding these measures ha-
ving

ving been taken, the discharge shall prove very large, astringents both external and internal may be employed. In such cases, may small doses of emetics be of service?

DCCCCLXXIII.

When the menorrhagia depends on the laxity of the uterine vessels, it will be proper, in the intervals of menstruation, to employ tonic remedies; as cold bathing and chalybeates. The exercises of gestation, also, may be very useful, both for strengthening the whole system, and for taking off the determination of the blood to the internal parts.

DCCCCLXXIV.

The remedies mentioned in these two last paragraphs, may be employed in all cases
of

of menorrhagia, from whatever cause it may have proceeded, if the disease shall have already induced a considerable degree of debility in the body.

C H A P.

C H A P. VII.

OF THE LEUCORRHOEA, FLUOR ALBUS,
OR WHITES.

DCCCCLXXXV.

EVERY ferous or puriform discharge from the vagina, may be, and has been comprehended under one or other of the appellations I have prefixed to this chapter. Such discharges, however, may be various; and may proceed from various sources, not yet well ascertained: but I confine myself here to treat of that discharge alone which

I may

be presumed to proceed from the same vessels, which, in their natural state, pour out the menses.

DCCCCLXXXVI.

I conclude a discharge from the vagina to be of this kind; 1. From its happening to women who are subject to an immoderate flow of the menses, and liable to this from causes weakening the vessels of the uterus. 2. From its appearing chiefly, and often only, a little before, as well as immediately after, the flow of the menses. 3. From the flow of the menses being diminished, in proportion as the leucorrhœa is increased. 4. From the leucorrhœa continuing after the menses have entirely ceased, and with some appearance of its observing a periodical recurrence. 5. From the leucorrhœa being accompanied with the effects of the menorrhagia (DCCCCLXXII. VOL. III. C DCCCCLXXIII.)

DCCCCLXXIII.) 6. From the discharge having been neither preceded by, nor accompanied with, symptoms of any topical affections of the uterus. 7. From the leucorrhœa not having appeared soon after communication with a person who might be suspected of communicating infection, and from the first appearance of the disease not being accompanied with any inflammatory affection of the pudenda.

DCCCCLXXXVII.

The appearance of the matter discharged in the leucorrhœa, is very various with respect to consistence and colour; but from these appearances, it is not always possible to determine concerning its nature, or the particular source from whence it proceeds.

DCCCCLXXXVIII.

DCCCCLXXXVIII.

The leucorrhœa, of which I am to treat, as ascertained by the several circumstances (DCCCCLXXXVI.) seems to proceed from the same causes as that species of menorrhagia which I suppose to arise from the laxity of the extreme vessels of the uterus. It accordingly often follows or accompanies such a menorrhagia; but though the leucorrhœa depends chiefly upon the laxity mentioned, it may have proceeded from irritations inducing that laxity, and seems to be always increased by any irritations applied to the uterus.

DCCCCLXXXIX.

Some authors have alleged that a variety of circumstances in other parts of the body may have a share in bringing on and in continuing this affection of the uterus

now under consideration: but I cannot discover the reality of those causes; and it seems to me, that this leucorrhœa, excepting in so far as it depends upon a general debility of the system, is always primarily an affection of the uterus; and the affections of other parts of the body which may happen to accompany it, are for the most part to be considered as effects, rather than as causes.

DCCCCXC.

The effects of the leucorrhœa are much the same with those of menorrhagia; inducing a general debility, and, in particular, a debility in the functions of the stomach. If, however, the leucorrhœa be moderate, and be not accompanied with any considerable degree of menorrhagia, it may often continue long without inducing any great degree of debility, and
it

it is only when the discharge has been very copious as well as constant, that its effects in that way are very remarkable.

DCCCCXCI.

But, even when its effects upon the whole body are not very considerable, it may still be supposed to weaken the genital system; and it seems sufficiently probable that this discharge may often have a share in occasioning barrenness.

DCCCCXCII.

The matter discharged in the leucorrhœa, is at first generally mild: but after some continuance of the disease, it sometimes becomes acrid; and by irritating, or perhaps eroding, the surfaces over which

it passes, induces various painful disorders.

DCCCCXCIII.

As I have supposed that the leucorrhœa proceeds from the same causes as that species of menorrhagia which is chiefly owing to a laxity of the uterine vessels, it must be treated, and the cure attempted, by the same means as delivered in DCCCCLXXXII. for the cure of menorrhagia, and with less reserve in respect of the use of astringents.

DCCCCXCIV.

As the leucorrhœa generally depends upon a great loss of tone in the vessels of the uterus, the disease has been relieved, and sometimes cured, by certain stimulant medicines, which are commonly determined

mined to the urinary passages, and from the vicinity of these are often communicated to the uterus. Such, for example, are cantharides, turpentine, and other balsams of a similar nature.

C H A P. VIII.

OF THE AMENORRHOEA, OR INTERRUPTION OF THE MENSTRUAL FLUX.

DCCCCXCV.

WHATEVER, in a system of methodical nosology, may be the fittest place for the amenorrhœa, it cannot be improper to treat of it here as an object of practice, immediately after having considered the menorrhagia.

DCCCCXCVI.

DCCCCXCVI.

The interruption of the menstrual flux is to be considered as of two different kinds; the one being when the menses do not begin to flow at that period of life at which they usually appear; and the other being that when, after they have repeatedly taken place for some time, they do, from other causes than conception, cease to return at their usual periods: The former of these cases is named the *retention*, and the latter the *suppression* of the menses.

DCCCCXCVII.

As the flowing of the menses depends upon the force of the uterine arteries impelling the blood into their extremities, and opening these so as to pour out red blood; so the interruption of the menstrual flux must depend, either upon the
want

want of due force in the action of the uterine arteries, or upon some preternatural resistance in their extremities. The former I suppose to be the most usual cause of retention, the latter the most common cause of suppression; and of each of these I shall now treat more particularly.

DCCCCXCVIII.

The retention of the menses, the *emansio mensium* of Latin writers, is not to be considered as a disease merely from the menses not flowing at that period which is usual with most other women. This period is so different in different women, that no time can be precisely assigned as proper to the sex in general. In this climate, the menses usually appear about the age of fourteen; but in many they appear more early, and in many not till the sixteenth year; in which last case it is often
with-

without any disorder being thereby occasioned. It is not therefore from the age of the person, that the retention is to be considered as a disease; and it is only to be considered as such, when, about the time the menses usually appear, some disorders arise in other parts of the body which may be imputed to their retention; being such as, when arising at this period, are known from experience to be removed by the flowing of the menses.

DCCCCXCIX.

These disorders are, a sluggishness, and frequent sense of lassitude and debility, with various symptoms of dyspepsia; and sometimes with a preternatural appetite. At the same time the face loses its vivid colour, becomes pale, and sometimes of a yellowish hue; the whole body becomes pale and flaccid; and the feet, and perhaps
also

also a great part of the body, become affected with œdematous swelling. The breathing is hurried by any quick or laborious motion of the body, and the heart is liable to palpitation and syncope. A head-ach sometimes occurs; but more certainly pains of the back, loins, and haunches.

M.

These symptoms, when occurring in a high degree, constitute the *chlorosis* of authors, hardly ever appearing separate from the retention of the menses; and, attending to these symptoms, the cause of this retention may, I think, be perceived.

These symptoms manifestly show a considerable laxity and flaccidity of the whole system; and, therefore, give reason to conclude, that the retention of the menses accompanying them, is owing to a weaker
action

action of the vessels of the uterus ; which therefore do not impel the blood into their extremities, with a force sufficient to open these, and pour out blood by them.

MI.

How it happens that at a certain period of life a flaccidity of the system arises in young women not originally affected with any such weakness or laxity, and of which, but a little time before, they had given no indication, may be difficult to explain; but I would attempt it in this way.

As a certain state of the ovaria in females, prepares and disposes them to the exercise of venery, about the very period at which the menses first appear, it is to be presumed that the state of the ovaria and that of the uterine vessels are in some measure connected together ; and as generally symptoms of a change in the state of the
former

former appear before those of the latter, it may be inferred, that the state of the ovaria has a great share in exciting the action of the uterine vessels, and producing the menstrual flux. But, analogous to what happens in the male sex, it may be presumed, that in females a certain state of the genitals is necessary to give tone and tension to the whole system; and therefore that, if the stimulus arising from the genitals be wanting, the whole system may fall into a torpid and flaccid state, and from thence the chlorosis and retention of the menses may arise.

MII.

It appears to me, therefore, that the retention of the menses is to be referred to a certain state or affection of the ovaria: but what is precisely the nature of this affection, or what are the causes of it, I will
not

not pretend to explain; nor can I explain in what manner that primary cause of retention is to be removed. In this, therefore, as in many other cases, where we cannot assign the proximate cause of diseases, our indications of cure must be formed for obviating and removing the morbid effects or symptoms which appear.

MIII.

The effects, as has been said in M. consist in a general flaccidity of the system, and consequently in a weaker action of the vessels of the uterus; so that this debility may be considered as the more immediate cause of the retention. This, therefore, is to be cured by restoring the tone of the system in general, and by exciting the action of the uterine vessels in particular.

MIV.

MIV.

The tone of the system in general is to be restored by exercise, and, in the beginning of the disease, by cold bathing. At the same time, tonic medicines may be employed; and of these the chalybeates have been chiefly recommended.

MV.

The action of the vessels of the uterus may be excited:

1st, By determining the blood into them more copiously; which is to be done by determining the blood into the descending aorta, by purging, by the exercise of walking, by friction, and by warm bathing of the lower extremities. It is also probable that the blood may be determined more copiously into the hypogastric arteries which go to the uterus, by a

com-

compression of the iliacs ; but the trials of this kind hitherto made have seldom succeeded.

MVI.

2dly, The action of the uterine vessels may be excited by stimulants applied to them. Thus those purgatives which particularly stimulate the intestinum rectum, may also prove stimulant to the uterine vessels connected with those of the rectum. The exercise of venery certainly proves a stimulus to the vessels of the uterus; and therefore may be useful when, with propriety, it can be employed. The various medicines recommended as stimulants of the uterine vessels, under the title of Emmenagogues, have never appeared to me to be effectual ; and I cannot perceive that any of them are possessed of a specific power in this respect. Mercury, as an universal sti-

VOL. III. D mulant,

mulant, may act upon the uterus, but cannot be very safely employed in chlorotic persons. One of the most powerful means of exciting the action of the vessels in every part of the system is, the electrical shock; and it has often been employed with success for exciting the vessels of the uterus.

MVII.

The remedies (MIII.—MVI.) now mentioned, are those adapted to the *retention* of the menses; and I am next to consider the case of *suppression*. In entering upon this, I must observe, that every interruption of the flux, after it has once taken place, is not to be considered as a case of suppression. For the flux, upon its first appearance, is not always immediately established in its regular course; and therefore, if an interruption happen soon after the first appearance, or even in the course

course of the first, or perhaps second year after, it may often be considered as a case of retention, especially when the disease appears with the symptoms peculiar to that state.

MVIII.

Those which may be properly considered as cases of suppression, are such as occur after the flux has been for some time established in its regular course, and in which the interruption cannot be referred to the causes of retention (MII. MIII.) but must be imputed to some resistance in the extremities of the vessels of the uterus. Accordingly, we often find the suppression induced by cold, fear, and other causes which may produce a constriction of these extreme vessels. Some physicians have supposed an obstructing lentor of the fluids to occasion
D 2 the

the resistance now mentioned: but this is purely hypothetical, without any proper evidence of the fact; and it is besides, from other considerations, improbable.

MIX.

There are indeed some cases of suppression that seem to depend upon a general debility of the system, and consequently of the vessels of the uterus. But in such cases, the suppression always appears as symptomatic of other affections, and is therefore not to be considered here.

MX.

The idiopathic cases of suppression (MVIII.) seldom continue long without being attended with various symptoms or disorders in different parts of the body; very commonly arising from the blood
which

which should have passed by the uterus, being determined more copiously into other parts, and very often with such force as to produce hemorrhagies in these. Hence hemorrhagies from the nose, lungs, stomach, and other parts, have appeared in consequence of suppressed menses. Besides these, there are commonly hysteric and dyspeptic symptoms produced by the same cause; and frequently colic pains, with a bound belly.

MXI.

In the idiopathic cases of suppression, (MVIII.) the indication of cure is to remove the constriction affecting the extreme vessels of the uterus; and for this purpose, the chief remedy is warm bathing applied to the region of the uterus. This, however, is not always effectual, and I do not know of any other remedy

adapted to the indication. Besides this, we have perhaps no other means of removing the constriction in fault, but that of increasing the action and force of the vessels of the uterus, so as thereby to overcome the resistance or constriction of their extremities. This therefore is to be attempted by the same remedies in the case of suppression, as those prescribed in the cases of retention (MIV.—MVI.) The tonics, however, and cold bathing (MIV.) seem to be less properly adapted to the cases of suppression, and have appeared to me of ambiguous effect.

MXII.

It commonly happens in the cases of suppression, that though the menses do not flow at their usual periods, there are often at those periods some marks of an effort having a tendency to produce the discharge.

charge. It is therefore at those times especially when the efforts of the system are concurring, that we ought to employ the remedies for curing a suppression; and it is commonly fruitless to employ them at other times, unless they be such as require some continuance in their use to produce their effects.

MXIII.

Nearly similar to the cases of suppression, are those cases in which the menses flow after longer intervals and in lesser quantity than usual; and when these cases are attended with the disorders in the system (MX.) they are to be cured by the same remedies as the cases of entire suppression.

MXIV.

It may be proper in this place to take

notice of the dysmenorrhœa, or cases of menstruation in which the menses seem to flow with difficulty, and are accompanied with much pain in the back, loins, and lower belly. We impute this disorder partly to some weaker action of the vessels of the uterus, and partly, perhaps more especially, to a spasm of its extreme vessels. We have commonly found the disease relieved by employing some of the remedies of suppression immediately before the approach of the period, and at the same time employing opiates.

C H A P. IX.

O F S Y M P T O M A T I C H E M O R R H A G I E S.

M X V.

I HAVE thought it very improper in this work, to treat of those morbid affections that are almost always symptomatic of other more primary diseases; and this for several reasons, particularly because it introduces a great deal of confusion in directing practice, and leads physicians to employ palliative measures only. I shall here, however, deviate a little from my general plan,

plan, to make some reflections upon symptomatic hemorrhagies.

MXVI.

The hemorrhagies of this kind that especially deserve our notice, are the Hematemesis, or Vomiting of Blood; and the Hematuria, or the Voiding of Blood from the urinary passage. Upon these I am here to make some remarks; because, though they are very generally symptomatic, it is possible they may be sometimes primary and idiopathic affections; and because they have been treated of as primary diseases in almost every system of the practice of physic.

S E C T.

S E C T. I.

Of the HEMATEMESIS, or Vomiting of Blood.

MXVII.

I HAVE said above (in DCCCXLV.) in what manner blood thrown out from the mouth may be known to proceed from the stomach, and not from the lungs: but it may be proper here to say more particularly, that this may be certainly known, when the blood is brought up manifestly by vomiting without any coughing; when this vomiting has been preceded by some
sense

sense of weight, anxiety, and pain, in the region of the stomach; when the blood brought up is of a black and grumous appearance, and when it is manifestly mixed with other contents of the stomach; we can seldom have any doubt of the source from whence the blood proceeds, and therefore of the existence of the disease we treat of.

MXVIII.

We must allow it to be possible that a plethoric state of the body from general causes may be accompanied with causes of a peculiar determination and afflux of blood to the stomach, so as to occasion an hemorrhagy there, and thence a vomiting of blood; and in such a case this appearance might be considered as a primary disease. But the history of diseases in the records of physic, afford little foundation
for

for such a supposition; and on the contrary, the whole of the instances of a vomiting of blood which have been recorded, are pretty manifestly symptomatic of a more primary affection.

Of such symptomatic vomitings of blood, the chief instances are the following.

MXIX.

One of the most frequent is that which appears in consequence of a suppression of an evacuation of blood which had been for some time before established in another part of the body, particularly that of the menstrual flux in women.

MXX.

There are instances of a vomiting of blood happening from the *retention* of the
menfes;

menfes : but fuch instances are very uncommon, as a retention of the menfes rarely happens in confequence of, or even with, a plethoric ftate of the body ; and as rarely does it produce that, or the hemorrhagy in queftion.

There are instances of a vomiting of blood happening to pregnant women ; that might therefore alfo be imputed to the fuppreffion of the menfes, which happens to women in that ftate. There have indeed been more instances of this than of the former cafe ; but the latter are ftill very rare : for although the blood which ufed to flow monthly before impregnation is, upon this taking place, retained, it is commonly fo entirely employed in dilating the uterine veffels, and in the growth of the foetus, that it is feldom found to produce a plethoric ftate of the body, requiring a vicarious outlet.

The vomiting of blood, therefore, that

is vicarious of the menstrual flux, is that which commonly and almost only happens upon a suppression of that flux, after it had been for some time established.

MXXI.

When such a suppression happens, it may be supposed to operate by inducing a plethoric state of the whole body, and thereby occasioning hemorrhagy from other parts of it; and hemorrhagies from many different parts of the body have been observed by physicians as occurring in consequence of the suppression we speak of. It is however the great variety of such hemorrhagies, that leads me to think, that with the plethoric state of the whole body there must be always some peculiar circumstances in the part from which the blood flows, that determines its afflux to that particular, often singularly odd, part; and

and therefore, that such hemorrhagies may from these circumstances occur without any considerable plethora at the same time prevailing in the whole system.

MXXII.

It is to be observed, that if we are to expect an hemorrhagy in consequence of a suppression of the menses inducing a plethoric state of the system, we should expect especially an hemoptysis, or hemorrhagy from the lungs, as a plethora might be expected to show its effects especially there; and accordingly, upon occasion of suppressed menses, that hemorrhagy occurs more frequently than any other: but even this, when it does happen, neither in its circumstances nor its consequences, leads us to suppose, that at the same time any considerable or dangerous plethora prevails in the body.

MXXIII.

MXXIII.

These considerations in MXXI. MXXII. will, I apprehend, apply to our present subject; and I would therefore allege, that a hematemesis may perhaps depend upon particular circumstances of the stomach determining an afflux of blood to that organ, and may therefore occur without any considerable or dangerous plethora prevailing in the system. What are the circumstances of the stomach, which, upon the occasion mentioned, may determine an afflux of blood to it, I cannot certainly or clearly explain; but presume that it depends upon the connection and consent which we know to subsist between the uterus and the whole of the alimentary canal, and especially that principal part of it the stomach.

MXXIV.

From these reflections we may, I think, draw the following conclusions.

I. That the hematemesis we speak of is hardly ever a dangerous disease.

II. That it will hardly ever require the remedies suited to the cure of active hemorrhagy; and at least that it will require these only in those unusual cases in which there appear strong marks of a general plethora, and in which the vomiting of blood appears to be considerably active, very profuse, and frequently recurring.

III. That a vomiting of blood from suppressed menses, ought seldom to prevent the use of these remedies of amenorrhœa, which might be improper in the case of an active idiopathic hemorrhagy.

MXXV.

MXXV.

Another case of symptomatic hematemesis quite analogous to that already mentioned, is the hematemesis following, and seemingly depending upon, the suppression of an hemorrhoidal flux, which had been established and frequent for some time before.

This may perhaps be explained by a general plethoric state induced by such a suppression, and indeed some degree of a plethoric state must in such a case be supposed to take place: but that supposition alone will not explain the whole of the case; for a general plethora would lead us to expect an hemoptysis (MXXII.) rather than an hematemesis; and there is therefore something still wanting, as in the former case, to explain the particular determination to the stomach.

Whether such an explanation can be

got from the connection between the different parts of the sanguiferous vessels of the alimentary canal, or from the connection of the whole of these vessels with the vena portarum, I shall not venture to determine. But in the mean time I imagine, that the explanation required is rather to be obtained from that connection of the stomach with the hemorrhoidal affection that I have taken notice of in DCCCCXLVI.

MXXVI.

However we may explain the hematemesis occasioned by a suppression of the hemorrhoids, the considerations in MXXI. MXXII. will apply here as in the analogous case of hematemesis from suppressed menses; and will therefore allow us also to conclude here, that the disease we now treat of will seldom be dangerous, and will seldom require

quire the same remedies that idiopathic and active hemorrhagy does.

MXXVII.

The cases of hematemesis already mentioned, may be properly supposed to be hemorrhagies of the arterial kind; but it is probable that the stomach is also liable to hemorrhagies of the venous kind. (DCCLXVIII.)

In the records of physic there are many instances of vomitings of blood, which were accompanied with a tumefied spleen, which had compressed the vas breve, and thereby prevented the free return of venous blood from the stomach. How such an interruption of the venous blood may occasion an hemorrhagy from either the extremities of the veins themselves, or from the extremities of their correspondent arteries, we have explained above in DCCLXIX.

and the histories of tumefied spleens compressing the vasa brevia afford an excellent illustration and confirmation of our doctrine on that subject, and render it sufficiently probable that vomitings of blood often arise from such a cause.

MXXVIII.

It is also possible, that an obstruction of the liver resisting the free motion of the blood in the vena portarum, may sometimes interrupt the free return of the venous blood from the vessels of the stomach, and thereby occasion a vomiting of blood; but the instances of this are neither so frequent nor so clearly explained as those of the former case.

MXXIX.

Beside these cases depending on the state
of

of the liver or spleen, it is very probable that other hemorrhagies of the stomach are frequently of the venous kind.

The disease named by Sauvages *Melæna*, and by other writers commonly termed the *Morbus Niger*, (DCCLXXII.) consisting in an evacuation either by vomiting or by stool, and sometimes in both ways of a black and grumous blood, can hardly be otherwise occasioned, than by a venous hemorrhagy from some part of the internal surface of the alimentary canal.

It is, indeed, possible, that the bile may sometimes put on a black and viscid appearance, and give a real foundation for the appellation of an *Atra Bilis* : but it is certain, that instances of this are very rare ; and it is highly probable, that what gave occasion to the notion of an *atra bilis* among the ancients, was truly the appearance of blood poured into the alimentary canal in the manner I have mentioned ;

and which appearance, we know, the blood always puts on when it has stagnated there for any length of time. I suppose it is now generally thought, that Boerhaave's notion of such a matter existing in the mass of blood, is without any foundation; whilst, by dissections in modern times, it appears very clearly, that the morbus niger presenting such an appearance of blood, always depends upon the effusion and stagnation I have mentioned.

MXXX.

From this account of the melæna it will appear, that vomitings of blood may arise in consequence of blood being poured out in the manner I have mentioned, either into the cavity of the stomach itself, or into the superior portions of the intestines, from whence matters often pass into the stomach.

MXXXI.

MXXXI.

Both in the case of the melæna, and in the analogous cases from affections of the spleen or liver, it will appear, that the vomitings of blood occurring must be considered as symptomatic affections, not at all to be treated as a primary active hemorrhagy, but by remedies, if any such be known, that may resolve the primary obstructions.

MXXXII.

I believe I have now mentioned almost the whole of the causes producing a hæmatemesis; and certainly the causes mentioned, are those which most commonly give occasion to that symptom. Possibly, however, there may be some other causes of it, such as that singular one mentioned by Sauvage of an aneurism of the aorta
burst-

bursting into the stomach: and it is possible, that some diseases of other contiguous parts, which have become closely adhering to the stomach, may sometimes, by a rupture into the cavity of the stomach, pour blood into it, which is afterwards rejected by vomiting. It is possible also, that abscesses and ulcerations of the stomach itself, may sometimes pour blood into its cavity to be thrown up by vomiting.

I did not think it necessary, among the symptomatic vomitings of blood, to enumerate those from external violence, nor, what is analogous to it, that which arises from violent straining to vomit; which last, however, is much more rare than might be expected. In either of these cases the nature of the disease cannot be doubtful, and the management of it will be readily understood from what has been delivered above with respect to moderating and restraining hemorrhagy in general.

S E C T.

S E C T. II.

*Of the HEMATURIA, or the Voiding of Blood from
the Urinary Passage.*

MXXXIII.

IT is alleged, that an hematuria has occurred without any other symptom of an affection of the kidneys or urinary passages being present at the same time; and as this happened to plethoric persons, and recurred at fixed periods, such a case has been supposed to be an instance of idiopathic hematuria, and of the nature of those
active

active hemorrhagies I have treated of before.

MXXXIV.

I cannot positively deny the existence of such a case; but must observe, that there are very few instances of such upon the records of physic; that none have ever occurred to my observation, or to that of my friends; and that the observations adduced may be fallacious, as I have frequently observed an hematuria without symptoms of other affection of the kidney or urinary passages being, for the time, present; whilst, however, fits of a nephralgia calculosa having, before or soon after, happened, rendered it to me sufficiently probable, that the hematuria was owing to a wound made by a stone present in some part of the urinary passages.

MXXV.

MXXXV.

The existence of an idiopathic hematuria is further improbable, as a general plethora is more likely to produce an hemoptysis (MXXII.), and as we do not well know of any circumstances which might determine more particularly to the kidneys. An idiopathic hematuria, therefore, must certainly be a rare occurrence; and instances of symptomatic affections of the same kind are very frequent.

MXXXVI.

One of the most frequent is, that hematuria which attends the nephralgia calculosa, and seems manifestly to be owing to a stone wounding the internal surface of the pelvis of the kidney or of the ureter. In such cases, the blood discharged with the urine is sometimes of a pretty florid colour,

lour, but for the most part is of a dark hue: the whole of it is sometimes diffused or dissolved, and therefore entirely suspended in the urine; but if it is in any large quantity, a portion of it is deposited to the bottom of the vessel containing the voided blood and urine. On different occasions, the blood voided puts on different appearances. If the blood poured out in the kidney has happened to stagnate for some time in the ureters or bladder, it is sometimes coagulated, and the coagulated part is afterwards broken down into a grumous mass of a black or dark colour, and therefore gives the same colour to the urine voided; or if the quantity of broken down blood is small, it gives only a brownish urine resembling coffee. It sometimes also happens, that the blood stagnating and coagulating in the ureters, takes the form of these vessels, and is therefore voided under the appearance of a worm;

and if the coagulated blood happens to have, as it may sometimes have, the gluten separated from the red globules, these worm-like appearances have their external surface whitish, and the whole seemingly forming a tube containing a red liquor. I have sometimes observed the blood which had seemingly been coagulated in the ureter, come away in an almost dry state, resembling the half-burnt wick of a candle.

MXXXVII.

These are the several appearances of the blood voided in the hematuria calculosa, when it proceeds especially from the kidneys or ureter, and many of the same appearances are observed when the blood proceeds only from the bladder when a stone is lodged there; but the attending symptoms will commonly point out the different seat of the disease.

In one case, when a quantity of blood
from

from the kidney or ureter is coagulated in the bladder, and is therefore difficultly thrown out from this, the pain and uneasiness on such an occasion may appear chiefly to be in the bladder, though it contains no stone; but the antecedent symptoms will commonly discover the nature of the disease.

MXXXVIII.

In any of the cases of the hematuria calculosa it will hardly be necessary to employ the remedies suited to an active hemorrhagy. It will be proper only to employ the regimen fit for moderating hemorrhagy in general, and particularly here to avoid every thing or circumstance that might irritate the kidneys or ureters. Of such cases of irritation there is none more frequent or more considerable than the presence of hardened faeces in the colon; and these there-

fore are to be frequently removed, by the frequent use of gentle laxatives.

MXXXIX.

The hematuria calculosa may be properly considered as a case of the hematuria violenta: and therefore I subjoin to that the other instances of hematuria from external violence; such as that from external contusion on the region of the kidney, and that from the violent or long continued exercise of the muscles incumbent on the kidneys. An instance of the latter cause occurs especially in riding.

MXL.

It may also be considered as a case of the hematuria violenta, when the disease occurs in consequence of the taking in of certain acrid substances, which pass again

especially by the urinary passages; and, by inflaming and swelling the neck of the bladder, bring on a rupture of the over-distended blood-vessels, and give occasion to a bloody urine. The most noted instance of this is in the effect of cantharides in a certain quantity, any way introduced into the body. And possibly some other acrids may have the same effect.

MXLI.

Beside these most frequent instances of hematuria, which cannot be considered as idiopathic hemorrhagies, there are some other instances of hematuria mentioned by authors, that are still however manifestly symptomatic; such as a discharge of blood from the urinary passages, in consequence of a suppression of either the menstrual or hemorrhoidal flux. These may be considered as analogous to the hematemesis produced by
the

the like causes ; and the several reflections made above on that subject, will, I think, apply here, and particularly the conclusions formed in MXXIV. Instances, however, of either of these cases, and especially of the first, have been extremely rare.

MXLII.

Of such symptomatic hematuria there is however one instance deserving notice ; and that is, when a suppression of the hemorrhoidal flux, either by a communication of vessels, or merely by the vicinity of parts, occasions a determination of the blood into the vessels of the neck of the bladder, which in consequence of a rixis or anastomosis, pour out blood to be voided either with or without the urine. This case is what has been named the Hemorrhoides Vesicæ ; and with some propriety, when

it is manifestly an evacuation vicarious of what had before been usually made from the rectum. With respect to the management of the hemorrhoides vesicæ, I would apply the whole of the doctrines that I have delivered above, with respect to the cure of the proper hemorrhoidal affection.

MXLIII.

There remains still to be mentioned one other instance of symptomatic hematuria, which is that which happens in the case of confluent and putrid small-pox, as well as in several other instances of putrid diseases. The blood, in such cases, may be presumed to come from the kidneys; and I apprehend that it comes from thence in consequence of that fluidity which is always produced in the blood approaching to a putrid state. Such hematuria, therefore, is not to be considered as a symptom
of

of any affection of the kidneys, but merely as a mark of the putrescent state of the blood.

MXLIV.

In certain diseases the urine is discharged of such a deep red colour, as to give a suspicion of its being tinged by blood present in it; and this has given occasion to Sauvages, amongst the other species of hematuria, to mark the hematuria spuria, and the hematuria lateritia; both which, however, he supposes to be without any blood present in the urine. In many cases it is of importance, in ascertaining the nature of a disease, to determine whether the red colour of urine be from blood present in it, or from a certain state of the salts and oils which are always in greater or lesser proportion constituent parts of the urine; and the question may be com-

monly determined by the following considerations.

It has been observed above, that when any considerable quantity of blood is voided with the urine, there is always a portion of it deposited at the bottom of the vessel containing the voided blood and urine; and in such a case there will be no doubt in attributing the colour of the urine floating above, to some part of the blood diffused in it. The question, therefore, with respect to the presence of blood in the urine can only occur when no such deposition as I have mentioned appears; and when the blood that may be supposed to be present is dissolved or diffused, and therefore entirely suspended in the urine. In this case the presence of blood may be commonly known, 1st, By the colour which blood gives, different from any urine without blood that I have ever seen; and I think a little experience will enable most persons

persons to make this distinction. 2dly, By this, that the presence of blood always diminishes the transparency of the urine with which it is mixed: and it is very seldom that urine, though very high-coloured, loses its transparency; at least this hardly ever appears, if the urine is examined when recently voided. 3dly, When urine has blood mixed with it, it tinges a piece of linen dipt into it with a red colour, which the highest-coloured urine without blood never does. 4thly, High-coloured urine without blood, upon cooling, and remaining at rest in a vessel, almost always deposits a lateritious sediment; and if upon any occasion bloody urine should deposit a sediment that may be of a portion of the blood formerly diffused in it, the difference however may be discerned by this, that the sediment deposited by urine without blood, upon the urine's being again heated, will be entirely re-dissolved, which

will not happen to any sediment from blood. Lastly, we know no state of urine without blood, which shows any portion of it coagulable by a heat equal to that of boiling-water ; but blood diffused in urine is still coagulable by such a heat : and by this test, therefore, the presence of blood in urine may be commonly ascertained.

B O O K V.

O F

PROFLUVIA, OR FLUXES,

WITH PYREXIA.

MXLV.

FORMER nosologists have established a class of diseases under the title of Fluxes, or Profluvia; but, as in this class they have brought together a great number of diseases, which have nothing in
com-

common, excepting the single circumstance of an increased discharge of fluids, and which also are, in other respects, very different from one another; I have avoided so improper an arrangement, and have distributed most of the diseases comprehended in such a class by the nosologists, into places more natural and proper for them. I have, indeed, still employed here the general title; but I confine it to such fluxes only, as are constantly attended with pyrexia, and which therefore necessarily belong to the class of diseases of which I am now treating.

Of the fluxes which may be considered as being very constantly febrile diseases, there are only two, the *catarrh* and *dysentery*; and of these therefore I now proceed to treat.

C H A P. I.

O F T H E C A T A R R H.

MXLVI.

THE catarrh is an increased excretion of mucus from the mucous membrane of the nose, fauces, and bronchiæ, attended with pyrexia.

Practical writers and nosologists have distinguished the disease by different appellations, according as it happens to affect those different parts of the mucous membrane;

brane, the one part more or less than the other : But I am of opinion, that the disease, although affecting different parts, is always of the same nature, and proceeds from the same cause. Very commonly indeed those different parts are affected at the same time; and therefore there can be little room for the distinction mentioned.

The disease has been frequently treated of under the title of Tussis, or Cough; and a cough, indeed, always attends the chief form of catarrh, that is, the increased excretion from the bronchiæ: but a cough is so often a symptom of many other affections, which are very different from one another, that it is improperly employed as a generic title.

MXLVII.

The remote cause of catarrh is, most commonly, cold applied to the body.

This

This application of cold producing catarrh, can in many cases be distinctly observed; and I believe it would always be so, were men acquainted with, and attentive to, the circumstances which determine cold to act upon the body. See XCIV.—XCVI.

From the same paragraphs we may learn what in some persons gives a predisposition to catarrh.

MXLVIII.

The disease, of which I am now to treat, generally begins with some difficulty of breathing through the nose, and with a sense of some fulness stopping up that passage. This is also often attended with some dull pain and a sense of weight in the forehead, as well as some stiffness in the motion of the eyes. These feelings, sometimes at their very first beginning, and always soon after, are attended with the distillation

stillation from the nose, and sometimes from the eyes, of a thin fluid, which is often found to be somewhat acrid, both by its taste, and by its fretting the parts over which it passes.

MXLIX.

These symptoms constitute the *coryza* and *gravedo* of medical authors, and are commonly attended with a sense of lassitude over the whole body. Sometimes cold shiverings are felt, at least the body is more sensible than usual to the coldness of the air; and with all this the pulse becomes, especially in the evenings, more frequent than ordinary.

ML.

These symptoms seldom continue long before they are accompanied with some hoarseness,

ness, and a sense of roughness and foreness in the trachea, and with some difficulty of breathing, attributed to a sense of straitness of the chest, and attended with a cough which seems to arise from some irritation felt at the glottis. The cough is generally at first dry, occasioning pains about the chest, and more especially in the breast. Sometimes, together with these symptoms, pains resembling those of the rheumatism are felt in several parts of the body, particularly about the neck and head. While these symptoms take place, the appetite is impaired, some thirst arises, and a general lassitude is felt over all the body.

MLI.

These symptoms (MXLVIII.—ML.) mark the violence and height of the disease; which, however, does not commonly continue

nue long. By degrees the cough becomes attended with a copious excretion of mucus, which is at first thin, but, gradually becoming thicker, is brought up with less frequent and less laborious coughing. The hoarseness and soreness of the trachea likewise going off, the febrile symptoms abating, the cough becoming less frequent, and with less expectoration, the disease soon after ceases altogether.

MLII.

Such is generally the course of this disease, which is commonly neither tedious nor dangerous; but upon some occasions, it is in both respects otherwise. A person affected with catarrh seems to be more than usually liable to be affected by cold air; and, in that condition, if exposed to cold, the disease, which seemed to be yielding, is often brought back with greater violence

violence than before; and is rendered not only more tedious than otherwise it would have been, but also more dangerous by the supervening of other diseases.

MLIII.

Some degree of the cynanche tonsillaris often accompanies the catarrh; and, when the latter is aggravated by a fresh application of cold, the cynanche also becomes more violent and dangerous, in consequence of the cough which is present at the same time.

MLIV.

When a catarrh has been occasioned by a violent cause; when it has been aggravated by improper management; and especially when it has been rendered more violent by fresh and repeated applications

of cold, it often passes into a pneumonic inflammation attended with the utmost danger.

MLV.

Unless, however, such accidents as those of MLII.—MLIV. happen, a catarrh, in sound persons not far advanced in life, is, I think, always a slight disease, and attended with little danger. But in persons of a phthifical disposition, a catarrh may readily produce a hemoptysis, or perhaps form tubercles in the lungs; and more certainly, in persons who have tubercles already formed in the lungs, an accidental catarrh may occasion the inflammation of these tubercles, and in consequence produce a phthisis pulmonalis.

MLVI.

flammation affecting these parts. The latter circumstance is confirmed by this, that in the case of catarrh, the blood drawn from a vein, commonly exhibits the same inflammatory crust which appears in the case of phlegmasiæ.

MLVIII.

The application of cold which occasions a catarrh, probably operates by diminishing the perspiration usually made by the skin, and which is therefore determined to the mucous membrane of the parts above mentioned. As a part of the weight which the body daily loses by insensible evacuation, is owing to an exhalation from the lungs, there is probably a connection between this exhalation and the cutaneous perspiration, so that the one may be increased in proportion as the other is diminished: and therefore we may understand

stand how the diminution of cutaneous perspiration, in consequence of the application of cold, may increase the afflux of fluids to the lungs, and thereby produce a catarrh.

MLIX.

There are some observations made by Dr James Keil which may seem to render this matter doubtful; but there is a fallacy in his observations. The evident effects of cold in producing coryza, leave the matter in general without doubt; and there are several other circumstances which show a connexion between the lungs and the surface of the body.

MLX.

Whether, from the suppression of perspiration, a catarrh be produced merely by

an increased afflux of fluids, or whether the matter of perspiration be at the same time determined to the mucous glands, and there excite a particular irritation, may be uncertain; but the latter supposition is sufficiently probable.

MLXI.

Although, in the case of a common catarrh, which is in many instances sporadic, it may be doubtful whether any morbid matter be applied to the mucous glands; it is, however, certain, that the symptoms of a catarrh, do frequently depend upon such a matter being applied to these glands, as appears from the case of measles, chin-cough, and especially from the frequent occurrence of contagious and epidemical catarrh.

MLXII.

MLXII.

The mention of this last leads me to observe, that there are two species of catarrh, as I have marked in my Synopsis of Nofology. One of these, as I suppose, is produced by cold alone, as has been explained above; and the other seems manifestly to be produced by a specific contagion.

Of such contagious catarrhs, I have pointed out in the Synopsis many instances occurring from the 14th century down to the present day. In all these instances the phenomena have been much the same; and the disease has always been particularly remarkable in this, that it has been the most widely and generally spreading epidemic known. It has seldom appeared in any one country of Europe, without appearing successively in every other part

of it; and in some instances, it has been even transferred to America, and has been spread over that continent, so far as we have had opportunities of being informed.

MLXIII.

The catarrh from contagion appears with nearly the same symptoms as those mentioned MXLVIII.—ML. It seems often to come on in consequence of the application of cold. It comes on with more cold shivering than the catarrh arising from cold alone, and sooner shows febrile symptoms, and these likewise in a more considerable degree. Accordingly, it more speedily runs its course, which is commonly finished in a few days. It sometimes terminates by a spontaneous sweat; and this, in some persons, produces a miliar eruption. It is, however, the febrile state of this disease especially, that is finished

nished in a few days: for the cough, and other catarrhal symptoms, do frequently continue longer; and often, when they appear to be going off, they are renewed by any fresh application of cold.

MLXIV.

Considering the number of persons who are affected with catarrh, of either the one species or the other, and escape from it quickly without any hurt, it may be allowed to be a disease very free from danger: but it is not always to be considered as such; for in some persons it is accompanied with pneumonic inflammation. In the phthically disposed, it often accelerates the coming on of phthisis; and in elderly persons it frequently proves fatal in the manner explained above, MLIV. and MLVI.

MLXV.

MLXV.

The cure of catarrh is nearly the same, whether it proceed from cold or contagion; with this difference, that in the latter case, remedies are commonly more necessary than in the former.

In the cases of a moderate disease, it is commonly sufficient to avoid cold, and to abstain from animal-food for some days; or perhaps to lie a-bed, and, by taking frequently of some mild and diluent drink a little warmed, to promote a very gentle sweat; and after these to take care to return very gradually only, to the use of the free air.

MLXVI.

When the disease is more violent, not only the antiphlogistic regimen must be exactly

exactly observed, but various remedies also become necessary.

To take off the phlogistic diathesis which always attends this disease, blood-letting, in a larger or smaller quantity, and repeated according as the symptoms shall require, is the proper remedy.

For restoring the determination of the fluids to the surface of the body, and at the same time for expediting the secretion of mucus in the lungs, which may take off the inflammation of its membrane, vomiting is the most effectual means.

For the latter purpose, it has been supposed, that squills, gum ammoniac, the volatile alkali, and some other medicines, might be useful: but their efficacy has never appeared to me to be considerable; and, if squills have ever been very useful, it seems to have been rather by their emetic, than by their expectorant powers.

When the inflammatory affections of
the

the lungs seem to be considerable, it is proper, besides blood-letting, to apply blisters on some part of the thorax.

As a cough is often the most troublesome circumstance of this disease, so demulcents may be employed to alleviate it. See CCCLXXIII.

But, after the inflammatory symptoms have much abated, if the cough should still continue, opiates afford the most effectual means of relieving it; and, in the circumstances just now mentioned, they may be very safely employed. See CCCLXXV.

After the inflammatory and febrile states of this disease are almost entirely gone, the most effectual means of discussing all remains of the catarrhal affection, is by some exercise of gestation diligently employed.

C H A P. II.

O F T H E D Y S E N T E R Y.

MLXVII.

THE dysentery is a disease in which the patient has frequent stools, accompanied with much griping, and followed by a tenesmus. The stools, though frequent, are generally in small quantity; and the matter voided is chiefly mucus, sometimes mixed with blood. At the
same

same time, the natural fæces seldom appear; and, when they do, it is generally in a compact and hardened form.

MLXVIII.

This disease occurs especially in summer and autumn, at the same time with autumnal intermittent and remittent fevers; and with these it is sometimes combined or complicated.

MLXIX.

The disease comes on sometimes with cold shiverings, and other symptoms of pyrexia; but more commonly the symptoms of the topical affection appear first. The belly is costive, with an unusual flatulence in the bowels. Sometimes, though more rarely, some degree of diarrhœa is the first appearance. In most cases the
disease

disease begins with griping, and a frequent inclination to go to stool. In indulging this, little is voided; but some tenesmus attends it. By degrees the stools become more frequent, the griping more severe, and the tenesmus more considerable. Along with these symptoms there is a loss of appetite; and frequently sickness, nausea, and vomiting, also affecting the patient. At the same time there is always more or less of pyrexia present, which is sometimes of the remittent kind, and observes a tertian period. Sometimes the fever is manifestly inflammatory, and very often of a putrid kind. These febrile states continue to accompany the disease during its whole course, especially when it terminates soon in a fatal manner. In other cases, the febrile state almost entirely disappears, while the proper dysenteric symptoms remain for a long time after.

MLXX.

In the course of the disease, whether of a shorter or longer duration, the matter voided by stool is very various. Sometimes it is merely a mucous matter, without any blood, exhibiting that disease which Dr Roederer has named the *morbus mucosus*, and others the *dysenteria alba*. For the most part, however, the mucus discharged is more or less mixed with blood. This sometimes appears only in streaks amongst the mucus; but at other times is more copious, tinging the whole of the matter discharged; and upon some occasions a pure and unmixed blood is voided in considerable quantity. In other respects, the matter voided is variously changed in colour and consistence, and is commonly of a strong and unusually fetid odour. It is probable, that sometimes a genuine pus is voided; and frequently a putrid sanies,

proceeding from gangrenous parts. There are very often mixed with the liquid matter, some films of a membranous appearance, and frequently some small masses of a seemingly sebaceous matter.

MLXXI.

While the stools consisting of these various matters are, in many instances, exceedingly frequent, it is seldom that natural fæces appear in them; and when they do appear, it is, as I have mentioned, in the form of scybala, that is, in somewhat hardened, separate balls. When these are voided, whether by the efforts of nature, or as solicited by art, they procure a remission of all the symptoms, and more especially of the frequent stools, griping, and tenesmus.

MLXXII.

Accompanied with these circumstances, the disease proceeds for a longer or a shorter time. When the pyrexia attending it is of a violent inflammatory kind, and more especially when it is of a very putrid nature, the disease often terminates fatally in a very few days, with all the marks of a supervening gangrene. When the febrile state is more moderate, or disappears altogether, the disease is often protracted for weeks, and even for months; but, even then, after a various duration, it often terminates fatally, and generally in consequence of a return and considerable aggravation of the inflammatory and putrid states. In some cases, the disease ceases spontaneously; the frequency of stools, the griping, and tenesmus, gradually diminishing, while natural stools return. In other cases, the disease, with moderate symptoms,

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continues long, and ends in a diarrhoea, sometimes accompanied with lienteric symptoms.

MLXXIII.

The remote causes of this disease have been variously judged of. It generally arises in summer or autumn, after considerable heats have prevailed for some time, and especially after very warm and at the same time very dry states of the weather; and the disease is much more frequent in warm, than in cooler climates. It happens, therefore, in the same circumstances and seasons which considerably affect the state of the bile in the human body; but as the cholera is often without any dysenteric symptoms, and copious discharges of bile have been found to relieve the symptoms of dysentery, it is difficult to deter-

mine what connection the disease has with the state of the bile.

MLXXIV.

It has been observed, that the effluvia from very putrid animal-substances, readily affect the alimentary canal; and upon some occasions, they certainly produce a diarrhœa: but, whether they ever produce a genuine dysentery, I have not been able to learn with certainty.

MLXXV.

The dysentery does often manifestly arise from the application of cold, but the disease is always contagious; and, by the propagation of such contagion, independent of cold, or other exciting causes, it becomes epidemic in camps and other places. It is, therefore, to be doubted, if
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the application of cold does ever produce the disease, unless where the specific contagion has been previously received into the body: And upon the whole, it is probable, that a specific contagion is to be considered as always the remote cause of this disease.

MLXXVI.

Whether this contagion, like many others, be of a permanent nature, and only shows its effects in certain circumstances which render it active, or if it be occasionally produced, I cannot determine. Neither, if the latter supposition be received, can I say by what means it may be generated. As little do we know any thing of its nature, considered in itself; or at most this only, that, in common with many other contagions, it appears to be commonly of a putrid nature, and capable of

inducing a putrescent tendency in the human body. This, however, does not at all explain its peculiar power in inducing those symptoms which properly and essentially constitute the disease of dysentery, (MLXVII.)

MLXXVII.

Of these symptoms, the proximate cause is still obscure. The common opinion has been, that the disease depends upon an acrid matter received into, or generated in the intestines themselves, exciting their peristaltic motion, and thereby producing the frequent stools which occur in this disease. But this supposition cannot be admitted: for, in all the instances known of acrid substances applied to the intestines and producing frequent stools, they at the same time produce copious stools, as might

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to any length of the intestines. This, however, is not the case in dysentery; in which the stools, however frequent, are generally in very small quantity, and such as may be supposed to proceed from the lower parts of the rectum only. With respect to the superior portions of the intestines, and particularly those of the colon, it is probable they are under a preternatural and considerable degree of constriction: For, as I have observed above, the natural fæces are seldom voided; and when they are, it is in a form which gives reason to suppose, they have been long retained in the cells of the colon, and consequently that the colon had been affected with a preternatural constriction. This is confirmed by almost all the dissections which have been made of the bodies of dysenteric patients, in which, when gangrene had not entirely destroyed the texture and form of the parts, considerable portions of the great guts

have been found affected with a very considerable constriction.

MLXXVIII.

I apprehend, therefore, that the proximate cause of dysentery, or at least the chief part of the proximate cause, consists in a preternatural constriction of the colon, occasioning at the same time those spasmodic efforts which are felt in severe gripings, and which efforts, propagated downwards to the rectum, occasion there the frequent mucous stools and tenesmus. But, whether this explanation shall be admitted or not, it will still remain certain, that hardened fæces retained in the colon are the cause of the griping, frequent stools, and tenesmus: for the evacuation of these fæces, whether by nature or by art, gives relief from the symptoms mentioned; and it will be more fully and usefully confirmed

firmed by this, that the most immediate and successful cure of dysentery is obtained by an early and constant attention to the preventing the constriction, and the frequent stagnation of fæces in the colon.

MLXXIX.

In this manner I have endeavoured to ascertain the proximate cause of dysentery, and therefore to point out also the principal part of the cure, which, from want of the proper view of the nature of the disease, seems to have been in several respects fluctuating and undetermined among practitioners.

MLXXX.

The most eminent of our late practitioners, and of greatest experience in this
dif-

disease, seem to be of opinion, that the disease is to be cured most effectually by purging assiduously employed. The means may be various; but the most gentle laxatives are usually sufficient; and as they must be frequently repeated, the most gentle are the most safe; the more especially as an inflammatory state so frequently accompanies the disease. Whatever laxatives produce an evacuation of natural fæces, and a consequent remission of the symptoms, will be sufficient to effectuate the cure. But if gentle laxatives shall not produce the evacuation now mentioned, some more powerful medicines must be employed: and I have found nothing more proper or convenient than tartar emetic, given in small doses, and at such intervals as may determine their operation to be chiefly by stool. Rhubarb, so frequently employed, is in several respects

spects amongst the most improper purgatives.

MLXXXI.

Vomiting has been held a principal remedy in this disease; and may be usefully employed in the beginning of it, with a view to both the state of the stomach and of the fever: but it is not necessary to repeat it often; and unless the emetics employed operate also by stool, they are of little service. Ipecauanha seems to possess no specific power; and it proves only useful when so managed as to operate chiefly by stool.

MLXXXII.

For relieving the constriction of the colon, and evacuating the retained fæces, glysters may sometimes be useful: but they
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are seldom so effectual as laxatives, given by the mouth; and acrid glysters, if they be not effectual in evacuating the colon, may prove hurtful by stimulating the rectum too much.

MLXXXIII.

The frequent and severe griping attending this disease, leads almost necessarily to the use of opiates, and they are very effectual for the purpose of relieving from the gripes; but by occasioning an interruption of the action of the small guts, they favour the constriction of the colon, and thereby sometimes aggravate the disease: and if at the same time the use of them supersede in any measure the employing of purgatives, it commonly does much mischief; I believe it indeed to be only the neglect of purging that renders the use of opiates very necessary.

MLXXXIV.

MLXXXIV.

When the gripes are both frequent and feyere, they may sometimes be relieved by the employment of a femicupium, or by a fomentation of the abdomen, continued for some time. In the same case, the pains may be relieved, and, as I think, the constriction of the colon may be taken off, by blisters applied to the lower belly.

MLXXXV.

At the beginning of this disease, when the fever is any way considerable, blood-letting, in patients of tolerable vigour, may be proper and necessary; and, when the pulse is full and hard, with other symptoms of an inflammatory disposition, blood-letting ought to be repeated. But, as the fever attending dysentery is often of a putrid kind, or does, in the course of the disease,
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become soon of that nature, blood-letting must be employed with great caution.

MLXXXVI.

From the account now given of the nature of this disease, it will be sufficiently obvious, that the use of astringents in the beginning of it must be absolutely pernicious.

MLXXXVII.

Whether an acrid matter be the original cause of this disease, may be uncertain: but from the indigestion and the stagnation of fluids in the stomach which attend the disease, it may be presumed, that some acrid matters are constantly present in the stomach and intestines, and therefore that demulcents may be always usefully employed. At the same time, from this con-

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sideration

consideration that mild oily matters thrown into the intestines in considerable quantity always prove laxative, I am of opinion that the oleaginous demulcents are the most useful.

MLXXXVIII.

As this disease is so often of an inflammatory or of a putrid nature, it is evident that the diet employed in it should be vegetable and acescent. Milk in its entire state is of doubtful quality in many cases; but some portion of the cream is often allowable, and whey is always proper.

In the first stages of the disease, the sweet and subacid fruits are allowable, and even proper. It is in the more advanced stages only, that any morbid acidity seems to prevail in the stomach, and to require some reserve in the use of acescents. At the beginning of the disease, absorbents seem to
be

be superfluous; and by their astringent and septic powers they may be hurtful.

MLXXXIX.

When this disease is complicated with an intermittent fever, and is protracted from that circumstance chiefly, it is to be treated as an intermittent, by administering the Peruvian bark, which, however, in the earlier periods of the disease, is hardly to be admitted.

P A R T II. .

O F

N E U R O S E S,

O R

N E R V O U S D I S E A S E S.

M X C.

IN a certain view, almost the whole of the diseases of the human body might be called NERVOUS: but there would be no use for such a general appellation; and,

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on the other hand, it seems improper to limit the term, in the loose inaccurate manner in which it has been hitherto applied, to hysteric and hypochondriacal disorders, which are themselves hardly to be defined with sufficient precision.

MXCI.

In this place I propose to comprehend, under the title of NEUROSES, all those preternatural affections of sense or motion, which are without pyrexia as a part of the primary disease; and all those which do not depend upon a topical affection of the organs, but upon a more general affection of the nervous system, and of those powers of the system upon which sense and motion more especially depend.

MXCII.

MXCII.

Of such diseases I have established a class, under the title of NEUROSES, or NERVOUS DISEASES. These I again distinguish, as they consist, either in the interruption and debility of the powers of sense and motion, or in the irregularity with which these powers are exercised; and have accordingly arranged them under the four orders of *Comata*, *Adynamia*, *Spasmi*, and *Vesania*, to be defined as we proceed to treat of them more particularly.

[B O O K I.

OF C O M A T A,

OR OF THE

LOSS OF VOLUNTARY MOTION.

MXCIII.

UNDER this title are comprehended those affections which have been commonly called the Soporose diseases; but they are most properly distinguished by their consisting in some interruption
or

or suppression of the powers of sense and voluntary motion, or of what are called the animal-functions. These are indeed usually suspended in the time of natural sleep: but of all the diseases to be comprehended under our title, sleep, or even the appearance of it, is not constantly a symptom. Of such diseases I can mark and properly explain two genera only, which come under the titles of *Apoplexy* and *Palsy*.

C H A P. I.

O F A P O P L E X Y.

MXCIV.

APOPLEXY is that disease in which the whole of the external and internal senses, and the whole of the voluntary motions, are in some degree abolished; while respiration and the action of the heart continue to be performed. By its being an affection of the *whole* of the powers of sense and of voluntary motion, we distinguish

guish it from *Palsy*; and by its being with the continuance of respiration and the action of the heart, it is distinguished from *Syncope*. I have further added to the ordinary definition of apoplexy, that the abolition of the powers of sense and motion is in *some degree* only; meaning by this to imply, that, under the title of Apoplexy, are here comprehended those diseases which, as differing from it in degree only, cannot, with a view either to pathology or practice, be properly distinguished from it: Such are the diseases sometimes treated of under the names of *Carus*, *Cataphora*, *Coma*, and *Lethargus*.

MXCV.

Apoplexy, in all its different degrees, most commonly affects persons advanced in life, and especially those above sixty years of age. It most usually affects per-

sons of large heads and short necks, persons of a corpulent habit, persons who have passed an indolent life and used a full diet, and especially those who have indulged in frequent intoxication. Men who have long laboured under a frequent and copious discharge of blood from the hemorrhoidal vessels, upon either the suppression or spontaneous ceasing of that discharge, are particularly liable to be affected with apoplexy.

MXCVI.

This disease frequently comes on very suddenly: but in many cases it is preceded by various symptoms, such as frequent fits of giddiness, frequent headaches, a hemorrhagy from the nose, some transitory interruptions of seeing and hearing, some false vision and hearing, some transitory degree of numbness or loss of motion in

the extremities, some faltering of the tongue in speaking, a loss of memory, a frequent drowsiness, and frequent fits of incubus.

MXCVII.

An attention to these symptoms, and to the predisponent circumstances (MXCV.), will often enable us to foresee the more violent attacks of this disease.

MXCVIII.

When the disease comes on suddenly to a considerable degree, it has been frequently observed to have been immediately induced by violent exercise; by a full and long-continued inspiration; by a fit of anger; by much external heat, especially that arising from a crowded assembly of people; by warm bathing; by intoxication;

tion; by long stooping with the head down; and by a tight ligature about the neck. The disease has been remarked to make its attacks most frequently in the spring season, and especially when the vernal heat suddenly succeeds to the winter cold.

MXCIX.

The symptoms denoting the presence of this disease will be sufficiently known from the definition given MXCIV. Although the whole of the body is affected with the loss of sense and motion, it sometimes takes place more upon one side of the body than the other; and, in that case, the side least affected with palsy is sometimes affected with convulsions. In this disease there is often a stertorous breathing; and this has been said to be a mark of the most violent state of the disease: but it is not always
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present even in the most complete form or most violent degree of the disease.

MC.

The proximate cause of this disease may be, in general, whatever interrupts the motion of the nervous power from the brain to the muscles of voluntary motion; or, in so far as sense is affected, whatever interrupts the motion of the nervous power from the sentient extremities of the nerves to the brain.

MCI.

Such an interruption of the motions of the nervous power may be occasioned, either *by some compression of the origin of the nerves, or by something destroying the mobility of the nervous power.* Both these causes we must treat of more particularly; and, first,

first, of that of compression, seemingly the most frequent occasion of apoplexy, and perhaps the occasion of all those apoplexies arising from internal causes.

MCII.

The loss of sense and motion in particular parts of the body, may be occasioned by a compression, either of the origin of certain nerves only, or of the same nerves in some part of their course from the brain to the organs of sense and motion. Such cases of partial compression will be more properly considered hereafter; and the affection I am now to treat of being general, it must depend upon a very general compression of the origin of the nerves, or medullary portion of the brain; and therefore, this more general compression only is to be considered here.

MCIII.

MCIII.

This compression of the origin of the nerves, or medullary portion of the brain, may be produced in different ways; as,

1. By external violence fracturing and pressing in a part of the cranium.

2. By tumours, sometimes soft, sometimes bony, formed in different parts of the brain, or in its membranes, and becoming of such a bulk as to compress the medullary substance of the brain.

3. By the blood accumulated in the blood-vessels of the brain, and distending them to such a degree as to compress the medullary portion of the same.

4. By fluids effused in different parts of the brain, or into the cavity of the cranium, and accumulated in such quantity as to occasion the compression we treat of.

And, as to this last, it is to be remarked
here,

here, that the fluids effused may be of two kinds: that is, they may be either a portion of the common mass of blood, poured out from red vessels; or a portion of serum or colourless fluid, poured out chiefly by exhalants.

MCIV.

Of these several causes of compression the first is not to be considered here, because the removing it does not belong to our province; and the consideration of the second may be omitted, as in most instances it is neither to be discerned nor cured by any means yet known. The third and fourth causes of compression, as they are the most frequent, and are also most properly the subjects of our art, so they are those which deserve our particular attention; and we shall therefore endeavour

deavour to trace them further back in the series of causes which may produce them.

MCV.

Both the states of over-distention and of effusion, may be produced by whatever increases the afflux and impetus of the blood in the arteries of the head; such as violent exercise, a violent fit of anger, external heat applied, or any strong pressure upon the descending aorta.

MCVI.

But both these states of over-distention and of effusion, may also and seem to be more frequently produced by causes that operate by preventing the free return of the venous blood from the vessels of the head to the right ventricle of the heart.

MCVII.

MCVII.

The venous vessels of the brain are of a conformation and distribution so peculiar, as lead us to believe, that Nature intended to retard the motion of the blood, and accumulate it in these vessels; and therefore, even very small additional resistances to the motion of the blood from these towards the right ventricle of the heart, may still more readily accumulate the blood in them. Such accumulation will most readily happen in advanced life, when the venous system in general is in a plethoric state, and when this plethora takes place especially in the venous vessels of the brain. It will, in like manner, be most apt to occur in persons whose heads are large with respect to the rest of the body; and in persons of a short neck, which is unfavourable to the return of the venous blood from the head. The accumulation of

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blood

blood in the venous vessels of the brain, will also be most likely to occur in persons of a corpulent habit, either because these may be considered to be in a plethoric state, or because obesity, by occasioning a compression of the blood-vessels in other parts of the body, more readily fills those of the brain, which are entirely free from any such compression.

MCVIII.

These are the circumstances in the constitution of the body, which, producing a slower motion and return of the venous blood from the vessels of the head, favour an accumulation and distention in them; and we now proceed to mention the several occasional causes, which, in every person, may directly prevent the free return of the blood from the vessels of the head towards the heart. Such are,

1. Stooping down with the head, or other situations of the body in which the head is long kept in a depending state, and in which the gravity of the blood increases the afflux of it by the arteries, and opposes the return of it by the veins.

2. A tight ligature about the neck, which compresses the veins more strongly than the arteries.

3. Any obstruction of a considerable number of the veins carrying the blood from the head, and more especially any considerable obstruction of the ascending vena cava.

4. Any considerable impediment of the free passage of the blood from the veins into the right ventricle of the heart; and it is commonly by this, and the immediately preceding circumstance, that polypous concretions in the cava, or right ventricle, are found to occasion apoplexy.

5. The return of blood from the veins of
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the head towards the heart, is especially interrupted by every circumstance that produces a more difficult transmission of the blood through the vessels of the lungs. It is well known, that, at the end of every expiration, some interruption is given to the free transmission of the blood through the lungs; and that this at the same time gives an interruption to the motion of the blood from the veins into the right ventricle of the heart. This clearly appears from that regurgitation of the blood in the veins which occasions the alternate heaving and subsiding that is perceived in the brain of living animals when the cranium is removed, and which is observed to be synchronous with the alternate motions of respiration. From this we readily perceive, that whatever occasions a difficulty in the transmission of the blood through the lungs, must also interrupt the free return of the venous blood from the

vessels of the head; and must therefore favour, and perhaps produce, an accumulation of blood, and an over-distention in these vessels.

It is further to be observed, that, as a very full inspiration continued for any length of time, occasions such an interruption of the free transmission of the blood through the lungs, as produces a suffusion of face, and a manifest turgescence of the blood-vessels of the head and neck; so every full and long-continued inspiration may occasion an accumulation of blood in the vessels of the head, to a very considerable degree. Thus, as every strong exertion of the muscular force of the body requires, and is attended with, a very full and long-continued inspiration, we thence learn why the violent exertions of muscular force have been so often the immediate or exciting causes of apoplexy.

It may also be remarked, that corpulency

lency and obesity seem to operate very much, by occasioning a more difficult transmission of the blood through the vessels of the lungs. It appears, that in fat persons, from the compression of the blood-vessels in many parts of the body, the vessels of the lungs are thereby kept very full; so that, upon the least increase of bodily motion, which sends the blood faster into the lungs, a more frequent and laborious respiration becomes in such persons immediately necessary. This shows, that, in such persons, the blood is not freely transmitted through the lungs; a circumstance which, as in other instances, must give a constant resistance to the return of blood from the vessels of the head, and therefore favour or occasion an accumulation of blood in them.

Is the motion of the blood in the vessels of the head, rendered slower by study, care, and anxiety?

MCIX.

It is to be observed further, that these several causes (MCV.—MCVIII.) of a preternatural fulness in the blood-vessels of the brain, may produce apoplexy in different ways, according as the fulness takes place in the arteries or in the veins.

MCX.

Accordingly, *first*, the increased afflux of blood into the arteries of the brain, and an increased action in these, may either occasion a rupture of their extremities, and thereby an effusion of red blood producing compression; or the same afflux and increased action may occasion an increased exhalation from their extremities, of a ferrous fluid, which, if not as quickly reabsorbed, may soon accumulate in such quantity as to produce compression.

MCXI.

MCXI.

Secondly, The plethoric state of the venous vessels of the brain may operate in three different ways.

1. The fulness of the veins may give such resistance to the blood flowing into them from the arteries, as to determine the impetus of the blood to be so much greater upon the extremities of the arteries as to occasion a rupture of these, and consequently an effusion of red blood, or the *Hæmorrhagia cerebri*, which HOFFMAN considers as a frequent cause of apoplexy, and which we have before explained in DCCLXXII.

2. Whilst the same resistance to the blood flowing from the arteries into the veins, increases the impetus of the blood in the former, this may, without occasioning rupture, increase the exhalation from their exhalant extremities, and produce an effusion of a ferous fluid; in the same manner as

such resistance in the veins produces hydropic effusions in other parts of the body.

3. If we may suppose, as no lymphatics have been yet discovered in the brain, that the ordinary absorbents are not present there, and that the exhaled fluids are absorbed or taken up by the extremities of the veins; this will show still more clearly that a resistance to the motion of the blood in the veins of the brain, may readily produce an accumulation of serous fluid in its cavities, and consequently a compression producing apoplexy.

M CXII.

Beside these cases of apoplexy from afflux in the arteries, or resistance in the veins, an effusion of serum may happen from two other causes. The one is a relaxation of the exhalants, as in other cases of hydropic diathesis prevailing in the
body;

body; and it is not unusual for a general dropfy to end in apoplexy. The second is an over proportion of watery parts in the mafs of blood, which is therefore ready to run off by the exhalants, as in the case of an ischuria renalis; which, when it proves incurable, very commonly terminates in apoplexy.

MCXIII.

We have now mentioned the several causes of apoplexy depending upon compression; and from the whole it will appear, that the most frequent of all these causes is a plethoric state, or an accumulation and congestion of blood in the venous vessels of the head, operating, according to its degree, in producing over-distention or effusion. The frequent operation of such a cause will especially appear from a consideration of the predisponent
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circumstances (MXCV.), and from the antecedent symptoms (MXCVI.)

MCXIV.

From the view I have now given of the causes of apoplexy arising from compression, it will readily appear that there is a foundation for the common distinction of this disease into the two kinds of Sanguine and Serous. But this distinction cannot be very usefully applied in practice, as both kinds may often depend on the same cause, that is, a venous plethora, and therefore requiring very nearly the same method of cure. The only distinction that can be properly made of apoplexies from compression, is perhaps the distinction of serous apoplexy, into that depending on the plethora mentioned MCXIII.; and that depending upon hydropic diathesis, or an overproportion of water in the blood (MCXII.);

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the former causes giving a proper idiopathic, the latter only a symptomatic, disease.

MCXV.

Beside the causes now mentioned, occasioning apoplexy by compression, I allege there are other causes producing the same disease, by directly destroying the mobility of the nervous power. Such causes seem to be the mephitic air arising from fermenting liquors, and from many other sources; the fumes arising from burning charcoal; the fumes of mercury, of lead, and of some other metallic substances; opium, alcohol, and many other narcotic poisons: To all which I would add the power of cold, of concussion, of electricity, and of certain passions of the mind.

MCXVI.

MCXVI.

None of these poisons or noxious powers seem to kill by acting first upon the organs of respiration or upon the sanguiferous system; and I believe their immediate and direct action to be upon the nervous power, destroying its mobility, because the same poisons show their power in destroying the irritability of muscles and of the nerves connected with them, when both these are entirely separated from the rest of the body.

MXCVII.

It appears to me probable, that the apoplectic state in some degree accompanying, and almost always succeeding, an epileptic paroxysm, does not depend upon compression, but upon a certain state of immobility of the nervous power, produced by
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certain circumstances in the nervous system itself, which sometimes seem to be communicated from one part of the body to another, and at length to the brain.

MCXVIII.

The same observation may be made with respect to many instances of hysteric paroxysm; and the circumstances, both of epileptic and hysteric paroxysms, ending in coma, or a degree of apoplexy, lead me to think, that also the apoplexy proceeding from retrocedent or atonic gout is of the same kind, or that it depends upon an immobility of the nervous power, rather than upon compression.

MCXIX.

It may indeed happen, that as the apoplectic and gouty predispositions do often

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concur in the same person; so it may consequently happen, that the apoplexy coming upon gouty persons may sometimes depend upon compression; and dissections may, accordingly, discover that the circumstances of such a cause had preceded. But, in many cases of apoplexy following a retrocedent or atonic gout, no such antecedent or concomitant circumstances, as commonly occur in cases of compression, do distinctly or clearly appear; while others present themselves, which point out an affection of the nervous power alone.

MCXX.

With respect, however, to the circumstances which may appear upon the dissection of persons dead of apoplexy, there may be some fallacy in judging, from those circumstances, of the cause of the disease.

Whatever takes off or diminishes the mobility of the nervous power, may very much retard the motion of the blood in the vessels of the brain; and that perhaps to the degree of increasing exhalation, or even of occasioning rupture and effusion: so that, in such cases, the marks of compression may appear, upon dissection, tho' the disease had truly depended on causes destroying the mobility of the nervous power. This seems to be illustrated and confirmed from what occurs in many cases of epilepsy. In some of these, after a repetition of fits, recovered from in the usual manner, a fatuity is induced, which commonly depends upon a watery inundation of the brain: And in other cases of epilepsy, when fits have been often repeated without any permanent consequence, there happens at length a fatal paroxysm; and upon dissection it appears, that an effusion of blood had happened.

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This, I think, is to be considered as a cause of death, not as a cause of the disease: for in such cases, I suppose that the disease had diminished the action of the vessels of the brain, and thereby given occasion to a stagnation, which produced the appearances mentioned. And I apprehend the same reasoning will apply to the cases of retrocedent gout, which, by destroying the energy of the brain, may occasion such a stagnation as will produce rupture, effusion, and death; and in such a case, the appearances upon dissection might lead us to think that the apoplexy had depended entirely upon compression.

MCXXI.

The several causes mentioned in MCXV. are often of such power as to occasion immediate death, and therefore have not commonly been taken notice of as afford-

ing instances of apoplexy; but, as the operation of the whole of these causes is similar and analogous, and as in most instances of the operation of these causes an apoplectic state is manifestly produced, there can be little doubt in considering most of the instances of their effects as cases of apoplexy, and therefore such as fall properly under our consideration here.

MCXXII.

This disease of apoplexy is sometimes entirely recovered from; but more frequently it ends in death, or in a hemiplegia. Even when an attack of the disease is recovered from, we generally find it disposed to return; and the repeated attacks of it almost always, sooner or later, bring on the events we have mentioned.

MCXXIII.

The several events of this disease, in health, death, or another disease, may be expected and foreseen from a consideration of the predisponent circumstances (MXCV.); of the antecedent symptoms (MXCVI.); of the exciting causes (MXCVIII.); of the violence and degree of the symptoms when the disease has come on (MXCIV.); of the duration of the disease; and of the effects of the remedies employed.

MCXXIV.

From the great danger attending this disease when it has come on (MCXXII.), it will readily appear, that our care should be chiefly directed to the prevention of it. This, I think, may be often done by avoiding the remote and exciting causes; and how this may be accomplished, will be obvious

vious from the enumeration of those causes given above (MXCVIII.) But it will also appear from what is said above, that the prevention of this disease will especially depend upon obviating the predisponent cause; which, in most cases, seems to be a plethoric state of the blood-vessels of the brain. This, I think, may be obviated by different means; and, in the first place, by a proper management of exercise and diet.

MCXXV.

The exercise ought to be such as may support the perspiration, without heating the body or hurrying respiration; and, therefore, commonly by some mode of gestation. In persons not liable to frequent fits of giddiness, and who are accustomed to riding on horseback, this exercise is, of all others, the best. Walking, and some

other modes of bodily exercise, may be employed with the restrictions just now mentioned; but in old men, and in men of corpulent habits, bodily exercise ought always to be very moderate.

MCXXVI.

In persons who pretty early in life show the predisposition to apoplexy, it is probable that a low diet, with a good deal of exercise, might entirely prevent the disease; but, in persons who are advanced in life before they think of taking precautions, and are at the same time of a corpulent habit, which generally supposes their having been accustomed to full living, it might not be safe to put them upon a low diet: and it may be enough that their diet be rendered more moderate than usual, especially with respect to animal-food;

food; and that, at supper, such food should be abstained from altogether.

In drinking, all heating liquors are to be abstained from, as much as former habits will allow; and the smallest approach to intoxication is to be carefully shunned. For ordinary draught, small beer is to be preferred to plain water, as the latter is more ready to occasion costiveness, which in apoplectic habits is to be carefully avoided. The large use of tobacco, in any shape, may be hurtful; and except in cases where it has been accustomed to occasion a copious excretion from the head, the interruption of which might not be safe, the use of tobacco should be avoided; and even in the circumstance mentioned, where it may be in some measure necessary, the use of it should at least be rendered as moderate as possible.

MCXXVII.

Evacuations by stool may certainly contribute to relieve the plethoric state of the vessels of the head; and, upon an appearance of any unusual turgescence in these, purging will be very properly employed: but, when no such turgescence appears, the frequent repetition of large purging might weaken the body too much; and, for preventing apoplexy, it may for the most part be enough to keep the belly regular, and rather open, by gentle laxatives. In the summer season, it may be useful to drink, every morning, of a gentle laxative mineral water, but never in large quantity.

MCXXVIII.

In the case of a plethoric state of the system, it might be supposed that blood-letting would be the most effectual means
of

of diminishing the plethora, and of preventing its consequences: and, when an attack of apoplexy is immediately threatened, blood-letting is certainly the remedy to be depended upon; and blood should be taken largely, if it can be done, from the jugular vein, or temporal artery. But, when no threatening turgescence appears, the obviating plethora is not judiciously attempted by blood-letting, as we have endeavoured to demonstrate above DCCLXXXVII. In doubtful circumstances, leeches applied to the temples, or scarifications of the hind-head, may be more safe than general bleedings.

MCXXIX.

When there are manifest symptoms of a plethoric state in the vessels of the head, a seton, or pea-issue, near the head, may

be very useful in obviating any turgescence of the blood.

MCXXX.

These are the means to be employed for preventing the apoplexy which might arise from a plethoric state of the vessels of the brain; and if, at the same time, great care is taken to avoid the exciting causes (MXCVIII.), these means will be generally successful.

In the cases proceeding from other causes (MCXV.), as their application is so immediately succeeded by the disease, they hardly allow any opportunity for prevention.

MCXXXI.

For the CURE of apoplexies from internal causes, and which I suppose to be chiefly those

those from compression, the usual violence and fatality of it require that the proper remedies be immediately and largely employed.

The patient is to be kept as much as possible in somewhat of an erect posture, and in cool air; and therefore neither in a warm chamber, nor covered with bed-cloaths, nor surrounded with a crowd of people.

MCXXXII.

In all cases of a full habit, and where the disease has been preceded by marks of a plethoric state, blood-letting is to be immediately employed, and very largely. In my opinion, it will be most effectual when the blood is taken from the jugular vein; but, if that cannot be properly done, it may be taken from the arm. The opening of the temporal artery, when a large
branch

branch can be opened, so as suddenly to pour out a considerable quantity of blood, may also be an effectual remedy; but, in execution, it is more uncertain, and may be inconvenient. It may be in some measure supplied, by cupping and scarifying on the temples or hind-head. This, indeed, should seldom be omitted; and these scarifications are always preferable to the application of leeches.

With respect to every mode of blood-letting, this is to be observed, that when in any case of apoplexy, it can be perceived that one side of the body is more affected with the loss of motion than the other, the blood-letting, if possible, should be made on the side opposite to that most affected.

MCXXXIII.

Another remedy to be employed is purging,

ging, to be immediately attempted by acrid glysters; and at the same time, if any power of swallowing remain, by drastic purgatives given by the mouth. These, however, lest they may excite vomiting, should be given in divided portions at proper intervals.

MCXXXIV.

Vomiting has been commended by some practitioners and writers: but, apprehending that this might impel the blood with too much violence into the vessels of the head, I have never employed it.

MCXXXV.

Another remedy to be immediately employed is blistering; and I judge that this is more effectual when applied to the head, or near to it, than when it is applied to
the

the lower extremities. This remedy I do not consider as a stimulant, or capable of making any considerable revulsion: but, applied to the head, I suppose it useful in taking off the hemorrhagic disposition so often prevailing there.

MCXXXVI.

It has been usual with practitioners, together with the remedies already mentioned, to employ stimulants of various kinds: but I am disposed to think them generally hurtful; and they must be so, wherever the fulness of the vessels, and the impetus of the blood in these, is to be diminished. Upon this principle it is therefore agreed, that stimulants are absolutely improper in what is supposed to be a sanguine apoplexy; but they are commonly supposed to be proper in the ferous. If, however, we be right in alleging that

this also commonly depends upon a plethoric state of the blood-veffels of the brain, ftimulants must be equally improper in the one case as in the other.

MCXXXVII.

It may be argued from the almost univerfal employment of ftimulants, and fometimes with feeming advantage, that they may not be fo hurtful as my notions of the caufes of apoplexy lead me to fuppose. But this argument is, in feveral respects, fallacious; and particularly in this, that in a difeafe which, under every management, often proceeds fo quickly to a fatal termination, the effects of remedies are not to be eafily afcertained.

MCXXXVIII.

MCXXXVIII.

I have now mentioned the several remedies which I think adapted to the cure of apoplexy arising from compression, and should next proceed to treat of the cure of apoplexy arising from those causes that directly destroy the mobility of the nervous power. But many of those causes are often so powerful, and thereby so suddenly fatal in their effects, as hardly to allow of time for the use of remedies; and such cases therefore have been so seldom the subjects of practice, that the proper remedies are not so well ascertained as to enable me to say much of them here.

MCXXXIX.

When, however, the application of the causes (MCXV.) is not so powerful as immediately to kill, and induces only an

apoplectic state, some efforts are to be made to obviate the consequences, and to recover the patient: and even in some cases where the causes referred to, from the ceasing of the pulse and of respiration, and from a coldness coming upon the body, have induced an appearance of death; yet, if these appearances have not continued long, there may be means of recovering the persons to life and health. I cannot, indeed, treat this subject completely; but for the cure of apoplexy from several of the causes mentioned MCXV. shall offer the following general directions.

1. When a poison capable of producing apoplexy has been recently taken into the stomach, if a vomiting spontaneously arises, it is to be encouraged; or if it does not spontaneously come on, a vomiting is to be immediately excited by art, in order that the poison may be thrown out as quickly as possible. If, however, the poi-
son

son has been taken into the stomach long before its effects have appeared, we judge that, upon their appearance, the exciting of vomiting will be useless, and may perhaps be hurtful.

2. When the poison taken into the stomach, or otherwise applied to the body, has already induced an apoplectic state, as those causes do commonly at the same time occasion a stagnation or slower motion of the blood in the vessels of the brain and of the lungs, so it will generally be proper to relieve this congestion by taking some blood from the jugular vein, or from the veins of the arm.

3. Upon the same supposition of a congestion in the brain or lungs, it will generally be proper to relieve it by means of acrid glysters producing some evacuation from the intestines.

4. When these evacuations by blood-letting and purging have been made, the
various

various stimulants which have been commonly proposed in other cases of apoplexy, may be employed here with more probability and safety. One of the most effectual means of rousing apoplectics of this kind seems to be throwing cold water on several parts of the body, or washing the body all over with it.

5. Although the poison producing apoplexy happens to be so powerful as very soon to occasion the appearances of death above mentioned; yet if this state has not continued long, the patient may often be recoverable, and the recovery is to be attempted by the same means that are directed to be employed for the recovery of drowned persons, and which are now commonly known.

C H A P. II.

O F P A L S Y.

MCXL.

PALSY is a disease consisting in a loss of the power of voluntary motion, but affecting certain parts of the body only, and by this it is distinguished from apoplexy (MXCIV). One of the most frequent forms of palsy is when it affects the whole of the muscles on one side of the body, and then the disease is named a *Hemiplegia*.

MCXLI.

MCXLI.

The loss of the power of voluntary motion may be owing either to a morbid affection of the muscles or organs of motion, by which they are rendered unfit for motion; or to an interruption of the influx of the nervous power into them, which is always necessary to the motions of those that are under the power of the will. The disease, from the first of these causes, as consisting in an organic and local affection, we refer entirely to the class of local diseases. I am here to consider that disease only which depends upon the interrupted influx of the nervous power; and it is to this disease alone I would give the appellation of *Palsy*. A disease depending on an interrupted influx of the nervous power, may indeed often appear as merely a local affection; but as it depends upon an affection of the most ge-

neral powers of the system, it cannot be properly separated from the systematic affections.

MCXLII.

In palsy, the loss of motion is often accompanied with a loss of sense: but, as this is not constantly the case, and as therefore the loss of sense is not an essential symptom of palsy, I have not taken it into my definition (MCXL.); and I shall not think it necessary to take any further notice of it in this treatise; because, in so far as it is in any case a part of the paralytic affection, it must depend upon the same causes, and will be cured also by the very same remedies, as the loss of motion.

MCXLIII.

MCXLIII.

The palsy then, or loss of motion, which is to be treated of here, may be distinguished as of two kinds; one of them depending upon an affection of the origin of the nerves in the brain, and the other depending upon an affection of the nerves in some part of their course between the brain and the organs of motion. Of the latter, as appearing in a very partial affection, I am not to speak particularly here; I shall only treat of the more general paralytic affections, and especially of the hemiplegia (MCXL.). At the same time I expect, that what I shall say upon this subject will readily apply to both the pathology and practice in the cases of affections more limited.

MCXLIV.

The hemiplegia (MCXL.) usually begins with or follows, a paroxysm of apoplexy; and when the hemiplegia, after subsisting for some time, becomes fatal, it is commonly by passing again into the state of apoplexy. The relation therefore or affinity between the two diseases, is sufficiently evident; and is further strongly confirmed by this, that the hemiplegia comes upon persons of the same constitution (MXCV.), and is preceded by the same symptoms (MXCVIII.) that have been taken notice of with respect to apoplexy.

MCXLV.

When a fit of apoplexy has gone off, and there remains a state of palsy appearing as a partial affection only, it might
per-

perhaps be supposed that the origin of the nerves is in a great measure relieved; but in so far as commonly there still remain the symptoms of the loss of memory, and of some degree of fatuity, these I think show that the organ of intellect, or the common origin of the nerves, is still considerably affected.

MCXLVI.

Thus, the hemiplegia, from its evident connection with, and near relation to apoplexy, may be properly considered as depending upon like causes; and consequently either upon a compression preventing the flow of the nervous power from the brain into the organs of motion, or upon the application of narcotic or other powers (MCXV.) rendering the nervous power unfit to flow in the usual and proper manner.

MCXLVII.

We begin with considering the cases depending upon compression.

The compression occasioning hemiplegia may be of the same kind, and of all the different kinds that produce apoplexy, and therefore either from tumour, over-distention, or effusion. The existence of tumour giving compression, may often be better discerned in the case of palsy than in that of apoplexy, as its effects often appear at first in a very partial affection.

MCXLVIII.

The other modes of compression, that is, of over-distention and effusion, may, and commonly do take place, in hemiplegia; and when they do, their operation here differs from that producing apoplexy, by

by its effects being partial, and on one side of the body only.

It may seem difficult to conceive that an over-distention can take place in the vessels on one side of the brain only; but it may be understood: and in the case of a palsy which is both partial and transitory, it is perhaps the only condition of the vessels of the brain that can be supposed. In a hemiplegia, indeed, which subsists for any length of time, there is probably always an effusion, either sanguine or serous: but it is likely that even the latter must be supported by a remaining congestion in the blood-vessels.

MCXLIX.

That a sanguine effusion can happen without becoming very soon general, and thereby occasioning apoplexy and death, may also seem doubtful: but dissections
prove

prove that in fact it does happen occasioning palsy only ; though it is true, that this more commonly depends upon an effusion of ferous fluid, and of this only.

MCL.

Can a palsy occasioned by a compression remain, though the compression be removed ?

MCLI.

From what has been said MCXLIV. it will be obvious, that the hemiplegia may be prevented by all the several means proposed MCXXV. *et seq.* for the prevention of apoplexy.

MCLII.

Upon the same grounds, the CURE of
palsy

palsy must be very much the same with that of apoplexy (MCXXX. *et seq.*); and when palsy has begun as an apoplexy, it is presumed, that, before it is to be considered as palsy, all those several remedies have been employed. Indeed, even when it happens that on the first attack of the disease the apoplectic state is not very complete, and that the very first appearance of the disease is as a hemiplegia, the affinity between the two diseases (MCXLIV.) is such as to lead to the same remedies in both cases. This is certainly proper in all those cases in which we can with much probability impute the disease to compression; and it is indeed seldom that a hemiplegia from internal causes comes on but with a considerable affection of the internal and even of the external senses, together with other marks of a compression of the origin of the nerves.

MCLIII.

Not only, however, where the disease can be imputed to compression, but even where it can be imputed to the application of narcotic powers, if the disease come on with the appearances mentioned at the end of last paragraph, it is to be treated in the same manner as an apoplexy by MCXXXI.—MCXXXIX.

MCLIV.

The cure of hemiplegia, therefore, on its first attack, is the same, or very nearly the same, with that of apoplexy: and it seems requisite that it should be different only, 1. When the disease has subsisted for some time; 2. When the apoplectic symptoms, or those marking a considerable compression of the origin of the nerves, are removed; and particularly, 3. When there

there are no evident marks of compression, and it is at the same time known that narcotic powers have been applied.

MCLV.

In all these cases, the question arises, Whether stimulants may be employed, or how far the cure may be entirely trusted to such remedies? Upon this question, with respect to apoplexy, I have offered my opinion in MCXXXVI. And, with respect to hemiplegia, I am of opinion, that stimulants are almost always equally dangerous as in the cases of complete apoplexy; and particularly, 1. In all the cases of hemiplegia succeeding to a paroxysm of complete apoplexy; 2. In all the cases coming upon persons of the temperament mentioned in MXCV. and after the same antecedents as those of apoplexy (MXCVI.);
and,

and, 3. In all the cases coming on with symptoms of apoplexy from compression.

MCLVI.

It is, therefore, in the cases MCLIV. only, that stimulants are properly admisible: And even in the two first of these cases, in which a plethoric state of the blood-vessels of the brain may have brought on the disease; in which a disposition to that state may still continue; and in which even some degree of congestion may still remain; the use of stimulants must be an ambiguous remedy; so that perhaps it is in the third of these cases only that stimulants are clearly indicated and admisible.

MCLVII.

These doubts with respect to the use of

stimulants, may perhaps be overlooked or disregarded by those who allege that stimulants have been employed with advantage even in those cases (MCLV.) in which I have said they ought to be avoided.

MCLVIII.

To compromise this contrariety of opinion, I must observe, that even in the cases of hemiplegia depending upon compression, although the origin of the nerves be so much compressed as to prevent so full a flow of the nervous power as is necessary to muscular motion, yet it appears from the power of sense still remaining, that the nerves are, to a certain degree, still pervious; and therefore it is possible that stimulants applied, may excite the energy of the brain so much, as in some measure to force open the compressed nerves, and to
show

show some return of motion in paralytic muscles. Nay, further, it may be allowed, that if these stimulants be such as act more upon the nervous than upon the sanguiferous system, they may possibly be employed without any very hurtful consequence.

MCLIX.

But still it will be obvious, that although certain stimulants act chiefly upon the nervous system, yet they also act always in some measure upon the sanguiferous; so that, when they happen to have the latter effect in any considerable degree, they may certainly do much harm; and in a disease which they do not entirely cure, the mischief arising from them may not be discerned.

MCLX.

Whilst the employment of stimulants is so often an ambiguous practice, we may perhaps go some length towards ascertaining the matter, by considering the nature of the several stimulants which may be employed, and some of the circumstances of their administration. With this view, therefore, I shall now mention the several stimulants that have been commonly employed, and offer some remarks upon their nature and use.

MCLXI.

They are in the first place to be distinguished as external or internal. Of the first kind, we again distinguish them, as they are applied to particular parts of the body only, or as they are more generally ap-

plied to the whole system. Of the first kind are,

1. The concentrated acids of vitriol or nitre; involved, however, in oily or unctuous substances, which may obviate their corrosive, without destroying their stimulant power.
2. The volatile alkaline spirits, especially in their caustic state; but involved also in oils, for the purpose just now mentioned.
3. The same volatile spirits are frequently employed by being held to the nose, when they prove a powerful stimulus to the nervous system; but it is at the same time probable, that they may also prove a strong stimulant to the blood-vessels of the brain.
4. A brine, or strong solution of sea-salt.
5. The essential oils of aromatic plants, or of their parts.
6. The

6. The essential oils of turpentine, or of other such resinous substances.

7. The distilled oils of amber, or of other bituminous fossils.

8. The rectified empyreumatic oils of animal or vegetable substances.

9. Various vegetable acrids, particularly mustard.

10. The acrid matter found in several insects, particularly cantharides.

Some of these stimulants may be either applied in substance, or may be dissolved in ardent spirits, by which their stimulant power may be increased, or more conveniently applied.

MCLXII.

The greater part of the substances now enumerated show their stimulant power by inflaming the skin of the part to which they are applied; and when their applica-

tion is so long continued as to produce this effect, it interrupts the continuance of their use, and the inflammation of the part does not seem to do so much good as the frequent repetition of a more moderate stimulus.

MCLXIII.

Analogous to these stimulants is the stinging of nettles, which has been frequently commended.

Among the external stimulants, the mechanical one of friction with the naked hand, the flesh-brush, or flannel, is justly to be reckoned. Can the impregnation of the flannels to be employed, with the fumes of burning mastic, olibanum, &c. be of any service?

MCLXIV.

MCLXIV.

With respect to the whole of these external stimulants, it is to be observed, that they affect the part to which they are applied much more than they do the whole system, and they are therefore indeed safer in ambiguous cases; but, for the same reason, they are of less efficacy in curing a general affection.

MCLXV.

The external applications which may be applied to affect the whole system, are the powers of heat and cold, and of electricity.

Heat, as one of the most powerful stimulants of the animal œconomy has been often employed in palsies, especially by warm bathing. But as, both by stimulating the solids and rarefying the fluids,

this proves a strong stimulus to the sanguiferous system, it is often an ambiguous remedy; and has frequently been manifestly hurtful in palsies depending upon a congestion of blood in the vessels of the brain. The most certain, and therefore the most proper use of warm bathing in palsies, seems to be in those that have been occasioned by the application of narcotic powers. Are the natural baths more useful by the matters with which they may be naturally impregnated?

MCLXVI.

Cold applied to the body for any length of time, is always hurtful to paralytic persons; but if it be not very intense, nor the application long continued, and if at the same time the body be capable of a brisk reaction, such an application of cold is a powerful stimulant of the whole system,

tem, and has often been useful in curing palsy. But, if the power of reaction in the body be weak, any application of cold may prove very hurtful.

MCLXVII.

Electricity, in a certain manner applied, is certainly one of the most powerful stimulants that can be employed to act upon the nervous system of animals; and therefore, much has been expected from it in the cure of palsy. But, as it stimulates the sanguiferous as well as the nervous system, it has been often hurtful in palsies depending upon a compression of the brain; and especially when it has been so applied as to act upon the vessels of the head. It is safer when its operation is confined to particular parts somewhat remote from the head; and, further, as the operation of electricity, when very strong, can destroy

the mobility of the nervous power, I am of opinion, that it is always to be employed with caution, and that it is only safe when applied with moderate force, and when confined to certain parts of the body remote from the head. It is also my opinion, that its good effects are to be expected from its repetition rather than from its force, and that it is particularly suited to the cure of those palsies which have been produced by the application of narcotic powers.

MCLXVIII.

Amongst the remedies of palsy, the use of exercise is not to be omitted. In a hemiplegia, bodily exercise cannot be employed; and in a more limited affection, if depending upon a compression of some part of the brain, it would be an ambiguous

guous remedy: but, in all cases where the exercises of gestation can be employed, they are proper; as, even in cases of compression, the stimulus of such exercise is moderate, and therefore safe; and, as it always determines to the surface of the body, it is a remedy in all cases of internal congestion.

MCLXIX.

The internal stimulants employed in palsy are various, but chiefly the following.

1. The volatile alkaline salts, or spirits, as they are called, are very powerful and diffusible stimulants, operating especially on the nervous system; and even although they operate on the sanguiferous, yet, if given in frequently repeated small rather than in large doses, their operation being transitory, is tolerably safe.

2. The

2. The vegetables of the class named Tetradynamia, are many of them powerful diffusive stimulants; and at the same time, as quickly passing out of the body, and therefore of transitory operation, they are often employed with safety. As they commonly prove diuretic, they may in this way also be of service in some cases of ferous palsy.

3. The various aromatics, whether employed in substance, in tincture, or in their essential oils, are often powerful stimulants; but being more adhesive and inflammatory than those last mentioned, they are therefore in all ambiguous cases less safe.

4. Some other acrid vegetables have been employed; but we are not well acquainted with their peculiar virtues, or proper use.

5. Some resinous substances, as guaiacum, and the terebinthinate substances, or
their

their essential oils, have been, with some probability, employed; but they are apt to become inflammatory. Decoctions of guaiacum, and some other sudorifics, have been directed to excite sweating by the application of the fumes of burning spirit of wine in the laconicum, and have in that way been found useful.

6. Many of the fetid antispasmodic medicines have been frequently employed in palsy; but I do not perceive in what manner they are adapted to the cure of this disease, and I have not observed their good effects in any cases of it.

7. Bitters, and the Peruvian bark, have also been employed; but with no propriety or advantage that I can perceive.

MCLXX.

With respect to the whole of these internal stimulants, it is to be observed, that
they

they seldom prove very powerful; and wherever there is any doubt concerning the nature or state of the disease, they may readily do harm, and are often therefore of ambiguous use.

BOOK

B O O K II.

O F A D Y N A M I Æ,

O R

DISEASES CONSISTING IN A WEAKNESS
OR LOSS OF MOTION IN EITHER THE
VITAL OR NATURAL FUNCTIONS.

C H A P. I.

O F SYNCOPE, OR FAINTING.

MCLXXI.

THIS is a disease in which the action
of the heart and respiration become
considerably weaker than usual, or in which
for

for a certain time these functions cease altogether.

MCLXXII.

Physicians having observed that this affection occurs in different degrees, have endeavoured to distinguish these by different appellations; but as it is not possible to ascertain these different degrees with any precision, so there can be no strict propriety in employing those different names, and I shall here comprehend the whole of the affections of this kind under the title of Syncope.

MCLXXIII.

This disease sometimes comes on suddenly to a considerable degree, but sometimes also it comes on gradually; and in the latter case, it usually comes on with a sense of languor, and of anxiety about the
heart,

heart, accompanied at the same time, or immediately after, with some giddiness, dimness of sight, and sounding in the ears. Together with these symptoms, the pulse and respiration become weak; and often so weak, that the pulse is scarcely to be felt, or the respiration to be perceived; and sometimes these motions, for a certain time, cease altogether. While these symptoms take place, the face and whole surface of the body become pale, and more or less cold according to the degree and duration of the paroxysm. Very commonly, at the beginning of this, and during its continuance, a cold sweat appears, and perhaps continues on the fore-head, as well as on some other parts of the body. During the paroxysm, the animal functions, both of sense and motion, are always in some degree impaired, and very often entirely suspended. A paroxysm of syncope is often, after some time, spontaneously

neously recovered from; and this recovery is generally attended with a sense of much anxiety about the heart.

Fits of syncope are frequently attended with, or end in, vomiting; and sometimes with convulsions, or an epileptic fit.

MCLXXIV.

These are the phenomena in this disease; and from every view of the greatest part of them, there cannot be a doubt that the proximate cause of this disease is a very weak or a total ceasing of the action of the heart. But it will be a very difficult matter to explain in what manner the several remote causes operate in producing the proximate cause. This, however, I shall attempt, though with that diffidence which becomes me in attempting a subject that has not hitherto been treated with much success.

MCLXXIV.

The remote causes of syncope may, in the first place, be referred to two general heads. The one is, of those causes existing and acting in the brain, or in parts of the body remote from the heart, but acting upon it by the intervention of the brain. The other general head of the remote causes of syncope, is of those existing in the heart itself, or in parts very immediately connected with it, and thereby acting more directly upon it in producing this disease.

MCLXXV.

In entering upon the consideration of the first set of those causes (MCLXXIV.), I must assume a proposition which I suppose to be fully established in Physiology. It is this: That, though the muscular fibres of

the heart be endowed with a certain degree of inherent power, they are still, for such action as is necessary to the motion of the blood, very constantly dependent upon a nervous power sent into them from the brain. At least this is evident, that there are certain powers acting primarily, and perhaps only in the brain, which influence and variously modify the action of the heart. I suppose, therefore, a force very constantly during life exerted in the brain, with respect to the moving fibres of the heart, as well as of every part of the body: which force I shall call the Energy of the Brain; and which I suppose may be, on different occasions, stronger or weaker with respect to the heart.

MCLXXVI.

Admitting these propositions, it will be obvious, that if I can explain in what
man-

thereby diminishing its energy with respect to the heart, may occasion a syncope. In many persons, a small evacuation of blood will have this effect; and in such cases there is often a clear proof of the manner in which the cause operates, from this circumstance, that the effect can be prevented by laying the body in a horizontal posture; which, by favouring the afflux of the blood by the arteries, and retarding the return of it by the veins, preserves the necessary fulness of the vessels of the brain.

It is farther to be remarked here, that not only an evacuation of blood occasions syncope, but that even a change in the distribution of the blood, whereby a larger portion of it flows into one part of the system of blood-vessels, and consequently less into others, may occasion a syncope. It is thus I explain the syncope that readily occurs upon the evacuation of hydro-

pic

pic waters, which had before filled the cavities of the abdomen or thorax. It is thus also I explain the syncope that sometimes happens on blood-letting, but which does not happen till the ligature which had been employed is untied, and admits a larger afflux of blood into the blood-vessels of the arm. Both these cases of syncope show, that an evacuation of blood does not always occasion the disease by any general effect on the whole system, but often merely by taking off the requisite fulness of the blood-vessels of the brain.

MCLXXVIII.

The operation of some others of the remote causes of syncope, may be explained on the following principles. Whilst the energy of the brain is, upon different occasions, manifestly stronger or weaker, it seems to be with this condition, that a

stronger exertion of it is necessarily followed by a weaker state of the same. It seems to depend upon this law in the constitution of the nervous power, that the ordinary contraction of a muscle is always alternated with a relaxation of the same; that, unless a contraction proceeds to the degree of spasm, the contracted state cannot be long continued: and it seems to depend upon the same cause that the voluntary motions, which always require an unusual increase of exertion, occasion fatigue, debility, and at length irresistible sleep.

From this law, therefore, of the nervous power, we may understand, why a sudden and violent exertion of the energy of the brain is sometimes followed by such a diminution of it as to occasion a syncope; and it is thus I suppose that a violent fit of joy produces syncope, and even death. It is upon the same principle also, I suppose,

pose,

pose, that an exquisite pain may sometimes excite the energy of the brain more strongly than can be supported, and is therefore followed by such a diminution as must occasion fainting. But the effect of this principle appears more clearly in this, that a fainting readily happens upon the sudden remission of a considerable pain; and thus I have seen a fainting occur upon the reduction of a painful dislocation.

MCLXXIX.

It seems to be quite analogous when a syncope immediately happens on the finishing of any great and long-continued effort, whether depending on the will, or upon a propensity; and in this way a fainting sometimes happens to a woman on the bearing of a child. This may be well illustrated by observing, that in persons already much weakened, even a very mo-

derate effort will sometimes occasion fainting.

MCLXXX.

To explain the operation of some other causes of syncope, it may be observed, that as the exertions of the energy of the brain are especially under the influence of the will, so it is well known that those modifications of the will which are named Passions and Emotions, have a powerful influence on the energy of the brain in its actions upon the heart, either in increasing or diminishing the force of that energy. Thus, anger has the former, and fear the latter effect; and thence it may be understood how terror often occasions a syncope sometimes of the most violent kind, named Asphyxia, and sometimes death itself.

MCLXXXI.

MCLXXXI.

As, from what I have just mentioned, it appears, that the emotions of desire increase, and those of aversion diminish, the energy of the brain; so it may be understood, how a strong aversion, a horror, or the feeling which arises upon the sight of a very disagreeable object, may occasion fainting. As an example of this, I have known more than one instance of a person's fainting at the sight of a sore in another person.

MCLXXXII.

To this head of horror and disgust, I refer the operation of those odours which in certain persons occasion syncope. It may be supposed, that those odours are endowed with a directly sedative power, and may thereby occasion syncope; but they
are,

are, many of them, with respect to other persons, evidently of a contrary quality: and it appears to me, that those odours occasion syncope only in those persons to whom they are extremely disagreeable.

MCLXXXIII.

It is, however, very probable, that among the causes of syncope, there are some which, analogous to all those we have already mentioned, act by a directly sedative power: and such may either be diffused in the mass of blood, and thereby communicated to the brain, or may be only taken into the stomach, which so readily and frequently communicates its affections to the brain.

MCLXXXIV.

Having now enumerated, and, as I hope,

ex-

explained, the most part of the remote causes of syncope, that either operate immediately upon the brain, or whose operation upon other parts of the body is communicated to the brain, it is proper to observe, that the most part of these causes operate upon certain persons more readily and more powerfully than upon others; and this circumstance, which may be considered as the predisponent cause of syncope, deserves to be inquired into.

It is, in the first place, obvious, that the operation of some of those causes depends entirely upon an idiosyncrasy in the persons upon whom they operate; which, however, I cannot pretend to explain. But, in the next place, with respect to the greater part of the other causes, their effects seem to depend upon a temperament which is in one degree or other in common to many persons. This temperament

ment seems to consist in a great degree of sensibility and mobility, arising from a state of debility, sometimes depending upon original conformation, and sometimes produced by accidental occurrences in the course of life.

MCLXXXV.

The second set of the remote causes of syncope (MCLXXIV.), or those acting directly upon the heart itself, are certain organic affections of the heart itself, or of the parts immediately connected with it, particularly the great vessels which pour blood into or immediately receive it from the cavities of the heart. Thus a dilatation or aneurism of the heart, a polypus in its cavities, abscesses or ulcerations in its substance, a close adherence of the pericardium to the surface of the heart, aneurisms of the great vessels near to the heart,

poly-

polypus in these, and ossifications in these or in the valves of the heart, are one or other of them conditions which, upon dissection, have been discovered in those persons who had before laboured under frequent syncope.

MCLXXXVI.

It is obvious, that these conditions are all of them, either such as may, upon occasion, disturb the free and regular influx into, or the free egress of the blood from, the cavities of the heart; or such as may otherwise disturb its regular action, by sometimes interrupting it, or sometimes exciting it to more violent and convulsive action. The latter is what is named the Palpitation of the heart, and it commonly occurs in the same persons who are liable to syncope.

MCLXXXVII.

MCLXXXVII.

It is this, as I judge, that leads us to perceive in what manner these organic affections of the heart and great vessels may occasion syncope; for it may be supposed, that the violent exertions made in palpitations may either give occasion to an alternate great relaxation (MCLXXVIII.), or to a spasmodic contraction; and in either way suspend the action of the heart, and occasion syncope. It seems to me probable, that it is a spasmodic contraction of the heart that occasions the intermission of the pulse so frequently accompanying palpitation and syncope.

MCLXXXVIII.

Though it frequently happens that palpitation and syncope arise, as we have said, from the organic affections above mentioned,

tioned, it is proper to observe, that these diseases, even when in a violent degree, do not always depend on such causes acting directly on the heart, but are often dependent on some of those causes which we have mentioned above as acting primarily on the brain.

MCLXXXIX.

I have thus endeavoured to give the pathology of syncope; and of the cure I can treat very shortly.

The cases of syncope depending on the second set of causes (MCLXXIV.), and fully recited in MCLXXXV. I suppose to be generally incurable; as our art, so far as I know, has not yet taught us to cure any one of those several causes of syncope (MCLXXXV.)

The cases of syncope, depending on the first set of causes (MCLXXIV.), and whose

ope-]

operation I have endeavoured to explain in MCLXXVII. *et seq.* I hold to be generally curable, either by avoiding the several occasional causes there pointed out, or by correcting the predisponent causes (MCLXXXIV.) The latter, I think, may generally be done by correcting the debility or mobility of the system, by the means which I have already had occasion to point out in another place.

C H A P.

C H A P. II.

O F D Y S P E P S I A, O R I N D I G E S T I O N.

M C X C.

A W A N T of appetite, a squeamishness, sometimes a vomiting, sudden and transient distentions of the stomach, eructations of various kinds, heartburn, pains in the region of the stomach, and a bound belly, are symptoms which frequently concur in the same person, and therefore may be presumed to depend upon one and the same proximate cause. In both views,

therefore they may be considered as forming one and the same disease, to which we have given the appellation of *Dyspepsia*, set at the head of this chapter.

MCXCI.

But as this disease is also frequently a secondary and sympathetic affection, so the symptoms above mentioned are often joined with many others; and this has given occasion to a very confused and undetermined description of it, under the general title of Nervous Diseases, or under that of Chronic Weakness. It is proper, however, to distinguish, and I apprehend the symptoms enumerated above are those essential to the idiopathic affection I am now to treat of.

MCXCII.

MCXCII.

It is indeed to be particularly observed, that these symptoms are often truly accompanied with a certain state of mind which may be considered as a part of the idiopathic affection: but I shall take no further notice of this symptom in the present chapter, as it will be fully and more properly considered in the next, under the title of Hypochondriasis.

MCXCIII.

That there is a distinct disease attended always with the greater part of the above symptoms, is rendered very probable by this, that all these several symptoms may arise from one and the same cause; that is, from an imbecillity, loss of tone, and weaker action in the muscular fibres of the stomach: and I conclude therefore that

this imbecillity may be considered as the proximate cause of the disease I am to treat of under the name of *Dyspepsia*.

MCXCIV.

The imbecillity of the stomach, and the consequent symptoms (MCXC.), may, however, frequently depend upon some organic affection of the stomach itself, as tumour, ulcer, or scirrhoty; or upon some affection of other parts of the body communicated to the stomach, as in gout, amenorrhœa, and some others. In all these cases, however, the dyspeptic symptoms are to be considered as secondary or sympathetic affections, to be cured only by curing the primary disease. Such secondary and sympathetic cases cannot, indeed, be treated of here: but, as I presume, that the imbecillity of the stomach may often take place without either any organic affection

fection of this part, or any more primary affection in any other part of the body; so I suppose and expect it will appear, from the consideration of the remote causes, that the dyspepsia may be often an idiopathic affection, and that it is therefore properly taken into the system of methodical Nosology, and becomes the subject of our consideration here.

MCXCXV.

There can be little doubt, that, in most cases, the weaker action of the muscular fibres of the stomach, is the most frequent and chief cause of the symptoms mentioned in MCXC. ; but I dare not maintain it to be the only cause of idiopathic dyspepsia. There is, pretty certainly, a peculiar fluid in the stomach of animals, or at least a peculiar quality in the fluids, that we know to be there, upon which the

olution of the aliments taken into the stomach chiefly depends : and it is at the same time probable, that the peculiar quality of the dissolving or digesting fluids may be variously changed, or that their quantity may be, upon occasion, diminished. It is therefore sufficiently probable, that a change in the quality or quantity of these fluids may produce a considerable difference in the phenomena of digestion, and particularly may give occasion to many of the morbid appearances mentioned in MCXC.

MCXCVI.

This seems to be very well founded, and points out another proximate cause of dyspepsia beside that we have already assigned : But, notwithstanding this, as the peculiar nature of the digestive fluid, the changes which it may undergo, or the
causes

causes by which it may be changed, are all matters so little known, that I cannot find any practical doctrine upon any supposition with respect to them; and as, at the same time, the imbecillity of the stomach, either as causing the change in the digestive fluid, or as being induced by that change, seems always to be present, and to have a great share in occasioning the symptoms of indigestion; so I shall still consider the imbecillity of the stomach as the proximate and almost sole cause of dyspepsia. And I more readily admit of this manner of proceeding; as, in my opinion, the doctrine applies very fully and clearly to the explaining the whole of the practice which experience has established as the most successful in this disease.

MCXCVII.

Considering this, then, as the proximate cause of dyspepsia, I proceed to mention the several remote causes of this disease; as they are such, as, on different occasions, seem to produce a loss of tone in the muscular fibres of the stomach. They may, I think, be considered under two heads. The *first* is, of those which act directly and immediately upon the stomach itself: The *second* is, of those which act upon the whole body, or particular parts of it, but in consequence of which the stomach is chiefly or almost only affected.

MCXCVIII.

Of the first kind are,

1. Certain sedative or narcotic substances taken into the stomach; such as
tea,

tea, coffee, tobacco, ardent spirits, opium, bitters, aromatics, putrids, and acescents.

2. The large and frequent drinking of warm water, or of warm watery liquids.

3. Frequent surfeit, or immoderate repletion of the stomach.

4. Frequent vomiting, whether spontaneously arising, or excited by art.

5. Very frequent spitting, or rejection of saliva.

MCXCIX.

Those causes which act upon the whole body, or upon particular parts and functions of it, are,

1. An indolent and sedentary life.

2. Vexation of mind, and disorderly passions of any kind.

3. Intense study, or close application to business too long continued.

4. Excess in venery.

5. Frequent intoxication; which partly belongs to this head, partly to the former.

6. The being much exposed to moist and cold air when without exercise.

Though the disease, as proceeding from the last set of causes, may be considered as a symptomatic affection only; yet as the affection of the stomach is generally the first, always the chief, and often the only effect which these causes produce or discover, I think the affection of the stomach may be considered as the disease to be attended to in practice; and the more properly so, as in many cases the general debility is only to be cured by restoring the tone of the stomach, and by remedies first applied to this organ.

MCCI.

For the cure of this disease, we form three
feve-

several indications; a preservative, a palliative, and a curative.

The *first* is, to avoid or remove the remote causes just now enumerated.

The *second* is, to remove those symptoms which especially contribute to aggravate and continue the disease. And,

The *third* is, to restore the tone of the stomach; that is, to correct or remove the proximate cause of the disease.

MCCII.

The propriety and necessity of the first indication is sufficiently evident, as the continued application, or frequent repetition of those causes, must continue the disease; may defeat the use of remedies; or, in spite of these, may occasion the recurrence of the disease. It is commonly the neglect of this indication which renders this disease so frequently obstinate. How
the

the indication is to be executed, will be sufficiently obvious from the consideration of the several causes : but it is proper for the practitioner to attend to this, that the execution is often exceedingly difficult, because it is not easy to engage men to break in upon established habits, or to renounce the pursuit of pleasure ; and particularly, to persuade men that these practices are truly hurtful which they have often practised with seeming impunity.

MCCIII.

The symptoms of this disease which especially contribute to aggravate and continue it, and therefore require to be more immediately corrected or removed, are, *first*, the crudities of the stomach already produced by the disease, and discovered by a loss of appetite, by a sense of weight and uneasiness in the stomach, and particularly

cularly by the eructation of imperfectly digested matters.

Another symptom to be immediately corrected, is an unusual quantity, or a higher degree than usual, of acidity present in the stomach, discovered by various disorders in digestion, and by other effects to be mentioned afterwards.

The *third* symptom aggravating the disease, and otherwise in itself urgent, is costiveness, and therefore constantly requiring to be relieved.

MCCIV.

The *first* of these symptoms is to be relieved by exciting vomiting; and the use of this remedy, therefore, usually and properly begins the cure of this disease. The vomiting may be excited by various means, more gentle or more violent. The former may answer the purpose of evacuating the
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the contents of the stomach : but emetics, and vomiting, may also excite the ordinary action of the stomach ; and both, by variously agitating the system, and particularly by determining to the surface of the body, may contribute to remove the causes of the disease. But these latter effects can only be obtained by the use of emetics of the more powerful kind, such as the antimonial emetics especially are.

MCCV.

The *second* symptom to be palliated, is an excess of acidity, either in quantity or quality, in the contents of the stomach. In man there is a quantity of acedent aliment almost constantly taken in, and, as I think, always undergoes an acetous fermentation in the stomach ; and it is therefore, that, in the human stomach, and in the stomachs of all animals using vegetable
2 food,

food, there is always found an acid present. This acid, however, is generally innocent, and occasions no disorder, unless either the quantity of it is very large, or the acidity proceeds to a higher degree than usual. But, in either of these cases, the acid occasions various disorders, as flatulency, eructation, heartburn, gnawing pains of the stomach, irregular appetites and cravings, looseness, griping, emaciation, and debility. To obviate or remove these effects aggravating and continuing the disease, it is not only necessary to correct the acid present in the stomach; but, especially as this acid proves a ferment determining and increasing the acescency of the aliments afterwards taken in, it is proper also, as soon as possible, to correct the disposition to excessive acidity.

MCCVI.

The acidity present in the stomach may be corrected by the use of alkaline salts, or absorbent earths, or by such substances containing these, which can be decomposed by the acid of the stomach. Of the alkalines, the caustic is more effectual than the mild; and this accounts for the effects of lime-water. By employing absorbents, we avoid the excess of alkali, which might sometimes take place. The absorbents are different, as they form a neutral more or less laxative; and hence the difference between magnesia alba and other absorbents. It is to be observed, that alkalines and absorbents may be employed to excess; as, when employed in large quantity, they may deprive the animal fluids of the acid necessary to their proper composition.

MCCVII.

The disposition to acidity may be obviated by avoiding acefcent aliments, and using animal-food little capable of acefcency. This, however, cannot be long continued without corrupting the ftate of our blood; and as vegetable food cannot be entirely avoided, the excefs of their acefcency may in fome meafure be avoided, by choofing vegetable food the leaft difpofed to a vinous fermentation, fuch as leavened bread and well fermented liquors, and, inftead of fresh native acids, employing vinegar.

MCCVIII.

The acid arifing from acefcent matters in a found ftate of the ftomach, does not proceed to any high degree, or is again foon involved and made to difappear: but

this does not always happen; and a more copious acidity, or a higher degree of it, may be produced, either from a change in the digestive fluids, become less fit to moderate fermentation and to cover acidity, or from their not being supplied in due quantity. How the former may be occasioned, we do not well understand; but we can readily perceive that the latter, perhaps the former also, may proceed from a weaker action of the muscular fibres of the stomach. In certain cases, sedative passions, immediately after they arise, occasion the appearance of acidity in the stomach which did not appear before; and the use of stimulants often corrects or obviates an acidity that would otherwise have appeared. From these considerations, we conclude, that the production and subsistence of acidity in the stomach, is to be especially prevented by restoring and exciting the pro-
per

per action of it, by the several means to be mentioned hereafter.

MCCIX.

But it is also to be further observed, that though there are certain powers in the stomach for preventing a too copious acidity, or a high degree of it, they are not however always sufficient for preventing acescency, or for covering the acidity produced; and therefore, as long as vegetable substances remain in the stomach, their acescency may go on and increase. From hence we perceive, that a special cause of the excess of acidity may be, the too long retention of acescent matters in the stomach; whether this may be from these matters being of more difficult solution, or from the weakness of the stomach more slowly discharging its contents into the duodenum, or from some impediment to

the free evacuation of the stomach by the pylorus. The latter of these causes we are well acquainted with, in the case of a scirrhous pylorus, producing commonly the highest degree of acidity. In all the instances of this scirrhoty I have met with, I have found it incurable: but the first of these causes is to be obviated by avoiding such aliments as are of difficult solution; and the second is to be mended by the several remedies for exciting the action of the stomach, to be mentioned afterwards.

MCCX.

The *third* symptom commonly accompanying dyspepsia, which requires to be immediately removed, is costiveness. There is so much connection between the several portions of the alimentary canal with respect to the peristaltic motion, that, if accelerated or retarded in any one part, the
other

other parts of it are commonly affected in the same manner. Thus, as the brisker action of the stomach must accelerate the action of the intestines, so the slower action of the intestines must in some measure retard that of the stomach. It is therefore of consequence to the proper action of the stomach, that the peristaltic motion of the intestines determining their contents downwards, be regularly continued; and that all costiveness, or interruption of that determination, be avoided. This may be done by the various means of exciting the action of the intestines: but it is to be observed here, that as every considerable evacuation of the intestines weakens their action, and is ready therefore to induce costiveness when the evacuation is over; so those purgatives which produce a large evacuation, are unfit for correcting the habit of costiveness. This, therefore, should be attempted by medicines which do no more than so-

licit the intestines to a more ready discharge of their present contents, without either hurrying their action, or increasing the excretions made into their cavity; either of which effects might produce a purging. There are, I think, certain medicines peculiarly proper on this occasion, as they seem to stimulate especially the great guts, and to act little on the higher parts of the intestinal canal.

MCCXI.

We have thus mentioned the several means of executing our second indication; and I proceed to the *third*, which is, as we have said, the proper curative; and it is to restore the tone of the stomach, the loss of which we consider as the proximate cause of the disease, or at least as the chief part of it. The means of satisfying this indication we refer to two heads. One is, of those

those means which operate directly and chiefly on the stomach itself; and the other is, of those means which, operating upon the whole system, have their tonic effects thereby communicated to the stomach.

MCCXII.

The medicines which operate directly on the stomach, are either stimulants or tonics.

The stimulants are saline or aromatic.

The saline are acids or neutrals.

Acids of all kinds seem to have the power of stimulating the stomach, and therefore often increase appetite: but the native acids, as liable to fermentation, may otherwise do harm, and are therefore of ambiguous use. The acids, therefore, chiefly and successfully employed, are the vitriolic, muriatic, and the distilled acid of vegetables,

as it is found in tar-water, which are all of them antizymics.

The neutral salts answering this intention, are especially those which have the muriatic acid in their composition, though it is presumed that neutrals of all kinds have more or less of the same virtue.

MCCXIII.

The aromatics, and perhaps some other acrids, certainly stimulate the stomach, as they obviate the acescency and flatulency of vegetable food: but their stimulus is transitory; and if frequently repeated, and taken in large quantities, they may hurt the tone of the stomach.

MCCXIV.

The tonics employed to strengthen the
stomach

stomach are bitters, bitters and astringents combined, and chalybeates.

Bitters are undoubtedly tonic medicines, both with respect to the stomach and the whole system: but their long-continued use has been found to destroy the tone of the stomach, and of the whole system; and, whether this is from the mere repetition of their tonic operation, or from some narcotic power joined with the tonic in them, I am uncertain.

MCCXV.

Bitters and astringents combined, are, probably, more effectual tonics than either of them taken singly; and we suppose such a combination to take place in the Peruvian bark; which therefore proves a powerful tonic, both with respect to the stomach and to the whole system. But I have some ground to suspect, that the long-continued
use

use of this bark may, like bitters, destroy both the tone of the stomach and of the whole system.

MCCXVI.

Chalybeates may be employed as tonics in various forms, and in considerable quantities, with safety. They have been often employed in the form of mineral waters, and seemingly with success: but whether this is owing to the chalybeate in the composition of these waters, or to some other circumstances attending their use, I dare not positively determine; but the latter opinion seems to me the more probable.

MCCXVII.

The remedies which strengthen the stomach, by being applied to the whole
body,

body, are, exercise and the application of cold.

As exercise strengthens the whole body, it must also strengthen the stomach; but it does this also in a particular manner, by promoting perspiration, and exciting the action of the vessels on the surface of the body, which have a particular consent with the muscular fibres of the stomach. This particularly explains why the exercises of gestation, though not the most powerful in strengthening the whole system, are, however, very powerful in strengthening the stomach; of which we have a remarkable proof in the effects of sailing. In strengthening the general system, as fatigue must be avoided, so bodily exercise is of ambiguous use; and perhaps it is thereby, that riding on horseback has been so often found to be one of the most powerful means of strengthening

ing

ing the stomach, and thereby of curing dyspepsia.

MCCXVIII.

The other general remedy of dyspepsia, is the application of cold: which may be in two ways; that is, either by the application of cold air, or of cold water. It is probable, that, in the atmosphere constantly surrounding our bodies, a certain degree of cold, considerably less than the temperature of our bodies themselves, is necessary to the health of the human body. Such a degree of cold seems to strengthen the vessels on the surface of the body, and therefore the muscular fibres of the stomach. But, further, it is well known, that if the body is in exercise sufficient to support such a determination to the surface, as to prevent the cold from producing an entire constriction of the pores;

a certain degree of cold in the atmosphere, with such exercise, will render the perspiration more considerable. From the sharp appetite that in such circumstances is commonly produced, we can have no doubt, that by the application of such cold, the tone of the stomach is considerably strengthened. Cold air, therefore, applied with exercise, is a most powerful tonic with respect to the stomach: and this explains why, for that purpose, no exercises within doors, or in close carriages, are so useful as those in the open air.

MCCXIX.

From the same reasoning, we can perceive, that the application of cold water, or cold bathing, while it is a tonic with respect to the system in general, and especially as exciting the action of the extreme vessels, must in both respects be a powerful

ful

ful means of strengthening the tone of the stomach.

MCCXX.

These are the remedies to be employed towards a radical cure of idiopathic dyspepsia; and it might be, perhaps, expected here, that I should treat also of the various cases of the sympathetic disease. But it will be obvious that this cannot be properly done without treating of all the diseases of which the dyspepsia is a symptom, which cannot be proper in this place. It has been partly done already, and will be further treated of in the course of this work. In the mean time, it may be proper to observe, that there is not so much occasion for distinguishing between the idiopathic and sympathetic dyspepsia, as there is in many other cases of idiopathic and sympathetic diseases. For, as the sympathetic cases

of dyspepsia are owing to a loss of tone in some other part of the system, which is from thence communicated to the stomach; so the tone of the stomach restored, may be communicated to the part primarily affected; and therefore the remedies of the idiopathic may be often usefully employed, and are often the remedies chiefly employed, in sympathetic dyspepsia.

MCCXXI.

Another part of our business here might be to say, how some other of the urgent symptoms, beside those above mentioned, are to be palliated. On this subject, I think it is enough to say, that the symptoms chiefly requiring to be immediately relieved, are flatulency, heartburn, other kinds of pain in the region of the stomach, and vomiting.

The

The dyspeptic are ready to suppose that the whole of their disease consists in a flatulency. In this it will be obvious that they are mistaken; but, although the flatulency is not to be entirely cured, but by mending the imbecillity of the stomach by the means above mentioned; yet the flatulent distention of the stomach may be relieved by carminatives, as they are called, or medicines that produce a discharge of wind from the stomach; such are the various antispasmodics, of which the most effectual is the vitriolic æther.

The heartburn may be relieved by absorbents, antispasmodics, or demulcents.

The other pains of the stomach may be sometimes relieved by carminatives, but most certainly by opiates.

Vomiting is to be cured most effectually by opiates thrown by injection into the anus.

C H A P. III.

OF HYPOCHONDRIASIS,

OR THE

HYPOCHONDRIAC AFFECTION,

COMMONLY CALLED

VAPOURS OR LOW SPIRITS.

MCCXXII.

IN certain persons there is a state of mind distinguished by a concurrence of the following circumstances: A langour, listlessness, or want of resolution and activity

VOL. III.

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with

with respect to all undertakings; a disposition to feriousness, sadness, and timidity; as to all future events, an apprehension of the worst or most unhappy state of them; and therefore, often upon slight grounds, an apprehension of great evil. Such persons are particularly attentive to the state of their own health, to every the smallest change of feeling in their bodies; and from any unusual feeling, perhaps of the slightest kind, they apprehend great danger, and even death itself. In respect to all these feelings and apprehensions, there is commonly the most obstinate belief and persuasion.

MCCXXIII.

This state of mind is the Hypochondriasis of medical writers. See Linnæi Genera Morborum, Gen. 76. Sagari Systema Symptomaticum, Class XIII. Gen. 5. The same

same state of mind is what has been commonly called *Vapours* and *Low Spirits*. Though the term *Vapours* may be founded on a false theory, and therefore improper, I beg leave, for a purpose that will immediately appear, to employ it for a little here.

MCCXXIV.

Vapours, then, or the state of mind described above, is, like every other state of mind, connected with a certain state of the body, which must be inquired into in order to its being treated as a disease by the art of physic.

MCCXXV.

This state of the body, however, is not very easily ascertained: for we can perceive, that on different occasions it is very

different; vapours being combined sometimes with dyspepsia, sometimes with hysteria, and sometimes with melancholia, which are diseases seemingly depending on very different states of the body.

MCCXXVI.

The combination of vapours with dyspepsia is very frequent, and in seemingly very different circumstances. It is, especially, these different circumstances that I would wish to ascertain; and I remark, that they are manifestly of two different kinds. First, as the disease occurs in young persons of both sexes, in persons of a sanguine temperament, and of a lax and flaccid habit. Secondly, as it occurs in elderly persons of both sexes, of a melancholic temperament, and of a firm and rigid habit.

MCCXXVII.

stances of the disease; and as this turn of mind is often with few, or only slight symptoms of dyspepsia, and, even though the latter be attending, as they seem to be rather the effects of the general temperament, than of any primary or topical affection of the stomach; I consider this combination as a very different disease from the former, and would apply to it strictly the appellation of *Hypochondriasis*.

MCCXXVIII.

Having thus pointed out a distinction between Dyspepsia and Hypochondriasis, I shall now, using these terms in the strict sense above mentioned, make some observations which may, I think, illustrate the subject, and more clearly and fully establish the distinction proposed.

MCCXXX.

MCCXXIX.

The dyspepsia often appears early in life, and is frequently much mended as life advances ; but the hypochondriasis seldom appears early in life, and more usually in more advanced years only ; and more certainly still, when it has once taken place, it goes on increasing as life advances to old age.

This seems to be particularly well illustrated, by our observing the changes in the state of the mind which usually take place in the course of life. In youth, the mind is cheerful, active, rash, and moveable ; but as life advances, the mind by degrees becomes more serious, slow, cautious, and steady ; till at length, in old age, the gloomy, timid, distrustful, and obstinate state of melancholic temperaments is more exquisitely formed. In producing these changes, it is true, that moral causes

have a share; but it is at the same time obvious, that the temperament of the body determines the operation of these moral causes, sooner or later, and in a greater or lesser degree, to have their effects. The sanguine temperament retains longer the character of youth, while the melancholic temperament brings on more early the manners of old age.

MCCXXX.

Upon the whole, it appears, that the state of the mind which attends, and especially distinguishes hypochondriasis, is the effect of that same rigidity of the solids, torpor of the nervous power, and peculiar balance between the arterial and venous systems which occur in advanced life, and which at all times take place more or less in melancholic temperaments. If therefore there be also somewhat of a like state
of

of mind attending that dyspepsia which occurs early in life in sanguine temperaments and lax habits, it must depend upon a different state of the body, and probably upon a weak and moveable state of the nervous power.

MCCXXXI.

Agreeable to all this, in dyspepsia, there is more of spasmodic affection, and the affection of the mind (MCCXXII.) is often absent, and, when present, is perhaps always of a slighter kind: while, in hypochondriasis, the affection of the mind is more constant, and the symptoms of dyspepsia, or the affections of the stomach, are often absent, or, when present, are in a slighter degree.

I believe the affection of the mind is commonly different in the two diseases. In dyspepsia, it is often languor and timidity
only,

only, easily dispelled; while in hypochondriasis, it is generally the gloomy and rivetted apprehension of evil.

The two diseases are also distinguished by some other circumstances. Dyspepsia, as I have said, is often a symptomatic affection; while hypochondriasis is, perhaps, always a primary and idiopathic disease.

As debility may be induced by many different causes, dyspepsia is a frequent disease; while hypochondriasis, depending upon a peculiar temperament, is more rare.

MCCXXXII.

Having thus endeavoured to distinguish the two diseases, I suppose the peculiar nature and proximate cause of *hypochondriasis* will be understood; and I proceed therefore to treat of its cure.

So far as the affections of the body, and
parti-

particularly of the stomach, are the same here as in the case of *dyspepsia*, the method of cure might be supposed to be also the same; and accordingly the practice has been carried on with little distinction: but I am persuaded that a distinction is often necessary.

MCCXXXIII.

There may be a foundation here for the same preservative indication as first laid down in the cure of *dyspepsia* (MCCII.); but I cannot treat this subject so clearly or fully as I could wish, because I have not yet had so much opportunity of observation as I think necessary to ascertain the remote causes; and I can hardly make use of the observations of others, who have seldom or never distinguished between the two diseases. What, indeed, has been said with respect to the remote causes of *melancholia*,
will

will often apply to the *hypochondriasis*, which I now treat of; but the subject of the former has been so much involved in a doubtful theory, that I find it difficult to select the facts that might properly and strictly apply to the latter. I delay this subject, therefore, till another occasion; but in the mean time trust, that what I have said regarding the nature of the disease, and some remarks I shall have occasion to offer in considering the method of cure, may in some measure supply my deficiency on this subject of the remote causes.

MCCXXXIV.

The *second* indication laid down in the cure of dyspepsia (MCCL.) has properly a place here; but it is still to be executed with some distinction.

MCCXXXV.

An anorexia, and accumulation of crudities in the stomach, does not so commonly occur in hypochondriasis as in dyspepsia; and therefore vomiting (MCCIV.) is not so often necessary in the former as in the latter.

MCCXXXVI.

The symptom of excess of acidity, from the slow evacuation of the stomach in melancholic temperaments, often arises to a very high degree in hypochondriasis; and therefore, for the same reason as in MCCV. it is to be obviated and corrected with the utmost care. It is upon this account that the several antacids, and the other means of obviating acidity, are to be employed in hypochondriasis, and with the same attentions and considerations as in MCCVI.

and

and following ; with this reflection, however, that the exciting the action of the stomach there mentioned, is to be a little differently understood, as shall be hereafter explained.

MCCXXXVII.

As costiveness, and that commonly to a considerable degree, is a very constant attendant of hypochondriasis, so it is equally hurtful as in dyspepsia. It may be remedied by the same means in the former as in the latter, and they are to be employed with the same restrictions as in MCCX.

MCCXXXVIII.

It is especially with respect to the *third* indication laid down in the cure of dyspepsia (MCCL.) that there is a difference of practice to be observed in the cure

I

of

of hypochondriasis; and that often one directly opposite to that in the case of dyspepsia, is to be followed.

MCCXXXIX.

In dyspepsia, the chief remedies are the tonic medicines, which to me seem neither necessary nor safe in hypochondriasis; for in this there is not a loss of tone, but a want of activity that is to be remedied.

Chalybeate mineral waters have commonly been employed in hypochondriasis, and seemingly with success. But this is probably to be imputed to the amusement and exercise usually accompanying the use of these waters, rather than to the tonic power of the small quantity of iron which they contain. Perhaps the elementary water, by favouring the excretions, may have a share in relieving the disease.

MCCXL.

Cold bathing is often highly useful to the dyspeptic, and, as a general stimulant, may sometimes seem useful to the hypochondriac; but it is not commonly so to the latter: while, on the other hand, warm bathing, hurtful to the dyspeptic, is often extremely useful to the hypochondriac.

MCCXLI.

Another instance of a contrary practice necessary in the two diseases, and illustrating their respective natures, is, that the drinking tea and coffee is always hurtful to the dyspeptic, but is commonly extremely useful to the hypochondriac.

MCCXLII.

Exercise, as it strengthens the system,
and

and thereby the stomach, and more especially, as by increasing the perspiration it excites the action of the stomach, it proves one of the most useful remedies in dyspepsia; and further, as by increasing the perspiration, it excites the activity of the stomach, it likewise proves an useful remedy in the hypochondriasis. However, in the latter case, as I shall explain presently, it is still a more useful remedy by its operation upon the mind than by that upon the body.

MCXLIII.

It is now proper that we proceed to consider the most important article of our practice in this disease, and which is, to consider the treatment of the mind, an affection of which sometimes attends dyspepsia, but is always the chief circumstance in hypochondriasis. What I am to suggest here, will apply to both diseases;

but it is the hypochondriasis that I am to keep most constantly in view.

MCCXLIV.

The management of the mind, in hypochondriacs, is often nice and difficult. The firm persuasion that generally prevails in such patients, does not allow their feelings to be treated as imaginary, nor their apprehension of danger to be considered as groundless, though the physician may be persuaded that it is the case in both respects. Such patients, therefore, are not to be treated either by raillery or by reasoning.

It is said to be the manner of hypochondriacs to change often their physician, and indeed they often do it consistently: for a physician who does not admit the reality of the disease, cannot be supposed to take much pains to cure it, or to avert the dan-
2 ger

ger of which he entertains no apprehension.

If in any case the pious fraud of a placebo be allowable, it seems to be in treating hypochondriacs; who, anxious for relief, are fond of medicines, and, though often disappointed, will still take every new drug that can be proposed to them.

MCCXLV.

As it is the nature of man to indulge every present emotion, so the hypochondriac cherishes his fears, and, attentive to every feeling, finds in trifles light as air a strong confirmation of his apprehensions. His cure therefore depends especially upon the interruption of his attention, or upon its being diverted to other objects than his own feelings.

MCCXLVI.

Whatever aversion to application of any kind may appear in hypochondriacs, there is nothing more pernicious to them than absolute idleness, or a vacancy from all earnest pursuit. It is owing to wealth admitting of indolence, and leading to the pursuit of transitory and unsatisfying amusements, or to that of exhausting pleasures only, that the present times exhibit to us so many instances of hypochondriacism.

The occupations of business suitable to their circumstances and situation in life, if neither attended with emotion, anxiety, nor fatigue, are always to be admitted, and persisted in by hypochondriacs. But occupations upon which a man's fortune depends, and which are always, therefore, objects of anxiety to melancholic men; and more particularly where such occupations

pations are exposed to accidental interruptions, disappointments, and failures, it is from these that the hypochondriac is certainly to be withdrawn.

MCCXLVII.

The hypochondriac who is not necessarily, by circumstances or habits, engaged in business, is to be drawn from his attention to his own feelings by some amusement.

The various kinds of sport and hunting, as pursued with some ardor, and attended with exercise, if not too violent, are amongst the most useful.

All those amusements which are in the open air, joined with moderate exercise, and requiring some dexterity, are generally of use.

Within doors, company which engages attention, which is willingly yielded to,

and is at the same time of a cheerful kind, will be always found of great service.

Play, in which some skill is required, and where the stake is not an object of much anxiety, if not too long protracted, may often be admitted.

In dyspeptics, however, gaming, liable to sudden and considerable emotions, is dangerous; and the long continuance of it, with night-watching, is violently debilitating. But in melancholics, who commonly excel in skill, and are less susceptible of violent emotions, it is more admissible, and is often the only amusement that can engage them.

Music, to a nice ear, is a hazardous amusement, as long attention to it is very fatiguing.

MCCXLVIII.

It frequently happens, that amusements of every kind are rejected by hypochondriacs; and in that case, mechanical means of interrupting thought are the remedies to be sought for.

Such is to be found in brisk exercise, which requires some attention in the conduct of it.

Walking is seldom of this kind; though, as gratifying to the restlessness of hypochondriacs, it has sometimes been found useful.

The required interruption of thought is best obtained by riding on horseback, or in driving a carriage of any kind.

The exercise of sailing, except it be in an open boat, engaging some attention, does very little service.

Exercise in an easy carriage, in the direction of which the traveller takes no

part, unless it be upon rough roads, or driven pretty quickly, and with long continuance, is of little advantage.

MCCXLIX.

Whatever exercise may be employed, it will be most effectual when employed in the pursuit of a journey; first, because it withdraws a person from many objects of uneasiness and care which might present themselves at home; secondly, as it engages in more constant exercise, and in a greater degree of it than is commonly taken in airings about home; and, lastly, as it is constantly presenting new objects which call forth a person's attention.

MCCL.

In our system of Nosology we have, next to Hypochondriasis, placed the Chlorosis,
be-

because I once thought it might be considered as a genus, comprehending, besides the Chlorosis of Amenorrhœa, some species of Cachexy: but, as I cannot find this to be well founded, and cannot distinctly point out any such disease, I now omit considering Chlorosis as a genus here; and, as a symptom of Amenorrhœa, I have endeavoured before to explain it under that title.

B O O K III.

O F

SPASMODIC AFFECTIONS,
WITHOUT FEVER.

MCCLI.

UNDER this title I am to comprehend all the diseases which consist in *motu abnormi*; that is, in a preternatural state of the contraction and motion of the muscular or moving fibres in any part of the body.

MCCLII.

MCCLII.

It will hence appear, why, under this title, I have comprehended many more diseases than Sauvages and Sagar have comprehended under the title of Spasmi, or than Linnæus has done under the title of Motorii. But I expect it will be obvious, that, upon this occasion, it would not be proper to confine our view to the affections of voluntary motion only; and if those Nosologists have introduced into the class of Spasmi, Palpitatio and Hysteria, it will be, with equal propriety, that Asthma, Colica, and many other diseases, are admitted.

MCCLIII.

It has been hitherto the method of our Nosologists to divide the Spasmi into the two orders of Tonici and Clonici, Spastici
and

and Agitatorii; or, as many at present use the terms, into Spasms strictly so called, and Convulsions. I find, however, that many, and indeed most of the diseases to be considered under our title of Spasmodic Affections, in respect of Tonic or Clonic contractions, are of a mixed kind: and, therefore, I cannot follow the usual general division; but have attempted another, by arranging the several Spasmodic Diseases according as they affect the several functions, Animal, Vital, or Natural.

S E C T.

S E C T. I.

*Of the SPASMODIC AFFECTIONS of the
ANIMAL FUNCTIONS.*

MCCLIV.

AGREEABLE to the language of the ancients, the whole of the diseases to be treated of in this section might be termed *Spasmi*; and many of the moderns continue to apply the term in the same manner: but I think it convenient to distinguish the terms of *Spasim* and *Convulsion*, by applying the former, strictly to what has been called the *Tonic*, and the latter, to what

what has been called the *Clonic Spasm*. There is certainly a foundation for the use of those different terms, as there is a remarkable difference in the state of the contraction of moving fibres upon different occasions. This I have indeed pointed out before in my treatise of *Physiology*, but must also repeat it here.

MCCLV.

In the exercise of the several functions of the animal œconomy, the contractions of the moving fibres are excited by the will, or by certain other causes specially appointed by nature for exciting those contractions; and these other causes I name the *natural causes*. In a state of health the moving fibres are contracted by the power of the will, and by the *natural causes* only. At the same time the contractions produced are in force and velocity regulated
by

by the will, or by the circumstances of the natural causes; and the contractions, whether produced by the one or the other, are always soon succeeded by a state of relaxation, and are not repeated but when the power of the will or of the natural causes is again applied.

MCCLVI.

Such are the conditions of the action of the moving fibres in a state of health; but in a morbid state, the contractions of the muscles and moving fibres ordinarily depending upon the will are excited without the concurrence of the will, or contrary to what the will intends; and in the other functions they are excited by the action of unusual and unnatural causes. In both cases, the contractions produced may be in two different states. The one is, when the contractions are to a more violent degree

gree than is usual in health, and are neither succeeded by a spontaneous relaxation, nor even readily yield to an extension either from the action of antagonist muscles, or from other extending powers applied. This state of contractions is what has been called a *Tonic Spasm*, and is what I shall name simply and strictly a *Spasm*. The other morbid state of contractions is, when they are succeeded by a relaxation, but are immediately again repeated without the concurrence of the will or of the repetition of natural causes, and are at the same time commonly with respect to velocity and force more violent than in a healthy state. This state of morbid contraction is what has been named a *Clonic Spasm*, and what I shall name simply and strictly a *Convulsion*.

In this section I shall follow nearly the usual division of the spasmodic diseases,

into those consisting in Spasm, and those consisting in Convulsion; but it may not perhaps be in my power to follow such division exactly.

VOL. III.

T

— CHAP.

C H A P. I.

O F T E T A N U S.

MCCLVII.

BOTH Nosologists and Practical Writers have distinguished Tetanic complaints into the several species of Tetanus, Opisthotonos, and Emprosthotonos; and I have in my Nosology put the Trismus, or Locked Jaw, as a genus distinct from the Tetanus. All this, however, I now judge to be improper; and am of opinion, that
all

all the several terms mentioned, denote, and are applicable only to, different degrees of one and the same disease; the history and cure of which I shall endeavour to deliver in this chapter.

MCCLVIII.

Tetanic complaints may, from certain causes, occur in every climate that we are acquainted with; but they occur most frequently in the warmest climates, and most commonly in the warmest seasons of such climates. These complaints affect all ages, sexes, temperaments, and complexions. The causes from whence they commonly proceed, are cold and moisture applied to the body while it is very warm, and especially the sudden vicissitudes of heat and cold. Or, the disease is produced by punctures, lacerations, or other lesions of nerves in any part of the body. There

are, probably, some other causes of this disease; but they are neither distinctly known, nor well ascertained. Though the causes mentioned do, upon occasion, affect all sorts of persons, they seem however to attack persons of middle age more frequently than the older or younger, the male sex more frequently than the female, and the robust and vigorous more frequently than the weaker.

MCCLIX.

If the disease proceed from cold, it commonly comes on in a few days after the application of such cold; but, if it arise from a puncture or other lesion of a nerve, the disease does not commonly come on for many days after the lesion has happened, very often when there is neither pain nor uneasiness remaining in the wounded or hurt part, and very frequently

ly

ly when the wound has been entirely healed up.

MCCLX.

The disease sometimes comes on suddenly to a violent degree, but more generally it approaches by slow degrees to its violent state. In this case it comes on with a sense of stiffness in the back-part of the neck, which, gradually increasing, renders the motion of the head difficult and painful. As the rigidity of the neck comes on and increases, there is commonly at the same time a sense of uneasiness felt about the root of the tongue; which, by degrees, becomes a difficulty of swallowing, and at length an entire interruption of it. While the rigidity of the neck goes on increasing, there arises a pain, often violent, at the lower end of the sternum, and from thence shooting into the back. When this pain

arises, all the muscles of the neck, and particularly those of the back-part of it, are immediately affected with spasm, pulling the head strongly backwards. At the same time, the muscles that pull up the lower jaw, which upon the first approaches of the disease were affected with some spastic rigidity, are now generally affected with more violent spasm, and set the teeth so closely together that they do not admit of the smallest opening.

This is what has been named the *Locked Jaw*, and is often the principal part of the disease. When the disease has advanced thus far, the pain at the bottom of the sternum returns very frequently, and with it the spasms of the hind-neck and lower-jaw, are renewed with violence and much pain. As the disease thus proceeds, a greater number of muscles come to be affected with spasms. After those of the neck, those along the whole of the spine
be-

become affected, bending the trunk of the body strongly backwards; and this is what has been named the *Opisthotonos*.

In the lower extremities, both the flexor and extensor muscles are commonly at the same time affected, and keep the limbs rigidly extended. Though the extensors of the head and back are usually the most strongly affected, yet the flexors, or those muscles of the neck that pull the head forward, and the muscles that should pull down the lower jaw, are often at the same time strongly affected with spasm. During the whole of the disease, the abdominal muscles are violently affected with spasm, so that the belly is strongly retracted, and feels hard as a piece of board.

At length the flexors of the head and trunk become so strongly affected as to balance the extensors, and to keep the head and trunk straight, and rigidly extended, incapable of being moved in any

way ; and it is to this state the term of *Tetanus* has been strictly applied. At the same time, the arms, little affected before, are now rigidly extended ; the whole of the muscles belonging to them being affected with spasms, except those that move the fingers, which often to the last retain some mobility. The tongue also long retains its mobility ; but at length it also becomes affected with spasms, which attacking certain of its muscles only, often thrust it violently out between the teeth.

At the height of the disease, every organ of voluntary motion seems to be affected ; and amongst the rest, the muscles of the face. The forehead is drawn up into furrows ; the eyes, sometimes distorted, are commonly rigid, and immoveable in their sockets ; the nose is drawn up, and the cheeks are drawn backwards towards the ears, so that the whole countenance expresses the most violent grinning. Under these

these univerfal spasms, a violent convulsion commonly comes on, and puts an end to life.

MCCLXI.

These spasms are every where attended with most violent pains. The utmost violence of spasm is, however, not constant; but, after subsisting for a minute or two, the muscles admit of some remission of their contraction, although of no such relaxation as can allow the action of their antagonists. This remission of contraction gives also some remission of pain; but neither are of long duration. From time to time, the violent contractions and pains are renewed sometimes every ten or fifteen minutes, and that often without any evident exciting cause. But such exciting causes frequently occur; for almost every attempt to motion, as attempting a change
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of posture, endeavouring to swallow, and even to speak, sometimes gives occasion to a renewal of the spasms over the whole body.

MCCLXII.

The attacks of this disease are seldom attended with any fever. When the spasms are general and violent, the pulse is contracted, hurried, and irregular; and the respiration is affected in like manner: but, during the remission, both the pulse and respiration usually return to their natural state. The heat of the body is commonly not increased; frequently the face is pale, with a cold sweat upon it; and very often the extremities are cold, with a cold sweat over the whole body. When, however, the spasms are frequent and violent, the pulse is sometimes more full and frequent than natural; the face is flushed, and a
warm

warm sweat is forced out over the whole body.

MCCLXIII.

Although fever be not a constant attendant of this disease, especially when arising from a lesion of nerves; yet, in those cases proceeding from cold, a fever sometimes has supervened, and is said to have been attended with inflammatory symptoms. Blood has been often drawn in this disease, but it never exhibits any inflammatory crust; and all accounts seem to agree, that the blood drawn seems to be of a looser texture than ordinary, and that it does not coagulate in the usual manner.

MCCLXIV.

In this disease the head is seldom affected with delirium, or even confusion of thought,

thought, till the last stage of it; when, by the repeated shocks of a violent distemper, every function of the system is greatly disordered.

MCCLXV.

It is no less extraordinary, that, in this violent disease, the natural functions are not either immediately or considerably affected. Vomitings sometimes appear early in the disease, but commonly they are not continued; and it is usual enough for the appetite of hunger to remain through the whole course of the disease; and what food happens to be taken down, seems to be regularly enough digested. The excretions are sometimes affected, but not always. The urine is sometimes suppressed, or is voided with difficulty and pain. The belly is costive: but, as we have hardly any accounts excepting of those cases in which
opiates

opiates have been largely employed, it is uncertain whether the costiveness has been the effect of the opiates or of the disease. In several instances of this disease, a miliar eruption has appeared upon the skin; but whether this be a symptom of the disease, or the effect of a certain treatment of it, is undetermined. In the mean while, it has not been observed to denote either safety or danger, or to have any effect in changing the course of the distemper.

MCCLXVI.

This disease has generally proved fatal; and this indeed may be justly supposed to be the consequence of its nature: but, as we know that, till very lately, physicians were not well acquainted with a proper method of cure; and that, since a more proper method has been known and practised, many have recovered from this disease; it
may

may be therefore concluded, that the fatal tendency of it is not so unavoidable as has been imagined.

In judging of the tendency of this disease, in particular cases, we may remark, that, when arising from lesions of the nerves, it is commonly more violent, and of more difficult cure, than when proceeding from cold ; that the disease which comes on suddenly, and advances quickly to a violent degree, is always more dangerous than that which is slower in its progress. Accordingly, the disease often proves fatal before the fourth day ; and, when a patient has passed this period, he may be supposed to be in greater safety, and in general the disease is the safer the longer it has continued. It is, however, to be particularly observed, that, even for many days after the fourth, the disease continues to be dangerous ; and, even after some considerable abatement of its force,

it is ready to recur again with its former violence and danger. It never admits of any sudden, or what may be called a critical solution, but always recedes by degrees only, and it is often very long before the whole of the symptoms disappear.

MCCLXVII.

From the history of the disease now described, it will be evident, that there is no room for distinguishing the *tetanus*, *opisthotonos*, and *trismus* or *locked jaw*, as different species of this disease, since they all arise from the same causes, and are almost constantly conjoined in the same person. I have no doubt that the *emprosthotonos* belongs also to the same genus; and as the ancients have frequently mentioned it, we can have no doubt of its having occurred: but, at the same time, it is certainly in
these

these days a rare occurrence; and, as I have never seen it, nor find any histories in which this particular state of the spasms is said to have prevailed, I cannot mention the other circumstances which particularly attend it, and may distinguish it from the other varieties of tetanic complaints.

MCCLXVIII.

This disease has put on still a different form from any of those above mentioned. The spasms have been sometimes confined to one side of the body only, and which bend it strongly to that side. This is what has been named by Sauvages the *Tetanus Lateralis*, and by some late writers the *Pleurosthotonos*. This form of the disease has certainly appeared very seldom; and, in any of the accounts given of it, I cannot find any circumstances that would lead me to consider it as any other than a va-

riety of the species already mentioned, or to take further notice of it here.

MCCLXIX.

The pathology of this disease I cannot in any measure attempt; as the structure of moving fibres, the state of them under different degrees of contraction, and particularly the state of the sensorium, as variously determining the motion of the nervous power, are all matters very imperfectly, or not at all, known to me. In such a situation, therefore, the endeavouring to give any rules of practice, upon a scientific plan, appears to me vain and fruitless; and towards directing the cure of this disease, we must be satisfied with having learned something useful from analogy, confirmed by experience.

MCCLXX.

When the disease is known to arise from the lesion of a nerve in any part of the body, the first, and, as I judge, the most important step to be taken towards the cure, is, by every possible means to cut off that part from all communication with the sensorium, either by cutting through the nerves in their course, or perhaps by destroying, to a certain length, their affected part or extremity.

MCCLXXI.

When the cure of the disease is to be attempted by medicine, experience has taught us that opium has often proved an effectual remedy; but that, to render it such, it must be given in much larger quantities than have been employed in any other case; and in these larger quantities,
it

it may, in this disease, be given more safely than the body has been known to bear in any other condition. The practice has been, to give the opium either in a solid or a liquid form, not in any very large dose at once, but in moderate doses, frequently repeated, at the interval of one, two, three, or more hours, as the violence of the symptoms seems to require. Even when large quantities have been given in this way, it appears that the opium does not operate here in the same manner as in most other cases; for, though it procure some remission of the spasms and pains, it hardly induces any sleep, or occasions that stupor, intoxication, or delirium, which it often does in other circumstances, when much smaller quantities only have been given. It is therefore very properly observed, that, in tetanic affections, as the opium shows none of those effects by which it may endanger life, there is little

or no reason for being sparing in the exhibition of it; and it may be given, probably should be given, as largely and as fast as the symptoms of the disease may seem to demand.

It is particularly to be observed, that though the first exhibitions of the opium may have produced some remission of the symptoms, yet the effects of opium do not long continue in the system; and this disease being for some time ready to recur, it is commonly very necessary, by the time that the effects of the opium given may be supposed to be wearing off, and especially upon the least appearance of a return of the spasms, to repeat the exhibition of the opium in the same quantities as before. This practice is to be continued while the disease continues to show any disposition to return; and it is only after the disease has already subsisted for some time, and when considerable and long-continued remissions

miffions have taken place, that the dofes of the opium may be diminished, and the intervals of exhibiting them be more confiderable.

MCCLXXII.

The adminiftering of opium in this manner, has in many cafes been fuccefsful; and probably would have been equally fo in many others, if the opium had not been too fparingly employed, either from the timidity of practitioners, or from its exhibition being prevented by that interruption of deglutition which fo often attends this difeafe. This latter circumftance directs, that the medicine fhould be immediately and largely employed upon the firft approach of the difeafe, before the deglutition becomes difficult; or that, if this opportunity be loft, the medicine, in fufficient quantity, and with due frequency,

should be thrown into the body by glyster; which, however, does not seem to have been hitherto often practised.

MCCLXXIII.

It is highly probable, that, in this disease, the intestines are affected with the spasm that prevails so much in other parts of the system; and, therefore, that costiveness occurs here as a symptom of the disease. It is probably also increased by the opium, which is here so largely employed; and, from whichever of these causes it arises, it certainly must be held to aggravate the disease, and that a relaxation of the intestinal canal will contribute to a relaxation of the spasms elsewhere. This consideration directs the frequent exhibition of laxatives while the power of deglutition remains, or the frequent exhibition of glysters when it does not; and the
good

good effects of both have been frequently observed.

MCCLXXIV.

It has been with some probability supposed, that the operation of opium in this disease, may be much assisted by joining with it some other of the most powerful antispasmodics. The most promising are musk and camphire; and some practitioners have been of opinion, that the former has proved very useful in tetanic complaints. But, whether it be from its not having been employed of a genuine kind, or in sufficient quantity, the great advantage and propriety of its use are not yet clearly ascertained. It appears to me probable, that analogous to what happens with respect to opium, both musk and camphire might be employed in this disease, in much larger

quantities than they commonly have been in other cafes.

MCCLXXV.

Warm bathing has been commonly employed as a remedy in this difeafe, and often with advantage; but, fo far as I know, it has not alone proved a cure; and, in fome cafes, whether it be from the motion of the body here required, exciting the fpafms, or from the fear of the bath, which fome perfons were feized with, I cannot determine; but it is allowed, that the warm bath hath in fome cafes done harm, and even occafioned death. Partial fomentations have been much commended, and, I believe, upon good grounds: And I have no doubt but that fomentations of the feet and legs, as we now ufually apply them in fevers, might, without much ftirring of
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the patient, be very assiduously employed with advantage.

MCCLXXVI.

Unctuous applications were very frequently employed in this disease by the ancients : and some modern practitioners have considered them as very useful. Their effects, however, have not appeared to be considerable ; and, as a weak auxiliary only, attended with some inconvenience, they have been very much neglected by the British practitioners.

MCCLXXVII.

Bleeding has been formerly employed in this disease ; but of late it has been found prejudicial, excepting in a few cases, where, in plethoric habits, a fever has supervened. In general, the state of mens
bodies

bodies in warm climates is unfavourable to bloodletting: and, if we may form indications from the state of the blood drawn out of the veins, the state of this in tetanic diseases would forbid bleeding in them.

MCCLXXVIII.

Blistering, also, has been formerly employed in this disease; but several practitioners assert, that blisters are constantly hurtful, and they are now generally omitted.

MCCLXXIX.

These are the practices that hitherto have been generally employed; but of late we are informed by several West-India practitioners, that in many instances they have employed mercury with great
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advantage. We are told, that it must be employed early in the disease; that it is most conveniently administered by unction, and should be applied in that way in large quantities, so that the body may be soon filled with it, and a salivation raised, which is to be continued till the symptoms yield. Whether this method alone be generally sufficient for the cure of the disease, or if it may be assisted by the use of opium, and require this in a certain measure to be joined with it, I have not yet certainly learned.

MCCLXXX.

I have been further informed, that the Tetanus, in all its different degrees, has been cured by giving internally the Pissellæum Barbadiense, or, as it is vulgarly called, the Barbadoes Tar. I think it proper to take notice of this here, although I am
not

not exactly informed what quantities of this medicine are to be given, or in what circumstances of the disease it is most properly to be employed.

MCCLXXX.

In the former edition of this work, among the remedies of tetanus I did not mention the use of cold bathing; because, though I had heard of this, I was not informed of such frequent employment of it as might confirm my opinion of its general efficacy; nor was I sufficiently informed of the ordinary and proper administration of it. But now, from the information of many judicious practitioners who have frequently employed it, I can say, that it is a remedy which in numerous trials has been found to be of great service in this disease; and that, while the use of the ambiguous remedy of warm bathing

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ing is entirely laid aside, the use of cold bathing is over the whole of the West Indies commonly employed. The administration of it is sometimes by bathing the person in the sea, or more frequently by throwing cold water from a basin or bucket upon the patient's body, and over the whole of it: when this is done, the body is carefully wiped dry, wrapped in blankets, and laid a-bed, and at the same time a large dose of an opiate is given. By these means a considerable remission of the symptoms is obtained; but this remission, at first, does not commonly remain long, but returning again in a few hours, the repetition both of the bathing and the opiate becomes necessary. By these repetitions, however, longer intervals of ease are obtained, and at length the disease is entirely cured; and this even happens sometimes very quickly. I have only to add, that it does not appear to me, from any accounts I have yet had, that

that the cold bathing has been so frequently employed, or has been found so commonly successful in the cases of tetanus in consequence of wounds, as in those from the application of cold.

MCCLXXXI.

Before concluding this chapter, it is proper for me to take some notice of that peculiar case of the tetanus, or trismus, which attacks certain infants soon after their birth, and has been properly enough named the Trismus Nascentium. From the subjects it affects, it seems to be a peculiar disease: for these are infants not above two weeks, and commonly before they are nine days, old; insomuch that, in countries where the disease is frequent, if children pass the period now mentioned, they are considered as secure against its attacks. The symptom of it chiefly taken

notice of, is the trismus, or locked jaw, which is by the vulgar improperly named the Falling of the Jaw. But this is not the only symptom, as, for the most part, it has all the same symptoms as the Opisthotonos and Tetanus strictly so called, and which occur in the other varieties of tetanic complaints above described. Like the other varieties of tetanus, this is most frequent in warm climates; but is not, like those arising from the application of cold, entirely confined to such warm climates, as instances of it have occurred in most of the northern countries of Europe. In these latter it seems to be more frequent in certain districts than in others; but in what manner limited, I cannot determine. It seems to be more frequent in Switzerland than in France. I am informed of its frequently occurring in the Highlands of Scotland; but I have never met with any instance of it in the low country. The

particular causes of it are not well known; and various conjectures have been offered; but none of them are satisfying. It is a disease that has been almost constantly fatal; and this, also, commonly in the course of a few days. The women are so much persuaded of its inevitable fatality, that they seldom or never call for the assistance of our art. This has occasioned our being little acquainted with the history of the disease, or with the effects of remedies in it. Analogy, however, would lead us to employ the same remedies that have proved useful in the other cases of tetanus; and the few experiments that are yet recorded, seem to approve of such a practice.

C H A P.

C H A P. II.

OF EPILEPSY.

MCCLXXXII.

IN what sense I use the term *Convulsion*;
I have explained above in MCCLVI.

The convulsions that affect the human body are in several respects various; but I am to consider here only the chief and most frequent form in which they appear, and which is in the disease named *Epilepsy*. This may be defined, as consisting in con-

vulsions of the greater part of the muscles of voluntary motion, attended with a loss of sense, and ending in a state of insensibility, and seeming sleep.

MCCLXXXIII.

The general form or principal circumstances of this disease, are much the same in all the different persons whom it affects. It comes by fits, which often attack persons seemingly in perfect health; and, after lasting for some time, pass off, and leave the persons again in their usual state. These fits are sometimes preceded by certain symptoms, which, to persons who have before experienced such a fit, may give notice of its approach, as we shall hereafter explain; but even these preludes do not commonly occur long before the formal attack, which in most cases comes on suddenly without any such warning.

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The person attacked loses suddenly all sense and power of motion; so that, if standing, he falls immediately, or perhaps, with convulsions, is thrown, to the ground. In that situation he is agitated with violent convulsions, variously moving his limbs and the trunk of his body. Commonly the limbs on one side of the body, are more violently or more considerably agitated than those upon the other. In all cases the muscles of the face and eyes are much affected, exhibiting various and violent distortions of the countenance. The tongue is often affected, and thrust out of the mouth; while the muscles of the lower jaw are also affected; and, shutting the mouth with violence while the tongue is thrust out between the teeth, that is often grievously wounded.

While these convulsions continue, there is commonly at the same time a frothy moisture issuing from the mouth. These

convulsions have for some moments some remissions, but are suddenly again renewed with great violence. Generally, after no long time, the convulsions cease altogether; and the person for some time remains without motion, but in a state of absolute insensibility, and under the appearance of a profound sleep. After some continuance of this seeming sleep, the person sometimes suddenly, but for the most part by degrees only, recovers his senses and power of motion; but without any memory of what had passed from his being first seized with the fit. During the convulsions, the pulse and respiration are hurried and irregular; but, when the convulsions cease, they return to their usual regularity and healthy state.

This is the general form of the disease; and it varies only in different persons, or on different occasions in the same person, by the phenomena mentioned being more

or less violent, or by their being of longer or shorter duration.

MCCLXXXIV.

With respect to the proximate cause of this disease, I might say, that it is an affection of the energy of the brain, which, ordinarily under the direction of the will, is here, without any concurrence of it, impelled by preternatural causes. But I could go no further: For, as to what is the mechanical condition of the brain in the ordinary exertions of the will, I have no distinct knowledge; and therefore must be also ignorant of the preternatural state of the same energy of the brain under the irregular motions here produced. To form, therefore, the indications of a cure, from a knowledge of the proximate cause of this disease, I must not attempt; but, from a diligent attention to the remote causes

which first induce and occasionally excite the disease, I think we may often obtain some useful directions for its cure. It shall therefore be my business now, to point out and enumerate these remote causes as well as I can.

MCCLXXXV.

The remote causes of epilepsy may be considered as occasional or predisponent. There are, indeed, certain remote causes which act independently of any predisposition; but, as we cannot always distinguish these from the others, I shall consider the whole under the usual titles of *Occasional* or *Predisponent*.

MCCLXXXVI.

The occasional causes may, I think, be properly referred to two general heads; the

the *first* being of those which seem to act by directly stimulating and exciting the energy of the brain; and the *second*, of those which seem to act by weakening the same. With respect to both, for the brevity of expressing a fact, without meaning to explain the manner in which it is brought about, I shall use the terms of *Excitement* and *Collapfe*. And though it be true, that with respect to some of the causes I am to mention, it may be a little uncertain whether they act in the one way or the other, that does not render it improper for us to mark, with respect to others, the mode of their operating, wherever we can do it clearly, as the doing so may often be of use in directing our practice.

MCCLXXXVII.

First, then, of the occasional causes acting by excitement: They are either such as

act immediately and directly upon the brain itself; or those which are first applied to the other parts of the body, and are from thence communicated to the brain.

MCCLXXXVIII.

The causes of excitement immediately and directly applied to the brain, may be referred to the four heads of, 1. Mechanical Stimulants; 2. Chemical Stimulants; 3. Mental Stimulants; and, 4. The peculiar Stimulus of Over-distention.

MCCLXXXIX.

The mechanical stimulants may be, wounding instruments penetrating the cranium, and entering the substance of the brain; or splinters of a fractured cranium, operating in the same manner; or sharp-pointed offications, either arising from the
internal

internal surface of the cranium, or formed in the membranes of the brain,

MCCXC.

The chemical stimulants (MCCLXXXVIII.) may be fluids from various causes lodged in certain parts of the brain, and become acrid by stagnation or otherwise.

MCCXCI.

The mental irritations acting by excitement, are, all violent emotions of the active kind, such as joy and anger. The first of these is manifestly an exciting power, acting strongly, and immediately, on the energy of the brain. The second is manifestly, also, a power acting in the same manner. But it must be remarked, that it is not in this manner alone anger produces its effects: for it acts, also, strongly
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on the sanguiferous system, and may be a means of giving the stimulus of overdistention; as, under a fit of anger, the blood is impelled into the vessels of the head with violence, and in a larger quantity.

MCCXCII.

Under the head of Mental Irritations, is to be mentioned, the sight of persons in a fit of epilepsy, which has often produced a fit of the like kind in the spectator. It may, indeed, be a question, Whether this effect be imputable to the horror produced by a sight of the seemingly painful agitations of the limbs, and of the distortions in the countenance of the epileptic person; or if it may be ascribed to the force of imitation merely? It is possible, that horror may sometimes produce the effect: but certainly much may be imputed to
that

that propensity to imitation, at all times so powerful and prevalent in human nature; and so often operating in other cases of convulsive disorders, which do not present any spectacle of horror.

MCCXCIII.

Under the same head of Mental Irritation, I think proper to mention as an instance of it, the *Epilepsia Simulata*, or the Feigned Epilepsy, so often taken notice of. Although this, at first, may be entirely feigned, I have no doubt but that the repetition renders it at length real. The history of Quietism and of Exorcisms leads me to this opinion; and which receives a confirmation from what we know of the power of imagination, in renewing epileptic and hysteric fits.

MCCXCIV.

MCCXCIV.

I come now to the fourth head of the irritations applied immediately to the brain, and which I apprehend to be that of the Over-distention of the blood-vessels in that organ. That such a cause operates in producing epilepsy, is probable from this, that the dissection of persons dead of epilepsy, has commonly discovered the marks of a previous congestion in the blood-vessels of the brain. This, perhaps, may be supposed the effect of the fit which proved fatal: but that the congestion was previous thereto, is probable from the epilepsy being so often joined with headach, mania, palsy, and apoplexy; all of them diseases depending upon a congestion in the vessels of the brain. The general opinion receives also confirmation from this circumstance, that, in the brain of persons dead of epilepsy, there have been often found tumours and

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effusions, which, though seemingly not sufficient to produce those diseases which depend on the compression of a considerable portion of the brain, may, however, have been sufficient to compress so many vessels as to render the others upon any occasion of a more than usual turgescence, or impulse of the blood into the vessels of the brain more liable to an over-distention.

MCCXCV.

These considerations alone might afford foundation for a probable conjecture with respect to the effects of over-distention. But the opinion does not rest upon conjecture alone. That it is also founded in fact, appears from hence, that a plethoric state is favourable to epilepsy; and that every occasional turgescence, or unusual impulse of the blood into the vessels of the brain, such as a fit of anger, the heat of the sun,

or of a warm chamber, violent exercise, a surfeit, or a fit of intoxication, are frequently the immediately exciting causes of epileptic fits.

MCCXCVI.

I venture to remark further, that a piece of theory may be admitted as a confirmation of this doctrine. As I have formerly maintained, that a certain fulness and tension of the vessels of the brain, is necessary to the support of its ordinary and constant energy, in the distribution of the nervous power; so it must be sufficiently probable, that an over-distention of these blood-vessels may be a cause of violent excitement.

MCCXCVII.

We have now enumerated the several

remote or occasional causes of epilepsy, acting by excitement, and acting immediately upon the brain itself. Of the causes acting by excitement, but acting upon other parts of the body, and from thence communicated to the brain, they are all of them impressions producing an exquisite or high degree either of pleasure or pain.

Impressions which produce neither the one nor the other, have hardly any such effects; unless when such impressions are in a violent degree, and then their operation may be considered as a mode of pain. It is, however, to be remarked, that all strong impressions which are sudden and surprizing, or, in other words, unforeseen and unexpected, have frequently the effect of bringing on epileptic fits.

MCCXCVIII.

There are certain impressions made upon different parts of the body, which as they often operate without producing any sensation, so it is uncertain to what head they belong: but it is probable that the greater part of them act by excitement, and therefore fall to be mentioned here. The chief instances are, The teething of infants; worms; acidity or other acrimony in the alimentary canal; calculi in the kidneys; acrid matter in abscesses or ulcers; or acrimony diffused in the mass of blood, as in the case of some contagions.

MCCXCIX.

Physicians have found no difficulty in comprehending how direct stimulants, of a certain force, may excite the action of the brain, and occasion epilepsy; but they
have

have hitherto taken little notice of certain causes which manifestly weaken the energy of the brain, and act, as I speak, by collapse. These, however, have the effect of exciting the action of the brain in such a manner as to occasion epilepsy. I might, upon this subject, speak of the *vis medicatrix naturæ*; and there is a foundation for the term: but, as I do not admit the Stahlian doctrine of an administering soul, I make use of the term only as expressing a fact, and would not employ it with the view of conveying any explanation of the manner in which the powers of collapse mechanically produce their effects. In the meantime, however, I maintain, that there are certain powers of collapse, which in effect prove stimulants, and produce epilepsy.

MCCC.

That there are such powers, which may be termed Indirect Stimulants, I conclude from hence, that several of the causes of epilepsy are such as frequently produce syncope, which we suppose always to depend upon causes weakening the energy of the brain (MCLXXVI.) It may give some difficulty to explain, why the same causes sometimes occasion syncope, and sometimes occasion the reaction that appears in epilepsy; and I shall not attempt to explain it: but this, I think, does not prevent my supposing that the operation of these causes is by collapse. That there are such causes producing epilepsy, will, I think, appear very clearly from the particular examples of them I am now to mention.

MCCCI.

The first to be mentioned, which I suppose to be of this kind, is hemorrhagy, whether spontaneous or artificial. That the same hemorrhagy which produces syncope, often at the same time produces epilepsy, is well known; and from many experiments and observations it appears, that hemorrhagies occurring to such a degree as to prove mortal, seldom do so without first producing epilepsy.

MCCCII.

Another cause acting, as I suppose, by collapse, and therefore sometimes producing syncope and sometimes epilepsy, is terror; that is, the fear of some great evil suddenly presented. As this produces at the same time a sudden and considerable emotion,

(MCLXXX.), so it more frequently produces epilepsy than syncope.

MCCCIII.

A third cause acting by collapse, and producing epilepsy, is horror; or a strong aversion suddenly raised by a very disagreeable sensation, and frequently arising from a sympathy with the pain or danger of another person. As horror is often a cause of syncope, there can be no doubt of its manner of operating in producing epilepsy; and it may perhaps be explained upon this general principle, That as desire excites action and gives activity, so aversion restrains from action, that is, weakens the energy of the brain; and, therefore, that the higher degrees of aversion may have the effects of producing syncope or epilepsy.

MCCCIV.

MCCCIV.

A fourth set of the causes of epilepsy, which I suppose also to act by collapse, are certain odours, which occasion either syncope or epilepsy; and, with respect to the former, I have given my reasons (MCLXXXII.) for supposing odours in that case to act rather as disagreeable than as sedative. These reasons will, I think, also apply here; and perhaps the whole affair of odours might be considered as instances of the effect of horror, and therefore belonging to the last head.

MCCCIV.

A fifth head of the causes producing epilepsy by collapse, is the operation of many substances considered, and for the most part properly considered, as poisons. Many of these, before they prove mortal, occasion

epilepsy. This effect, indeed, may in some cases be referred to the inflammatory operation which they sometimes discover in the stomach and other parts of the alimentary canal; but, as the greater part of the vegetable poisons shew chiefly a narcotic, or strongly sedative power, it is probably by this power that they produce epilepsy, and therefore belong to this head of the causes acting by collapse.

MCCCVI.

Under the head of the remote causes producing epilepsy, we must now mention that peculiar one whose operation is accompanied with what is called the *Aura Epileptica*. This is a sensation of something moving in some part of the limbs or trunk of the body, and from thence creeping upwards to the head; and when it arrives there, the person is immediately de-

deprived of sense, and falls into an epileptic fit. This motion is described by the person's feeling it sometimes as a cold vapour, sometimes as a fluid gliding, and sometimes as the sense of a small insect creeping along their body; and very often they can give no distinct idea of their sensation, otherwise than as in general of something moving along. This sensation might be supposed to arise from some affection of the extremity or other part of a nerve acted upon by some irritating matter; and that the sensation, therefore, followed the course of such a nerve: but I have never found it following distinctly the course of any nerve; and it generally seems to pass along the teguments. It has been found in some instances to arise from something pressing upon or irritating a particular nerve, and that sometimes in consequence of contusion or wound: but instances of these are more rare; and the

more common consequence of contusions and wounds is a tetanus. This latter effect wounds produce, without giving any sensation of an aura, or other kind of motion proceeding from the wounded part to the head; while, on the other hand, the aura producing epilepsy often arises from a part which had never before been affected with wound or contusion, and in which part the nature of the irritation can seldom be discovered.

It is natural to imagine that this aura epileptica is an evidence of some irritation or direct stimulus acting in the part, and from thence communicated to the brain, and should therefore have been mentioned among the causes acting by excitement; but the remarkable difference that occurs in seemingly like causes producing tetanus, gives some doubt on this subject.

MCCCVII.

Having now enumerated the occasional causes of epilepsy, I proceed to consider the predisponent. As so many of the above-mentioned causes act upon certain persons, and not at all upon others, there must be supposed in those persons a predisposition to this disease: But in what this predisposition consists, is not to be easily ascertained.

MCCCVIII.

As many of the occasional causes are weak impressions, and are applied to most persons with little or no effect, I conclude, that the persons affected by those causes are more easily moved than others; and therefore that, in this case, a certain mobility gives the predisposition. It will, perhaps, make this matter clearer, to show,
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in the first place, that there is a greater mobility of constitution in some persons than in others.

MCCCIX.

This mobility appears most clearly in the state of the mind. If a person is readily elated by hope, and as readily depressed by fear, and passes easily and quickly from the one state to the other; if he is easily pleased, and prone to gaiety, and as easily provoked to anger, and rendered peevish; if liable, from slight impressions, to strong emotions, but tenacious of none; this is the boyish temperament, *qui colligit ac ponit iram temere, et mutatur in horas*; this is the *varium et mutabile femina*; and, both in the boy and woman, every one perceives and acknowledges a mobility of mind. But this is necessarily connected with an analogous state of the
brain;

brain; that is, with a mobility, in respect of every impression, and therefore liable to a ready alternation of excitement and collapse, and of both to a considerable degree.

MCCCX.

There is, therefore, in certain persons, a mobility of constitution, generally derived from the state of original stamina, and more exquisite at a certain period of life than at others; but sometimes arising from, and particularly modified by, occurrences in the course of life.

MCCCXI.

This mobility consists in a greater degree of either sensibility or irritability. These conditions, indeed, physicians consider as so necessarily connected, that the
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constitution, with respect to them, may be considered as one and the same: but I am of opinion that they are different; and that mobility may sometimes depend upon an increase of the one, and sometimes on that of the other. If an action excited, is, by repetition, rendered more easily excited, and more vigorously performed, I consider this as an increase of irritability only. I go no farther on this subject here, as it was only necessary to take notice of the case just now mentioned, for the purpose of explaining why epilepsy, and convulsions of all kinds, by being repeated, are more easily excited, readily become habitual, and are therefore of more difficult cure.

MCCCXII.

However we may apply the distinction of sensibility and irritability, it appears
that

that the mobility, which is the predisponent cause of epilepsy, depends more particularly upon debility, or upon a plethoric state of the body.

MCCCXIII.

What share debility, perhaps by inducing sensibility, has in this matter, appears clearly from hence, that children, women, and other persons of manifest debility, are the most frequent subjects of this disease.

MCCCXIV.

The effects of a plethoric state in disposing to this disease appears from hence, that plethoric persons are frequently the subjects of it: that it is commonly excited, as I have said above, by the causes of any unusual turgescence of the blood;
and

and that it has been frequently cured by diminishing the plethoric state of the body.

That a plethoric state of the body should dispose to this disease, we may understand from several considerations. *1st*, Because a plethoric state implies, for the most part, a laxity of the solids, and therefore some debility in the moving fibres. *2^{dly}*, Because, in a plethoric state, the tone of the moving fibres depends more upon their tension, than upon their inherent power: and as their tension depends upon the quantity and impetus of the fluids in the blood-vessels, which are very changeable, and by many causes frequently changed, so these frequent changes must give a mobility to the system. *3^{dly}*, Because a plethoric state is favourable to a congestion of blood in the vessels of the brain, it must render these more readily affected by every general turgescence of the blood in the system,

system, and therefore more especially dispose to this disease.

MCCCXV.

There is another circumstance of the body disposing to epilepsy, which I cannot so well account for; and that is, the state of sleep: but whether I can account for it or not, it appears, in fact, that this state gives the disposition I speak of; for, in many persons liable to this disease, the fits happen only in the time of sleep, or immediately upon the persons coming out of it. In a case related by De Haen, it appeared clearly, that the disposition to epilepsy depended entirely upon the state of the body in sleep.

MCCCXVI.

Having thus considered the whole of the

remote causes of epilepsy, I proceed to treat of its cure, as I have said it is from the consideration of those remote causes only, that we can obtain any directions for our practice in this disease.

I begin with observing, that as the disease may be considered as sympathetic or idiopathic, I must treat of these separately, and judge it proper to begin with the former.

MCCCXVII.

When this disease is truly sympathetic, and depending upon a primary affection in some other part of the body, such as acidity or worms in the alimentary canal, teething, or other similar causes, it is obvious, that such primary affections must be removed for the cure of the epilepsy; but it is not our business here to say how these primary diseases are to be treated.

MCCCXVIII.

There is, however, a peculiar case of sympathetic epilepsy; that is, the case accompanied with the *aura epileptica*, as described in MCCCVI. in which, though we can perceive by the *aura epileptica* arising from a particular part, that there is some affection in that part; yet, as in many such cases we cannot perceive of what nature the affection is, I can only offer the following general directions.

1st, When the part can with safety be entirely destroyed, we should endeavour to do so by cutting it out, or by destroying it by the application of an actual or potential cauterly.

2^{dly}, When the part cannot be properly destroyed, that we should endeavour to correct the morbid affection in it by blistering, or by establishing an issue upon the part.

3dly, When these measures cannot be executed, or do not succeed, if the disease seems to proceed from the extremity of a particular nerve which we can easily come at in its course, it will be proper to cut through that nerve, as before proposed on the subject of tetanus.

4thly, When it cannot be perceived that the *aura* arises from any precise place or point, so as to direct to the above mentioned operations; but, at the same time, we can perceive its progress along the limb; it frequently happens that the epilepsy can be prevented by a ligature applied upon the limb, above the part from which the *aura* arises: and this is always proper to be done, both because the preventing a fit breaks the habit of the disease, and because the frequent compression renders the nerves less fit to propagate the *aura*.

MCCCXIX.

The cure of idiopathic epilepsy, as I have said above, is to be directed by our knowledge of the remote causes. There are therefore two general indications to be formed: The first is, to avoid the occasional causes; and the second is, to remove or correct the predisponent.

This method, however, is not always purely palliative; as in many cases the predisponent may be considered as the only proximate cause, so our second indication may be often considered as properly curative.

MCCCXX.

From the enumeration given above, it will be manifest, that for the most part the occasional causes, so far as they are in our power, need only to be known, in order

der to be avoided ; and the means of doing this will be sufficiently obvious. I shall here, therefore, offer only a few remarks.

MCCCXXI.

One of the most frequent of the occasional causes is that of over-distention (MCCCXIV), which, so far as it depends upon a plethoric state of the system, I shall say hereafter how it is to be avoided. But as, not only in the plethoric, but in every moveable constitution, occasional turgescence is a frequent means of exciting epilepsy, the avoiding therefore of such turgescence is what ought to be most constantly the object of attention to persons liable to epilepsy.

MCCCXXII.

Another of the most frequent exciting
causes

causes of this disease are, all strong impressions suddenly made upon the senses; for as such impressions, in moveable constitutions, break in upon the usual force, velocity, and order of the motions of the nervous system, they thereby readily produce epilepsy. Such impressions therefore, and especially those which are suited to excite any emotion or passion of the mind, are to be most carefully guarded against by persons liable to epilepsy.

MCCCXXIII.

In many cases of epilepsy, where the predisponent cause cannot be corrected or removed, the recurrence of the disease can only be prevented by the strictest attention to avoid the occasional; and as the disease is often confirmed by repetition and habit, so the avoiding the frequent re-

currence of it is of the utmost importance towards its cure.

These are the few remarks I have to offer with respect to the occasional causes; and must now observe, that, for the most part, the complete, or, as it is called, the Radical Cure, is only to be obtained by removing or correcting the predisponent cause.

MCCCXXIV.

I have said above, that the predisponent cause of epilepsy is a certain mobility of the sensorium; and that this depends upon a plethoric state of the system, or upon a certain state of debility in it.

MCCCXXV.

How the plethoric state of the system is to be corrected, I have treated of fully
above

above in DCCLXXXIII. *et seq.* and I need not repeat it here. It will be enough to say, that it is chiefly to be done by a proper management of exercise and diet; and, with respect to the latter, it is particularly to be observed here, that an abstemious course has been frequently found to be the most certain means of curing epilepsy.

MCCCXXVI.

Considering the nature of the matter poured out by issues, these may be supposed to be a constant means of obviating the plethoric state of the system; and it is, perhaps, therefore, that they have been so often found useful in epilepsy. Possibly, also, as an open issue may be a means of determining occasional turgescences to such places, and therefore of diverting them in some measure from their

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action

action upon the brain; so also, in this manner, issues may be useful in epilepsy.

MCCCXXVII.

It might be supposed that blood-letting would be the most effectual means of correcting the plethoric state of the system; and such it certainly proves when the plethoric state has become considerable, and immediately threatens morbid effects. It is therefore, in such circumstances, proper and necessary: but as we have said above, that blood-letting is not the proper means of obviating a recurrence of the plethoric state, and, on the contrary, is often the means of favouring it; so it is a remedy adviseable in every circumstance of epilepsy. There is, however, a case of epilepsy in which there is a periodical or occasional recurrence of the fulness and turgescence of the sanguiferous system,
giving

giving occasion to a recurrence of the disease. In such cases, when the means of preventing plethora have been neglected, or may have proved ineffectual, it is absolutely necessary for the practitioner to watch the returns of these turgescences, and to obviate their effects by the only certain means of doing it, that is, by a large blood-letting.

MCCCXXVIII.

The second cause of mobility which we have assigned, is a state of debility. If this is owing, as it frequently is, to original conformation, it is perhaps not possible to cure it; but when it has been brought on in the course of life, it possibly may admit of being mended; and, in either case, much may be done to obviate and prevent its effects.

MCCCXXIX.

MCCCXXIX.

The means of correcting debility, so far as it can be done, are, The person's being much in cool air; the frequent use of cold bathing; the use of exercise, adapted to the strength and habits of the person; and, perhaps, the use of astringent and tonic medicines.

These remedies are suited to strengthen the inherent power of the solids or moving fibres; but as the strength of these depends also upon their tension, so when debility has proceeded from inanition, the strength may be restored, by restoring the fulness and tension of the vessels by a nourishing diet; and we have had instances of the propriety and success of such a practice.

MCCCXXX.

MCCCXXX.

The means of obviating the effects of debility, and of the mobility depending upon it, are the use of tonic and antispasmodic remedies.

The tonics are, Fear, or some degree of terror; astringents; certain vegetable and metallic tonics; and cold bathing.

MCCCXXXI.

That fear, or some degree of terror, may be of use in preventing epilepsy, we have a remarkable proof in Boerhaave's cure of the epilepsy, which happened in the Orphan-house at Haerlem. See Kauu Boerhaave's treatise, entitled *Impetum Faciens*, § 406. And we have met with several other instances of the same.

As the operation of horror is in many respects analogous to that of terror, several

ral seemingly superstitious remedies have been employed for the cure of epilepsy; and, if they have ever been successful, I think it must be imputed to the horror they had inspired.

MCCCXXXII.

Of the astringent medicines used for the cure of epilepsy, the most celebrated is the *viscus quercinus*, which, when given in large quantities, may possibly be useful; but I believe it was more especially so in ancient times, when it was an object of superstition. In the few instances in which I have seen it employed, it did not prove of any effect.

MCCCXXXIII.

Among the vegetable tonics, the bitters are to be reckoned; and it is by this quality

lity that I suppose the orange-tree leaves to have been useful: but they are not always so.

MCCCXXXIV.

The vegetable tonic, which from its use in analogous cases is the most promising, is the Peruvian bark; this, upon occasion, has been useful, but has also often failed. It is especially adapted to those epilepsies which recur at certain periods, and which are at the same time without the recurrence of any plethoric state, or turgescence of the blood; and in such periodical cases, if the bark is employed some time before the expected recurrence, it may be useful: but it must be given in large quantity, and as near to the time of the expected return as possible.

MCCCXXXV.

MCCCXXXV.

The metallic tonics seem to be more powerful than the vegetable, and a great variety of the former have been employed.

Even arsenic has been employed in the cure of epilepsy; and its use in intermittent fevers gives an analogy in its favour.

Preparations of tin have been formerly recommended in the cure of epilepsy, and in the cure of the analogous disease of hysteria; and several considerations render the virtues of tin, with respect to these diseases, probable: but I have had no experience of its use in such cases.

A much safer metallic tonic is to be found in the preparations of iron; and we have seen some of them employed in the cure of epilepsy, but have never found them to be effectual. This, however, I think, may be imputed to their not having
been

been always employed in the circumstances of the disease, and in the quantities of the medicine, that were proper and necessary.

MCCCXXXVI.

Of the metallic tonics, the most celebrated and the most frequently employed is copper, under various preparation. What preparation of it may be the most effectual, I dare not determine; but of late the *cuprum ammoniacum* has been frequently found successful.

MCCCXXXVII.

Lately the flowers of zinc have been recommended by a great authority as useful in all convulsive disorders; but in cases of epilepsy, I have not hitherto found that medicine useful.

MCCCXXXVIII.

MCCCXXXVIII.

There have been of late some instances of the cure of epilepsy by the accidental use of mercury ; and if the late accounts of the cure of tetanus by this remedy are confirmed, it will allow us to think that the same may be adapted also to the cure of certain cases of epilepsy.

MCCCXXXIX.

With respect to the employment of any of the above mentioned tonics in this disease, it must be observed, that in all cases where the disease depends upon a constant or occasional plethoric state of the system, these remedies are likely to be ineffectual; and if sufficient evacuations are not made at the same time, these medicines are likely to be very hurtful.

MCCXXL.

The other set of medicines which we have mentioned as suited to obviate the effects of the too great mobility of the system, are the medicines named *antispasmodics*. Of these there is a long list in the writers on the *Materia Medica*, and by these authors recommended for the cure of epilepsy. The greater part, however, of those taken from the vegetable kingdom, are manifestly inert and insignificant. Even the root of the wild valerian hardly supports its credit.

MCCCXLI.

Certain substances taken from the animal kingdom seem to be much more powerful: and of these the chief, and seemingly the most powerful, is musk; which, employed

in its genuine state, and in due quantity, has often been an effectual remedy.

It is probable also, that the *oleum animale*, as it has been named, when in its purest state, and exhibited at a proper time, may be an effectual remedy.

MCCCXLII.

In many diseases, the most powerful antispasmodic is certainly opium; but the propriety of its use in epilepsy has been disputed among physicians. When the disease depends upon a plethoric state in which bleeding may be necessary, the employment of opium is likely to be very hurtful; but, when there is no plethoric or inflammatory state present, and the disease seems to depend upon irritation or upon increased irritability, opium is likely to prove the most certain remedy. Whatever effects in this and other convulsive disorders

ders have been attributed to the hyoscyamus, must probably be attributed to its possessing a narcotic power similar to that of opium.

MCCCXLIII.

With respect to the use of antispasmodics, it is to be observed, that they are always most useful, and perhaps only useful, when employed at a time when epileptic fits are frequently recurring, or near to the times of the accession of fits which recur after considerable intervals.

MCCCXLIV.

On the subject of the cure of epilepsy, I have only to add, that as the disease in many cases is continued by the power of habit only, and that in all cases habit has a great share in increasing mobility, and

therefore in continuing this disease; so the breaking in upon such habit, and changing the whole habits of the system, is likely to be a powerful remedy in epilepsy. Accordingly, a considerable change of climate, diet, and other circumstances in the manner of life, has often proved a cure of this disease.

MCCCXLV.

After treating of epilepsy, I might here treat of particular convulsions, which are to be distinguished from epilepsy by their being more partial; that is, affecting certain parts of the body only, and by their not being attended with a loss of sense, nor ending in such a comatose state as epilepsy always does.

MCCCXLVI.

MCCCXLVI.

Of such convulsive affections many different instances have been observed and recorded by physicians. But many of these have been manifestly sympathetic affections, to be cured only by curing the primary disease upon which they depend, and therefore not to be treated of here: Or, tho' they are such as cannot be referred to another disease, as many of them however have not any specific character with which they occur in different persons, I must therefore leave them to be treated upon the general principles I have laid down with respect to epilepsy, or shall lay down with respect to the following convulsive disorder; which, as having very constantly in different persons a peculiar character, I think necessary to treat of more particularly.

MCCCXLVIII.

It is chiefly marked by convulsive motions, somewhat varied in different persons, but nearly of one kind in all; affecting the leg and arm on the same side, and generally on one side only.

MCCCXLIX.

These convulsive motions commonly first affect the leg and foot. Though the limb be at rest, the foot is often agitated by convulsive motions, turning it alternately outwards and inwards. When walking is attempted, the affected leg is seldom lifted as usual in walking, but is dragged along as if the whole limb were paralytic; and, when it is attempted to be lifted, this motion is unsteadily performed, the limb becoming agitated by irregular convulsive motions.

MCCCL.

The arm of the same side is generally affected at the same time; and, even when no voluntary motion is attempted, the arm is frequently agitated with various convulsive motions. But especially when voluntary motions are attempted, these are not properly executed, but are variously hurried or interrupted by convulsive motions in a direction contrary to that intended. The most common instance of this is in the person's attempting to carry a cup of liquor to his mouth, when it is only after repeated efforts, interrupted by frequent convulsive retractions and deviations, that the cup can be carried to the mouth.

MCCCLI.

It appears to me, that the will often yields to these convulsive motions, as to a
pro-

propensity, and thereby they are often increased, while the person affected seems pleased with increasing the surprize and amusement which his motions occasion in the bystanders.

MCCCLII.

In this disease the mind is often affected with some degree of fatuity; and often shows the same varied, desultory, and causeless emotions which occur in hysteria.

MCCCLIII.

These are the most common circumstances of this disease; but at times, and in different persons, it is varied by some difference in the convulsive motions, particularly by these affecting the head and trunk of the body. As in this disease
there

there seem to be propensities to motion, so various fits of leaping and running occur in the persons affected; and there have been instances of this disease, consisting of such convulsive motions, appearing as an epidemic in a certain corner of the country. In such instances, persons of different ages are affected, and may seem to make an exception to the general rule above laid down; but still the persons are, for the most part, the young of both sexes, and of the more manifestly moveable constitutions.

MCCCLIV.

The method of curing this disease has been variously proposed. Dr Sydenham proposed to cure it by alternate bleeding and purging. In some plethoric habits I have found some bleeding useful; but in many cases I have found repeated evacuations, especially by bleeding, very hurtful.

In many cases, I have found the disease, in spite of remedies of all kinds, continue for many months; but I have also found it often readily yield to tonic remedies, such as the Peruvian bark, and chalybeates.

The late Dr De Haen found several persons labouring under this disease cured by the application of electricity.

S E C T.

S E C T. II.

OF THE SPASMODIC AFFECTIONS
OF THE VITAL FUNCTIONS.

C H A P. IV*.

OF THE PALPITATION OF THE HEART.

MCCCLV.

THE motion thus named is a contraction or systole of the heart, that is performed with more rapidity, and generally

* Though I have thought it proper to divide this book into sections, I think it necessary, for the convenience of references, to number the chapters from the beginning.

rally also with more force, than usual; and when at the same time the heart strikes with more than usual violence against the inside of the ribs, producing often a considerable sound.

MCCCLVI.

This motion, or palpitation, is occasioned by a great variety of causes, which have been recited with great pains by Mr Senac and others, whom, however, I cannot follow in all the particulars with sufficient discernment, and therefore shall here only attempt to refer all the several cases of this disease to a few general heads.

MCCCLVII.

The first is of those arising from the application of the usual stimulus to the
heart's

heart's contraction; that is, the influx of the venous blood into its cavities, being made with more velocity, and therefore, in the same time, in greater quantity than usual. It seems to be in this manner that violent exercise occasions palpitation.

MCCCLVIII.

A second head of the cases of palpitation, is of those arising from any resistance given to the free and entire evacuation of the ventricles of the heart. Thus a ligature made upon the aorta occasions palpitations of the most violent kind. Similar resistances, either in the aorta or pulmonary artery, may be readily imagined; and such have been often found in the dead bodies of persons who, during life, had been much affected with palpitations.

To this head are to be referred all those cases

causes of palpitation arising from causes producing an accumulation of blood in the great vessels near to the heart.

MCCCLIX.

A third head of the causes of palpitation, is of those arising from a more violent and rapid influx of the nervous power into the muscular fibres of the heart. It is in this manner that I suppose various causes acting in the brain, and particularly certain emotions of the mind, occasion palpitation.

MCCCLX.

A fourth head of the causes of palpitation, is of those arising from causes producing a weakness in the action of the heart, by diminishing the energy of the brain with respect to it. That such causes operate

rate

rate in producing palpitation, I presume from hence, that all the several causes mentioned above (MCLXXVII. *et seq.*), as in this manner producing syncope, do often produce palpitation. It is on this ground that these two diseases are affections frequently occurring in the same person, as the same causes may occasion the one or the other, according to the force of the cause and mobility of the person acted upon. It seems to be a law of the human œconomy, that a degree of debility occurring in any function, often produces a more vigorous exertion of the same, or at least an effort towards it, and that commonly in a convulsive manner.

I apprehend it to be the convulsive action, frequently ending in some degree of a spasm, that gives occasion to the intermittent pulse so frequently accompanying palpitation.

MCCCLXI.

A fifth head of the cases of palpitation may perhaps be of those arising from a peculiar irritability or mobility of the heart. This, indeed, may be considered as a predisponent cause only, giving occasion to the action of the greater part of the causes recited above. But it is proper to observe, that this predisposition is often the chief part of the remote cause; inso-much that many of the causes producing palpitation would not have this effect but in persons peculiarly predisposed. This head, therefore, of the cases of palpitation, often requires to be distinguished from all the rest.

MCCCLXII.

After thus marking the several cases and causes of palpitation, I think it necessary, with

view to the cure of this disease, to observe, that the several causes of it may be again reduced to two heads. The first is, of those consisting in, or depending upon, certain organic affections of the heart itself, or of the great vessels immediately connected with it. The second is of those consisting in, or depending upon, certain affections subsisting and acting in other parts of the body, and acting either by the force of the cause, or in consequence of the mobility of the heart.

MCCCLXIII.

With respect to the cases depending upon the first set of causes, I must repeat here what I said with respect to the like cases of syncope, that I do not know any means of curing them. They, indeed, admit of some palliation, *first*, by avoiding every circumstance that may hurry the circulation

tion of the blood; and, *secondly*, by every means of avoiding a plethoric state of the system, or any occasional turgescence of the blood. In many of these cases, blood-letting may give a temporary relief: but in so far as debility and mobility are concerned, in such cases this remedy is likely to do harm.

MCCCLXIV.

With respect to the cases depending upon the other set of causes, they may be various, and require very different measures: but I can here say in general, that these cases may be considered as of two kinds; one depending upon primary affections in other parts of the body, and acting by the force of the particular causes; and another depending upon a state of mobility in the heart itself. In the first of these, it is obvious, that the cure of the palpita-

tion must be obtained by curing the primary affection; which is not to be treated of here. In the second, the cure must be obtained, partly by diligently avoiding the occasional causes, partly and chiefly by correcting the mobility of the system, and of the heart in particular; for doing which we have treated of the proper means elsewhere.

C H A P.

C H A P . V .

O F

D Y S P N O E A , O R D I F F I C U L T B R E A T H I N G .

M C C C L X V .

THE exercise of respiration, and the organs of it, have so constant and considerable a connection with almost the whole of the other functions and parts of the human body, that upon almost every occasion of disease, respiration must be affected. Accordingly some difficulty and

disorder in this function, are in fact symptoms very generally accompanying disease.

MCCCLXVI.

Upon this account the symptom of difficult breathing deserves a chief place and an ample consideration in the general system of Pathology; but what share of consideration it ought to have in a treatise of Practice, I find it difficult to determine.

MCCCLXVII.

On this subject, it is, in the first place, necessary to distinguish between the symptomatic and idiopathic affections; that is, between those difficulties of breathing which are symptoms only of a more general affection, or of a disease subsisting primarily in other parts than the organs of respiration,

tion, and that difficulty of breathing which depends upon a primary affection of the lungs themselves. The various cases of symptomatic dyspnœa I have taken pains to enumerate in my Methodical Nosology, and it will be obvious they are such as cannot be taken notice of here.

MCCCLXVII.

In my Nosology I have also taken pains to point out and enumerate the proper, or at least the greater part of the proper, idiopathic cases of dyspnœa; but from that enumeration it will, I think, readily appear, that few, and indeed hardly any, of these cases will admit or require much of our notice in this place.

MCCCLXIX.

The Dyspnœa *Sicca*, *species 2d*, the

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Dysp-

Dyspnœa *Aerea*, *sp.* 3^d, the Dyspnœa *Terrea*, *sp.* 4th, and Dyspnœa *Thoracica*, *sp.* 7th, are some of them with difficulty known, and are all of them diseases which in my opinion do not admit of cure. All, therefore, that can be said concerning them here is, that they may admit of some palliation; and this, I think, is to be obtained chiefly by avoiding a plethoric state of the lungs, and every circumstance that may hurry respiration.

MCCCLXX.

Of the Dyspnœa *Extrinfeca*, *sp.* 8th, I can say no more, but that these external causes marked in the Nosology, and perhaps some others that might have like effects, are to be carefully avoided; or, when they have been applied, and their effects have taken place, the disease is to be palliated

liated by the means mentioned in the last paragraph.

MCCCLXXI.

The other species, though enumerated as idiopathic, can hardly be considered as such, or as requiring to be treated of here.

The *Dyspnœa Catarrhalis*, *sp. 1st*, may be considered as a species of catarrh, and is pretty certainly to be cured by the same remedies as that species of catarrh which depends rather upon the increased afflux of mucus to the bronchiæ, than upon any inflammatory state in them.

The *Dyspnœa Aquosa*, *sp. 5th*, is certainly to be considered as a species of dropfy, and is to be treated by the same remedies as the other species of that disease.

The *Dyspnœa Pinguedinosæ*, *sp. 6th*, is in like manner to be considered as a
symp-

symptom or local effect of the Polyfarcia, and is only to be cured by correcting the general fault of the system.

MCCCLXXII.

From this view of those idiopathic cases of dyspnœa, which are perhaps all I could properly arrange under this title, it will readily appear that there is little room for treating of them here: but there is still one case of difficult breathing, which has been properly distinguished from every other under the title of *Asthma*; and as it deserves our particular attention, I shall here separately consider it.

C H A P.

C H A P . VI.

O F A S T H M A .

MCCCLXXIII.

THE term of Asthma has been commonly applied by the vulgar, and even by many writers on the Practice of Physic, to every case of difficult breathing, that is, to every species of Dyspnœa. The Methodical Nosologists, also, have distinguished

guished Asthma from Dyspnœa chiefly, and almost solely, by the former being the same affection with the latter, but in a higher degree. Neither of these applications of the term seems to have been correct or proper. I am of opinion, that the term Asthma may be most properly applied, and should be confined, to a case of difficult breathing that has peculiar symptoms, and depends upon a peculiar proximate cause, which I hope to assign with sufficient certainty. It is this disease I am now to treat of, and it is nearly what Practical Writers have generally distinguished from the other cases of difficult breathing, by the title of Spasmodic Asthma, or of *Asthma Convulsivum*; although, by not distinguishing it with sufficient accuracy from the other cases of Dyspnœa, they have introduced a great deal of confusion into their treatises on this subject.

MCCCLXXIV.

The disease I am to treat of, or the Asthma to be strictly so called, is often a hereditary disease. It seldom appears very early in life, and hardly till the time of puberty, or after it. It affects both sexes, but most frequently the male. I have not observed it to be more frequent in one kind of temperament than in another; and it does not seem to depend upon any general temperament of the whole body, but upon a particular constitution of the lungs alone. It frequently attacks persons of a full habit; but it hardly ever continues to be repeated for some length of time without occasioning an emaciation of the whole body.

MCCCLXXV.

The attacks of this disease are generally
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in the night-time, or towards the approach of night; but there are also some instances of their coming on in the course of the day. At whatever time they come on, it is for the most part suddenly, with a sense of tightness and stricture across the breast, and a sense of straitness in the lungs impeding inspiration. The person thus attacked, if in a horizontal situation, is immediately obliged to get into somewhat of an erect posture, and requires a free and cool air. The difficulty of breathing goes on for some time increasing, and both inspiration and expiration are performed slowly, and with a wheezing noise. In violent fits, speaking is difficult and uneasy. There is often some propensity to coughing, but it can hardly be executed.

MCCCLXXVI.

These symptoms often continue for

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many

many hours together, and particularly from midnight till the morning is far advanced. Then commonly a remission takes place by degrees; the breathing becomes less laborious and more full, so that the person can speak and cough with more ease; and, if the cough brings up some mucus, the remission becomes immediately more considerable, and the person falls into a much wished-for sleep.

MCCCLXXVII.

During these fits the pulse often continues in its natural state; but in some persons the fits are attended with a frequency of pulse, and with some heat and thirst, as marks of some degree of fever. If urine be voided at the beginning of a fit, it is commonly in considerable quantity, and with little colour or odour; but, after the fit is over, the urine voided is in the ordinary

nary quantity, of a high colour, and sometimes deposits a sediment. In some persons, during the fit the face is a little flushed and turgid; but more commonly it is somewhat pale and shrunk.

MCCCLXXVIII.

After some sleep in the morning, the patient, for the rest of the day, continues to have more free and easy breathing, but it is seldom entirely such. He still feels some tightness across his breast, cannot breathe easily in a horizontal posture, and can hardly bear any motion of his body, without having his breathing rendered more difficult and uneasy. In the afternoon he has an unusual flatulency of his stomach, and an unusual drowsiness; and, very frequently, these symptoms precede the first attacks of the disease. But, whether these symptoms appear or not, the
diffi-

difficulty of breathing returns towards the evening; and then sometimes gradually increases, till it becomes as violent as in the night before: or if, during the day, the difficulty of breathing has been moderate, and the person gets some sleep in the first part of the night, he is however waked about midnight, or at some time between midnight and two o'clock in the morning; and is then suddenly seized with a fit of difficult breathing, which runs the same course as the night before.

MCCCLXXIX.

In this manner fits return for several nights successively; but generally, after some nights passed in this way, the fits suffer more considerable remissions. This especially happens when the remissions are attended with a more copious expectora-

tion in the mornings, and that this continues from time to time throughout the day. In these circumstances, asthmatics, for a long time after, have not only more easy days, but enjoy also nights of entire sleep, without the recurrence of the disease.

MCCCLXXX.

When this disease, however, has once taken place in the manner above described, it is ready to return at times for the whole of life after. These returns, however, happen with different circumstances in different persons.

MCCCLXXXI.

In some persons the fits are readily excited by external heat, whether of the weather or of a warm chamber, and particularly

ticularly by warm bathing. In such persons fits are more frequent in summer, and particularly during the dog-days, than at other colder seasons. The same persons are also readily affected by changes of the weather, especially by sudden changes made from a colder to a warmer, or, what is commonly the same thing, from a heavier to a lighter atmosphere. The same persons are also affected by every circumstance straitening the capacity of the thorax, as by any ligature made, or even by a plaster laid, upon it; and a like effect happens from any increased bulk of the stomach, either by a full meal, or by air collected in it. They are likewise much affected by exercise, or whatever else can hurry the circulation of the blood.

MCCCLXXXII.

As asthmatic fits seem thus to depend

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upon

upon some fulness of the vessels of the lungs, it is probable that an obstruction of perspiration, and the blood being less determined to the surface of the body, may favour an accumulation in the lungs, and thereby be a means of exciting asthma. This seems to be the case of those asthmatics who have fits most frequently in the winter-season, and who have commonly more of a catarrhal affection accompanying the asthma; which therefore occurs more frequently in winter, and more manifestly from the application of cold.

MCCCLXXXIII.

Beside these cases of asthma excited by heat or cold, there are others, in which the fits are especially excited by powers applied to the nervous system; as by passions of the mind, by particular odours, and by irritations of smoke and dust.

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That this disease is an affection of the nervous system, and depending upon a mobility of the moving fibres of the lungs, appears pretty clearly from its being frequently connected with other spasmodic affections depending upon mobility; such as hysteria, hypochondriasis, dyspepsia, and atonic gout.

MCCCLXXXIV.

From the whole of the history of asthma now delivered, I think it will readily appear, that the proximate cause of this disease is a preternatural, and in some measure a spasmodic, constriction of the muscular fibres of the bronchiæ; which not only prevents the dilatation of the bronchiæ necessary to a free and full inspiration, but gives also a rigidity which prevents a full and free expiration. This preternatural constriction, like many other

convulsive and spasmodic affections, is readily excited by a turgescence of the blood, or other cause of any unusual fulness and distention of the vessels of the lungs.

MCCCLXXXV.

This disease, as coming by fits, may be generally distinguished from most other species of dyspnœa, whose causes being more constantly applied, produce therefore a more constant difficulty of breathing. There may, however, be some fallacy in this matter, as some of these causes may be liable to have abatements and intensities, whereby the dyspnœa produced by them may seem to come by fits; but I believe it is seldom that such fits put on the appearance of the genuine asthmatic fits described above. Perhaps, however, there is still another case that may give more difficulty; and that is,
when

when several of the causes, which we have assigned as causes of several of the species of difficult breathing referred to the genus of *Dyspnœa*, may have the effect of exciting a genuine asthmatic fit. Whether this can happen to any but the peculiarly predisposed to asthma, I am uncertain; and therefore, whether, in any such cases, the asthma may be considered as symptomatic, or if, in all such cases, the asthma may not still be considered and treated as an idiopathic disease.

MCCCLXXXVI.

The asthma, though often threatening immediate death, seldom occasions it; and many persons have lived long under this disease. In many cases, however, it does prove fatal; sometimes very quickly, and perhaps always at length. In some young persons it has ended soon, by occasioning

a phthisis pulmonalis. After a long continuance, it often ends in a hydrothorax; and commonly, by occasioning some aneurism of the heart or great vessels, it thereby proves fatal.

MCCCLXXXVII.

As it is seldom that an asthma has been entirely cured, I therefore cannot propose any method of cure which experience has approved as generally successful. But the disease admits of alleviation in several respects from the use of remedies; and my business now shall be chiefly to offer some remarks upon the choice and use of the remedies which have been commonly employed in cases of asthma.

MCCCLXXXVIII.

As the danger of an asthmatic fit arises
chiefly

chiefly from the difficult transmissiion of the blood through the vessels of the lungs, threatening suffocation ; so the most probable means of obviating this seems to be blood-letting : and therefore, in all violent fits, practitioners have had recourse to this remedy. In first attacks, and especially in young and plethoric persons, blood-letting may be very necessary, and is commonly allowable. But it is also evident, that, under the frequent recurrence of fits, blood-letting cannot be frequently repeated without exhausting and weakening the patient too much. It is further to be observed, that blood-letting is not so necessary as might be imagined, as the passage of the blood through the lungs is not so much interrupted as has been commonly supposed. This I particularly conclude from hence, that, instead of the suffusion of face, which is the usual effect of such interruption, the face, in asthmatic fits, is
often

often shrunk and pale. I conclude the same also from this, that, in asthmatic fits, blood-letting does not commonly give so much relief as, upon the contrary supposition, might be expected.

MCCCLXXXIX.

As I have alleged above, that a turgescence of the blood is frequently the exciting cause of asthmatic fits, so it might be supposed that a plethoric state of the system might have a great share in producing a turgescence of the blood in the lungs; and especially, therefore, that blood-letting might be a proper remedy in asthma. I allow it to be so in the first attacks of the disease: but as the disease, by continuing, generally takes off the plethoric state of the system; so, after the disease has continued for some time, I allege that

that blood-letting becomes less and less necessary.

MCCCXC.

Upon the supposition of asthmatics being in a plethoric state, purging might be supposed to prove a remedy in this disease: but, both because the supposition is not commonly well founded, and because purging is seldom found to relieve the vessels of the thorax, this remedy has not appeared to be well suited to asthmatics; and large purging has always been found to do much harm. But as asthmatics are always hurt by the stagnation and accumulation of matters in the alimentary canal, so costiveness must be avoided, and an open belly proves useful. In the time of fits, the employment of emollient and moderately laxative glysters has been found to give considerable relief.

MCCCXCI.

MCCCXCI.

As a flatulency of the stomach, and other symptoms of indigestion, are frequent attendants of asthma, and very troublesome to asthmatics; so, both for removing these symptoms, and for taking off all determination to the lungs, the frequent use of gentle vomits is proper in this disease. In certain cases, where a fit was expected to come on in the course of the night, a vomit given in the evening has frequently seemed to prevent it.

MCCCXCII.

Blistering between the shoulders, or upon the breast, has been frequently employed to relieve asthmatics; but in the pure spasmodic asthma we treat of here, I have rarely found blisters useful, either in preventing or relieving fits.

MCCCXCIII.

MCCCXCIII.

Issues are certainly useful in obviating plethora; but as such indications seldom arise in cases of asthma, so issues have been seldom found useful in this disease.

MCCCXCIV.

As asthmatic fits are so frequently excited by a turgescence of the blood, so the obviating and allaying of this by acids and neutral salts, seems to have been at all times the object of practitioners. See FLOYER *on the Asthma*.

MCCCXCV.

Although a plethoric state of the system may seem to dispose to asthma, and the occasional turgescence of the blood may seem to be frequently the exciting cause

of the fits ; yet it is evident, that the disease must have arisen chiefly from a peculiar constitution in the moving fibres of the bronchiæ, disposing them upon various occasions to fall into a spasmodic constriction ; and therefore, that the entire cure of the disease can only be expected from the correcting of that predisposition, or from correcting the preternatural mobility or irritability of the lungs in that respect.

MCCCXCVI.

In cases wherein this predisposition depends upon original conformation, the cure must be difficult, and perhaps impossible ; but it may perhaps be moderated by the use of antispasmodics. Upon this footing, various remedies of that kind have been commonly employed, and particularly the fetid gums ; but we have

not found them of any considerable efficacy, and have observed them to be sometimes hurtful by their heating too much. Some other antispasmodics which might be supposed powerful, such as musk, have not been properly tried. The vitriolic ether has been found to give relief, but its effects are not lasting.

MCCCXCVII.

As in other spasmodic affections, so in this, the most certain and powerful antispasmodic is opium. I have often found it effectual, and generally safe; and if there have arisen doubts with respect to its safety, I believe they have arisen from not distinguishing between certain plethoric and inflammatory cases of dyspnoea, improperly named Asthma, and the genuine spasmodic asthma we treat of here.

MCCCXCVIII.

MCCCXCVIII.

As in many cases this disease depends upon a predisposition which cannot be corrected by our art, so in such cases the patient can only escape the disease by avoiding the occasional or exciting causes, which I have endeavoured to point out above. It is, however, difficult to give any general rules here, as different asthmatics have their different idiosyncrasies with respect to externals. Thus, one asthmatic finds himself easiest living in the midst of a great city, while another cannot breathe but in the free air of the country. In the latter case, however, most asthmatics bear the air of a low ground, if tolerably free and dry, better than that of the mountain.

MCCCXCIX.

In diet also, there is some difference to
be

be made with respect to different asthmatics. None of them bear a large or full meal, or any food that is of slow and difficult solution in the stomach; but many of them bear animal-food of the lighter kinds, and in moderate quantity. The use of vegetables which readily prove flatulent, are always very hurtful. In recent asthma, and especially in the young and plethoric, a spare, light, and cool diet is proper, and commonly necessary; but, after the disease has continued for years, asthmatics commonly bear, and even require, a tolerably full diet, though in all cases a very full diet is very hurtful.

MCCCC.

In drinking, water, or cool watery liquors, is the only safe and fit drink for asthmatics; and all liquors ready to ferment, and become flatulent, are hurtful to

them. Few asthmatics can bear any kind of strong drink; and any excess in such is always very hurtful to them. As asthmatics are commonly hurt by taking warm or tepid drink, so, both upon that account, and upon account of the liquors weakening the nerves of the stomach, neither tea nor coffee is proper in this disease.

MCCCCI.

Asthmatics commonly bear no bodily motion easily but that of the most gentle kind. Riding, however, on horseback, or going in a carriage, and especially sailing, are very often useful to asthmatics.

C H A P. VII.

OF THE CHINCOUGH, OR HOOPING-COUGH.

MCCCCII.

THIS disease is commonly epidemic, and manifestly contagious. It seems to proceed from a contagion of a specific nature, and of singular quality. It does not, like most other contagions, necessarily produce a fever; nor does it, like most others, occasion any eruption, or produce otherwise any evident change in the state of the human fluids. It has, in common with the catarrhal contagion, and with that of the measles, a peculiar

determination to the lungs, but with particular effects there, very different from those of the other two; as will appear from the history of this disease now to be delivered.

MCCCCIII.

This contagion, like several others, affects persons but once in the course of their lives; and therefore, necessarily, children are most commonly the subjects of this disease: but there are many instances of it occurring in persons considerably advanced in life; though it is probable, that the further that persons are advanced in life, they are the less liable to be affected with this contagion.

MCCCCIV.

MCCCCIV.

The disease commonly comes on with the ordinary symptoms of a catarrh arising from cold; and often, for many days, keeps entirely to that appearance; and I have had instances of a disease which, though evidently arising from the chin-cough contagion, never put on any other form than that of a common catarrh.

This, however, seldom happens; for, generally, in the second, and at farthest in the third week after the attack, the disease puts on its peculiar and characteristic symptom, a convulsive cough. This is a cough in which the expiratory motions peculiar to coughing are made with more frequency, rapidity, and violence, than usual. As these circumstances, however, in different instances of coughing, are in very different degrees; so no exact limits can be put to determine when the cough

can be strictly said to be convulsive; and it is therefore especially by another circumstance that the chincough is distinguished from every other form of cough. This circumstance is, when many expiratory motions have been convulsively made, and thereby the air is in great quantity thrown out of the lungs, a full inspiration is necessarily and suddenly made; which, by the air rushing in through the glottis with unusual velocity, gives a peculiar sound. This sound is somewhat different in different cases, but is in general called a Hoop; and from it the whole of the disease is called the Hooping Cough. When this sonorous inspiration has happened, the convulsive coughing is again renewed, and continues in the same manner as before, till a quantity of mucus is thrown up from the lungs, or the contents of the stomach are thrown up by vomiting. Either of these evacuations

com-

commonly puts an end to the coughing, and the patient remains free from it for some time after. Sometimes it is only after several alternate fits of coughing and hooping that expectoration or vomiting takes place; but it is commonly after the second coughing that these happen, and put an end to the fit.

MCCCCV.

When the disease, in this manner, has taken its proper form, it generally continues for a long time after, and generally from one month to three; but sometimes much longer, and that with very various circumstances.

MCCCCVI.

The fits of coughing return at various intervals, rarely observing any exact pe-

riod. They happen frequently in the course of the day, and more frequently still in the course of the night. The patient has commonly some warning of their coming on; and, to avoid that violent and painful concussion which the coughing gives to the whole body, he clings fast to any thing that is near to him, or demands to be held fast by any person that he can come at.

When the fit is over, the patient sometimes breathes fast, and seems fatigued for a little after: but in many this appears very little; and children are commonly so entirely relieved, that they immediately return to their play, or what else they were occupied in before.

MCCCCVII.

If it happens that the fit of coughing ends in vomiting up the contents of the
sto-

stomach, the patient is commonly immediately after seized with a strong craving and demand for food, and takes it in very greedily.

MCCCCVIII.

At the first coming on of this disease, the expectoration is sometimes none at all, or of a thin mucus only; and while this continues to be the case, the fits of coughing are more violent, and continue longer: but commonly the expectoration soon becomes considerable, and a very thick mucus, often in great quantity, is thrown up; and as this is more readily brought up, the fits of coughing are of shorter duration.

MCCCCIX.

The violent fits of coughing frequently
inter-

interrupt the free transmission of the blood through the lungs, and thereby the free return of blood from the vessels of the head. This occasions that turgescence and suffusion of face which commonly attends the fits of coughing, and seems to occasion also those eruptions of blood from the nose, and even from the eyes and ears, which sometimes happen in this disease.

MCCCCX.

This disease often takes place in the manner we have now described, without any pyrexia attending it; but, though Sydenham had seldom observed it, we have found the disease very frequently accompanied with pyrexia, sometimes from the very beginning, but more frequently only after the disease had continued for some time. When it does accompany the disease, we have not found it appearing under any
regular

regular intermitten form. It is constantly in some degree present; but with evident exacerbations towards evening, continuing till next morning.

MCCCCXI.

Another symptom very frequently attending the chincough, is a difficulty of breathing; and that not only immediately before and after fits of coughing, but as constantly present, though in different degrees in different persons. I have hardly ever seen an instance of a fatal chincough, in which a considerable degree of pyrexia and dyspnœa had not been for some time constantly present.

MCCCCXII.

When by the power of the contagion this disease has once taken place, the fits
of

of coughing are often repeated, without any evident exciting cause: but, in many cases, the contagion may be considered as giving a predisposition only; and the frequency of fits depends in some measure upon various exciting causes; such as, violent exercise; a full meal; the having taken in food of difficult solution; irritations of the lungs by dust, smoke, or disagreeable odours of a strong kind; and especially any considerable emotion of the mind.

MCCCCXIII.

Such are the chief circumstances of this disease, and it is of various event; which, however, may be commonly foreseen by attending to the following considerations.

The younger that children are, they are in the greater danger from this disease; and of those

those to whom it proves fatal, there are many more under two years old than above it.

The older that children are, they are the more secure against an unhappy event; and this I hold to be a very general rule, though I own there are many exceptions to it.

Children born of phthical and asthmatic parents are in the greatest danger from this disease.

When the disease, beginning in the form of a catarrh, is attended with fever and difficult breathing, and with little expectoration, it often proves fatal, without taking on the form of the hooping cough; but, in most of such cases, the coming on of the convulsive cough and hooping, bringing on at the same time a more free expectoration, generally removes the danger.

When the disease is fully formed, if the fits are neither frequent nor violent, with
mode-

moderate expectoration, and the patient, during the intervals of the fits, is easy, keeps his appetite, gets sleep, and is without fever or difficult breathing, the disease is attended with no danger; and these circumstances becoming daily more favourable, the disease very soon spontaneously terminates.

An expectoration, either very scanty or very copious, is attended with danger; especially if the latter circumstance is attended with great difficulty of breathing.

Those cases in which the fits terminate by a vomiting, and are immediately followed by a craving of food, are generally without danger.

A moderate hemorrhagy from the nose often proves salutary, but very large hemorrhagies are generally very hurtful.

This disease coming upon persons under a state of much debility, has very generally an unhappy event.

The

The danger of this disease sometimes arises from the violence of the fits of coughing, occasioning apoplexy, epilepsy, or immediate suffocation; but these accidents are very rare, and the danger of the disease seems generally to be in proportion to the fever and dyspnoea attending it.

MCCCCXIV.

The cure of this disease has been always considered as difficult, whether the purpose be to obviate its fatal tendency when it is violent, or merely to shorten the course of it when it is mild. When the contagion is recent, and continues to act, we neither know how to correct, nor how to expel it; and therefore the disease necessarily continues for some time: but it is probable, that the contagion in this as in other instances ceases at length to act; and that then the disease continues, as in other
con-

convulsive affections, by the power of habit alone.

MCCCCXV.

From this view of the matter I maintain, that the practice must be different, and adapted to two different indications, according to the period of the disease. At the beginning of the disease, and for some time after, the remedies to be employed must be such as may obviate the violent effects of the disease, and the fatal tendency of it; but, after the disease has continued for some time, and is without any violent symptoms, the only remedies which can be required are those which may interrupt its course, and put an entire stop to it sooner than it would have spontaneously ceased.

MCCCCXVI.

MCCCCXVI.

For answering the first indication. In plethoric subjects, or in others, when from the circumstances of the cough and fits it appears that the blood is difficultly transmitted through the lungs, bloodletting is a necessary remedy; and it may be even necessary to repeat it, especially in the beginning of the disease: but, as spasmodic affections do not commonly admit of much bleeding, so it is seldom proper in the chin-cough to repeat this remedy often.

MCCCCXVII.

As costiveness frequently attends this disease, so it is necessary to obviate or remove it by laxatives employed; and keeping an open belly is generally useful: but large evacuations in this way are commonly hurtful.

MCCCCXVIII.

To obviate or remove the inflammatory determination to the lungs that sometimes occurs in this disease, blistering is often useful, and even repeated blistering has been of service; but issues have not so much effect, and should by no means supersede the repeated blistering that may be indicated. When blisters are proper, they are more effectual when applied to the thorax than when applied to any distant parts.

MCCCCXIX.

Of all other remedies, emetics are the most useful in this disease; both in general by interrupting the return of spasmodic affections, and in particular by determining very powerfully to the surface of the body, and thereby taking off determinations

nations to the lungs. For these purposes, I think, full vomiting is frequently to be employed; and in the intervals necessary to be left between the times of full vomiting, nauseating doses of the antimonial emetics may be useful. I have never found the *sulphur auratum*, so much praised by Cloffius, to be a convenient medicine, on account of the uncertainty of its dose; and the tartar emetic, employed in the manner directed by the late Dr Fothergill, has appeared to be more useful.

MCCCCXX.

These are the remedies to be employed in the first stage of the disease for obviating its fatal tendency, and putting it into a safe train. But in the second stage, when I suppose the contagion has ceased to act, and that the disease continues merely by

the power of habit, a different indication arises, and different remedies are to be employed.

MCCCCXXI.

This disease, which often continues for a long time, does not, in my opinion, continue during the whole of that time in consequence of the contagion's remaining in the body, and continuing to act in it. That the disease does often continue long after the contagion has ceased to act, and that too by the power of habit alone, appears to me probable from hence, that terror has frequently cured the disease; that any considerable change in the state of the system, such as the coming on of the small-pox, has also cured it; and, lastly, that it has been cured by antispasmodic and tonic medicines; whilst none of all these means of cure can be supposed either to

correct or to expel a morbid matter, though they are evidently suited to change the state and habits of the nervous system.

MCCCCXXII.

From this view we are directed to the indication that may be formed, and in a great measure to the remedies which may be employed in what we suppose to be the second stage of the disease. It may perhaps be alleged, that this indication of shortening the course of the disease, is not very important or necessary, as it supposes that the violence and danger is over, and, in consequence, that the disease will soon spontaneously cease. The last supposition, however, is not well founded; as the disease, like many other convulsive and spasmodic affections, may continue for a long time by the power of habit alone, and by

the repetition of paroxysms may have hurtful effects, more especially as the violence of paroxysms, and therefore their hurtful effects, may be much aggravated by various external causes that may be accidentally applied. Our indication, therefore, is proper; and we proceed to consider the several remedies which may be employed to answer it.

MCCCCXXIII.

Terror may possibly be a powerful remedy, but it is difficult to measure the degree of it that shall be produced; and, as a slight degree of it may be ineffectual, and a high degree of it dangerous, I cannot propose to employ it.

MCCCCXXIV.

The other remedies which we suppose
suited

sued to our second indication, and which indeed have been frequently employed in this disease, are antispasmodics or tonics.

Of the antispasmodics, castor has been particularly recommended by Dr Morris; but in many trials we have not found it effectual.

With more probability musk has been employed: but whether it be from our not having it of a genuine kind, or not employing it in sufficiently large doses, I cannot determine; but we have not found it commonly successful. Of antispasmodics, the most certainly powerful is opium: and when there is no considerable fever or difficulty of breathing present, opium has often proved useful in moderating the violence of the chincough; but I have not known it employed so as entirely to cure the disease.

If hemlock has proved a remedy in this disease, as we must believe from Dr Butter's

ter's accounts, I agree with that author, that it is to be considered as an antispasmodic. Upon this supposition, it is a probable remedy; and from the accounts of Dr Butter and some others, it seems to have been often useful: but, in our trials, it has often disappointed us, perhaps from the preparation of it not having been always proper.

MCCCCXXV.

Of the tonics, I consider the cupmoss, formerly celebrated, as of this kind; as also the bark of the mistletoe: but I have had no experience of either, as I have always trusted to the Peruvian bark. I consider the use of this medicine as the most certain means of curing the disease in its second stage; and when there has been little fever present, and a sufficient quantity of the bark has been given, it has sel-

dom failed of soon putting an end to the disease.

MCCCCXXVI.

When convulsive disorders may be supposed to continue by the force of habit alone, it has been found that a considerable change in the whole of the circumstances and manner of life has proved a cure of such diseases; and analogy has applied this in the case of the chincough so far, that a change of air has been employed, and supposed to be useful. In several instances I have observed it to be so; but I have never found the effects of it durable, or sufficient to put an entire stop to the disease.

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