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FIRST LINES
OF THE
PRACTICE OF PHYSIC.

BY
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UNIVERSITY OF EDINBURGH, &c. &c.

IN FOUR VOLUMES.

WITH PRACTICAL AND EXPLANATORY NOTES,
BY JOHN ROTHERAM,

M. D. F. R. & A. SS. EDIN.

A NEW EDITION WITH IMPROVEMENTS.

VOL. IV.

EDINBURGH:

Printed for BELL & BRADFUTE, and WILLIAM CREECH;

AND

G. G. and J. ROBINSONS, and H. MURRAY, *London.*

M DCC XCVI.





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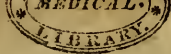
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FIRST LINES

OF THE

PRACTICE OF PHYSIC.

PART II.

BOOK III. SECT. III.

OF THE SPASMODIC AFFECTIONS
IN THE NATURAL FUNCTIONS.

CHAP. VIII.

OF THE PYROSIS, OR WHAT IS NAMED
IN SCOTLAND THE WATER-BRASH.

1427. **T**HE painful sensations referred
to the stomach, and which
are probably occasioned by real affections

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B

of

of this organ, are of different kinds. Probably they proceed from affections of different natures, and should therefore be distinguished by different appellations; but I must own that the utmost precision in this matter will be difficult. In my essay towards a methodical Nosology, I have, however, attempted it. For those pains that are either acute or pungent, or accompanied with a sense of distention, or with a sense of constriction, if they are at the same time not attended with any sense of acrimony or heat, I employ the appellation of *Gastrodynia*. To express those painful or uneasy sensations which seem to arise from a sense of acrimony irritating the part, or from such a sense of heat as the application of acrids, whether externally or internally applied, often gives, I employ the terms of *Cardialgia*; and by this I particularly mean to denote those feelings which are expressed
by

by the term Heart-burn in the English language. I think the term Soda has been commonly employed by practical writers, to express an affection attended with feelings of the latter kind.

1428. Beside the pains denoted by the terms Gastrodynia, Periadynia, Cardialgia, and Soda, there is, I think, another painful sensation different from all of these, which is named by Mr Sauvages Pyrosis Suecica; and his account of it is taken from Linnæus, who names it Cardialgia Sputatoria. Under the title of Pyrosis Mr Sauvages has formed a genus, of which the whole of the species, except the eighth, which he gives under the title of Pyrosis Suecica, are all of them species of the Gastrodynia, or of the Cardialgia; and if there is a genus to be formed under the title of Pyrosis, it can in my opinion comprehend only the spe-

cies I have mentioned. In this case, indeed, I own that the term is not very proper; but my aversion to introduce new names has made me continue to employ the term of Mr Sauvages.

1429. The *Gastrodynia* and *Cardialgia* I judge to be for the most part symptomatic affections; and therefore have given them no place in this work: but the *Pyrosis*, as an idiopathic disease, and never before treated of in any system, I propose to treat of here.

1430. It is a disease frequent among people in lower life; but occurs also, though more rarely, in people of better condition. Though frequent in Scotland, it is by no means so frequent as Linnæus reports it to be in Lapland. It appears most commonly in persons under middle age, but seldom in any persons before the
age



age of puberty. When it has once taken place, it is ready to recur occasionally a long time after; but it seldom appears in persons considerably advanced in life. It affects both sexes, but more frequently the female. It sometimes attacks pregnant women, and some women only when they are in that condition. Of other women, it more frequently affects the unmarried; and of the married, most frequently the barren. I have had many instances of its occurring in women labouring under a fluor albus.

1431. The fits of this disease usually come on in the morning and forenoon, when the stomach is empty. The first symptom of it is a pain at the pit of the stomach, with a sense of constriction, as if the stomach was drawn towards the back; the pain is increased by raising the body into an erect posture, and therefore

the body is bended forward. This pain is often very severe; and, after continuing for some time, it brings on an eructation of a thin watery fluid in considerable quantity. This fluid has sometimes an acid taste, but is very often absolutely insipid. The eructation is for some time frequently repeated; and does not immediately give relief to the pain which preceded it, but does so at length, and puts an end to the fit.

1432. The fits of this disease commonly come on without any evident exciting cause, and I have not found it steadily connected with any particular diet. It attacks persons using animal food, but I think more frequently those living on milk and farinacea. It seems often to be excited by cold applied to the lower extremities, and is readily excited by any considerable emotion of mind. It is of-

ten without any symptoms of dyspepsia.

1433. The nature of this affection is not very obvious; but I think it may be explained in this manner: It seems to begin by a spasm of the muscular fibres of the stomach; which is afterwards, in a certain manner, communicated to the blood-vessels and exhalants, so as to increase the impetus of the fluids in these vessels, while a constriction takes place on their extremities. While therefore the increased impetus determines a greater quantity than usual of fluids into these vessels, the constriction upon their extremities allows only the pure watery parts to be poured out, analogous, as I judge, in every respect, to what happens in the diabetes hystericus.

1434. The practice in this disease is as

difficult as the theory. The paroxysm is only to be certainly relieved by opium. Other antispasmodics, as vitriolic ether and volatile alkali, are sometimes of service, but not constantly so. Although opium and other antispasmodics relieve the fits, they have no effect in preventing their recurrence. For this purpose, the whole of the remedies of dyspepsia have been employed without success. Of the use of the nux vomica, mentioned as a remedy by Linnæus, I have had no experience.

C H A P.

C H A P. IX.

OF THE

C O L I C.

1435. **T**HE principal symptom of this disease is a pain felt in the lower belly. It is seldom fixed and pungent in one part, but is a painful distention in some measure spreading over the whole of the belly; and particularly

ticularly with a sense of twisting or wringing round the navel. At the same time, with this pain, the navel and teguments of the belly are frequently drawn inwards, and often the muscles of the belly are spasmodically contracted, and this in separate portions, giving the appearance of a bag full of round balls.

1436. Such pains, in a certain degree, sometimes occur in cases of diarrhœa and cholera; but these are less violent and more transitory, and are named Gripings. It is only when more violent and permanent, and attended with costiveness, that they constitute colic. This is also commonly attended with vomiting, which in many cases is frequently repeated, especially when any thing is taken down into the stomach; and in such vomitings, not only the contents of the stomach are thrown up, but also the contents of the duodenum,

duodenum; and therefore frequently a quantity of bile.

1437. In some cases of colic, the peristaltic motion is inverted through the whole length of the alimentary canal, in such a manner that the contents of the great guts, and therefore stercoraceous matter, is thrown up by vomiting; and the same inversion appears still more clearly from this, that what is thrown into the rectum by glyster is again thrown out by the mouth. In these circumstances of inversion the disease has been named ileus, or, the Iliac Passion; and this has been supposed to be a peculiar disease distinct from colic; but to me it appears that the two diseases are owing to the same proximate cause, and have the same symptoms, only in a different degree.

1438. The colic is often without any
pyrexia

pyrexia attended it. Sometimes, however, an inflammation comes upon the part of the intestine especially affected; and this inflammation aggravates all the symptoms of the disease, being probably what brings on the most considerable inversion of the peristaltic motion; and, as the stercoraceous vomiting is what especially distinguishes the ileus, this has been considered as always depending on an inflammation of the intestines. However, I can affirm, that as there are inflammations of the intestines without stercoraceous vomiting, so I have seen instances of stercoraceous vomiting without inflammation; and there is therefore no ground for distinguishing ileus from colic, but as a higher degree of the same affection.

1439. The symptoms of the colic, and the dissections of bodies dead of this disease, shew very clearly, that it depends
upon

upon a spasmodic constriction of a part of the intestines ; and that this therefore is to be considered as the proximate cause of the disease. In some of the dissections of persons dead of this disease, an intro-susception has been remarked to have happened ; but whether this be constantly the case in all the appearances of ileus, is not certainly determined.

1440. The colic has commonly been considered as being of different species, but I cannot follow the writers on this subject in the distinctions they have established. So far, however, as a difference of the remote cause constitutes a difference of species a distinction may perhaps be admitted ; and accordingly in my Nosology I have marked seven different species : but I am well persuaded, that in all these different species the proximate cause is the same, that is, a spasmodic constriction of a
part

part of the intestines ; and consequently, that in all these cases the indication of cure is the same, that is, to remove the constriction mentioned. Even in the several species named *Stercorea*, *Callosa*, and *Calculosa*, in which the disease depends upon an obstruction of the intestine, I am persuaded that these obstructions do not produce the symptoms of colic, excepting in so far as they produce spasmodic constrictions of the intestines ; and therefore that the means of cure in these cases, so far as they admit of cure, must be obtained by the same means which the general indication above mentioned suggests.

1441. The cure, then, of the colic universally, is to be obtained by removing the spasmodic constrictions of the intestines ; and the remedies suited to this purpose may be referred to three general heads.

1. The

1. The taking off the spasm by various antispasmodic powers.
2. The exciting the action of the intestines by purgatives.
3. The employing mechanical dilatation.

1442. Before entering upon a particular account of these remedies, it will be proper to observe, that in all cases of violent colic, it is advisable to practise blood-letting; both as it may be useful in obviating the inflammation which is commonly to be apprehended, and even as it may be a means of relaxing the spasm of the intestine. This remedy may perhaps be improper in persons of a weak and lax habit, but in all persons of tolerable vigour it will be a safe remedy; and in all cases where there is the least suspicion of
an

an inflammation actually coming on, it will be absolutely necessary. Nay, it will be even proper to repeat it perhaps several times, if, with a full and hard pulse, the appearance of the blood drawn, and the relief obtained by the first bleeding, shall authorise such repetition.

1443. The antispasmodic powers that may be employed, are, the application of heat in a dry or humid form, the application of blisters, the use of opium, and the use of mild oils.

The application of heat, in a dry form, has been employed by applying to the belly of the patient a living animal, or bladders filled with warm water, or bags of substances which long retain their heat; and all these have sometimes been applied with success; but none of them seem to

me so powerful as the application of heat in a humid form.

This may be employed either by the immersion of a great part of the body in warm water, or by fomenting the belly with cloths wrung out of hot water. The immersion has advantages from the application of it to a greater part of the body, and particularly to the lower extremities: but immersion cannot always be conveniently practised, and fomentation may have the advantage of being longer continued; and it may have nearly all the benefit of immersion, if it be at the same time applied both to the belly and to the lower extremities.

1444. From considering that the teguments of the lower belly have such a connection with the intestines, as at the same time to be affected with spasmodic con-

traction, we perceive that blisters applied to the belly may have the effect of taking off the spasms both from the muscles of the belly and from the intestines; and accordingly blistering has often been employed in the colic with advantage. Analogous to this, rubefacients applied to the belly have been frequently found useful.

1445. The use of opium in colic may seem to be an ambiguous remedy. Very certainly it may for some time relieve the pain, which is often so violent and urgent, that it is difficult to abstain from the use of such a remedy. At the same time, the use of opium retards or suspends the peristaltic motion so much, as to allow the intestines to fall into constrictions; and may therefore, while it relieves the pain, render the cause of the disease more obstinate. On this account, and further as opium prevents the operation of purgatives so often
i
necessary

necessary in this disease, many practitioners are averse to the use of it, and some entirely reject the use of it as hurtful. There are, however, others, who think they can employ opium in this disease with much advantage.

In all cases where the colic comes on without any previous costiveness, and arises from cold, from passions of the mind, or other causes which operate especially on the nervous system, opium proves a safe and certain remedy; but in cases which have been preceded by long costiveness, or where the colic, though not preceded by costiveness, has however continued for some days without a stool, so that a stagnation of fæces in the colon is to be suspected, the use of opium is of doubtful effect. In such cases, unless a stool has been first procured by medicine, opium cannot be employed but with some hazard

of aggravating the disease. However, even in those circumstances of costiveness, when, without inflammation, the violence of the spasm is to be suspected, when vomiting prevents the exhibition of purgatives, and when with all this the pain is extremely urgent, opium is to be employed, not only as an anodyne, but also as an antispasmodic, necessary to favour the operation of purgatives; and may be so employed, when, either at the same time with the opiate, or not long after it, a purgative can be exhibited.

Is the hyoscyamus, as often showing, along with its narcotic, a purgative quality, better suited to this disease than opium?

1446. It is seemingly on good grounds that several practitioners have recommended the large use of mild oils in this disease, both as antispasmodics and as laxa-

tives; and where the palate and stomach could admit them, I have found them very useful. But as there are few Scottish stomachs that can admit a large use of oils, I have had few opportunities of employing them.

1447. The second set of remedies adapted to the cure of colic, are purgatives; which, by exciting the action of the intestines, either above or below the obstructed place, may remove the constriction; and therefore these purgatives may be given either by the mouth, or thrown by glyster into the anus. As the disease is often seated in the great guts; as glysters, by having a more sudden operation, may give more immediate relief; and as purgatives given by the mouth are ready to be rejected by vomiting; so it is common, and indeed proper, to attempt curing the colic in the first place by glysters. These

may at first be of the mildest kind, consisting of a large bulk of water, with some quantity of mild oil; and such are sometimes sufficiently efficacious: however, they are not always so; and it is commonly necessary to render them more powerfully stimulant by the addition of neutral salts, of which the most powerful is the common or marine salt. If these saline glysters, as sometimes happens, are rendered again too quickly, and on this account or otherwise are found ineffectual, it may be proper, instead of these salts, to add to the glysters an infusion of fenna, or of some other purgative that can be extracted by water. The antimonial wine * may be sometimes employed in glysters with advantage. Hard-

ly

* Tartar Emetic is surer than the antimonial wine; but it is a very violent remedy, and ought to be used with caution even in glysters. Five or six grains is the usual quantity given in glysters.

ly any glysters are more effectual than those made of turpentine * properly prepared. When all other injections are found ineffectual, recourse is to be had to the injection of tobacco-smoke: and, when even this fails, recourse is to be had to the mechanical dilatation to be mentioned hereafter.

C 4

1448. As

* The proper manner of preparing turpentine glysters is as follows :

R. Tereb. Venet. ʒvi.

Vitel. Ov. No. ii.

Tere in mortar. marmoreo donec penitus fol-
vetur Terebinthina ; dein adde gradatim,

Aq. font. frigid. ʒij.

Huic affunde

Aq. font. tepid. lb. i.

M. f. Enema, statim injiciend.

If the turpentine does not dissolve sufficiently with the yolks of two eggs, a third may be added.

1448. As glysters often fail altogether in relieving this disease, and as even when they give some relief they are often imperfect in producing a complete cure; so it is generally proper, and often necessary, to attempt a more entire and certain cure by purgatives given by the mouth. The more powerful of these, or, as they are called, the Draftic Purgatives, may be sometimes necessary; but their use is to be avoided, both because they are apt to be rejected by vomiting, and because when they do not succeed in removing the obstruction they are ready to induce an inflammation. Upon this account it is usual, and indeed proper, at least in the first place, to employ the milder and less inflammatory purgatives. None have succeeded with me better than the crystals of tartar*, because this medicine may
be

* Crystals of tartar may be given in doses of two
drachms

be given in small but repeated doses to a considerable quantity; and under this management it is the purgative least ready to be rejected by vomiting, and much less so than the other neutral salts. If a stronger purgative be required, jalap †, properly

drachms each, repeated every two hours or oftener. The chief objection against the use of this salt is its difficult solution in water, and therefore many practitioners prefer the soluble tartar, or the Rochel salt.

† The Pulvis Jalap. comp. of the Edinburgh pharmacopœia answers in general very well; but, the following formula is less liable to be rejected by the vomiting which so frequently accompanies this disease.

R. Resin. Jalap. gr. xij.

Amygdal. dulc. decorticat. No. vi.

Sacch. alb. ʒi.

Tere in mortario marmoreo, et adde gradatim,

Aq. Cinnamom. simpl. ʒi.

M. f. haust.

Half

properly prepared, is less offensive to the palate, and fits better upon the stomach, than most other powerful purgatives. On many occasions of colic, nothing is a more effectual purgative than a large dose of calomel*. Some practitioners have attempted to remove the obstruction of the intestines by antimonial emetics † exhibited in small doses repeated at proper intervals; and when these doses are not entirely

Half of this potion may be given at once, and the other half an hour afterward.

* This is French practice, but it is dangerous. It has however been serviceable in many cases, when given in doses of 12 or 15 grains, or even a scruple, when other purgatives have failed.

† As the stomach, as was before observed, is very irritable in this disease, the practitioner will find considerable difficulty in managing antimonials. It is better to avoid them altogether, for they may do much mischief.

tirely rejected by vomiting, they often prove effectual purgatives.

When every purgative has failed, the action of the intestines has been effectually excited by throwing cold water on the lower extremities.

1449. The third means of overcoming the spasm of the intestines in this disease, is by employing a mechanical dilatation; and it has been frequently supposed that quicksilver, given in large quantity, might operate in this manner. I have not, however, found it successful; and the theory of it is with me very doubtful. Some authors have mentioned the use of gold and silver pills, or balls, swallowed down; but I have no experience of such practices, and I cannot suppose them a probable means of relief.

1450. Another

1450. Another means of mechanical dilatation, and a more probable measure, is by injecting a large quantity of warm water by a proper syringe, which may throw it with some force, and in a continued stream, into the rectum. Both from the experiments reported by the late Mr De Haen, and from those I myself have had occasion to make, I judge this remedy to be one of the most powerful and effectual*.

1451. I have now mentioned all the several means that may be employed for the cure of the colic, considered as a genus ;

* It is to be thrown up, by means of a large syringe, in such quantities, that the patient begins to feel a sense of uneasiness from the great distention which it occasions. Some patients have borne two gallons to be injected, and the cases were attended with the desired success.

nus; but before I quit this subject, it may be expected that I should take notice of some of the species which may seem to require a particular consideration. In this view it may be expected that I should especially take notice of that species named the Colic of Poitou, and particularly known in England by the name of the Devonshire Colic.

1452. This species of the disease is certainly a peculiar one, both in respect of its cause and its effects; but, as to the first, it has been lately so much the subject of investigation, and is so well ascertained by the learned physicians, Sir
George

The cases in which these large injections are most useful, are those in which hardened fæces are accumulated in the colon. The warm water answers two intentions, viz. dilating the passage, and softening the fæces.

George Baker and Dr Hardy, that it is unnecessary for me to say any thing of it here.

With respect to the cure of it*, so far as it appears in the form of a colic, my want of experience concerning it does not allow me to speak with any confidence on the subject; but, so far as I can learn from

* In the early stages of this disease, the belly is to be kept open by the mildest laxatives, and a milk diet strictly used. The following formula answers extremely well;

R. Mannæ,
Ol. Olivar. āā ʒi.
M. f. Linctus.

This quantity is a proper dose, and it may be repeated every day with thirty or forty drops of laudanum at bed-time. If the symptoms, however, do not abate, we may at the same time give large emollient glysters.

from others, it appears to me, that it is to be treated by all the several means that I have proposed above for the cure of colic in general.

How far the peculiar effects of this disease are to be certainly foreseen and obviated, I have not properly learned; and I must leave the matter to be determined by those who have had sufficient experience in it.

CHAP.

CHAP. X.

OF THE

C H O L E R A.

1453. **I**N this disease, a vomiting and purging concurring together, or frequently alternating with one another, are the chief symptoms. The matter

ter rejected both upwards and downwards appears manifestly to consist chiefly of bile.

1454. From this last circumstance I conclude, that the disease depends upon an increased secretion of bile, and its copious effusion into the alimentary canal; and, as in this it irritates and excites the motions above-mentioned, I infer that the bile thus effused in larger quantity is at the same time also of a more acrid quality. This appears likewise from the violent and very painful gripings that attend the disease, and which we can impute only to the violent spasmodic contractions of the intestines that take place here. These spasms are commonly communicated to the abdominal muscles, and very frequently to those of the extremities.

1455. In the manner now described, the disease frequently proceeds with great violence till the strength of the patient is greatly, and often suddenly, weakened; while a coldness of the extremities, cold sweats, and faintings, coming on, an end is put to the patient's life, sometimes in the course of one day. In other cases the disease is less violent, continues for a day or two, and then ceases by degrees; though such recoveries seldom happen without the assistance of remedies.

1456. The attacks of this disease are seldom accompanied with any symptoms of pyrexia; and though, during the course of it, both the pulse and respiration are hurried and irregular, yet these symptoms are generally so entirely removed by the remedies that quiet the spasmodic affections peculiar to the disease, as to leave no ground for supposing that it
had

had been accompanied by any proper pyrexia.

1457. This is a disease attending a very warm state of the air; and in very warm climates, it may perhaps appear at any time of the year; but even in such climates it is most frequent during their warmest seasons; and in temperate climates, it appears only in the warm seasons. Dr Sydenham considered the appearances of this disease in England to be confined to the month of August; but he himself observed it to appear sometimes towards the end of summer, when the season was unusually warm; and that, in proportion to the heat, the violence of the disease was greater. Others have observed that it appeared more early in summer, and always sooner or later, according as the great heats sooner or later set in.

1458. From all these circumstances, it is, I think, very evident that this disease is the effect of a warm atmosphere, producing some change in the state of the bile in the human body: and the change may consist, either in the matter of the bile being rendered more acrid, and thereby fitted to excite a more copious secretion; or, in the same matter, its being prepared to pass over in larger quantity than usual.

1459. It has been remarked, that in warm climates and seasons, after extremely hot and dry weather, a fall of rain cooling the atmosphere seems especially to bring on this disease; and it is very probable that an obstructed perspiration may have also a share in this, though it is also certain that the disease does appear when no change in the temperature of the air,
nor

nor any application of cold, has been observed.

1460. It is possible, that, in some cases, the heat of the season may give only a predisposition, and that the disease may be excited by certain ingesta or other causes; but it is equally certain, that the disease has occurred without any previous change or error, either in diet, or in the manner of life, that could be observed.

1461. The Nosologists have constituted a Genus under the title of Cholera, and under this have arranged as a species every affection in which a vomiting and purging of any kind happened to concur. In many of these species, however, the matter evacuated is not bilious; nor does the evacuation proceed from any cause in the state of the atmosphere. Further, in many of these species also, the vomiting

which occurs is not an essential, but merely an accidental, symptom from the particular violence of the disease. The appellation of Cholera therefore should, in my opinion, be confined to the disease I have described above; which, by its peculiar cause, and perhaps also by its symptoms, is very different from all the other species that have been associated with it. I believe that all the other species arranged under the title of Cholera by Sauvages or Sagar, may be properly enough referred to the genus of Diarrhœa; which we are to treat of in the next chapter.

The distinction I have endeavoured to establish between the proper Cholera, and the other diseases that have sometimes got the same appellation, will, as I judge, supersede the question, Whether the Cholera, in temperate climates, happens at
any

any other feason than that above affigned?

1462. In the cafe of a genuine cholera, the cure of it has been long eftablifhed by experience.

In the beginning of the difeafe, the evacuation of the redundant bile is to be favoured by the plentiful exhibition of mild diluents*, both given by the mouth, and injected by the anus; and all evacuant medicines, employed in either way, are not only fuperfluous, but commonly hurtful.

1463. When the redundant bile appears

D 4

to

* Thin rice-gruel is as proper a mild diluent as any we can ufe; as is alfo water in which a cruft of bread is boiled. A very fmall quantity of port wine may be added to thefe diluents if the pulfe be fmall or weak.

to be sufficiently washed out, and even before that, if the spasmodic affections of the alimentary canal become very violent, and are communicated in a considerable degree to other parts of the body, or when a dangerous debility seems to be induced, the irritation is to be immediately obviated by opiates in sufficiently large doses, but in small bulk, and given either by the mouth or by glyster*.

1464. Though

* A pill consisting of a grain of opium may be given every two hours, and if it does not relieve the symptoms after the third or fourth repetition, we may inject the following glyster :

R. Decoct. Hord. \bar{z} x.

Tinct. Opii, \bar{z} ii.

M. f. Enema.

This glyster may be repeated twice, or thrice if there be occasion.

1464. Though the patient be in this manner relieved, it frequently happens, that when the operation of the opium is over, the disease shows a tendency to return; and, for at least some days after the first attack, the irritability of the intestines, and their disposition to fall into painful spasmodic contractions, seem to continue. In this situation, the repetition of the opiates, for perhaps several days, may come to be necessary; and as the debility commonly induced by the disease favours the disposition to spasmodic affections, it is often useful and necessary, together with the opiates, to employ the tonic powers of the Peruvian bark*.

* The bark in these cases is often successfully given along with rhubarb, as in the following formula:

R.

R. Pulv. Cort. Peruv. $\bar{3}\beta$

Rad. Rhei, $\bar{3}\iota$.

M. f. Pulv. in part. $\bar{\alpha}$ equal. xii. dividend.

One of these powders may be given thrice a-day
with a glafs of port wine.

CHAP.

C H A P. XI.

O F

D I A R R H Œ A

O R.

L O O S E N E S S.

1465. **T**HIS disease consists in evacuations by stool, more frequent and of more liquid matter than usual. This leading and characteristic symptom

symptom is so diversified in its degree, in its causes, and in the variety of matter evacuated, that it is almost impossible to give any general history of the disease.

1466. It is to be distinguished from dysentery, by not being contagious; by being generally without fever; and by being with the evacuation of the natural excrements, which are, at least for some time, retained in dysentery. The two diseases have been commonly distinguished by the gripings being more violent in the dysentery; and they are commonly less violent and less frequent in diarrhœa: but as they frequently do occur in this also, and sometimes to a considerable degree, so they do not afford any proper distinction*.

1467. A

* Tenesmus is a distinguishing symptom of dysentery, but it is sometimes present in diarrhœa also; especially those

1467. A diarrhœa is to be distinguished from cholera chiefly by the difference of their causes; which, in cholera, is of one peculiar kind; but in diarrhœa is prodigiously diversified, as we shall see presently. It has been common to distinguish cholera by the evacuation downwards being of bilious matter, and by this being always accompanied with a vomiting of the same kind; but it does not universally apply, as a diarrhœa is sometimes attended with vomiting, and even of bilious matter.

1468. The disease of diarrhœa, thus distinguished, is very greatly diversified; but in all cases, the frequency of stools is to be imputed to a preternatural increase of the peristaltic motion in the whole, or
at

those diarrhœas which proceed from acrid or putrid substances in the intestines.

at least in a considerable portion, of the intestinal canal. This increased action is in different degrees, is often convulsive and spasmodic, and at any rate is a *motus abnormis*: for which reason, in the methodical Nosology, I have referred it to the order of Spasmi, and accordingly treat of it in this place.

1469. Upon the same ground, as I consider the disease named Lientery to be an increased peristaltic motion over the whole of the intestinal canal, arising from a peculiar irritability, I have considered it as merely a species of diarrhœa. The idea of a laxity of the intestinal canal being the cause either of lientery, or other species of diarrhœa, appears to me to be without foundation, except in the single case of frequent liquid stools from a palsy of the *sphincter ani*.

1470. The

1470. The increased action of the peristaltic motion, I consider as always the chief part of the proximate cause of diarrhoea: but the disease is further, and indeed chiefly, diversified by the different causes of this increased action; which we are now to enquire into.

1471. The several causes of the increased action of the intestines may be referred, I think, in the first place, to two general heads.

The *first* is, of the diseases of certain parts of the body which, either from a consent of the intestines with these parts, or from the relation which the intestines have to the whole system, occasion an increased action of the intestines, without the transference of any stimulant matter from the primary diseased part to them.

The

The *second* head of the causes of the increased action of the intestines is of the stimuli of various kinds, which are applied directly to the intestines themselves.

1472. That affections of other parts of the system may affect the intestines without transference or application of any stimulant matter, we learn from hence, that the passions of the mind do in some persons excite diarrhoea.

1473. That diseases in other parts may in like manner affect the intestines, appears from the dentition of infants frequently exciting diarrhoea. I believe that the gout often affords another instance of the same kind; and probably there are others also, though not well ascertained.

1474. The stimuli (1471), which may be applied to the intestines are of very various kinds; and are either,

1. Matters introduced by the mouth.

2. Matters poured into the intestines by the several excretories opening into them.

3. Matters poured from certain preternatural openings made into them in certain diseases:

1475. Of those (1474. 1.) introduced by the mouth, the first to be mentioned are the aliments commonly taken in. Too great a quantity of these taken in, often prevents their due digestion in the stomach; and by being thus sent in their crude, and probably acrid, state to the

intestines, they frequently excite diarrhœa.

The same aliments, though in proper quantity, yet having too great a proportion, as frequently happens, of saline or saccharine matter along with them, prove stimulant to the intestines, and excite diarrhœa.

But our aliments prove especially the causes of diarrhœa, according as they, from their own nature, or from the weakness of the stomach, are disposed to undergo an undue degree of fermentation there, and thereby become stimulant to the intestines. Thus acedent aliments are ready to produce diarrhœa; but whether from their having any directly purgative quality; or only as mixed in an over proportion with the bile, is not well determined.

1476. Not only the acedcent, but also the putrescent disposition of the aliments, seems to occasion a diarrhœa; and it appears that even the effluvia of putrid bodies, taken in any way in large quantity, have the same effect.

Are oils or fats, taken in as part of our aliments, ever the cause of diarrhœa? and if so, in what manner do they operate*?

1477. The other matters introduced by the mouth, which may be causes of diarrhœa, are those thrown in either as medicines, or poisons that have the faculty of stimulating the alimentary canal. Thus, in the list of the *Materia Medica*, we have a long catalogue of those named purgatives;

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tives;

* Rancid oils and fats certainly irritate the intestines, and may therefore produce Diarrhœa.

tives; and in the list of poisons, we have many possessed of the same quality. The former given in a certain quantity, occasion a temporary diarrhœa; and given in very large doses, may occasion it in excess, and continue it longer than usual, producing that species of diarrhœa named a Hypercatharsis.

1478. The matters (1474. 2.) poured into the cavity of the intestines from the excretories opening into them, and which may occasion diarrhœa, are either those from the pancreatic or biliary duct, or those from the excretories in the coats of the intestines themselves.

1479. What changes may happen in the pancreatic juice, I do not exactly know; but I suppose that an acrid fluid may issue from the pancreas, even while still entire in its structure; but more especially

ally when it is in a suppurated, scirrhus, or cancerous state, that a very acrid matter may be poured out by the pancreatic duct, and occasion diarrhœa.

1480. We know well, that from the biliary duct the bile may be poured out in greater quantity than usual; and there is little doubt of its being also sometimes poured out of a more than ordinary acrid quality. It is very probable, that in both ways the bile is frequently a cause of diarrhœa.

Though I have said above that diarrhœa may be commonly distinguished from cholera, I must admit here, that as the causes producing that state of the bile which occasions cholera, may occur in all the different possible degrees of force, so as, on one occasion, to produce the most violent and distinctly marked cholera;

but, upon another, to produce only the gentlest diarrhœa; which, however, will be the same disease, only varying in degree. So I think it probable, that in warm climates, and in warm seasons, a *diarrhœa biliosa* of this kind may frequently occur, not to be always certainly distinguished from cholera.

However this may be, it is sufficiently probable, that, in some cases, the bile, without having been acted upon by the heat of the climate or season, may be redundant and acrid, and prove therefore a particular cause of diarrhœa.

1481. Beside bile from the several causes and in the conditions mentioned, the biliary duct may pour out pus, or other matter, from abscesses in the liver, which may be the cause of diarrhœa.

Practical

Practical writers take notice of a diarrhœa wherein a thin and bloody liquid is discharged, which they suppose to have proceeded from the liver, and have therefore given the disease the name of Heparirrhœa; but we have not met with any instance of this kind; and therefore cannot properly say any thing concerning it.

1482. A second set of excretories, from which matter is poured into the cavity of the intestines, are those from the coats of the intestines themselves; and are either the exhalants proceeding directly from the extremities of the arteries, or the excretories from the mucous follicles: and both these sources occur in prodigious number over the internal surface of the whole intestinal canal. It is probable that it is chiefly the effusion from these sources

which, in most instances, gives the matter of the liquid stools occurring in diarrhoea.

1483. The matter from both sources may be poured out in larger quantity than usual, merely by the increased action of the intestines, whether that be excited by the passions of the mind (1472), by diseases in other parts of the system (1471, 1.), or by the various stimulants mentioned (1475 and following); or the quantity of matter poured out may be increased, not so much by the increased action of the intestines, as by an increased afflux of fluids from other parts of the system.

Thus, cold applied to the surface of the body, and suppressing perspiration, may
determine

determine a greater quantity of fluids to the intestines.

Thus, in the *ischuria renalis*, the urine taken into the blood-vessels is sometimes determined to pass off again by the intestines.

In like manner, pus or serum may be absorbed from the cavities in which they have been stagnant, and be again poured out into the intestines, as frequently happens, in particular with respect to the water of dropsy.

1484. It is to be observed here, that a diarrhœa may be excited not only by a copious afflux of fluids from other parts of the system, but likewise by the mere determination of various acrid matters from the mass of blood into the cavity of the intestines. Thus it is supposed that the
morbific

morbific matter of fevers is sometimes thrown out into the cavity of the intestines, and gives a critical diarrhœa; and whether I do or do not admit the doctrine of critical evacuations, I think it is probable that the morbific matter of the exanthemata is frequently thrown upon the intestines, and occasions diarrhœa.

1485. It is to me further probable, that the putrescent matter diffused over the mass of blood in putrid diseases, is frequently poured out by the exhalants into the intestines, and proves there the cause, at least in part, of the diarrhœa so commonly attending these diseases.

1486. Upon this subject of the matters poured into the cavity of the intestines, I have chiefly considered them as poured out in unusual quantity: but it is probable that, for the most part, they are also changed.

changed in their quality, and become of a more acrid and stimulant nature, upon which account especially it is that they excite, or at least increase a diarrhœa.

1487. How far, and in what manner, the exhalant fluid may be changed in its nature and quality, we do not certainly know: but with respect to the fluid from the mucous excretories, we know, that, when poured out in unusual quantity, it is commonly, at the same time, in a more liquid and acrid form; and may prove therefore, considerably irritating.

1488. Though the copious effusion of a more liquid and acrid matter from the mucous excretories, be probably owing to the matter being poured out immediately as it is secreted from the blood into the mucous follicles, without being allowed to stagnate in the latter, so as to acquire
that

that milder quality and thicker consistence we commonly find in the mucus in its natural state; and although we might suppose the excretions of a thin and acrid fluid should always be the effect of every determination to the mucous follicles, and of every stimulant applied to them: yet it is certain, that the reverse is sometimes the case; and that, from the mucous follicles, there is frequently an increased excretion of a mucus, which appears in its proper form of a mild, viscid, and thickish matter. This commonly occurs in the case of dysentery; and it has been observed to give a species of diarrhœa, which has been properly named the *Diarrhœa Mucosa*.

1489. A third source of matter poured into the cavity of the intestines, and occasioning diarrhœa (1474, 3.), is from those preternatural openings produced by diseases

eases

eases in the intestines or neighbouring parts. Thus the blood-vessels on the internal surface of the intestines may be opened by erosion, rupture, or anastomosis, and pour into the cavity their blood, which, either by its quantity or by its acrimony, whether inherent or acquired by stagnation, may sometimes give a diarrhoea evacuating bloody matter. This is what I think happens in that disease which has been called the *Melena* or *Morbus Niger*.

1490. Another preternatural source of matter poured into the cavity of the intestines, is the rupture of abscesses seated either in the coats of the intestines themselves, or in any of the contiguous viscera, which, during an inflamed state, had formed an adhesion with some part of the intestines. The matter thus poured into their cavity may be various; puru-

lent, or sanious, or both together, mixed at the same time with more or less of blood; and in each of these states may be a cause of diarrhœa.

1491. Amongst the stimuli that may be directly applied to the intestines, and which, by increasing their peristaltic motion, may occasion diarrhœa, I must not omit to mention worms, as having frequently that effect.

1942. I must also mention here a state of the intestines, wherein their peristaltic motion is preternaturally increased, and a diarrhœa produced; and that is, when they are affected with an erythematic inflammation. With respect to the existence of such a state, and its occasioning diarrhœa, see what is said above in (398 and following). Whether it is to be considered as a particular and distinct case

of diarrhœa, or is always the same with some of those produced by one or other of the causes above mentioned, I have not been able to determine.

1493. Lastly, by an accumulation of alimentary or of other matter poured into the cavity of the intestines from several of the sources above-mentioned, a diarrhœa may be especially occasioned when the absorption of the lacteals, or of other absorbents, is prevented, either by an obstruction of their orifices, or by an obstruction of the mesenteric glands, through which alone the absorbed fluids can be transmitted.

In one instance of this kind, when the chyle prepared in the stomach and duodenum is not absorbed in the course of the intestines, but passes off in considerable quantity by the anus, the disease has
been

been named *Morbus Cœliacus*, or simply and more properly *Cœliaca*; which accordingly I have considered as a species of diarrhœa:

1494. I have thus endeavoured to point out the various species of disease that may come under the general appellation of Diarrhœa; and from that enumeration it will appear, that many, and indeed the greater part of the cases of diarrhœa, are to be considered as sympathetic affections; and to be cured only by curing the primary disease upon which they depend; of which, however, I cannot properly treat here. From our enumeration it will also appear, that many of the cases of diarrhœa which may be considered as idiopathic, will not require my saying much of them here. In many instances, the disease is ascertained, and also the cause assigned, by the condition of
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the matter evacuated ; so that what is necessary to correct or remove it will be sufficiently obvious to practitioners of any knowledge. In short, I do not find that I can offer any general plan for the cure of diarrhœa ; and all that I can pretend to do on this subject, is to give some general remarks on the practice that has been commonly followed in the cure of this disease.

1495. The practice in this disease has chiefly proceeded upon the supposition of an acrimony in the fluids, or of a laxity in the simple and moving fibres of the intestines ; and the remedies employed have accordingly been, Correctors of particular acrimony, general demulcents, evacnants by vomiting or purging, astringents, or opiates. Upon each of these kinds of remedies I shall now offer some remarks.

1496. An acrid acrimony is, upon several occasions, the cause of diarrhœa, particularly in children; and in such cases the absorbent earths have been very properly employed. The common, however, and promiscuous use of these have been very injudicious; and where there is any putrescency, they must be hurtful.

1497. The cases in which there is a putrid or putrescent acrimony prevailing, have been, I think, too seldom taken notice of; and therefore, the use of acids too seldom admitted. The acrimony to be suspected in bilious cases, is probably of the putrescent kind.

1498. The general correctors of acrimony are the mild diluents and demulcents. The former have not been so much employed in diarrhœa as they ought;

ought; for joined with demulcents, they very much increase the effects of the latter: and although the demulcents, both mucilaginous and oily, may by themselves be useful, yet without the assistance of diluents they can hardly be introduced in such quantity as to answer the purpose*.

F 2

1499. As

* Lintseed tea is both diluent and demulcent; but as the patient sometimes loaths it, we may in its place use a decoction of marsh-mallow root, or of quince seed. These infusions and decoctions ought to be extremely thin. An ounce of bruised quince seed will make three pints of water as thick and ropy as the white of an egg; hence a drachm is sufficient for a pint of the decoction.

We have another instance of a diluent and demulcent in the almond emulsion, which is an exceedingly elegant medicine. The formula in the London pharmacopœia is not so well adapted to cases of diarrhœa, because it contains sugar. That of the Edinburgh pharmacopœia

1499. As indigestion and crudities present in the stomach are so often the cause of diarrhœa, vomiting must therefore be frequently very useful in this disease.

In like manner, when the disease proceeds, as it often does, from obstructed perspiration, and increased afflux of fluids to the intestines, vomiting is perhaps the most effectual means of restoring the determination of the fluids to the surface of the body.

It is possible also, that vomiting may give some inversion of the peristaltic motion which is determined too much downwards in diarrhœa; so that upon the whole

is made with almonds and water alone, and is therefore preferable in these cases. But the emulsio arabica of the Edinburgh pharmacopœia is the best diluent and demulcent in cholera.

whole it is a remedy which may be very generally useful in this disease*.

1500. Purging has been supposed to be more universally necessary, and has been more generally practised. This, however, in my opinion, proceeds upon very mistaken notions with respect to the disease; and such a practice seems to me for the most part superfluous, and in many cases very hurtful. It goes upon the supposition of an acrimony present in the intestines, that ought to be carried out by purging: but if that acrimony has either been introduced by the mouth, or brought into the intestines from other parts of the body, purging can neither be a means of

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correcting

* The methods of giving the tartar emetic, for producing either vomiting or sweating, may be seen in the notes on article 185.

correcting nor of exhausting it ; and must rather have the effect of increasing its afflux, and of aggravating its effects. From whatever source the acrimony which can excite a diarrhœa proceeds, it may be supposed sufficient to evacuate itself, so far as that can be done by purging ; and as in cholera, so in the same kind of diarrhœa, it will be more proper to assist the evacuation by diluents and demulcents, than to increase the irritation by purgatives.

1501. If, then, the use of purgatives in diarrhœa may be considered, even when an acrimony is present, as superfluous, there are many other cases in which it may be extremely hurtful. If the irritability of the intestines shall, from affections in other parts of the system, or other causes, have been already very much increased, purgatives must necessarily aggravate

gravate the disease. In the case of lientery, nobody thinks of giving a purgative; and in many cases of diarrhœa approaching to that, they must be equally improper. I have already observed, that when diarrhœa proceeds from an afflux of fluids to the intestines, whether in too great quantity, or of an acrid quality, purgatives may be hurtful; and whoever, therefore considers the numerous and various sources from which acrid matter may be poured into the cavity of the intestines, will readily perceive, that, in many cases of diarrhœa, purgatives may be extremely pernicious.

There is one case in particular to be taken notice of. When, from a general and acrid dissolution of the blood, the ferous fluids run off too copiously in the cavity of the intestines, and excite that diarrhœa which attends the advanced state of hectic

fever, and is properly called a Colliquative Diarrhœa; I have, in such cases, often seen purgatives given with the most baneful effects.

There is still another case of diarrhœa in which purgatives are pernicious; and that is, when the disease depends, as we have alleged it sometimes may, upon an erythematic inflammation of the intestines.

I need hardly add, that if there be a case of diarrhœa depending upon a laxity of the solids, purgatives cannot there be of any service, and may do much harm. Upon the whole, it will I think, appear, that the use of purgatives in diarrhœa is very much limited; and that the promiscuous use of them, which has been so common, is injudicious, and often pernicious. I believe the practice has been

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chiefly

chiefly owing to the use of purgatives in dysenteric cases, in which they are truly useful: because, contrary to the case of diarrhœa, there is, in dysentery a considerable constriction of the intestines*.

1502. Another

* Notwithstanding all the author advances concerning the danger of purgatives in a diarrhœa, there are some cases in which they are of singular utility. His arguments in this article are doubtless just; and, in the species of diarrhœa which he here enumerates, purgatives are certainly hurtful: but many instances of diarrhœa occur, which proceed from an acrimony that is extremely tenacious, and that adheres closely to the internal surface of the intestines, or is retained in their folds. In such cases purgatives are the only remedies for removing the disease, and ought therefore to be used. In all other cases; as the author justly observes; they are certainly pernicious.

Having ascertained *when* purgatives are proper, the next consideration is, *what* purgatives ought to be used? The answer is obvious:---Neutral salts, particularly Soda Phosphorata, Rochel salt, Glauber's salts, and Ep-
som

1502. Another set of remedies employed in diarrhœa are astringents. There has been some hesitation about the employment of these in recent cases, upon the supposition that they might occasion the retention of an acrid matter that should be thrown out. I cannot, however, well understand or assign the cases in which such caution is necessary; and I think that the power of astringents is seldom so great as to render their use very dangerous. The only difficulty which has occurred to me, with respect to their use, has been to judge of the circumstances to which they are especially adapted. It appears to me to be only in those where
the

from salt, which are enumerated in the order of their being agreeable, but in a contrary order to their degree of efficacy; the Epsom salt being the least agreeable, but the most efficacious.

the irritability of the intestines depends upon a loss of tone; and this, I think, may occur either from the debility of the whole system, or from causes acting on the intestines alone. All violent or long continued spasmodic and convulsive affections of the intestinal canal necessarily induce a debility there: and such causes often take place, from violent irritation, in colic, dysentery, cholera, and diarrhoea*.

1503. The

* The astringents to be used, when they are proper, are various: as Alum, Logwood, Catechu, Rhubarb, &c. The author justly remarks, that astringents are only useful in cases of debility, and therefore the tonic astringents are undoubtedly preferable to any other. Rhubarb and Peruvian bark, each possessing both these qualities, may therefore be advantageously used conjointly, as in the following formula.

R. Pulv. Cort. Peruv. ζ i.

Rad. Rhei, ζ β .

M. f. Pulv.

The

1503. The last of the remedies of diarrhœa that remain to be mentioned are opiates. The same objections have been made to the use of these, in recent cases of diarrhœa, as to that of astringents; but on

The dose of this powder may be varied according to circumstances, from a scruple to a drachm, twice a-day, with a glass of port wine after it.

It may not be improper to observe, that in diarrhœas in general, peculiar attention must be paid to diet. The oleraceous and acedent vegetables must be carefully avoided; as must also all fermented liquors except port wine. Of the farinaceous vegetables, rice is the best; and rice-water, with a little cinnamon and port wine, is the most proper drink for patients in these cases. Roasted meats are preferable to boiled; and veal, lamb, or chickens, preferable to beef or mutton. Pork is very improper; as are also all kinds of fish. Puddings of all kinds without fruit are very proper food for such patients, especially rice-puddings made without eggs, but with milk and cinnamon; and also rice-milk, sago with port wine, blanc mange, &c.

on no good grounds: for the effect of opiates, as astringent, is never very permanent; and an evacuation depending upon irritation, though it may be for some time suspended by opiates, yet always returns very soon. It is only by taking off irritability that opiates are useful in diarrhoea; and therefore, when the disease depends upon an increase of irritability alone, or when, though proceeding from irritation, that irritation is corrected or exhausted, opiates are the most useful and certain remedy. And though opiates are not suited to correct or remove an irritation applied, they are often of great benefit in suspending the effects of that irritation whenever these are violent: and, upon the whole, it will appear, that opiates may be very frequently, and with great propriety, employed in the cure of diarrhoea.

C H A P. XII.

OF THE

D I A B E T E S.

1504. **T**HIS disease consists in the voiding of an unusually large quantity of urine.

As hardly any secretion can be increased without an increased action of the vessels

fels concerned in it, and as some instances of this disease are attended with affections manifestly spasmodic, I have had no doubt of arranging the diabetes under the order of Spasmi.

1505. This disease is always accompanied with a great degree of thirst, and therefore with the taking in of a great quantity of drink. This in some measure accounts for the very extraordinary quantities of urine voided: but still, independent of this, a peculiar disease certainly takes place; as the quantity of urine voided does almost always exceed the whole of the liquids, and sometimes the whole of both solids and liquids, taken in.

1506. The urine voided in this disease is always very clear, and at first sight appears entirely without any colour; but,

but, viewed in a certain light, it generally appears to be slightly tinged with a yellowish green, and in this respect has been very properly compared to a solution of honey in a large proportion of water.

Examined by the taste, it is very generally found to be more or less sweet; and many experiments that have now been made in different instances of the disease show clearly that such urine contains, in considerable quantity, a saccharine matter which appears to be very exactly of the nature of common sugar.

1507. Doctor Willis seems to me to have been the first who took notice of the sweetness of the urine in diabetes, and almost every physician of England has since taken notice of the same. It is to be doubted, indeed, if there is any case of
idiopathic

idiopathic diabetes in which the urine is of a different kind. Though neither the ancients, nor, in the other countries of Europe, the moderns, till the latter were directed to it by the English, have taken notice of the sweetness of the urine, it does not persuade me, that either in ancient or in modern times the urine in diabetes was of another kind. I myself, indeed, think I have met with one instance of diabetes in which the urine was perfectly insipid; and it would seem that a like observation had occurred to Dr Martin Lister. I am persuaded, however, that such instances are very rare; and that the other is by much the more common, and perhaps the almost universal occurrence. I judge, therefore, that the presence of such a saccharine matter may be considered as the principal circumstance in idiopathic diabetes; and it gives at least the only case of that disease that I can properly

treat of here, for I am only certain that what I am further to mention relates to such a case.

1508. The antecedents of this disease, and consequently the remote causes of it, have not been well ascertained. It may be true that it frequently happens to men who, for a long time before, had been intemperate in drinking; that it happens to persons of a broken constitution, or who, as we often express it, are in a cachectic state; that it sometimes follows intermit- tent fevers; and that it has often occur- red from excess in drinking of mineral waters. But none of these causes apply very generally to the cases that occur: such cases are not always, nor even fre- quently, followed by a diabetes; and there are many instances of diabetes which could not be referred to any of them. In most of the cases of this disease which

I have met with, I could not refer it to any particular cause.

1509. This disease commonly comes on slowly, and almost imperceptibly, without any previous disorder. It often arises to a considerable degree, and subsists long without being accompanied with evident disorder in any, particular part of the system. The great thirst which always, and the voracious appetite which frequently, occur in it, are often the only remarkable symptoms. Under the continuance of the disease, the body is often greatly emaciated; and a great weakness also prevails. The pulse is commonly frequent; and an obscure fever is for the most part present. When the disease proves fatal, it generally ends with a fever, in many circumstances, particularly those of emaciation and debility, similar to and resembling a hectic.

1510. The proximate cause of this disease is not certainly or clearly known. It seems to have been sometimes connected with calculous affections of the kidneys; and it is possible, that an irritation applied there may increase the secretion of urine. It perhaps often does so; but how it should produce the singular change that takes place in the state of the urine, is not to be easily explained. It certainly often happens, that calculous matters are long present in the urinary passages, without having any such effect as that of producing diabetes in any shape.

Some have supposed that the disease occurs from a relaxed state of the secretory vessels of the kidneys; and indeed the dissections of persons who had died of this disease have shown the kidneys in a very flaccid state. This, however, is probably

to be considered as rather the effect than the cause of the disease.

That no topical affection of the kidneys has a share in producing this disease, and that a fault in the assimilation of the fluids is rather to be blamed, I conclude from hence, that even the solid food taken in, increases the quantity of the urine voided, at the same time with an increase of the saccharine matter above mentioned.

1511. The diabetes has been supposed to be owing to a certain state of the bile; and it is true, that this disease has sometimes occurred in persons who were at the same time affected with diseases of the liver: but this occurrence does not often take place; and the diabetes frequently occurs separately from any affection of the liver. In twenty instances of diabetes

which I have seen, there was not in any one of them any evident affection of the liver.

The explanation that has been offered of the nature and operation of the bile, in producing diabetes, is very hypothetical, and nowise satisfying.

1512. As I have already said, I think it probable, that in most cases the proximate cause of this disease is some fault in the assimilatory powers, or in those employed in converting alimentary matters into the proper animal fluids. This I formerly hinted to Dr Dobson, and it has been prosecuted and published by him; but I must own that it is a theory embarrassed with some difficulties which I cannot at present very well remove.

1513. The

1513. The proximate cause of diabetes being so little known or ascertained, I cannot propose any rational method of cure in the disease *. From the testimony of several authors, I believe that the disease has been cured: but I believe

G 4 also,

* The disease is happily not very common: but, when a physician is called, he is under the necessity of doing something, and not remaining inactive. Some general directions may therefore be acceptable to the young practitioner.

The cure will principally consist in avoiding whatever may relax the renal vessels, especially by avoiding strong drink. As the quantity of urine is always less in proportion as the perspiration is increased, it seems advisable to keep the surface of the skin lax and perspirable; and, if the patient's strength allows him, he ought frequently to use bodily exercise to promote sweat. For a similar reason, external cold must be avoided, because by diminishing perspiration, a larger quantity of fluids is derived to the kidneys.

also, that this has seldom happened; and when the disease has been cured, I doubt much if it was effected by the several remedies to which these cures have been ascribed. In all the instances of this disease which I myself have seen, and in several others of which I have been informed, no cure of it has ever been made in Scotland, though many instances of it have occurred, and in most of them the remedies recommended by authors have been diligently employed. I cannot, therefore, with any advantage, enter into a detail of these remedies; and as the disease, together with its several circumstances, when they shall hereafter occur, is likely to become the subject of diligent investigation, I avoid going farther at present, and
judge

In some cases the disease may be probably owing to a lax or weak state of the kidneys: hence the indication of tonics, as Peruvian bark, and other tonic bitters.

judge it prudent to suspend my opinion till I shall have more observations and experiments upon which I can form it more clearly.

CHAP.

C H A P. XIII.

O F T H E

H Y S T E R I A,

O R T H E

H Y S T E R I C D I S E A S E.

1514. **T**H E many and various symptoms which have been supposed to belong to a disease under this appellation,

appellation, render it extremely difficult to give a general character or definition of it. It is, however, proper in all cases to attempt some general idea; and therefore, by taking the most common form, and that concurrence of symptoms by which it is principally distinguished, I have formed a character in my system of Methodical Nosology, and shall here endeavour to illustrate it by giving a more full history of the phenomena.

1515. The disease attacks in paroxysms or fits. They commonly begin by some pain and fulness felt in the left side of the belly. From this a ball * seems to move with a grumbling noise into the other parts of the belly; and, making as it were various convolutions there, seems

* Commonly called *Globus hystericus* by authors.

seems to move into the stomach; and more distinctly still rises up to the top of the gullet, where it remains for some time, and by its pressure upon the larynx gives a sense of suffocation. By the time that the disease has proceeded thus far, the patient is affected with a stupor and insensibility, while at the same time, the body is agitated with various convulsions. The trunk of the body is wreathed to and fro, and the limbs are variously agitated; commonly the convulsive motion of one arm and hand, is that of beating with the closed fist upon the breast very violently and repeatedly. This state continues for some time, and has during that time some remissions and renewals of the convulsive motions; but they at length cease, leaving the patient in a stupid and seemingly sleeping state. More or less suddenly, and frequently with repeated sighing and sobbing, together

ther with a murmuring noise in the belly, the patient returns to the exercise of sense and motion, but generally without any recollection of the several circumstances that had taken place during the fit.

1516. This is the form of what is called an *hysterical paroxysm*, and is the most common form; but its paroxysms are considerably varied in different persons, and even in the same person at different times. It differs, by having more or fewer of the circumstances above-mentioned; by these circumstances being more or less violent; and by the different duration of the whole fit.

Before the fit, there is sometimes a sudden and unusually large flow of limpid urine. At the coming on of the fit the
stomach

stomach is sometimes affected with vomiting, the lungs with considerable difficulty of breathing, and the heart with palpitations. During the fit, the whole of the belly, and particularly the navel, is drawn strongly inwards; the sphincter ani is sometimes so firmly constricted as not to admit a small glyster pipe, and there is at the same time an entire suppression of urine. Such fits are, from time to time, ready to recur; and during the intervals the patients are liable to involuntary motions, to fits of laughing and crying, with sudden transition from the one to the other; while sometimes false imaginations, and some degree of delirium also occur.

1517. These affections have been supposed peculiar to the female sex: and indeed they most commonly appear in females: but they sometimes, though rarely, attack

attack also the male sex; never, however, that I have observed in the same exquisite degree.

In the female sex, the disease occurs especially from the age of puberty to that of thirty-five years; and though it does sometimes, yet it very seldom appears before the former or after the latter of these periods.

At all ages, the time at which it most readily occurs is that of the menstrual period.

The disease more especially affects the females of the most exquisitely sanguine and plethoric habits; and frequently affects those of the most robust and masculine constitution.

It affects the barren more than the
breeding

breeding women, and therefore frequently young widows.

It occurs especially in those females who are liable to the Nymphomania; and the Nosologists have properly enough marked one of the varieties of this disease by the title of *Hysteria Libidinosæ*.

In the persons liable to the fits of this disease, it is readily excited by the passions of the mind, and by every considerable emotion, especially those brought on by surprize.

The persons liable to this disease acquire often such a degree of sensibility, as to be strongly affected by every impression that comes upon them by surprize.

1518. In this history, there appears to be a concurrence of symptoms and circumstances

cumstances properly marking a very particular disease, which I think may be distinguished from all others. It seems to me to have been improperly considered by physicians, as the same with some other diseases, and particularly with hypochondriasis. The two diseases may have some symptoms in common, but for the most part are considerably different.

Spasmodic affections occur in both diseases; but neither so frequently nor to so great a degree, in hypochondriasis as in hysteria.

Persons liable to hysteria are sometimes affected at the same time with dyspepsia. They are often, however, entirely free from it; but I believe this never happens to persons affected with hypochondriasis.

These different circumstances mark some difference in the two diseases; but they are still more certainly distinguished by the temperament* they attack, and by the time † of life at which they appear to be most exquisitely formed.

It has been generally supposed, that the two diseases differ only in respect of their appearing in different sexes. But this is not well founded: for although the hysteria appears most commonly in females, the male sex is not absolutely free from it, as I have observed above; and although the hypochondriasis may
be

* Hysteria attacks the sanguine and plethoric, but Hypochondriasis the melancholic.

† Hypochondriasis scarcely ever appears early in life, nor Hysteria late: and Hypochondriasis becomes aggravated, but Hysteria relieved by advancing age.

be most frequent in men, the instances of it in the female sex are very common*.

1519. From all these considerations, it must, I think, appear, that the hysteria may be very well, and properly, distinguished from hypochondriasis.

Further, it seems to me to have been with great impropriety, that almost every degree of the irregular motions of the nervous system has been referred to the one or other of these two diseases. Both are marked by a peculiarity of temperament, as well as by certain symptoms commonly accompanying that; but some of these, and many others usually marked by the name of nervous symptoms,

H 2

may,

* The Hypochondriasis in women has been frequently mistaken for Hysteria.

may, from various causes, arise in temperaments different from that which is peculiar to either hysteria or hypochondriasis, and without being joined with the peculiar symptoms of either the one or the other disease: so that the appellations of Hysterical and Hypochondriac are very inaccurately applied to them. Under what view these symptoms are otherwise to be considered, I am not ready to determine: but must remark, that the appellation of Nervous Diseases is too vague and undefined to be of any useful application.

1520. Having thus endeavoured to distinguish hysteria from every other disease, I shall now attempt its peculiar pathology. With respect to this, I think it will, in the first place, be obvious that its paroxysms begin by a convulsive and spasmodic affection of the alimentary canal,

canal, which is afterwards communicated to the brain, and to a great part of the nervous system. Although the disease appears to begin in the alimentary canal, yet the connection which the paroxysms so often have with the menstrual flux, and with the diseases that depend on the state of the genitals, shows, that the physicians have at all times judged rightly in considering this disease as an affection of the uterus and other parts of the genital system.

1521. With regard to this, however, I can go no farther. In what manner the uterus, and in particular the ovaria, are affected in this disease; how the affection of these is communicated, with particular circumstances, to the alimentary canal; or how the affection of this, rising upwards, affects the brain, so as to occasion the particular convulsions which oc-

cur in this disease, I cannot pretend to explain.

But although I cannot trace this disease to its first causes, or explain the whole of the phenomena, I hope, that with respect to the general nature of the disease, I may form some general conclusions, which may serve to direct our conduct in the cure of it.

1522. Thus, from a consideration of the predisponent and occasional causes, it will, I think, appear, that the chief part of the proximate cause is a mobility of the system, depending generally upon its plethoric state.

1523. Whether this disease ever arises from a mobility of the system, independent of any plethoric state of it, I cannot positively determine; but in many
cases

cases that have subsisted for some time, it is evident that a sensibility, and consequently a mobility, are acquired, which often appear when neither a general plethora can be supposed to subsist, nor an occasional turgescence to have happened. However, as we have shown above, that a distention of the vessels of the brain seems to occasion epilepsy, and that a turgescence of the blood in the vessels of the lungs seems to produce asthma; so analogy leads me to suppose, that a turgescence of blood in the uterus, or in other parts of the genital system, may occasion the spasmodic and convulsive motions which appear in hysteria. It will, at the same time, be evident, that this affection of the genitals must especially occur in plethoric habits; and every circumstance mentioned in the history of the disease serves to confirm this opinion with respect to its proximate cause.

1524. From this view of the subject, the analogy of hysteria and epilepsy will readily appear; and why, therefore, I am to say that the indications of cure are the same in both*.

As

* Although the indications of cure may be the same in both diseases, yet in hysteria we are more frequently under the necessity of relieving the violence of the symptoms than in epilepsy; and for this purpose we must have recourse to a variety of antispasmodics.

Asafœtida, in various forms, is usually employed; as are also volatile spirits; but both these joined prove more efficacious than either of them singly. There are excellent formulæ of this kind in the London and Edinburgh pharmacopœias, under the title of Spiritus Ammoniaë fœtidus. Its dose is twenty or thirty drops, repeated according to the urgency of the case, several times a-day.

The Tinctura Castorei composita of the Edinburgh pharmacopœia is another excellent formula of the same kind:

As the indications, so the several means of answering them are so much the same in

kind: it is a remedy of real efficacy. The dose of it is thirty or forty drops repeated occasionally.

The Tinctura Valerianæ ammoniata of both the pharmacopœias is also frequently used. Its dose is a tea-spoonful or two.

Few of the compositions of the shops are found to be more efficacious antispasmodics than the Spiritus Ætheris Vitriolicus compositus of the London Pharmacopœia. Its dose is from thirty to fifty drops in two or three spoonfuls of cold water; and it must be swallowed immediately on pouring it out of the vial.

These and other antispasmodics may be used promiscuously; for, in different cases and constitutions, they prove differently efficacious. Sometimes they may be variously combined with one another, and with opium. Opium, however, ought not to be used, except where other antispasmodics fail, as it always leaves the patient remarkably

in both diseases, that the same observations and directions, with regard to the choice

remarkably low, and liable to the return of the paroxysms.

Besides the use of these remedies internally, some of them may be usefully employed externally; as strong volatile spirits to the nose, the vitriolic ether to the temples, &c.

These remedies are chiefly designed for occasionally removing the violence of symptoms; but the fetid gums, in substance, must be used, when we wish to produce permanent effects. The formulæ of them are in both our pharmacopœias, under the title of *Pilulæ Galbani compositæ* in the London, and *Pilulæ Asafœtidæ compositæ* in the Edinburgh Pharmacopœia; but they will be found much more efficacious by adding to them a little castor, as in the following formula:

R. Pilul. Galban. comp. ζss
Castor. Ruffic. ʒi .

Syr.

choice and employment of these remedies, that have been delivered above on the subject of epilepsy, will apply pretty exactly to hysteria; and therefore need not be repeated here.

CHAP.

Syr. simpl. q. s.

M. f. mass. in pilulas lxxv. equales dividend.

Five of these pills may be taken twice-a day, washing them down with a tea-cupful of cold water, with a tea-spoonful of volatile tincture of valerian in it.

The *Pilulæ fœtidæ* of the Swedish Pharmacopœia, in which castor is one of the ingredients, is preferable to any of our fetid gum pills.

C H A P. IX.

O F

C A N I N E M A D N E S S

A N D

H Y D R O P H O B I A.

1525. **T**HIS disease has been so exactly and fully described in books that are in every body's hands, that it is on no account necessary for me to
give

give any history of it here; and with respect to the pathology of it, I find that I can say nothing satisfying to myself, or that I can expect to prove so to others. I find also, with respect to the cure of this disease, that there is no subject in which the fallacy of experience appears more strongly than in this. From the most ancient to the present times, many remedies for preventing and curing this disease have been recommended under the sanction of pretended experience, and have perhaps also kept their credit for some time: but succeeding times have generally, upon the same ground of experience, destroyed that credit entirely; and most of the remedies formerly employed are now fallen into absolute neglect. In the present age, some new remedies have been proposed, and have experience alleged to vouch for their efficacy; but many doubts still remain with respect to this: and
though

though I cannot determine in this matter from my own experience, I think it incumbent on me to give the best judgement I can form with respect to the choice of the remedies at present recommended.

1526. I am, in the first place, firmly persuaded, that the most certain means of preventing the consequences of the bite, is to cut out, or otherwise destroy, the part in which the bite has been made. In this every body agrees; but with this difference, that some are of opinion that it can only be effectual when it is done very soon after the wound has been made, and they therefore neglect it when this opportunity is missed. There have been, however, no experiments made proper to determine this matter: and there are many considerations which lead me to think, that the poison is not immediately communicated

municated to the system; and therefore, that this measure of destroying the part may be practised with advantage, even many days after the bite has been given.

1527. Whilst the state of our experience with respect to several remedies now in use, is uncertain, I cannot venture to assert that any of these is absolutely ineffectual; but I can give it as my opinion, that the efficacy of mercury, given very largely, and persisted in for a long time, both as a means of preventing the disease, and of curing it when it has actually come on, is better supported by experience than that of any other remedy now proposed or commonly employed.



B O O K IV.

O F

V E S A N I Æ,

O R, O F T H E

DISORDERS OF THE INTELLECTUAL
FUNCTIONS.

C H A P. I.

O F V E S A N I Æ I N G E N E R A L.

1528. **T**HE Nosologists, Sauvages and
Sagar, in a class of diseases
under the title of VESANIÆ, have com-
VOL. IV. I prehended

prehended the two orders, of *Hallucinationes* or False Perceptions, and of *Morositates* or Erroneous Appetites and Passions; and, in like manner, Linnæus in his class of MENTALES, corresponding to the *Vesaniæ* of Sauvages, has comprehended the two orders of *Imaginarium* and *Patheticum*, nearly the same with the *Hallucinationes* and *Morositates* of that author. This, however, from several considerations, appears to me improper; and I have therefore formed a class of *Vesaniæ* nearly the same with the *Paranoxiæ* of Vogel, excluding from it the *Hallucinationes* and *Morositates*, which I have referred to the *Morbi Locales*. Mr Vogel has done the like, in separating from the *Paranoxiæ* the false perceptions and erroneous appetites; and has thrown these into another class, to which he has given the title of *Hypæstheses*.

1529. It is indeed true, that certain hallucinationes and morositates are frequently combined with what I propose to consider as strictly a vesania or an erroneous judgement; and sometimes the hallucinationes seem to lay the foundation of, and to form almost entirely, the vesania. But as most part of the hallucinationes enumerated by the Nosologists are affections purely topical, and induce no other error of judgement beside that which relates to the single object of the sense or particular organ affected; so these are certainly to be separated from the diseases which consist in a more general affection of the judgement. Even when the hallucinationes constantly accompany or seem to induce the vesania, yet being such as arise from internal causes, and may be presumed to arise from the same cause as the more general affection of the judgement, they are there-

fore to be considered as symptoms of this only.

In like manner I judge with respect to the morositates, or erroneous passions, that accompany vesania; which, as consequences of a false judgement, must be considered as arising from the same causes, and as symptoms only, of the more general affection.

There is, indeed, one case of a morositas which seems to induce a vesania, or more general affection of the judgement; and this may lead us to consider the vesania, in this case, as a symptom of an erroneous appetite, but will not afford any good reason for comprehending the morositates in general under the vesaniæ, considered as primary diseases.

The limitation, therefore, of the class of *Vesaniæ* to the lesions of our judging faculty, seems from every consideration to be proper.

The particular diseases to be comprehended under this class, may be distinguished according as they affect persons in the time of waking or sleeping. Those which affect men awake, may again be considered, as they consist in an erroneous judgement, to which I shall give the appellation of *Delirium*; or as they consist in a weakness or imperfection of judgement, which I shall name *Fatuity*. I begin with the consideration of *Delirium*.

1530. As men differ greatly in the soundness and force of their judgement, so it may be proper here to ascertain more precisely what error or imperfection

of our judging faculty is to be considered as morbid and to admit of the appellations of Delirium and Fatuity. In doing this, I shall first consider the morbid errors of judgement under the general appellation of Delirium, which has been commonly employed to denote every mode of such error.

1531. As our judgement is chiefly exercised in discerning and judging of the several relations of things, I apprehend that delirium may be defined to be,— In a person awake, a false or mistaken judgement of those relations of things, which as occurring most frequently in life, are those about which the generality of men form the same judgement; and particularly when the judgement is very different from what the person himself had before usually formed.

1532. With

1532. With this mistaken judgement of relations there is frequently joined some false perception of external objects, without any evident fault in the organs of sense, and which seems therefore to depend upon an internal cause; that is, upon the imagination arising from a condition in the brain presenting objects which are not actually present. Such false perceptions must necessarily occasion a delirium, or an erroneous judgement; which is to be considered as the disease.

1533. Another circumstance, commonly attending delirium, is a very unusual association of ideas. As, with respect to most of the affairs of common life, the ideas laid up in the memory are, in most men, associated in the same manner; so a very unusual association, in any individual must prevent his forming the ordinary judgement of those relations which

are the most common foundation of association in the memory: and therefore this unusual and commonly hurried association of ideas, usually is, and may be considered as, a part of delirium. In particular it may be considered as a certain mark of a general morbid affection of the intellectual organs, it being an interruption or perversion of the ordinary operations of memory, the common and necessary foundation of the exercise of judgement.

1534. A third circumstance attending delirium, is an emotion or passion, sometimes of the angry, sometimes of the timid kind; and from whatever cause in the perception or judgement, it is not proportioned to such cause, either in the manner formerly customary to the person himself, or in the manner usual with the generality of other men.

1535. Delirium,

1535. Delirium, then, may be more shortly defined,—In a person awake, a false judgement arising from perceptions of imagination, or from false recollection, and commonly producing disproportionate emotions.

Such delirium is of two kinds; as it is combined with pyrexia and comatose affections; or, as it is entirely without any such combination. It is the latter case that we name *Insanity*; and it is this kind of delirium only that I am to treat of here.

1536. Insanity may perhaps be properly considered as a genus comprehending many different species, each of which may deserve our attention; but before proceeding to the consideration of particular species, I think it proper to attempt an
investigation

investigation of the cause of insanity in general.

1537. In doing this, I shall take it for granted, as demonstrated elsewhere, that although this disease seems to be chiefly, and sometimes solely, an affection of the mind; yet the connection between the mind and body in this case is such, that these affections of the mind must be considered as depending upon a certain state of our corporeal part. See Halleri Prim. Lin. Physiolog. § 570. See Boerhaavii Inst. Med. § 581. 696.

1538. Admitting this proposition, I must in the next place assume another, which I likewise suppose to be demonstrated elsewhere. This is, that the part of our body more immediately connected with the mind, and therefore more especially concerned in every affection of the intellectual

lectual functions, is the common origin of the nerves ; which I shall, in what follows, speak of under the appellation of the Brain.

1539. Here, however, in assuming this last proposition, a very great difficulty immediately presents itself. Although we cannot doubt that the operations of our intellect always depend upon certain motions taking place in the brain, (see Gaub. Path. Med. § 523); yet these motions have never been the objects of our senses, nor have we been able to perceive that any particular part of the brain has more concern in the operations of our intellect than any other. Neither have we attained any knowledge of what share the several parts of the brain have in that operation ; and therefore, in this situation of our science, it must be a very difficult matter to discover those states of the
brain

brain that may give occasion to the various state of our intellectual functions.

1540. It may be observed, that the different state of the motion of the blood in the vessels of the brain has some share in affecting the operations of the intellect; and physicians, in seeking for the causes of the different states of our intellectual functions, have hardly looked further than into the state of the motion of the blood, or into the condition of the blood itself: but it is evident that the operations of the intellectual functions ordinarily go on, and are often considerably varied, without our being able to perceive any difference either in the motions or in the conditions of the blood.

1541. Upon the other hand, it is very probable that the state of the intellectual
tual

tual functions depends chiefly upon the state and condition of what is termed the Nervous Power, or, as we suppose, of a subtile very moveable fluid, included or inherent, in a manner we do not clearly understand, in every part of the medullary substance of the brain and nerves, and which in a living and healthy man is capable of being moved from every one part to every other of the nervous system.

1542. With respect to this power, we have pretty clear proof that it frequently has a motion from the sentient extremities of the nerves towards the brain, and thereby produces sensation; and we have the same proof, that in consequence of volition the nervous power has a motion from the brain into the muscles or organs of motion. Accordingly, as sensation excites our intellectual operations,
and

and volition is the effect of these, and as the connection between sensation and volition is always by the intervention of the brain and of intellectual operations; so we can hardly doubt, that these latter depend upon certain motions, and the various modifications of these motions in the brain.

1543. To ascertain the different states of these motions may be very difficult; and physicians have commonly considered it to be so very mysterious, that they have generally despaired of attaining any knowledge with regard to it: but I consider such absolute despair, and the negligence it inspires, to be always very blameable; and I shall now venture to go some length in the inquiry, hoping that some steps made with tolerable firmness may enable us to go still further.

1544. To this purpose, I think it evident, that the nervous power, in the whole as well as in the several parts of the nervous system, and particularly in the brain, is at different times, in different degrees of mobility and force. To these different states, I beg leave to apply the terms of *Excitement* and *Collapse*. To that state in which the mobility and force are sufficient for the exercise of the functions, or when these states are any way preternaturally increased, I give the name of *Excitement*; and to that state in which the mobility and force are not sufficient for the ordinary exercise of the functions, or when they are diminished from the state in which they had been before, I give the name of *Collapse*. I beg, however, it may be observed, that by these terms I mean to express matters of fact only; and without intending, by these terms, to explain the circumstance or condition,

condition, mechanical or physical, of the nervous power or fluid in these different states.

1545. That these different states of excitement and collapse take place on different occasions, must, I think, be manifest from numberless phenomena of the animal œconomy: but it is especially to our present purpose to observe, that the different states of excitement and collapse, are in no instance more remarkable, than in the different states of waking and sleeping. In this latter, when quite complete, the motion and mobility of the nervous power, with respect to the whole of what we called the Animal Functions, entirely cease, or, as I would express it, are in a state of collapse: and are very different from the state of waking, which in healthy persons I would call a state of general and entire excitement.

1546. This

1546. This difference in the states of the nervous power in sleeping and waking being admitted, I must in the next place observe, that when these states are changed from the one into the other, as commonly happens every day, the change is hardly ever made instantaneously, but almost always by degrees, and in some length of time only: and this may be observed with respect to both sense and motion. Thus when a person is falling asleep, the sensibility is gradually diminished: so that, although some degree of sleep has come on, slight impressions will excite sensation, and bring back excitement; which the same, or even stronger impressions, will be insufficient to produce when the state of sleep has continued longer, and is, as we may say, more complete. In like manner, the power of voluntary motion is gradually diminished. In some members it fails sooner than in

others; and it is some time before it becomes general and considerable over the whole.

The same gradual progress may be remarked in a person's coming out of sleep: The ears in this case are often awake before the eyes are opened to see clearly, and the senses are often awake before the power of voluntary motion is recovered; and it is curious to observe, that in some cases, sensations may be excited without producing the ordinary association of ideas. See Mem. de Berlin. 1752.

1547. From all this, I think it will clearly appear, that not only the different states of excitement and collapse can take place in different degrees, but that they can take place in different parts of the brain, or at least, with respect to the different functions, in different degrees.

As I presume that almost every person
has

has perceived the gradual approach of sleeping and waking, I likewise suppose every person has observed, that, in such intermediate state of unequal excitement, there almost always recurs more or less of delirium, or dreaming, if any body chooses to call it so. There are in this state false perceptions, false associations, false judgements, and disproportionate emotions; in short, all the circumstances by which I have above defined delirium.

This clearly shows that delirium may depend, and I shall hereafter endeavour to prove that it commonly does depend, upon some inequality in the excitement of the brain; and that both these assertions are founded on this, that, in order to the proper exercise of our intellectual functions, the excitement must be complete, and equal in every part of the brain. For though we cannot say that

the vestiges of ideas are laid up in different parts of the brain, or that they are in some measure diffused over the whole, it will follow upon either supposition, that as our reasoning and our intellectual operations always require the orderly and exact recollection or memory of associated ideas; so, if any part of the brain is not excited, or not excitable, that recollection cannot properly take place, while at the same time other parts of the brain, more excited and excitable, may give false perceptions, associations, and judgements.

1548. It will serve to illustrate this, that the collapse in sleep is more or less complete; or that the sleep, as we commonly speak, is more or less profound: and therefore, that in many cases, though sleep takes place to a considerable degree, yet certain impressions do still take effect, and excite motions,
or,

or, if you will, sensations in the brain; but which sensations, upon account of the collapsed state of so great a part of the brain, are generally of the delirious kind, or dreams, consisting of false perceptions, associations, and judgements, that would have been corrected if the brain had been entirely excited.

Every one, I believe, has observed, that the most imperfect sleeps are those chiefly attended with dreaming; that dreams, therefore, most commonly occur towards morning, when the complete state of sleep is passing away; and further, that dreams are most commonly excited by strong and uneasy impressions made upon the body.

I apprehend it may also be an illustration of the same thing, that, even in waking hours, we have an instance of an une-

qual state of excitement in the brain producing delirium. Such, I think, occurs in the case of fever. In this, it is manifest, that the energy of the brain, or its excitement, is considerably diminished with respect to the animal functions; and it is accordingly upon this ground that I have explained above (in 45,) the delirium which so commonly attends fever. To what I have there said, I shall here only add, that it may serve to confirm my doctrine, that the delirium in fever comes on at a certain period of the disease only, and that we can commonly discern its approach by a more than usual degree of it appearing in the time of the patient's falling into or coming out of sleep. It appears, therefore, that delirium when it first comes on in fever, depends upon an inequality of excitement; and it can hardly be doubted, that the delirium which comes at length to prevail in the
entirely

entirely weakened state of fevers, depends upon the same cause prevailing in a more considerable degree.

1549. From what has been now delivered, I hope it will be sufficiently evident, that delirium may be, and frequently is, occasioned by an inequality in the excitement of the brain.

How the different portions of the brain may at the same time be excited or collapsed in different degrees, or how the energy of the brain may be in different degrees of force, with respect to the several animal, vital, and natural functions, I cannot pretend to explain; but it is sufficiently evident in fact, that the brain may be at one and the same time in different conditions with respect to these functions. Thus in inflammatory diseases when, by a stimulus applied to the brain, the force of the

vital functions is preternaturally increased, that of the animal is either little changed, or considerably diminished. On the contrary, in many cases of mania, the force of the animal functions depending always on the brain, is prodigiously increased, while the state of the vital function in the heart is very little or not at all changed. I must therefore say again, that how difficult soever it may be to explain the mechanical or physical condition of the brain in such cases, the facts are sufficient to show that there is such an inequality as may disturb our intellectual operations.

1550. I have thus endeavoured to explain the general cause of Delirium: which is of two kinds; according as it is with or without pyrexia. Of the first I take no further notice here, having explained it as well as I could above (in 45).

I proceed now to consider that delirium which properly belongs to the class of *Vesaniæ*, and which I shall treat of under the general title of *Insanity*.

1551. In entering upon this subject, it immediately occurs, that in many instances of insanity, we find, upon dissection after death, that peculiar circumstances had taken place in the general condition of the brain. In many cases, it has been found of a drier, harder, and firmer consistence, than what it is usually of in persons who had not been affected with that disease. In other cases, it has been found in a more humid, soft, and flaccid state; and in the observations of the late Mr Meckel *, it has been found considerably

* *Memoirs de Berlin pour l'année 1764*. It appeared in many instances of insane persons, that the medullary substance

ably changed in its density or specific gravity. Whether these different states have been observed to be uniformly the same over the whole of the brain, I cannot certainly learn; and I suspect the dissectors have not always accurately inquired into this circumstance: but in several instances, it appears that these states had been different in different parts of the brain; and instances of this inequality will afford a confirmation of our general doctrine.

The accurate Morgagni has observed, that in maniacal persons the medullary portion of the brain is unusually dry, hard, and firm: And this he had so frequently observed, that he was disposed to
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substance of the cerebrum was drier, and of a less specific gravity, than in persons who had been always of a sound judgement. *Author.*

consider it as generally the case. But in most of the particular instances which he has given, it appears, that, for the most part, while the cerebrum was of an unusually hard and firm consistence, the cerebellum was of its usual softness; and in many of the cases it was unusually soft and flaccid. In some other cases, Morgagni observes, that while a part of the cerebrum was harder and firmer than ordinary, other parts of it were preternaturally soft.

1552. These observations tend to confirm our general doctrine: and there are others which I think will apply to the same purpose.

Upon the dissection of the bodies of persons who had laboured under insanity, various organic affections, have been discovered in particular parts of the brain; and

and it is sufficiently probable, that such organic affections might have produced a different degree of excitement in the free and affected parts, and must have interrupted in some measure the free communication between the several parts of the brain, and in either way have occasioned insanity.

There have occurred so many instances of this kind, that I believe physicians are generally disposed to suspect organic lesions of the brain to exist in almost every case of insanity,

1553. This, however, is probably a mistake; for we know that there have been many instances of insanity from which the persons have entirely recovered; and it is difficult to suppose that any organic lesions of the brain had in such case taken place. Such transitory cases, indeed,

indeed, render it probable, that a state of excitement, changeable by various causes, had been the cause of such instances of insanity.

1554. It is indeed further asserted, that in many instances of insane persons, their brain had been examined after death, without showing that any organic lesions had before subsisted in the brain, or finding that any morbid state of the brain then appeared. This, no doubt, may serve to show, that organic lesions had not been the cause of the disease; but it does not assure us that no morbid change had taken place in the brain: for it is probable, that the dissectors were not always aware of its being the general condition of hardness and density, as different in different parts of the brain that was to be attended to, in order to discover the cause of the preceding disease; and therefore many of them

them had not with this view examined the state of the brain, as Morgagni seems carefully to have done.

1555. Having thus endeavoured to investigate the cause of insanity in general, it were to be wished that I could apply the doctrine to the distinguishing the several species of it, according as they depend upon the different state and circumstances of the brain, and thereby to the establishing of a scientific and accurately adapted method of cure. These purposes, however, appear to me to be extremely difficult to be attained; and I cannot hope to execute them here. All I can do is to make some attempts, and offer some reflections, which further observation, and greater sagacity, may hereafter render more useful.

1556. The ingenious Dr Arnold has been commendably employed in distinguishing the different species of insanity as they appear with respect to the mind; and his labours may hereafter prove useful, when we shall come to know something more of the different states of the brain corresponding to these different states of the mind; but at present I can make little application of his numerous distinctions. It appears to me that he has chiefly pointed out and enumerated distinctions, that are merely varieties, which can lead to little or no variety of practice: and I am especially led to form the latter conclusion, because these varieties appear to me to be often combined together, and to be often changed into one another, in the same person; in whom we must therefore suppose a general cause of the disease, which, so far as it can be known, must

must establish the pathology, and especially direct the practice.

1557. In my limited views of the different states of insanity, I must go on to consider them under the two heads of Mania and Melancholia: and though I am sensible that these two genera do not comprehend the whole of the species of insanity, I am not clear in assigning the other species which may not be comprehended under those titles. I shall, however, endeavour, on proper occasions as I go along, to point them out as well as I can.

C H A P.

C H A P. II.

O F,

M A N I A,

O R

M A D N E S S.

1558. **T**HE circumstances which I have mentioned above in 1535, as constituting delirium in general, do more especially belong to that kind of it which

I shall treat of here under the title of
MANIA.

There is sometimes a false perception or imagination of things present that are not; but this is not a constant, nor even a frequent, attendant of the disease. The false judgement, is of relations long before laid up in the memory. It very often turns upon one single subject: but more commonly the mind rambles from one subject to another with an equally false judgement concerning the most part of them; and as at the same time there is commonly a false association, this increases the confusion of ideas, and therefore the false judgements. What for the most part more especially distinguishes the disease is a hurry of mind, in pursuing any thing like a train of thought, and in running from one train of thought to another. Maniacal persons are in general very irascible; but what
more

more particularly produces their angry emotions is, that their false judgements lead to some action which is always pushed with impetuosity and violence; when this is interrupted or restrained, they break out into violent anger and furious violence against every person near them, and upon every thing that stands in the way of their impetuous will. The false judgement often turns upon a mistaken opinion of some injury supposed to have been formerly received, or now supposed to be intended: and it is remarkable, that such an opinion is often with respect to their former dearest friends and relations; and therefore their resentment and anger are particularly directed towards these. And although this should not be the case, they commonly soon lose that respect and regard which they formerly had for their friends and relations. With all these circumstances, it will be readily

perceived, that the disease must be attended very constantly with that incoherent and absurd speech we call raving. Further, with the circumstances mentioned, there is commonly joined an unusual force in all the voluntary motions; and an insensibility or resistance of the force of all impressions, and particularly a resistance of the powers of sleep, of cold, and even of hunger; though indeed in many instances a voracious appetite takes place.

1559. It appears to me, that the whole of these circumstances and symptoms point out a considerable and unusual excess in the excitement of the brain, especially with respect to the animal functions; and it appears at the same time to be manifestly in some measure unequal, as it very often takes place with respect to these functions alone, while at the same time
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the vital and natural are commonly very little changed from their ordinary healthy state.

1560. How this excess of excitement is produced, it may be difficult to explain. In the various instances of what Sauvages has named the *Mania Metastatica*, and in all the instances I have mentioned in my Nosology under the title of *Mania Corporæa*, it may be supposed that a morbid organic affection is produced in some part of the brain; and how that may produce an increased or unequal excitement in certain parts of it, I have endeavoured to explain above in 1552. But I must at the same time acknowledge, that such remote causes of mania have very rarely occurred; and that therefore some other causes of the disease must be sought for.

The effects of violent emotions or passions of the mind have more frequently occurred as the remote causes of Mania; and it is sufficiently probable, that such violent emotions, as they do often immediately produce a temporary increase of excitement, so they may, upon some occasions of their permanent inherence or frequent repetition, produce a more considerable and more permanent excitement, that is, a mania.

With respect to those causes of mania which arise in consequence of a melancholia which had previously long subsisted; whether we consider that melancholia as a partial insanity, or as a long persisting attachment to one train of thinking, it will be readily perceived, that in either case such an increase of excitement may take place in so considerable a degree, and in so large a portion of the brain,

brain, as may give occasion to a complete mania.

1561. These considerations with regard to the remote causes appear to me to confirm sufficiently our general doctrine of increased and unequal excitement in the mania which I have described above; but I must own that I have not exhausted the subject, and that there are cases of mania of which I cannot assign the remote causes: but although I cannot in all cases explain in what manner the mania is produced, I presume from the explanation given, and especially from the symptoms enumerated above, to conclude, that the disease described above depends upon an increased excitement of the brain; an opinion in which I am the more confirmed, as I think it will point out the proper method of cure. At least I think it will most clearly explain the operation of those

remedies, which, so far as I can learn from my own experience and that of others, have proved the most successful in this disease; and to illustrate this, I now enter upon the consideration of these remedies, and to make some remarks upon the proper manner of employing them.

1562. Restraining the anger and violence of madmen is always necessary for preventing their hurting themselves or others: but this restraint is also to be considered as a remedy. Angry passions are always rendered more violent by the indulgence of the impetuous motions they produce; and even in madmen the feeling of restraint will sometimes prevent the efforts which their passion would otherwise occasion. Restraint, therefore, is useful, and ought to be complete; but it should be executed in
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the easiest manner possible for the patient, and the strait waistcoat answers every purpose better than any other that has yet been thought of. The restraining madmen by the force of other men, as occasioning a constant struggle and violent agitation, is often hurtful. Although on many occasions, it may not be safe to allow maniacs to be upon their legs or to walk about, it is never desirable to confine them to a horizontal situation; and whenever it can be admitted, they should be more or less in an erect posture. Although there may be no symptoms of any preternatural fulness or increased impetus of blood in the vessels of the brain, a horizontal posture always increases the fulness and tension of these vessels, and may thereby increase the excitement of the brain.

1563. The restraint mentioned requires
confinement

confinement within doors, and it should be in a place which presents as few objects of sight and hearing as possible ; and particularly, it should be removed from the objects that the patient was formerly acquainted with, as these would more readily call up ideas and their various associations. It is for this reason that the confinement of madmen should hardly ever be in their usual habitation ; or if they are, that their apartments should be stripped of all its former furniture. It is also for the most part proper, that maniacs should be without the company of any of their former acquaintance ; the appearance of whom commonly excites emotions that increase the disease. Strangers may at first be offensive ; but in a little time they come to be objects either of indifference or of fear, and they should not be frequently changed.

1564. Fear being a passion that diminishes excitement, may therefore be opposed to the excess of it; and particularly to the angry and irascible excitement of maniacs. These being more susceptible of fear than might be expected, it appears to me to have been commonly useful. In most cases it has appeared to be necessary to employ a very constant impression of fear; and therefore to inspire them with the awe and dread of some particular persons, especially of those who are to be constantly near them. This awe and dread is therefore, by one means or other, to be acquired; in the first place, by their being the authors of all the restraints that may be occasionally proper; but sometimes it may be necessary to acquire it even by stripes and blows. The former, although having the appearance of more severity, are much safer than strokes or blows about the head. Neither of them,

them, however, should be employed further than seems very necessary, and should be trusted to those only whose discretion can be depended upon. There is one case in which they are superfluous; that is, when the maniacal rage is either not susceptible of fear, or incapable of remembering the objects of it; for in such instances, stripes and blows would be wanton barbarity. In many cases of a moderate disease, it is of advantage that the persons who are the authors of restraints and punishment should be upon other occasions the bestowers of every indulgence and gratification that is admissible; never, however, neglecting to employ their awe when their indulgence shall have led to any abuse.

1565. Although in mania, no particular irritation nor fulness of the system seem to be present, it is plain that the
avoiding

avoiding of all irritation and means of fulness is proper ; and therefore, that a diet neither stimulating nor nourishing is commonly to be employed. As it may even be useful to diminish the fulness of the system, so both a low and a spare diet is likely in most cases to be of service.

1566. Upon the same principle, although no unusual fulness of the body be present, it may be of advantage to diminish even its ordinary fulness by different evacuations.

Blood-letting, in particular, might be supposed useful ; and in all recent cases of mania it has been commonly practised, and I think with advantage ; but when the disease has subsisted, for some time, I have seldom found blood-letting of service. In those instances in which there

is any frequency or fulness of pulse, or any marks of an increased impetus of the blood in the vessels of the head, blood-letting is a proper and even a necessary remedy. Some practitioners, in such cases, have preferred a particular manner of blood-letting, recommending ateriectomy, scarifying the hind-head, or opening the jugular vein; and where any fulness or inflammatory disposition in the vessels of the brain is to be suspected, the opening of the vessels nearest to them is likely to be of the greatest service. The opening, however, of either the temporal artery or the jugular vein in maniacal persons is very often inconvenient; and it may generally be sufficient to open a vein in the arm, while the body is kept somewhat of an erect posture, and such a quantity of blood drawn as nearly brings on a deliquium animi, which is always a pretty certain mark of some diminution of
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the fulness and tension of the vessels of the brain.

1567. For the same purpose of taking off the fulness and tension of these vessels of the brain, purging may be employed; and I can in no other view understand the celebrated use of hellebore among the ancients. I cannot, however, suppose any specific power in hellebore; and can by no means find, that at least the black hellebore, is so efficacious with us as it is said to have been at Anticyra. As costiveness, however, is commonly a very constant and hurtful attendant of mania, purgatives come to be sometimes very necessary: and I have known some benefit obtained from the frequent use of pretty drastic purgatives. In this, however, I have been frequently disappointed; and I have found more advantage from the frequent use of cooling purgatives,

tives, particularly the soluble tartar, than from more drastic medicines,

1568. Vomiting has also been frequently employed in mania; and by determining powerfully to the surface of the body, it may possibly diminish the fulness and tension of the vessels, and thereby the excitement of the brain; but I have never carried the use of this remedy so far as might enable me to judge properly of its effects. Whether it may do harm by impelling the blood too forcibly into the vessels of the brain, or whether by its general agitation of the whole system, it may remove that inequality of excitement which prevails in mania, I have not had experience enough to determine.

1569. Frequent shaving of the head has been found of service in mania, and
by

by promoting perspiration, it probably takes off from the excitement of the internal parts. This, however, it is likely, may be more effectually done by blistering, which more certainly takes off the excitement of subjacent parts. In recent cases it has been found useful by inducing sleep; and when it has that effect, the repetition of it may be proper: but in maniacal cases, that have lasted for some time, blistering has not appeared to me to be of any service; and in such cases also I have not found perpetual blisters, or any other form of issue, prove useful.

1570. As heat is the principal means of first exciting the nervous system, and establishing the nervous power and vital principle in animals; so, in cases of preternatural excitement, the application of cold might be supposed a remedy; but

there are many instances of maniacs who have been exposed for a great length of time to a considerable degree of cold without having their symptoms anywise relieved. This may render in general the application of cold a doubtful remedy; but it is at the same time certain, that maniacs have often been relieved, and sometimes entirely cured, by the use of cold-bathing, especially when administered in a certain manner. This seems to consist, in throwing the madman into cold water by surprize; by detaining him in it for some length of time; and pouring water frequently upon the head, while the whole of the body except the head is immersed in the water; and thus managing the whole process, so as that, with the assistance of some fear, a refrigerant effect may be produced. This, I can affirm, has been often useful; and that the external application of cold may be of

service, we know further from the benefit which has been received in some maniacal cases from the application of ice and snow to the naked head, and from the application of the noted Clay Cap.

Warm bathing has been also recommended by some practical writers; and in rigid melancholic habits it may possibly be useful, or as employed in the manner prescribed by some, of immersing the lower parts of the body in warm water, while cold water is poured upon the head and upper parts. Of this practice, however, I have had no experience; and in the common manner of employing warm bathing I have found it rather hurtful to maniacs.

1571. According to my supposition that the disease depends upon an increased excitement of the brain, especially with

respect to the animal functions, opium, so commonly powerful in inducing sleep, or a considerable collapse as to these functions, should be a powerful remedy of mania. That it has truly proved such, I believe from the testimony of Bernard Huet, whose practice is narrated at the end of Wepferi Historia Apoplecticorum. I leave to my readers to study this in the work I have referred to, where every part of the practice is fully, and as it appears to me, very judiciously delivered. I have never indeed carried the trial so far as seems to be requisite to an entire cure: but I have frequently employed in some maniacal cases large doses of opium; and when they had the effect of inducing sleep, it was manifestly with advantage. At the same time, in some cases, from doubts, whether the disease might not depend upon some organic lesions of the brain, when the opium would be superfluous;

fluorous; and in other cases, from doubts, whether there might not be some inflammatory affection joined with the mania, when the opium would be hurtful, I have never pushed this remedy to the extent that might be necessary to make an entire cure.

1572. Camphire has been recommended as a remedy of mania, and there are instances alledged of its having performed an entire cure. As it appears from the experiments of Beccaria that this substance is possessed of a sedative and narcotic virtue, these cures are not altogether improbable: but in several trials, and even in large doses, I have found no benefit from it; and excepting those in the Philosophical Transactions, No. 400. I have hardly met with any other testimonies in its favour.

1573. I have been informed that some maniacs have been cured by being compelled to constant and even hard labour; and as a forced attention to the conduct of any bodily exercise is a very certain means of diverting the mind from pursuing any train of thought, it is highly probable that such exercise may be useful in many cases of mania.

I must conclude this subject with observing, that even in several cases of complete mania I have known a cure take place in the course of a journey carried on for some length of time.

1574. These are the remedies which have been chiefly employed in the mania that has been above described, and I believe that they have been employed promiscuously, without supposing that the mania was to be distinguished into different

rent species. Indeed I am not ready to say how far it is to be so distinguished, but I shall offer one observation which may possibly merit attention.

It appears to me that there are two different cases of mania that are especially different according to the original temperament of the persons whom the disease affects. It perhaps occurs most frequently in persons of a melancholic or atrabilarian temperament; but it certainly does also often occur in persons of that very opposite temperament which physicians have named the Sanguine. According as the disease happens to occur in persons of the one or other of these temperaments, I apprehend it may be considered as of a different nature; and I believe, that accurate observation, employed upon a sufficient number of cases, would discern some pretty constant difference,

rence, either of the symptoms, or at least of the state of the symptoms, in the two cases. I imagine that false imaginations, particular aversions and resentments, are more fixed and steady in the melancholic than in the sanguine; and that somewhat inflammatory is more commonly joined with mania in the sanguine than in the melancholic. If such difference, however, does truly take place, it will be obvious, that it may be proper to make some difference also in the practice. I am of opinion, that in the mania of sanguine persons, blood-letting and other antiphlogistic measures are more proper, and have been more useful, than in the melancholic. I likewise apprehend that cold bathing is more useful in the sanguine than in the melancholic: but I have not had experience enough to ascertain these points with sufficient confidence.

I have only to add to this other observation, that maniacs of the sanguine temperament recover more frequently and more entirely than those of the melancholic.

C H A P.

C H A P. III.

O F

M E L A N C H O L Y,

A N D

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

1575. **M**ELANCHOLY has been commonly considered as partial insanity; and as such it is defined in my Nosology: but I now entertain doubts if

if this be altogether proper. By a partial insanity, I understand a false and mistaken judgement upon one particular subject, and what relates to it; whilst, on every other subject, the person judges as the generality of other men do. Such cases have certainly occurred;—but, I believe, few in which the partial insanity is certainly limited. In many cases of general insanity, there is one subject of anger or fear, upon which the false judgement more particularly turns, or which is at least more frequently than any other the prevailing object of delirium: and though, from the inconsistency which this principal object of delirium must produce, there is therefore also a great deal of insanity with regard to most other objects; yet this last is in very different degrees, both in different persons, and in the same person at different times. Thus persons considered as generally insane,

sane, will, however, at times, and in some cases, pretty constantly judge properly enough of present circumstances and incidental occurrences; though, when these objects engaging attention are not presented, the operations of imagination may readily bring back a general confusion, or recal the particular object of the delirium. From these considerations, I am inclined to conclude, that the limits between general and partial insanity cannot always be so exactly assigned, as to determine when the partial affection is to be considered as giving a peculiar species of disease, different from a more general insanity.

1576. When insanity neither strictly partial, nor entirely nor constantly general, occurs in persons of a sanguine temperament, and is attended with agreeable, rather than with angry or gloomy emotions,

tions, I think such a disease must be considered as different from the Mania described above; and also, though partial, must be held as different from the proper Melancholia to be mentioned hereafter.

1577. Such a disease, as different from those described (1554) requires, in my opinion, a different administration of remedies; and it will be proper for me to take particular notice of this here.

Although it may be necessary to restrain such insane persons as we have mentioned (1576) from pursuing the objects of their false imagination or judgement, it will hardly be requisite to employ the same force of restraint that is necessary in the impetuous and angry mania. It will be generally sufficient to acquire some awe over them, that may be employed,
and

and sometimes even be necessary, to check the rambling of their imagination, and incoherency of judgement.

1578. The restraint just now mentioned as necessary will generally require the patient's being confined to one place for the sake of excluding the objects, and more particularly the persons, that might excite ideas connected with the chief objects of their delirium. At the same time, however, if it can be perceived there are objects or persons that can call off their attention from the pursuit of their own disordered imagination, and can fix it a little upon some others, these last may be frequently presented to them: and for this reason a journey, both by its having the effect of interrupting all train of thought, and by presenting objects engaging attention, may often be useful. In such cases also, when the insanity, though
more

more especially fixed upon one mistaken subject, is not confined to this alone, but is further apt to ramble over other subjects with incoherent ideas, I apprehend the confining or forcing such persons to some constant uniform labour, may prove an useful remedy.

1579. When such cases as in (1576) occur in sanguine temperaments, and may therefore approach more nearly to Phrenetic Delirium; so, in proportion as the symptoms of this tendency are more evident and considerable, blood-letting and purging will be the more proper and necessary.

1580. To this species of insanity, when occurring in sanguine temperaments, whether it be more or less partial, I apprehend that cold bathing is particularly adapted; while, in the partial insanity of melancholic

cholic persons, as I shall show hereafter, it is hardly admissible.

1581. Having thus treated of a species of insanity, different, in my apprehension, from both the Mania and Melancholia, I proceed to consider what seems more properly to belong to this last.

1582. The disease which I name Melancholia is very often a partial insanity only. But as in many instances, though the false imagination or judgement seems to be with respect to one subject only; yet it seldom happens that this does not produce much inconsistency in the other intellectual operations: And as, between a very general and a very partial insanity, there are all the possible intermediate degrees; so it will be often difficult, or perhaps improper, to distinguish melancholia by the character of Partial Insanity alone. If I
mistake

mistake not, it must be chiefly distinguished by its occurring in persons of a melancholic temperament, and by its being always attended with some seemingly groundless, but very anxious, fear.

1583. To explain the cause of this, I must observe, that persons of a melancholic temperament are for the most part of a serious thoughtful disposition, and disposed to fear and caution, rather than to hope and temerity. Persons of this cast are less moveable than others by any impressions; and are therefore capable of a closer or more continued attention to one particular object, or train of thinking. They are even ready to be engaged in a constant application to one subject; and are remarkably tenacious of whatever emotions they happen to be affected with.

1584. These circumstances of the melancholic character, seem clearly to show, that persons strongly affected with it may be readily seized with an anxious fear; and that this, when much indulged, as is natural to such persons, may easily grow into a partial insanity.

1585. Fear and dejection of mind, or a timid and desponding disposition, may arise in certain states, or upon certain occasions of mere debility: and it is upon this footing, that I suppose it sometimes to attend dyspepsia. But in these cases, I believe the despondent disposition hardly ever arises to a considerable degree, or proves so obstinately fixed as when it occurs in persons of a melancholic temperament. In these last, although the fear proceeds from the same dyspeptic feelings as in the other case, yet it will be obvious, that the emotion may rise to a more considerable

siderable degree; that it may be more anxious, more fixed, and more attentive; and therefore may exhibit all the various circumstances which I have mentioned in 1222, to take place in the disease named **HYPOCHONDRIASIS.**

1586. In considering this subject formerly in distinguishing Dyspepsia from Hypochondriasis, although the symptoms affecting the body be very much the same in both, and even those affecting the mind be somewhat similar, I found no difficulty in distinguishing the latter disease, merely from its occurring in persons of a melancholic temperament. But I must now acknowledge, that I am at a loss to determine how in all cases hypochondriasis and melancholia may be distinguished from one another, whilst the same temperament is common to both.

1587. I apprehend, however, that the distinction may be generally ascertained in the following manner.

The hypochondriasis I would consider as being always attended with dyspeptic symptoms: and though there may be, at the same time an anxious melancholic fear arising from the feeling of these symptoms: yet while this fear is only a mistaken judgement with respect to the state of the person's own health, and to the danger to be from thence apprehended, I would still consider the disease as a hypochondriasis, and as distinct from the proper melancholia. But when an anxious fear and dependency arises from a mistaken judgement with respect to other circumstances than those of health, and more especially when the person is at the same time without any dyspeptic symptoms, every one will readily allow this to be a disease
widely

widely different from both dyspepsia and hypochondriasis; and it is, what I would strictly name Melancholia.

1588. In this there seems little difficulty: but as an exquisitely melancholic temperament may induce a torpor and slowness in the action of the stomach, so it generally produces some dyspeptic symptoms; and from thence there may be some difficulty in distinguishing such a case from hypochondriasis. But I would maintain, however, that when the characters of the temperament are strongly marked; and more particularly when the false imagination turns upon other subjects than that of health, or when, though relative to the person's own body, it is of a groundless and absurd kind; then, notwithstanding the appearance of some dyspeptic-symptoms, the case is still to be

considered as that of a melancholia, rather than a hypochondriasis.

1589. The disease of melancholia; therefore, manifestly depends upon the general temperament of the body: and although, in many persons, this temperament is not attended with any morbid affection either of mind or body; yet when it becomes exquisitely formed, and is in a high degree, it may become a disease affecting both, and particularly the mind. It will therefore be proper to consider in what this melancholic temperament especially consists; and to this purpose, it may be observed, that in it there is a degree of torpor in the motion of the nervous power, both with respect to sensation and volition; that there is a general rigidity of the simple solids; and that the balance of the sanguiferous system, is upon the side of the veins. But all these circum-

stances are the directly opposite of those of the sanguine temperament; and must therefore also produce an opposite state of mind.

1590. It is this state of mind, and the state of the brain corresponding to it, that is the chief object of our present consideration. But what that state of the brain is, will be supposed to be difficult to explain; and it may perhaps seem rash in me to attempt it.

I will, however venture to say, that it is probable the melancholic temperament of mind depends upon a drier and firmer texture in the medullary substance of the brain; and that this perhaps proceeds from a certain want of fluid in that substance, which appears from its being of a lesser specific gravity than usual. That this state of the brain in melancholia does

actually exist, I conclude, *first*, from the general rigidity of the whole habit; and, *secondly*, from dissections, showing such a state of the brain to have taken place in mania, which is often no other than a higher degree of melancholia. It does not appear to me anywise difficult to suppose, that the same state of the brain may in a moderate degree give melancholia; and in a higher, that mania, which melancholia so often passes into; especially, if I shall be allowed further to suppose, that either a greater degree of firmness in the substance of the brain may render it susceptible of a higher degree of excitement, or that one portion of the brain may be liable to acquire a greater firmness than others, and consequently give occasion to that inequality of excitement upon which mania so much depends.

1591. I have thus endeavoured to deli-

ver, what appears to me most probable with respect to the proximate cause of melancholia; and although the matter should in some respects remain doubtful, I am well persuaded that these observations may often be employed to direct our practice in this disease, as I shall now endeavour to show.

1592. In most of the instances of melancholia, the mind is to be managed very much in the same manner as I have advised above with regard to hypochondriasis; but as in the case of proper melancholia, there is commonly a false imagination or judgement appearing as a partial insanity, it may be further necessary in such cases to employ some artifices for correcting such imagination or judgement.

1593. The various remedies for relieving
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ing the dyspeptic symptoms which always attend hypochondriasis, will seldom be either requisite or proper in melancholia.

There is only one of the dyspeptic symptoms, which, though there should be no other, is very constantly present in melancholia, and that is costiveness. This it is always proper and even necessary to remove; and I believe it is upon this account that the use of purgatives has been found so often useful in melancholia. Whether there be any purgatives peculiarly proper in this case, I dare not positively determine; but with respect to the choice of purgatives in melancholia, I am of the same opinion that I delivered above, on this same subject, with respect to mania.

1594. With respect to other remedies,

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I judge that blood-letting will more seldom be proper in melancholia, than in mania; but how far it may be in any case proper, must be determined by the same considerations as in the case of mania.

1595. The cold bathing that I judged to be so very useful in several cases of insanity, is, I believe, in melancholia, hardly ever fit to be admitted; at least while this is purely a partial affection, and without any marks of violent excitement. On the contrary, upon account of the general rigidity prevailing in melancholia, it is probable that warm bathing may be often useful.

1596. With respect to opiates, which I have supposed might often be useful in cases of mania, I believe they can seldom be properly employed in the partial
insanities

insanities of the melancholic, except in certain instances of violent excitement, when the melancholia approaches nearly to the state of mania.

1597. In such cases of melancholia approaching to a state of mania, a low diet may sometimes be necessary; but as the employing a low diet almost unavoidably leads to the use of vegetable food, and as this in every torpid state of the stomach is ready to produce some dyspeptic symptoms, such vegetable food ought, in moderate cases of melancholia, to be used with some caution.

Though exercise, as a tonic power, is not proper either in hypochondriasis or melancholia; yet, with respect to its effects upon the mind, it may be extremely useful in both, and in melancholia is to be employed in the same manner that

I have advised above in the case of hypochondriasis.

1598. Having now delivered my doctrine with respect to the chief forms of insanity, I should in the next place proceed to consider the other genera of Amentia and Oneirodynia, which in the Nosology I have arranged under the order of Vefaniæ: but as I cannot pretend to throw much light upon these subjects, and as they are seldom the objects of practice, I think it allowable for me to pass them over at present; and the particular circumstances of this work in some measure requires that I should do so.



PART III.

OF

CACHEXIES.

1599. **U**NDER this title I propose to
establish a class of diseases,
which consist in a depraved state of the
whole, or of a considerable part, of the
habit

habit of the body, without any primary pyrexia or neurosis combined with that state.

1600. The term *Cachexy* has been employed by Linnæus and Vogel, as it had been formerly by other authors, for the name of a particular disease; but the disease to which these authors have affixed it, comes more properly under another appellation; and the term of *Cachexy* is more properly employed by Sauvages and Sagar for the name of a class. In this I have followed the last-mentioned nosologists, though I find it difficult to give such a character of the class as will clearly apply to all the species I have comprehended under it. This difficulty would be still greater, if, in the class I have established under the title of *Cachexies*, I were to comprehend all the diseases that those other nosologists have done; but

but I am willing to be thought deficient rather than very incorrect. Those difficulties, however, which still remain in methodical nosology, must not affect us much in a treatise of practice. If I can here properly distinguish and describe the several species that truly and most commonly exist, I shall be the less concerned about the accuracy of any general classification: though at the same time this, I think, is always to be attempted; and I shall pursue it as well as I can.

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B O O K I.

OF

E M A C I A T I O N S.

1601. **E**MACIATION, or a considerable diminution of the bulk or plumpness of the whole body, is for the most part only a symptom of disease,

and very feldom to be confidered as a primary and idiopathic affection. Upon this account, according to my general plan, fuch a fymptom might perhaps have been omitted in the Methodical Nofology: but both the uncertainty of concluding it to be always fymptomatic, and the confifteny of fyftem, made me introduce into the Nofology, as others had done, an order under the title of *Marcores*; and this renders it requifite now to take fome notice of fuch difeafes.

1602. Upon this occafion, therefore, I hope it may be ufeful to inveftigate the feveral caufes of emaciation in all the different cafes of difeafes in which it appears. And this I attempt, as the fureft means of determining how far it is a primary, or a fymptomatic affection only; and even in the latter view, the inveftigation may be attended with fome advantage.

1603. The causes of emaciation may, I apprehend, be referred to two general heads; that is, either to a general deficiency of fluids in the vessels of the body, or to the particular deficiency of the oil in the cellular texture of it*. These causes are frequently combined together; but it will be proper, in the first place, to consider them separately.

1604. As a great part of the body of animals is made up of vessels filled with fluids, the bulk of the whole must depend very much on the size of these vessels, and the quantity of fluids present in them: and it will therefore be sufficiently obvious, that a deficiency of the fluids in these vessels must, according to its degree, occasion a proportionate diminution of the bulk of

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* Might not a third cause be added, viz. a deficiency of the solid parts?

the whole body. This, however, will appear still more clearly from considering that, in the living and sound body, the vessels every where seem to be preternaturally distended by the quantity of fluids present in them; but being at the same time elastic, and constantly endeavouring to contract themselves, they must on the withdrawing of the distending force, or, in other words, upon a diminution of the quantity of fluids, be in proportion contracted and diminished in their size: And it may be further observed, that as each part of the vascular system communicates with every other part of it; so every degree of diminution of the quantity of fluid, in any one part, must in proportion diminish the bulk of the vascular system, and consequently of the whole body*.

1605. The

* There may however be a partial without a general emaciation.

1605. The diminution and deficiency of the fluids may be occasioned by different causes: such as, first by a due quantity of aliments not being taken in; or by the aliment taken in not being of a sufficiently nutritious quality. Of the want of a due quantity of aliment not being taken into the body, there is an instance in the *Atrophia lactantium Sauvagesii*, species 3. and many other examples have occurred of emaciation from want of food, occasioned by poverty, and other accidental causes.

With respect to the quality of food, I apprehend, it arises from the want of

O 4 nutritious

emaciation, as is the case in a palsied limb; but this partial diminution of bulk in the diseased limb is not owing to a lessened quantity of the general mass of the circulating fluids, but to the languid circulation in that part, the arteries not propelling the blood through it with sufficient vigour.

nutritious matter in the food employed, that persons living very entirely on vegetables are seldom of a plump and succulent habit*.

1606. A second cause of the deficiency of fluids may be, the aliments taken in not being conveyed to the blood-vessels. This may occur from a person's being affected

* As the author says at the conclusion of this chapter, "After having considered the various causes of emaciations, I should perhaps treat of their cure: but it will readily appear, that the greater part of the cases above-mentioned are purely symptomatic, and consequently that the cure of them must be that of the primary diseases upon which they depend. Of those cures that can anywise be considered as idiopathic, it will appear that they are to be cured entirely by removing the remote causes;" It may not be improper to treat of the cure as we proceed.

This species of emaciation may be obviously cured by a rich and nutritious diet.

fected with a frequent vomiting; which, rejecting the food soon after it had been taken in, must prevent the necessary supply of fluids to the blood-vessels*.

Another cause, frequently interrupting the conveyance of the alimentary matter into the blood-vessels, is an obstruction of the conglobate or lymphatic glands of the mesentery, through which the chyle must necessarily pass to the thoracic duct. Many instances of emaciation, seemingly depending upon this cause, have been observed by physicians, in persons of all ages, but especially in the young. It has also been remarked, that such cases have most frequently occurred in scrophulous persons, in whom the mesenteric glands
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* This species may be cured by preventing the vomiting by antispasmodics, especially opium, and by the use of gentle laxatives occasionally. A nutritious diet will also be necessary in these cases.

are commonly affected with tumour or obstruction, and in whom, generally at the same time, scrophula appears externally. Hence the *Tabes scrophulosa Synop. Nosolog.* vol. ii. p. 266. And under these I have put as synonimes *Tabes glandularis*, sp. 10.; *Tabes mesenterica*, sp. 9.; *scrophula mesenterica*, sp. 4.; *Atrophia infantilis*, sp. 13.; *Atrophia rachitica*, sp. 8.; *Tabes rachialgica*, sp. 16. At the same time, I have frequently found the case occurring in persons who did not show any external appearance of scrophula, but in whom the mesenteric obstruction was afterwards discovered by dissection. Such also I suppose to have been the case in the disease frequently mentioned by authors under the title of the *Atrophia infantum*. This has received its name from the time of life at which it generally appears; but I have met with instances of it at fourteen years of age ascertained by dissection. In
several

several such cases which I have seen, the patients were without any scrophulous appearances at the time, or at any period of their lives before*.

In the case of phthical persons, I shall hereafter mention another cause of their emaciation; but it is probable that an obstruction of the mesenteric glands, which so frequently happens in such persons, concurs

* These cases are generally incurable; if, however, there be no suspicion of scrophula, we may attempt a cure by endeavouring to remove the obstruction either by invigorating the habit, or by active aperients. Open and pure air, with exercise suited to the strength of the patient, and the use of chalybeate waters, have admirable effects in these cases.

Peruvian bark so often used as a tonic, is improper in all cases of obstructed glands, as are also astringents and styptics.

conkurs very powerfully in producing the emaciation that takes place.

Although a scrophulous taint may be the most frequent cause of mesenteric obstructions, it is sufficiently probable that other kinds of acrimony may produce the same, and the emaciation that follows.

It may perhaps be supposed, that the interruption of the chyle's passing into the blood-vessels may be sometimes owing to a fault of the absorbents on the internal surface of the intestines. This, however, cannot be readily ascertained: but the interruption of the chyle's passing into the blood-vessels may certainly be owing to a rupture of the thoracic duct; which, when it does not prove soon fatal, by occasioning an hydrothorax, must in

a short time produce a general emaciation*.

1607. A third cause of the deficiency of fluids may be a fault in the organs of digestion, as not duly converting the aliment into a chyle fit to form in the blood-vessels a proper nutritious matter. It is not, however, easy to ascertain the cases of emaciation which are to be attributed to this cause; but I apprehend that the emaciation which attends long subsisting cases of dyspepsia, or of hypochondriasis, is to be explained chiefly in this way. It is this which I have placed in the Nosology under the title of the *Atrophia debiliū*; and of which the *Atrophia nervosa*, Sauv. sp. 1. is a proper instance, and therefore put there as a synonyme. But the other titles of *Atrophia lateralis*,

* This is an absolutely incurable case.

teralis, Sauv. sp. 15. and *Atrophia senilis*, Sauv. sp. 11. are not so properly put there, as they must be explained in a different manner*.

1608. A fourth cause of a deficiency of the fluids in the body; may be excessive evacuations made from it by different outlets; and Sauvages has properly enumerated the following species, which we have put as synonimes under the title of *Atrophia inanitorum*; as, *Tabes nutricum*, sp. 4. *Atrophia nutricum*, sp. 5. *Atrophia a leucorrhœa*, sp. 4. *Atrophia ab alvi fluxu*, sp. 6. *Atrophia a ptyalismo*, sp. 7. and lastly, the *Tabes a sanguifluxu*; which, it is to be observed, may arise not only from
spontaneous

* This species of emaciation may be successfully cured by the means of those remedies mentioned in the notes on the articles 1204, 1206, 1210, 1212, 1213, 1215, 1216, 2221.

spontaneous hemorrhagies or accidental wounds, but also from blood-letting in too large a quantity, and too frequently repeated.

Upon this subject it seems proper to observe, that a meagre habit of body frequently depends upon a full perspiration being constantly kept up, though at the same time a large quantity of nutritious aliment is regularly taken in*.

1609. Besides this deficiency of fluids from evacuations by which they are carried entirely out of the body, there may be a deficiency of fluid and emaciation in a considerable part of the body, by
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* In these cases astringents are the principal remedies on which we must depend; and those astringents must be chosen which are adapted to suppress the peculiar evacuation that occasions the disease.

the fluids being drawn into one part, or collected into one cavity; and of this we have an instance in the *Tabes a hydrope*, Sauv. sp. 5*.

1610. In the Methodical Nosology, among the other synonimes of the *Atrophia inanitorum*, I have set down the *Tabes dorsalis*; but whether properly or not, I at present very much doubt. In the evacuation considered as the cause of this tabes, as the quantity evacuated is never so great as to account for a general deficiency of fluids in the body, we must seek for another explanation of it. And whether the effects of the evacuation may be accounted for, either from the quality of the fluid evacuated, or from the singularly enervating

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* The emaciation from this cause is merely symptomatic, and can only be cured by curing the primary disease.

ing pleasure attending the evacuation, or from the evacuation's taking off the tension of parts, the tension of which has a singular power in supporting the tension and vigour of the whole body, I cannot positively determine; but I apprehend that upon one or other of these suppositions the emaciation attending the *tabes dorsalis* must be accounted for; and therefore, that it is to be considered as an instance of the *Atrophia debiliūm*, rather than of the *Atrophia inanitorum**.

1611. A fifth cause of a deficiency of fluids and of emaciations in the whole or in a particular part of the body, may be the concretion of the small vessels, either not admitting of fluids, or of the same proportion as before: and this seems to

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* If a particular abominable practice be the cause, it must be abandoned before a cure can be attempted.

me to be the case in the *Atrophia senilis*, Sauv. sp. 2. Or it may be a palsy of the larger trunks of the arteries rendering them unfit to propel the blood into the smaller vessels; as is frequently the case of paralytic limbs, in which the arteries are affected as well as the muscles. The *Atrophia lateralis*, Sauv. sp. 15. seems to be of this nature*.

1612. A second general head of the causes of emaciation I have mentioned in 1602. to be a deficiency of oil. The extent and quantity of the cellular texture in every part of the body, and therefore how considerable a part it makes in the bulk of the whole, is now well known. But this substance, in different circumstances,

* This is one of the incurable species of emaciation, and it can only be relieved by a very nutritious and invigorating diet.

stances, is more or less filled with an oily matter; and therefore the bulk of it, and in a great measure that of the whole body, must be greater or less according as this substance is more or less filled in that manner. The deficiency of fluids, for a reason to be immediately explained, is generally accompanied with a deficiency of oil: but physicians have commonly attended more to the latter cause of emaciation than to the other, that being usually the most evident; and I shall now endeavour to assign the several causes of the deficiency of oil as it occurs upon different occasions.

1613. The business of secretion in the human body is in general little understood, and in no instance less so than that of the secretion of oil from blood which does not appear previously to have contained it. It is possible, therefore, that

our theory of the deficiency of oil may be in several respects imperfect; but there are certain facts that may in the mean time apply to the present purpose.

1614. First, it is probable, that a deficiency of oil may be owing to a state of the blood in animal bodies less fitted to afford a secretion of oil, and consequently to supply the waste of it that is constantly made. This state of the blood must especially depend upon the state of the aliments taken in, as containing less of oil or oily matter. From many observations made, both with respect to the human body and to that of other animals, it appears pretty clearly, that the aliments taken in by men and domestic animals, according as they contain more of oil, are in general more nutritious, and in particular are better fitted to fill the cellular texture of their
2 bodies

bodies with oil. I might illustrate this, by a minute and particular consideration of the difference of alimentary matters employed; but it will be enough to give two instances. The one is, that the herbaceous part of vegetables, does not fatten animals, so much as the seeds of vegetables, which manifestly contain in any given weight a greater proportion of oil; and a second instance is, that in general vegetable aliments do not fatten men so much as animal food, which generally contains a larger proportion of oil.

It will be obvious, that upon the same principles a want of food, or a less nutritious food, may not only occasion a general deficiency of fluids (1604), but must also afford less oil, to be poured into the cellular texture. In such cases, therefore, the emaciation produced,

is to be attributed to both these general causes*.

1615. A second cause of the deficiency of oil may be explained in this manner. It is pretty manifest, that the oil of the blood is secreted and deposited in the cellular texture in greater or lesser quantity, according as the circulation of the blood is faster or slower; and therefore that exercise, which hastens the circulation of the blood, is a frequent cause of emaciation. Exercise produces this effect in two ways. 1st, By increasing the perspiration, and thereby carrying off a greater quantity of the nutritious matter, it leaves less of it to be deposited in the cellular texture; thereby not only preventing an accumulation of fluids, but, as I have said

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above,

* The cure of this species of emaciation will be best effected by a rich diet of animal food.

above, causing a general deficiency of these, which must also cause a deficiency of oil in the cellular texture. 2dly, It is well known, that the oil deposited in the cellular texture is upon many occasions, and for various purposes of the œconomy, again absorbed, and mixed or diffused in the mass of blood, to be from thence perhaps carried entirely out of the body by the several excretions. Now, among other purposes of the accumulation and re-absorption of oil, this seems to be one, that the oil is requisite to the proper action of the moving fibres in every part of the body; and therefore that nature has provided for an absorption of oil to be made according as the action of the moving fibres may demand it. It will thus be obvious, that the exercise of the muscular and moving fibres every where, must occasion an absorption of oil; and consequently that such exercise not only pre-

vents the secretion of oil, as has been already said, but may also cause a deficiency of it, by occasioning an absorption of what had been deposited; and in this way, perhaps especially does it produce emaciation*.

1616. A third case of the deficiency of oil may occur from the following cause. It is probable, that one purpose of the accumulation of oil in the cellular texture of animals is, that it may, upon occasion, be again absorbed from thence, and carried into the mass of blood, for the purpose of enveloping and correcting any unusual acrimony arising and existing in the state of the fluids. Thus, in most instances in which we can discern an acrid state of the fluids, as in scurvy, cancer,

* Abstinence from too severe exercise is the only cure for this species of the disease.

cancer, syphilis, poisons, and several other diseases, we find at the same time a deficiency of oil and an emaciation take place; which, in my apprehension, must be attributed to the absorption of oil, which the presence of acrimony in the body excites.

It is not unlikely that certain poisons introduced into the body, may subsist there; and, giving occasion to an absorption of oil, may lay a foundation for the *Tabes a veneno*, Sauv. sp. 17*.

1617. A

* As this kind of emaciation proceeds from various causes, the practitioner, must, after having ascertained the true cause, endeavour to remove it; and this must be left entirely to his own sagacity. It may however be proper to observe, that several of these emaciations proceed from incurable diseases; as from Cancer, Scrophula, &c. and consequently admit of no cure: And those emaciations which proceed from scurvy, syphilis,

or

1617. A fourth case of emaciation, and which I would attribute to a sudden and considerable absorption of oil from the cellular texture, is that of fever, which so generally produces emaciation. This may perhaps be in part attributed to the increased perspiration, and therefore to the general deficiency of fluids that may be supposed to take place: but whatever share that may have in producing the effect, we can, from the evident shrinking and diminution of the cellular substance, wherever it falls under our observation, certainly conclude, that there has been a very considerable absorption of the oil which had been before deposited in that substance. This explanation is rendered the more probable from this, that I suppose the absorption mentioned

is

or those diseases which we can cure, are only to be cured by curing the primary disease.

is necessarily made for the purpose of enveloping or correcting an acrimony, which manifestly does in many, and may be suspected to arise in all, cases of fever. The most remarkable instance of emaciation occurring in fevers, is that which appears in the case of hectic fevers. Here the emaciation may be attributed to the profuse sweatings that commonly attend the disease: but there is much reason to believe, that an acrimony also is present in the blood, which, even in the beginning of the disease, prevents the secretion and accumulation of oil; and in the more advanced states of it, must occasion a more considerable absorption of it; which, from the shrinking of the cellular substance, seems to go farther than in almost any other instance*.

Upon

* This emaciation is purely symptomatic, and consequently cannot be cured but by removing the primary

Upon the subject of emaciations from a deficiency of fluids, it may be observed, that every increased evacuation excites an absorption from other parts, and particularly from the cellular texture; and it is therefore probable, that a deficiency of fluids, from increased evacuations, produces an emaciation, not only by the waste of the fluids in the vascular system, but also by occasioning a considerable absorption from the cellular texture.

1618. I have thus endeavoured to explain the several cases and causes of emaciation; but I could not prosecute the consideration of these here in the order they are set down in the Methodical Nosology. In that work I was engaged chiefly in arranging the species of Sauvages;

mary disease, and a subsequent very nutritious diet, consisting chiefly of animal food.

vages ; but it is my opinion now, that the arrangement there given is erroneous, in both combining and separating species improperly : and it seems to me more proper here to take notice of diseases, and put them together, according to the affinity of their nature, rather than by that of their external appearances. I doubt, if even the distinction of the *Tabes* and *Atrophia*, attempted in the *Nosology*, will properly apply ; as I think there are certain diseases of the same nature, which sometimes appear with, and sometimes without fever.

1619. After having considered the various cases of emaciations, I should perhaps treat of their cure : but it will readily appear that the greater part of the cases above mentioned are purely symptomatic, and consequently that the cure of them must be that of the primary diseases

diseases upon which they depend. Of those cases that can anywise be considered as idiopathic, it will appear that they are to be cured entirely by removing the remote causes; the means of accomplishing which must be sufficiently obvious.

BOOK

B O O K II,

OF

INTUMESCENTIÆ,

OR

GENERAL SWELLINGS.

1620. **T**HE swellings to be treated of
in this place are those which
extend over the whole or a great part of
the body ; or such at least, as, though of
small

small extent, are however of the same nature with those that are more generally extended.

The swellings comprehended under this artificial order, are hardly to be distinguished from one another otherwise than by the matter they contain or consist of: and in this view I have divided the order into four sections, as the swelling happens to contain, *1st*, Oil; *2d*, Air; *3d*, A watery fluid; or, *4th*, As the increased bulk depends upon the enlargement of the whole substance of certain parts, and particularly of one or more of the abdominal viscera.

C H A P. I.

O F

A D I P O S E S W E L L I N G S.

1621. **T**HE only disease to be mentioned in this chapter, I have, with other Nosologists, named *Polyfarcia*; and in English it may

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be

be named Corpulency, or, more strictly Obesity; as it is placed here upon the common supposition of its depending chiefly upon the increase of oil in the cellular texture of the body. This corpulency or obesity, is in very different degrees in different persons, and is often considerable without being considered as a disease. There is, however, a certain degree of it, which will be generally allowed to be a disease; as, for example, when it renders persons, from a difficult respiration, uneasy in themselves, and, from the inability of exercise, unfit for discharging the duties of life to others: and for that reason I have given such a disease a place here. Many physicians have considered it as an object of practice, and as giving, even in a very high degree, a disposition to many diseases; I am of opinion that it should be an object of practice more frequently than it

has

has been, and therefore that it merits our consideration here.

1622. It may perhaps be alleged, that I have not been sufficiently correct, in putting the disease of corpulency as an *intumescencia pinguidinosa*, and therefore implying its being an increase of the bulk of the body from an accumulation of oil in the cellular texture only. I am aware of this objection: and as I have already said, that emaciation (1602) depends either upon a general deficiency of fluids in the vascular system, or upon a deficiency of oil in the cellular texture; so I should perhaps have observed farther, that the corpulency, or general fulness of the body, may depend upon the fulness of the vascular system as well as upon that of the cellular texture. This is true; and from the same reasons I ought, perhaps, after Linnæus and Sagar, to have

set down plethora as a particular disease, and as an instance of morbid intumescence. I have however avoided this, as Sauvages and Vogel have done, because I apprehend that plethora is to be considered as a state of temperament only, which may indeed dispose to disease; but not as a disease in itself, unless, in the language of the Stahlians, it be a plethora commota, when it produces a disease accompanied with particular symptoms, which give occasion to its being distinguished by a different appellation. Farther, it appears to me, that the symptoms which Linnæus, and more particularly those which Sagar employs in the character of plethora, never do occur but when the intumescencia pinguidinosa has a great share in producing them. It is, however, very necessary to observe here, that plethora and obesity are generally combined together; and that in some cases

cases of corpulency it may be difficult to determine which of the causes has the greatest share in producing it. It is indeed very possible that a plethora may occur without great obesity; but I apprehend that obesity never happens to a considerable degree without producing a *plethora ad spatium* in a great part of the system of the aorta, and therefore a *plethora ad molem* in the lungs, and in the vessels of the brain.

1623. In attempting the cure of polyfarcia, I am of opinion that the conjunction of plethora and obesity, in the manner just now mentioned, should be constantly attended to; and when the morbid effects of the plethoric habit are threatened, either in the head or lungs, that blood-letting is to be practised: but at the same time it is to be observed, that persons of much obesity do not bear

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blood-letting.

blood-letting well; and when the circumstances I have mentioned do not immediately require it, the practice upon account of obesity alone, is hardly ever to be employed. The same remark is to be made with respect to any other evacuations that may be proposed for the cure of corpulency: for without the other means I am to mention, they can give but a very imperfect relief; and, in so far as they can either empty or weaken the system, they may favour the return of plethora, and the increase of obesity.

1624. Polyfarcia, or corpulency, whether it depend upon plethora or obesity, whenever it either can be considered as a disease, or threatens to induce one, is to be cured, or the effects of it are to be obviated, by diet and exercise. The diet must be sparing; or rather, what is
more

more admissible, it must be such as affords little nutritious matter. It must therefore be chiefly, or almost only, of vegetable matter, and at the very utmost of milk. Such a diet should be employed, and generally ought to precede exercise; for obesity does not easily admit of bodily exercise, which is, however, the only mode that can be very effectual. Such, indeed, in many cases, may seem difficult to be admitted; but I am of opinion, that even the most corpulent may be brought to bear it, by at first attempting it very moderately, and increasing it by degrees very slowly, but at the same time persisting in such attempts with great constancy*.

1625. As these, though the only effectual

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tual

* Besides the means mentioned by the author, evacuations of different kinds ought to be occasionally made, especially by purging and sweating.

tual measures, are often difficult to be admitted or carried into execution, some other means have been thought of and employed for reducing corpulency. These, if I mistake not, have all been certain methods of inducing a saline state in the mass of blood; for such I suppose to be the effects of vinegar and of soap, which have been proposed. The latter, I believe, hardly passes into the blood-vessels, without being resolved and formed into a neutral salt, with the acid which it meets with in the stomach. How well acrid and saline substances are fitted to diminish obesity, may appear from what has been said above in (1615). What effects vinegar, soap, or other substances employed, have had in reducing corpulency, there have not proper opportunities of observing occurred to me: but I am well persuaded, that the inducing a saline and acrid state of the blood, may

may have worse consequences than the corpulency it was intended to correct; and that no person should hazard these, while he may have recourse to the more safe and certain means of abstinence and exercise.

C H A P.

C H A P. II,

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F L A T U L E N T S W E L L I N G S .

1626. **T**HE cellular texture of the human body very readily admits of air, and allows the same to pass from any one to every other part of it.

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Hence Emphysemata have often appeared from air collected in the cellular texture under the skin, and in several other parts of the body. The flatulent swellings under the skin, have indeed most commonly appeared in consequence of air immediately introduced from without: but in some instances of flatulent swellings, especially those of the internal parts not communicating with the alimentary canal, such an introduction cannot be perceived or supposed; and therefore, in these cases, some other cause of the production and collection of air must be looked for, though it is often not to be clearly ascertained.

In every solid as well as every fluid substance which makes a part of the human body, there is a considerable quantity of air in a fixed state, which may be again restored to its elastic state, and separated from

from those substances, by the power of heat, putrefaction, and perhaps other causes: but which of these may have produced the several instances of pneumatosis and flatulent swellings that have been recorded by authors, I cannot pretend to ascertain. Indeed, upon account of these difficulties, I cannot proceed with any clearness on the general subject of pneumatosis; and therefore, with regard to flatulent swellings, I find it necessary to confine myself to the consideration of those of the abdominal region alone; which I shall now treat of under the general name of Tympanites.

1627. The tympanites is a swelling of the abdomen; in which the teguments appear to be much stretched by some distending power within, and equally stretched in every posture of the body. The swelling does not readily yield to any pressure;

pressure; and in so far as it does, very quickly recovers its former state upon the pressure being removed. Being struck, it gives a sound like a drum, or other stretched animal membranes. No fluctuation within is to be perceived; and the whole feels less weighty than might be expected from its bulk. The uneasiness of the distention is commonly relieved by the discharge of air from the alimentary canal, either upwards or downwards.

1628. These are the characters by which the tympanites may be distinguished from the ascites or physconia; and many experiments show, that the tympanites always depends upon a preternatural collection of air, somewhere within the teguments of the abdomen: but the seat of the air is in different cases somewhat different; and
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this produces the different species of the disease.

One species is, when the air collected is entirely confined within the cavity of the alimentary canal, and chiefly in that of the intestines. This species, therefore, is named the *Tympanites intestinalis*, Sauv. sp. 1. It is, of all others, the most common; and to it especially belong the characters given above.

A second species is, when the air collected is not entirely confined to the cavity of the intestines, but is also present between their coats; and such is that which is named by Sauvages *Tympanites enterophysodes*, Sauv. sp. 3. This has certainly been a rare occurrence; and has probably occurred only in consequence of the *tympanites intestinalis*, by the air escaping from the cavity of the intestines into the interstices
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of the coats. It is, however, possible that an erosion of the internal coat of the intestines may give occasion to the air, so constantly present in their cavity, to escape into the interstices of their coats, though in the whole of their cavity there has been no previous accumulation.

A third species is, when the air is collected in the sac of the peritonæum, or what is commonly called the cavity of the abdomen, that is, the space between the peritonæum and viscera; and then the disease is named *Tympanites abdominalis*, Sauv. sp. 2. The existence of such a tympanites, without any *tympanites intestinalis*, has been disputed; and it certainly has been a rare occurrence: but from several dissections, it is unquestionable that such a disease has sometimes truly occurred.

A fourth species of tympanites is, when the *tympanites intestinalis* and *abdominalis* are joined together, or take place at the same time. With respect to this, it is probable that the *tympanites intestinalis* is the primary disease; and the other, only a consequence of the air escaping, by an erosion or rupture of the coats of the intestines, from the cavity of these into that of the abdomen. It is indeed possible, that in consequence of erosion or rupture, the air which is so constantly present in the intestinal canal, may escape from thence in such quantity into the cavity of the abdomen, as to give a *tympanites abdominalis*, whilst there was no previous considerable accumulation of air in the intestinal cavity itself; but I have not facts to ascertain this matter properly.

A fifth species has also been enumerated.

ed. It is when a *tympanites abdominalis* happens to be joined with the *hydrops ascites*; and such a disease therefore is named by Sauvages *Tympanites asciticus*, Sauv. sp. 4. In most cases of tympanites, indeed, some quantity of serum has, upon dissection, been found in the sac of the peritonæum; but that is not enough to constitute the species now mentioned, and when the collection of serum is more considerable, it is commonly where, both from the causes which have preceded, and likewise from the symptoms which attend, the ascites may be considered as the primary disease; and therefore that this combination does not exhibit a proper species of the tympanites.

1629. As this last is not a proper species, and as some of the others are not only extremely rare, but even, when occurring, are neither primary, nor to be

easily distinguished, nor, as considered in themselves, admitting of any cure, I shall here take no further notice of them; confining myself, in what follows, to the consideration of the most frequent case, and almost the only object of practice, the *tympanites intestinalis*.

1630. With respect to this, I cannot perceive that it arises in any peculiar temperament, or depends upon any predisposition, which can be discerned. It occurs in either sex, at every age, and frequently in young persons.

1631. Various remote causes of it have been assigned: but many of these have not commonly the effect of producing this disease; and although some of them have been truly antecedents of it, I can in few instances discover the manner in which they produce the disease, and therefore cannot

cannot certainly ascertain them to have been causes of it.

1632. The phenomena of this disease in its several stages are the following.

The tumour of the belly sometimes grows very quickly to a considerable degree, and seldom in the slow manner the ascites commonly comes on. In some cases, however, the tympanites comes on gradually, and is introduced by an unusual flatulency of the stomach and intestines, with frequent borborygmi, and an uncommonly frequent expulsion of air upwards and downwards. This state is also frequently attended with colic pains, especially felt about the navel, and upon the sides towards the back; but generally as the disease advances; these pains become less considerable. As the disease advances, there is a pretty constant desire to

discharge air, but it is accomplished with difficulty: and when obtained, although it gives some relief from the sense of distention, this relief is commonly transient and of short duration. While the disease is coming on, some inequality of tumor and tension may be perceived in different parts of the belly; but the distention soon becomes equal over the whole, and exhibits the phenomena mentioned in the character. Upon the first coming on of the disease, as well as during its progress, the belly is bound, and the fæces discharged are commonly hard and dry. The urine, at the beginning, is usually very little changed in quantity or quality from its natural state: but as the disease continues, it is commonly changed in both respects; and at length sometimes a stranguary, and even an ischuria, comes on. The disease has seldom advanced far, before the appetite is much impaired, and

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digestion

digestion ill performed; and the whole body, except the belly, becomes considerably emaciated. Together with these symptoms, a thirst and uneasy sense of heat at length comes on, and a considerable frequency of pulse occurs, which continues throughout the course of the disease. When the tumor of the belly arises to a considerable bulk, the breathing becomes very difficult, with a frequent dry cough. With all these symptoms the strength of the patient declines; and the febrile symptoms daily increasing, death at length ensues, sometimes probably in consequence of a gangrene coming upon the intestines.

1633. The tympanites is commonly of some duration, and to be reckoned a chronic disease. It is very seldom quickly fatal, except where such an affection suddenly arises in fevers. To this Sauvages

has properly given a different appellation, that of *Meteorismus*; and I judge it may always be considered as a symptomatic affection, entirely distinct from the tympanites we are now considering.

1634. The tympanites is generally a fatal disease, seldom admitting of cure; but what may be attempted in this way, I shall try to point out, after I shall have endeavoured to explain the proximate cause, which alone can lay the foundation of what may be rationally attempted towards its cure.

1635. To ascertain the proximate cause of tympanites, is somewhat difficult. It has been supposed in many cases, to be merely an uncommon quantity of air present in the alimentary canal, owing to the extrication and detachment of a greater quantity of air than usual from the alimentary

mentary matters taken in. Our vegetable aliments, I believe, always undergo some degree of fermentation; and in consequence, a quantity of air is extricated and detached from them in the stomach and intestines: but it appears, that the mixture of the animal fluids which our aliments meet with in the alimentary canal, prevents the same quantity of air from being detached from them that would have been in their fermentation without such mixture; and it is probable that the same mixture contributes also to the reabsorption of the air that had been before in some measure detached. The extrication, therefore, of an unusual quantity of air from the aliments, may, in certain circumstances, be such, perhaps, as to produce a tympanites; so that this disease may depend upon a fault of the digestive fluids, whereby they are unfit to prevent the too copious extrication of air,

and unfit also to occasion that reabsorption of air which in sound persons commonly happens. An unusual quantity of air in the alimentary canal, whether owing to the nature of the aliments taken in, or to the fault of the digestive fluid, does certainly sometimes take place; and may possibly have, and in some measure certainly has, a share in producing certain flatulent disorders of the alimentary canal; but cannot be supposed to produce the tympanites, which often occurs when no previous disorder had appeared in the system. Even in those cases of tympanites which are attended at their beginning with flatulent disorders in the whole of the alimentary canal, as we know that a firm tone of the intestines both moderates the extrication of air, and contributes to its reabsorption or ready expulsion, so the flatulent symptoms which happen to appear at the coming on of a tympanites, are, in my opinion,

opinion, to be referred to a loss of tone in the muscular fibres of the intestines, rather than to any fault in the digestive fluids.

1636. These, and other considerations, lead me to conclude, that the chief part of the proximate cause of tympanites, is a loss of tone in the muscular fibres of the intestines. But further, as air of any kind accumulated in the cavity of the intestines should even by its own elasticity, find its way either upwards or downwards, and should also, by the assistance of inspiration, be entirely thrown out of the body; so, when neither the reabsorption nor the expulsion takes place, and the air is accumulated so as to produce tympanites, it is probable that the passage of the air along the course of the intestines is in some places of these interrupted. This interruption, however, can hardly
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be supposed to proceed from any other cause than spasmodic constrictions in certain parts of the canal; and I conclude, therefore, that such constrictions concur as part in the proximate cause of tympanites. Whether these spasmodic constrictions are to be attributed to the remote cause of the disease, or may be considered as the consequence of some degree of atony first arising, I cannot with certainty, and do not find it necessary to determine.

1637. Having thus endeavoured to ascertain the proximate cause of tympanites, I proceed to treat of its cure; which indeed has seldom succeeded, and almost never but in a recent disease. I must however, endeavour to say what may be reasonably attempted; what has commonly been attempted; and what attempts

tempts have sometimes succeeded in the cure of this disease.

1638. It must be a first indication to evacuate the air accumulated in the intestines: and for this purpose it is necessary that those constrictions, which had especially occasioned its accumulation, and continue to interrupt its passage along the course of the intestines should be removed. As these, however, can hardly be removed but by exciting the peristaltic motion in the adjoining portions of the intestines, purgatives have been commonly employed; but it is at the same time agreed, that the more gentle laxatives only ought to be employed, as the more drastic, in the overstretched and tense state of the intestines, are in danger of bringing on inflammation.

It is for this reason, also, that glysters
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have been frequently employed; and they are the more necessary, as the fæces collected are generally found to be in a hard and dry state. Not only upon account of this state of the fæces, but, farther, when glysters produce a considerable evacuation of air, and thus shew that they have some effect in relaxing the spasms of the intestines, they ought to be repeated very frequently.

1639. In order to take off the constrictions of the intestines, and with some view also to the carminative effects of the medicines, various antispasmodics have been proposed, and commonly employed; but their effects are seldom considerable, and it is alleged that their heating and inflammatory powers have sometimes been hurtful. It is, however, always proper to join some of the milder kinds with both the purgatives and glysters

sters that are employed* ; and it has been very properly advised to give always the chief of antispasmodics, that is, an opiate, after the operation of purgatives is finished.

1640. In consideration of the overstretched, tense, and dry state of the intestines, and especially of the spasmodic constrictions that prevail, fomentations and warm bathing have been proposed as

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* The antispasmodics that are to be joined with purgatives ought to be essential oils, especially the essential oils of umbelliferous plants, as oil of aniseed, oil of carui, &c. and their dose ought to be moderate. In many cases, they may be used in repeated small doses by themselves on a piece of sugar. The dose of the ol. anisi ought not to exceed ten or twelve drops, nor of the ol. carui five drops; larger doses are too heating. It may be proper also to observe, that the essential oils of the verticillated plants, as mint, marjoram, thyme, &c. are much too heating, and much more so those of the aromatics, as cloves, cinnamon, &c.

a remedy ; and are said to have been employed with advantage : but it has been remarked, that very warm baths have not been found so useful as tepid baths long continued.

1641. Upon the supposition that this disease depends especially upon an atony of the alimentary canal, tonic remedies seem to be properly indicated. Accordingly chalybeates, and various bitters, have been employed : and, if any atonic *, the Peruvian bark might probably be useful.

1642. But as no tonic remedy is more powerful than cold applied to the surface of the body, and cold drink thrown into the

* The author here surely meant to say tonic ; and atonic seems to be a typographical error ; but it was so printed in the last edition published before his death.

the stomach; so such a remedy has been thought of in this disease. Cold drink has been constantly prescribed, and cold bathing has been employed with advantage; and there have been several instances of the disease being suddenly and entirely cured by the repeated application of snow to the lower belly.

1643. It is hardly necessary to remark, that, in the diet of tympanitic persons, all sorts of food ready to become flatulent in the stomach are to be avoided: and it is probable that the fossil acids and neutral salts, as antiyzmics, may be useful*.

1644. In obstinate and desperate cases of tympanites, the operation of the paracentesis

* The fossil acids are undoubtedly very powerful in resisting fermentation; and if the air in the intestines is produced by fermentation, they are consequently highly useful.

centesis has been proposed: but it is a very doubtful remedy, and there is hardly any testimony of its having been practised with success. It must be obvious, that this operation is a remedy suited especially, and almost only to the *tympanites abdominalis*; the existence of which, separately from the *intestinalis*, is very doubtful, at least not easily ascertained. Even if its existence could be ascertained, yet it is not very likely to be cured by this remedy: and how far the operation might be safe in the *tympanites intestinalis*, is not yet determined by any proper experience.

C H A P.

C H A P. III.

O F

W A T E R Y S W E L L I N G S,

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D R O P S I E S.

1645. **A** PRETERNATURAL collection of serous or watery fluids, is often formed in different parts of the human body; and although the disease

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thence arising be distinguished according to the different parts which it occupies, yet the whole of such collections come under the general appellations of Dropsies. At the same time, although the particular instances of such collection are to be distinguished from each other according to the parts they occupy, as well as by other circumstances attending them; yet all of them seem to depend upon some general causes, very much in common to the whole. Before proceeding, therefore, to consider the several species, it may be proper to endeavour to assign the general causes of dropsy.

1646. In persons in health, a serous or watery fluid seems to be constantly poured out, or exhaled in vapour, into every cavity and interstice of the human body capable of receiving it; and the same fluid, without remaining long or being accumulated

mulated in these spaces, seems constantly to be soon again absorbed from thence by vessels adapted to the purpose. From this view of the animal œconomy, it will be obvious, that if the quantity poured out into any space happens to be greater than the absorbents can at the same time take up, an unusual accumulation of serous fluid will be made in such parts; or though the quantity poured out be not more than usual, yet if the absorption be any wise interrupted or diminished, from this cause also an unusual collection of fluids may be occasioned.

Thus, in general, dropfy may be imputed to an increased effusion, or to a diminished absorption; and I therefore proceed to inquire into the several causes of these.

1647. An increased effusion may hap-

pen, either from a preternatural increase of the ordinary exhalation, or from the rupture of vessels carrying, or of sacs containing, ferous or watery fluids.

1648. The ordinary exhalation may be increased by various causes, and particularly by an interruption given to the free return of the venous blood from the extreme vessels of the body to the right ventricle of the heart. This interruption seems to operate by resisting the free passage of the blood from the arteries into the veins, thereby increasing the force of the arterial fluids in the exhalants, and consequently the quantity of fluid which they pour out.

1649. The interruption of the free return of the venous blood from the extreme vessels, may be owing to certain circumstances affecting the course of the

venous blood; very frequently to certain conditions in the right ventricle of the heart itself, preventing it from receiving the usual quantity of blood from the vena cava; or to obstructions in the vessels of the lungs preventing the entire evacuation of the right ventricle, and hereby hindering its receiving the usual quantity of blood from the cava. Thus, a polypus in the right ventricle of the heart, and the ossification of its valves, as well as all considerable and permanent obstructions of the lungs, have been found to be causes of dropsy.

1650. It may serve as an illustration of the operation of these general causes, to remark, that the return of the venous blood is in some measure resisted when the posture of the body is such as gives occasion to the gravity of the blood to oppose the motion of it in the veins,

which takes effect when the force of the circulation is weak; and from whence it is that an upright posture of the body produces or increases serous swellings in the lower extremities.

1651. Not only those causes interrupting the motion of the venous blood more generally, but, farther, the interruption of it in particular veins, may likewise have the effect of increasing exhalation, and producing dropsy. The most remarkable instance of this is, when considerable obstructions of the liver prevent the blood from flowing freely into it from the vena portarum and its numerous branches; and hence these obstructions are a frequent cause of dropsy.

1652. Schirrosities of the spleen and other viscera, as well as the schirrosity of the liver, have been considered as causes
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of dropfy; but the manner; in which they can produce the difeafe, I do not perceive, except it may be where they happen to be near fome confiderable vein, by the compreffion of which they may occafion fome degree of afcites; or, by compreffing the vena cava may produce an anafarca of the lower extremities. It is indeed true, that fchirrofities of the fpleen and other viscera, have been frequently difcovered in the bodies of hydropic perfons; but I believe that they have been feldom found, unlefs when fchirrofities of the liver were alfo prefent; and I am inclined to think, that the former have been the effects of the latter, rather than the caufe of the dropfy; or that, if fchirrofities of the other viscera have appeared in hydropic bodies when that of the liver was not prefent, they muft have been the effects of fome of thofe caufes of dropfy to be hereafter mention-

ed; and consequently to be the accidental attendants, rather than the causes, of such dropsies.

1653. Even in smaller portions of the venous system, the interruption of the motion of the blood in particular veins has had the same effect. Thus a polypus formed in the cavity of a vein, or tumours formed in its coats, preventing the free passage of the blood through it, have had the effect of producing dropsy in parts towards the extremity of such veins.

1654. But the cause most frequently interrupting the motion of the blood through the veins is, the compression of tumours existing near to them; such as aneurisms in the arteries, abscesses, and schirrhous or steatomatous tumours in the adjoining parts.

To this head may be referred the compression of the descending cava by the bulk of the uterus in pregnant women, and the compression of the same by the bulk of water in the ascites; both of which compressions frequently produce serous swellings in the lower extremities.

1655. It may be supposed that a general preternatural plethora of the venous system may have the effect of increasing exhalation; and that this plethora may happen from the suppression of fluxes, or evacuations of blood, which had for some time taken place in the body, such as the menstrual and hæmorrhoidal fluxes. A dropfy, however, from such a cause, has been at least a rare occurrence; and when it seems to have happened, I should suppose it owing to the same causes as the
_suppression

suppression itself, rather than to the plethora produced by it.

1656. One of the most frequent causes of an increased exhalation, I apprehend to be the laxity of the exhalant vessels. That such a cause may operate, appears probable from this, that paralytic limbs, in which such a laxity is to be suspected, are frequently affected with serous, or, as they are called œdematous swellings.

But a much more remarkable and frequent example of its operation occurs in the case of a general debility of the system, which is so often attended with dropsy. That a general debility does induce dropsy, appears sufficiently from its being so commonly the consequence of powerfully debilitating causes; such as fevers, either of the continued or intermittent kind, which have lasted long; long-con-

tinued and somewhat excessive evacuations of any kind.; and, in short, almost all diseases that have been of long continuance, and have at the same time induced the other symptoms of a general debility.

Among other causes inducing a general debility of the system, and thereby dropsy, there is one to be mentioned as frequently occurring, and that is intemperance in the use of intoxicating liquors; from whence it is that drunkards of all kinds, and especially dram-drinkers, are so affected with this disease.

1657. That a general debility may produce a laxity of the exhalants, will be readily allowed; and that by this especially it occasions dropsy, I judge from thence, that while most of the causes already mentioned are suited to produce dropsies of particular parts only, the state of general debility

debility gives rise to an increased exhalation into every cavity and interstice of the body, and therefore brings on a general disease. Thus, we have seen effusions of a ferous fluid made, at the same time, into the cavity of the cranium, into that of the thorax and of the abdomen, and likewise into the cellular texture almost over the whole of the body. In such cases, the operation of a general cause discovered itself, by these several dropsies increasing in one part as they diminished in another, and this alternately in the different parts. This combination, therefore, of the different species of dropsy, or rather, as it may be termed, this universal dropsy, must, I think, be referred to a general cause; and in most instances, hardly any other can be thought of, but a general laxity of the exhalants. It is this, therefore, that I call the *hydropic diathesis*; which frequently operates by itself;

itself; and frequently, in some measure, concurring with other causes, is especially that which gives them their full effect.

This state of the system, in its first appearance, seems to be what has been considered as a particular disease under the name of *Cachexy*; but in every instance of it that has occurred to me, I have always considered, and have always found, it to be the beginning of general dropsy.

1658. The several causes of dropsy already mentioned may produce the disease, although there be no preternatural abundance of serous or watery fluid in the blood-vessels; but it is now to be remarked, that a preternatural abundance of that kind may often give occasion to the disease, and more especially when such abundance

dance concurs with the causes above enumerated.

One cause of such preternatural abundance may be an unusual quantity of water taken into the body. Thus an unusual quantity of water taken in by drinking, has sometimes occasioned a dropsy. Large quantities of water, it is true, are upon many occasions taken in; and being as readily thrown out again by stool, urine, or perspiration, have not produced any disease. But it is also certain, that, upon some occasions, an unusual quantity of watery liquors taken in has run off by the several internal exhalants, and produced a dropsy. This seems to have happened, either from the excretories not being fitted to throw out the fluid so fast as it had been taken in, or from the excretories having been obstructed by accidentally concurring causes. Accordingly

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it is said, that the sudden taking in of a large quantity of very cold water, has produced dropsy, probably from the cold producing a constriction of the excretories.

The proportion of watery fluid in the blood may be increased, not only by the taking in a large quantity of water by drinking, as now mentioned, but it is possible that it may be increased also by water taken in from the atmosphere by the skin in an absorbing or imbibing state. It is well known that the skin may be, at least, occasionally in such a state; and it is probable, that in many cases of beginning dropsy, when the circulation of the blood on the surface of the body is very languid, that the skin may be changed from a perspiring to an imbibing state; and thus, at least, the disease may be very much increased.

1659. A second cause of a preternatural abundance of watery fluids in the blood-vessels, may be, an interruption of the ordinary watery excretions; and accordingly it is alleged, that persons much exposed to a cold and moist air are liable to dropsy. It is also said, that an interruption, or considerable diminution, of the urinary secretion, has produced the disease: and it is certain, that in the case of an *ischuria renalis*, the serosity retained in the blood-vessels has been poured out into some internal cavities, and has occasioned dropsy.

1660. A third cause, of an over-proportion of serous fluid in the blood ready to run off by the exhalants, has been very large evacuations of blood, either spontaneous or artificial. These evacuations, by abstracting a large proportion of red globules and gluten, which are the principal

cipal means of retaining serum in the red vessels, allow the serum to run off more readily by the exhalants; and hence drop-fies have been frequently the consequence of such evacuations.

It is possible also, that large and long-continued issues, by abstracting a large proportion of gluten, may have the same effect.

An over proportion of the serous parts of the blood may not only be owing to the *spoliation* just now mentioned, but may, I apprehend, be likewise owing to a fault in the digesting and assimilating powers in the stomach and other organs; whereby they do not prepare and convert the aliments taken in, in such a manner, as to produce from them the due proportion of red globules and gluten; but still continuing to supply the watery parts, occa-

sion these to be in an over-proportion, and consequently ready to run off in too large quantity by the exhalants. It is in this manner that we explain the dropsy, so often attending chlorosis: which appears always at first by a pale colour of the whole body, showing a manifest deficiency of red blood; which in that disease can only be attributed to an imperfect digestion and assimilation.

Whether a like imperfection takes place in what has been called a *Cachexy*, I dare not determine. This disease indeed has been commonly and very evidently owing to the general causes of debility above mentioned: and it being probable that the general debility may affect the organs of digestion and assimilation; so the imperfect state of these functions, occasioning a deficiency of red globules and gluten,

ten, may often occur with the laxity of the exhalants in producing dropsy.

1661. These are the several causes of increased exhalation, which I have mentioned as the chief cause of the effusion producing dropsy; but I have likewise observed in 1647, that with the same effect, an effusion may also be made by the rupture of vessels carrying watery fluids.

In this way, a rupture of the thoracic duct, has given occasion to an effusion of chyle and lymph into the cavity of the thorax; and a rupture of the lacteals has occasioned a like effusion into the cavity of the abdomen; and in either case, a dropsy has been produced.

It is sufficiently probable, that a rupture of lymphatics, in consequence of

strains, or the violent compression of neighbouring muscles, has occasioned an effusion; which being diffused in the cellular texture, has produced dropsy.

It belongs to this head of causes, to remark, that there are many instances of a rupture or erosion of the kidneys, ureters, and bladder of urine; whereby the urine has been poured into the cavity of the abdomen, and produced an ascites.

1662. Upon this subject, of the rupture of vessels carrying, or of vesicles containing, watery fluids, I must observe, that the dissection of dead bodies has often shown vesicles formed upon the surface of many of the internal parts; and it has been supposed, that the rupture of such vesicles, commonly named *Hydatides*, together with their continuing to pour out a watery fluid, has been frequently the
cause

cause of dropfy. I cannot deny the possibility of fuch a cause, but suspect the matter must be explained in a different manner.

There have been frequently found, in almost every different part of animal bodies, collections of spherical vesicles, containing a watery fluid; and in many cases of supposed dropfy, particularly in those called the preternatural encysted dropfies, the swelling has been entirely owing to a collection of such hydatides. Many conjectures have been formed with regard to the nature and production of these vesicles; but the matter at last seems to be ascertained. It seems to be certain, that each of these vesicles has within it, or annexed to it, a living animal of the worm kind; which seems to have the power of forming a vesicle for the purpose of its own œconomy, and of

filling it with a watery fluid drawn from the neighbouring parts: and this animal has therefore been properly named by late naturalists, the *Tænia hydatigena*. The origin and œconomy of this animal, or an account of the several parts of the human body which it occupies, I cannot prosecute further here; but it was proper for me, in delivering the causes of dropsy, to say thus much of hydatides: and I must conclude with observing, I am well persuaded, that most of the instances of preternatural encysted dropsies which have appeared in many different parts of the human body, have been truly collections of such hydatides; but how the swellings occasioned by these are to be distinguished from other species of dropsy, or how they are to be treated in practice, I cannot at present determine.

1663. After having mentioned these,

I return to consider the other general cause of dropfy, which I have said in 1646, may be, An interruption or diminution of the absorption that should take up the exhaled fluids from the several cavities and interstices of the body; the causes of which interruption, however, are not easily ascertained.

1664. It seems probable, that absorption may be diminished, and even cease altogether, from a loss of tone in the absorbent extremities of the lymphatics, I cannot indeed doubt that a certain degree of tone or active power is necessary in these absorbent extremities; and it appears probable, that the same general debility which produces that laxity of the exhalant vessels, wherein I have supposed the hydropic diathesis to consist, will at the same time occasion a loss of tone in the absorbents; and therefore that a

laxity of the exhalants will generally be accompanied with a loss of tone in the absorbents; and that this will have a share in the production of dropsy. Indeed it is probable that the diminution of absorption has a considerable share in the matter; as dropsies are often cured by medicines which seem to operate by exciting the action of the absorbents.

1665. It has been supposed, that the absorption performed by the extremities of lymphatics may be interrupted by an obstruction of these vessels, or at least of the conglobate glands through which these vessels pass. This, however, is very doubtful. As the lymphatics have branches frequently communicating with one another, it is not probable that the obstruction of any one, or even several of these can have any considerable effect
in

in interrupting the absorption of their extremities.

And for the same reason, it is as little probable that the obstruction of conglomerate glands can have such an effect: at least it is only an obstruction of the glands of the mesentery, through which so considerable a portion of the lymph passes, that can possibly have the effect of interrupting absorption. But even this we should not readily suppose, there being reason to believe that these glands, even in a considerable tumefied state, are not entirely obstructed: And accordingly I have known several instances of the most part of the mesenteric glands being considerably tumefied, without either interrupting the transmission of fluids to the blood-vessels, or occasioning any drop-sy.

An

An hydropic swelling, indeed, seems often to affect the arm from a tumor of the axillary gland; but it seems to me doubtful, whether the tumor of the arm may not be owing to some compression of the axillary vein rather than to an obstruction of the lymphatics.

1666. A particular interruption of absorption may be supposed to take place in the brain. As no lymphatic vessels have yet very certainly been discovered in that organ, it may be thought that the absorption, which certainly takes place there, is performed by the extremities of veins, or by vessels that carry the fluid directly into the veins; so that any impediment to the free motion of the blood in the veins of the brain, may interrupt the absorption there, and occasion that accumulation of serous fluid which so frequently occurs from a congestion
of

of blood in these veins. But I give all this as a matter of conjecture only.

1667. Having thus explained the general causes of dropfy, I should proceed, in the next place, to mention the several parts of the body in which serous collections take place, and so to mark the different species of dropfy: but I do not think it necessary for me to enter into any minute detail upon this subject. In many cases these collections are not to be ascertained by any external symptoms, and therefore cannot be the objects of practice; and many of them, though in some measure discernible, do not seem to be curable by our art. I the more especially avoid mentioning very particularly the several species, because that has already been sufficiently done by Dr D. Monro and other writers, in every body's hands. I
must

must confine myself here to the consideration of those species which are the most frequently occurring and the most common objects of our practice; which are, the Anasarca, Hydrothorax, and Ascites; and each of these I shall treat of in so many separate sections.

SECT.

S E C T. I.

O F

A N A S A R C A.

1668. THE Anasarca is a swelling upon the surface of the body, at first commonly appearing in particular parts only, but at length frequently appearing over the whole.

whole. So far as it extends, it is an uniform swelling over the whole member, at first always soft, and readily receiving the pressure of the finger, which forms a hollow that remains for some little time after the pressure is removed, but at length rises again to its former fulness. This swelling generally appears, first, upon the lower extremities; and there too only in the evening, disappearing again in the morning. It is usually more considerable as the person has been more in an erect posture during the day; but there are many instances of the exercise of walking preventing altogether its otherwise usual coming on. Although this swelling appears at first only upon the feet and about the ankles; yet if the causes producing it continue to act, it gradually extends upwards, occupying the legs, thighs, and trunk of the body, and sometimes even the head. Commonly the swelling of the lower extremities

tremities diminishes during the night; and in the morning, the swelling of the face is most considerable, which again generally disappears almost entirely in the course of the day.

1669. The terms of *Anasarca* and *Leucophlegmatia* have been commonly considered as synonymous; but some authors have proposed to consider them as denoting distinct diseases. The authors who are of this last opinion employ the name of *Anasarca* for that disease which begins in the lower extremities, and is from thence gradually extended upwards in the manner I have just now described; while they term *Leucophlegmatia*, that in which the same kind of swelling appears even at first very generally over the whole body. They seem to think also, that the two diseases proceed from different causes; and that, while the anasarca may arise

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from the several causes in 1648, 1659, the leucophlegmatia proceeds especially from a deficiency of red blood, as we have mentioned in 1660, *et seq.* I cannot, however, find any proper foundation for this distinction. For although in dropfies proceeding from the causes mentioned in 1660, *et seq.* the disease appears in some cases more immediately affecting the whole body; yet that does not establish a difference from the common case of anasarca: for the disease, in all its circumstances, comes at length to be entirely the same; and in cases occasioned by a deficiency of red blood, I have frequently observed it to come on exactly in the manner of anasarca, as above described.

1670. An *anasarca* is evidently a preternatural collection of serous fluid in the cellular texture immediately under the skin. Sometimes pervading the skin itself,

self, it oozes out through the pores of the cuticle; and sometimes, too gross to pass by these, it raises the cuticle in blisters. Sometimes the skin, not allowing the water to pervade it, is compressed and hardened, and at the same time so much distended, as to give anasarcaous tumours an unusual firmness. It is in these last circumstances also that an erythematic inflammation is ready to come upon anasarcaous swellings.

1671. An anasarca may immediately arise from any of the several causes of dropsy, which act more generally upon the system: and even when other species of dropsy, from particular circumstances, appear first; yet, whenever these proceed from any causes more generally affecting the system, an anasarca sooner or later comes always to be joined with them.

1672. The manner in which this disease commonly first appears, will be readily explained by what I have said in 1650, respecting the effects of the posture of the body. Its gradual progress, and its affecting, after some time, not only the cellular texture under the skin, but probably also much of the same texture in the internal parts, will be understood partly from the communication that is readily made between the several parts of the cellular texture: but especially from the same general causes of the disease producing their effects in every part of the body. It appears to me, that the water of anasarcaous swellings is more readily communicated to the cavity of the thorax, and to the lungs, than to the cavity of the abdomen, or to the viscera contained in it.

1673. An

1673. An anasarca is almost always attended with a scarcity of urine; and the urine voided, is, from its scarcity, always of a high colour; and, from the same cause, after cooling, readily lets fall a copious reddish sediment. This scarcity of urine may sometimes be owing to an obstruction of the kidneys; but probably is generally occasioned by the watery parts of the blood running off into the cellular texture, and being thereby prevented from passing in the usual quantity to the kidneys.

The disease is also generally attended with an unusual degree of thirst; a circumstance I would attribute to a like abstraction of fluid from the tongue and fauces, which are extremely sensible to every diminution of the fluid in these parts.

1674. The cure of anasarca is to be attempted upon three general indications.

1. The removing the remote causes of the disease.

2. The evacuation of the serous fluid already collected in the cellular texture.

3. The restoring the tone of the system, the loss of which may be considered in many cases as the proximate cause of the disease.

1675. The remote causes are very often such as had not only been applied, but had also been removed*, long before the
disease

* These are large evacuations of different kinds, but especially

disease came on. Although, therefore, their effects remain, the causes themselves cannot be the object of practice; but if the causes still continue to be applied, such as intemperance, indolence, and some others, they must be removed. For the most part, the remote causes are certain diseases, previous to the dropsy, which are to be cured by the remedies particularly adapted to them, and cannot be treated of here. The curing of these, indeed, may be often difficult; but it was proper to lay down the present indication, in order to show, that when these remote causes cannot be removed, the cure of the dropsy must be difficult, or perhaps impossible. In many cases, therefore, the following indications will be to little purpose: and particularly, that often the

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execution

especially hæmorrhagies, which have ceased before the dropsy came on.

execution of the second will not only give the patient a great deal of fruitless trouble, but commonly also hurry on his fate.

1676. The second indication for evacuating the collected serum, may be sometimes executed with advantage, and often, at least, with temporary relief. It may be performed in two ways. First, by drawing off the water directly from the dropfical part, by openings made into it for that purpose: Or, secondly, by exciting certain serous excretions; in consequence of which, an absorption may be excited in the dropfical parts, and thereby the serum absorbed and carried into the blood-vessels, may be afterwards directed to run out, or may spontaneously pass out, by one or other of the common excretions.

1677. In

1677. In an anasarca, the openings into the dropfical part are commonly to be made in some part of the lower extremities; and will be most properly made by many small punctures reaching the cellular texture. Formerly, considerable incisions were employed for this purpose: but as any wound made in dropfical parts, which, in order to their healing, must necessarily inflame and suppurate, are liable* to become gangrenous; so it is found to be much safer to make the openings by small punctures only, which may heal up by the first intention. At the same time even with respect to these punctures, it is proper to observe, that they should be made at some distance from one another, and that care

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should

* Peculiarly liable in this disease on account of the diminished tone and consequently the diminished strength of the parts.

should be taken to avoid them in the most depending parts.

1678. The water of anasarcaous limbs may be, sometimes drawn off by peaiſſues, made by caustic a little below the knees: for as the great swelling of the lower extremities is chiefly occasioned by the serous fluid exhaled into the upper parts constantly falling down to the lower: so the issues now mentioned, by evacuating the water from the upper parts, may very much relieve the whole of the disease. Unless, however, the issues be put in before the disease is far advanced, and before the parts have very much lost their tone, the places of the issues are ready to become affected with gangrene.

Some practical writers have advised the employment of setons for the same
purpose

purpose that I have proposed issues; but I apprehend, that setons will be more liable than issues to the accident just now mentioned.

1679. For the purpose of drawing out serum from anasarcaous limbs, blisters have been applied to them, and sometimes with great success; but the blistered parts are ready to have a gangrene come upon them. Blistering is therefore to be employed with great caution; and perhaps only in the circumstances that I have mentioned above to be fit for the employment of issues.

168c. Colewort-leaves applied to the skin, readily occasion a watery exudation from its surface; and applied to the feet and legs affected with anasarca, have sometimes drawn off the water very copiously, and with great advantage.

Analagous,

Analagous, as I judge, to this, oiled silk-hose put upon the feet and legs, so as to shut out all communication with the external air, have been found sometimes to draw a quantity of water from the pores of the skin, and are said in this way to have relieved anasarcaous swellings: but in several trials made, I have never found either the application of these hose, or that of the colewort-leaves, of much service*.

1681. The 2d means proposed in 1676. for drawing off the water from dropical places, may be the employment of emetics, purgatives, diuretics, or sudorifics.

1682. As spontaneous vomiting has
sometimes

* How does this last agree with the first sentence of this article?

sometimes excited an absorption in hydropic parts, and thereby drawn off the waters lodged in them, it is reasonable to suppose that vomiting excited by art may have the same effect; and accordingly it has been often practised with advantage. The practice, however, requires that the strong antimonial emetics be employed, and that they be repeated frequently after short intervals.

1683. Patients submit more readily to the use of purgatives, than to that of emetics; and indeed they commonly bear the former more easily than the latter. At the same time, there are no means we can employ to procure a copious evacuation of a ferous fluid with greater certainty than the operation of purgatives, and it is upon these accounts that purging is the evacuation which has been most frequently, and perhaps

perhaps with most success, employed in dropfy. It has generally been found necessary to employ purgatives of the more drastic kind; which are commonly known, and need not be enumerated here *, I believe, indeed, that the more
drastic

* The Drastic purgatives are Jalap, Colocynth, Gamboge, Scammony, &c. Their drastic quality however depends very much on the dose in which they are given, small doses being gently laxative, while large ones are very violent in their operation. They ought seldom to be given alone, but in conjunction with some aromatic, which greatly increases their action, and at the same time prevents the uneasiness of griping, with which their operation is frequently attended: most of these drastics being resinous substances, they are difficultly soluble in the alimentary canal, or if reduced to a powder they are liable to concrete; in either case, their action is impeded. To remedy these inconveniences, it is usual to add to them some salt, which both divides the resin and prevents its concretion; and consequently increases its action. For these reasons, we find in the shops many formulæ, in which the drastic
resins

draftic purgatives are the moft effectual for exciting abforption, as their ftimulus is moft readily communicated
to

refins are mixed with either falts or aromatics, or both: As, the Pulvis Aloeticus, Pulvis e Scammonio compofitus, Pulvis e Scammonio cum Aloe, Pulvis e fenna compofitus, and Electuarium e Scammonio of the London Pharmacopœia; and the Pulvis Jalappæ compofitus, Pulvis Scammonii compofitus, Pilulæ Aloeticæ, Pilulæ Aloes cum colocynthide, and Pilulæ Aloes cum myrrh. of the Edinburgh Pharmacopœia.

Any of the foregoing compofitions, if given in fufficient dofes, are very active and brisk purges. Many more might be contrived, and on fome occafions may be neceffary. For procuring a brisk difcharge of fluids, an addition of Calomel is remarkably efficacious as in the following formula:

R. Scammon.

Calomel.

Crem. Tart.

Zinzib āā. p. æ.

M. f. pulv.

to the other parts of the system; but of late an opinion has prevailed, that some milder purgatives may be employed with advantage. This opinion has prevailed particularly with regard to the crystals vulgarly called the Cream of Tartar, which in large doses, frequently repeated, have sometimes answered the purpose of exciting large evacuations both by stool and urine, and has thereby cured dropsies. This medicine, however, has frequently failed, both in its operation and effects, when the drastic purgatives have been more successful.

Practitioners have long ago observed, that, in the employment of purgatives,
it

The dose of this powder is two scruples or a drachm: it is extremely active and ought to be used with care, the patients being kept moderately warm, and drinking some thin mucilaginous liquor during its operation.

it is requisite they be repeated after as short intervals as the patient can bear; probably for this reason; that when the purging is not carried to the degree of soon exciting an absorption, the evacuation weakens the system, and thereby increases the afflux of fluids to the hydropic parts.

1684. The kidneys afford a natural outlet for a great part of the watery fluids contained in the blood-veffels; and the increasing the excretion by the kidneys to a considerable degree, is a means as likely as any other of exciting an absorption in dropfical parts. It is upon this account that diuretic medicines have been always properly employed in the cure of dropfy. The various diuretics that may be employed, are enumerated in every treatise of the Materia Medica and of the Practice of Phyfic, and therefore need not
be

be repeated here. It happens, however, unluckily, that none of them are of very certain operation ; neither is it well known why they sometimes succeed, and why they so often fail ; nor why one medicine should prove of service when another does not. It has been generally the fault of writers upon the Practice of Physic, that they give us instances of cases in which certain medicines have proved very efficacious, but neglect to tell us in how many other instances the same have failed.

1685. It deserves to be particularly observed here, that there is hardly any diuretic more certainly powerful than a large quantity of common water taken in by drinking. I have indeed observed above in 1658, that a large quantity of water, or of watery liquors, taken in by drinking, has sometimes proved a cause

of dropſy; and practitioners have been formerly ſo much afraid that watery liquors taken in by drinking might run off into dropſical places and increaſe the diſeaſe, that they have generally enjoined, the abſtaining as much as poſſible, from ſuch liquors. Nay it has been further aſſerted, that by avoiding this ſupply of exhalation, and by a total abſtinance from drink, dropſies have been entirely cured. What concluſion is to be drawn from theſe facts is, however, very doubtful. A dropſy ariſing from a large quantity of liquids taken in to the body has been a very rare occurrence; and there are, on the other hand, innumerable inſtances of very large quantities of water having been taken in, and running off again very quickly by ſtool and urine, without producing any degree of dropſy. With reſpect to the total abſtinance from drink, it is a practice of the moſt dif-

ficult execution; and therefore has been so seldom practised, that we cannot possibly know how far it might prove effectual. The practice of giving drink very sparingly, has indeed been often employed: but in an hundred instances I have seen it carried to a great length, without any manifest advantage; while, on the contrary, the practice of giving drink very largely has been found not only safe, but very often effectual in curing the disease. The ingenious and learned Dr. Millman has, in my opinion, been commendably employed in restoring the practice of giving large quantities of watery liquors for the cure of dropsy. Not only from the instances he mentions from his own practice, and from that of several eminent physicians in other parts of Europe, but also from many instances in the records of physic, of the good effects of drinking large quantities of
mineral

mineral waters in the cure of dropfy, I can have no doubt of the practice recommended by Dr. Millman being very often extremely proper. I apprehend it to be especially adapted to those cafes in which the cure is chiefly attempted by diuretics. It is very probable that these medicines can hardly be carried in any quantity to the kidneys without being accompanied with a large portion of water; and the late frequent employment of the crystals of tartar has often shown, that the diuretic effects of that medicine are almost only remarkable when accompanied with a large quantity of water; and that without this, the diuretic effects of the medicine seldom appear. I shall conclude this subject with observing, that as there are so many cafes of dropfy absolutely incurable, the practice now under consideration may often fail, yet in most cafes it may be safely tried;

and if it appear that the water taken in passes readily by the urinary secretion, and especially that it increases the urine beyond the quantity of drink taken in, the practice may probably be continued with great advantage: but on the contrary, if the urine be not increased, or be not even in proportion to the drink taken in, it may be concluded, that the water thrown in runs off by the exhalants, and will augment the disease.

1686. Another set of remedies which may be employed for exciting a serous excretion, and thereby curing dropsy, is that of sudorifics. Such remedies, indeed, have been sometimes employed; but however useful they may have been thought, there are few accounts of their having effected a cure; and although I have had some examples of their success, in most instances

instances of their trial they have been ineffectual.

Upon this subject it is proper to take notice of the several means that have been proposed and employed for dissipating the humidity of the body; and particularly that of heat externally applied to the surface of it. Of such applications I have had no experience: and their propriety and utility must rest upon the credit of the authors who relate them. I shall offer only this conjecture upon the subject. That if such measures have been truly useful, as it has seldom been by the drawing out of any sensible humidity, it has probably been by their restoring the perspiration, which is so often greatly diminished in this disease; or, perhaps, by changing the state of the skin, from the imbibing condition which is alleged to take place, into that of perspiring.

1687. When by the several means now mentioned, we shall have succeeded in evacuating the water of dropfies, there will then especially be occasion for our third indication, which is, to restore the tone of the system, the loss of which is so often the cause of the disease. This indication, indeed, may properly have place from the very first appearance of the disease; and certain measures adapted to this purpose may, upon such first appearance, be employed with advantage. In many cases of a moderate disease, I am persuaded that they may obviate any future increase of it.

1688. Thus, upon what is commonly the first symptom of anasarca, that is, upon the appearance of what are called Oedematous Swellings of the feet and legs, the three remedies of bandaging, friction, and

and exercise, have often been used with advantage.

1689. That some degree of external compression is suited to support the tone of the vessels, and particularly to prevent the effects of the weight of the blood in dilating those of the lower extremities, must be sufficiently evident; and the giving that compression by a bandage properly applied, has been often useful. In applying such a bandage, care is to be taken that the compression may never be greater on the upper than on the lower part of the limb; and this, I think, can hardly ever be so certainly avoided, as by employing a properly constructed laced stocking.

1690. Friction is another means by which the action of the blood-vessels may be promoted, and thereby the stagnation

of fluids in their extremities prevented. Accordingly, the use of the flesh brush has often contributed to disperse œdematous swellings. It appears to me that friction, for the purposes now mentioned, is more properly employed in the morning, when the swelling is very much gone off, than in the evening, when any considerable degree of it has already come on. I apprehend also, that friction being made from below upwards only, is more useful than when made alternately upwards and downwards. It has been common, instead of employing the flesh brush, to make the friction by warm and dry flannels; and this may in some cases be the most convenient: but I cannot perceive that the impregnation of these flannels with certain dry fumes is of any benefit.

1691. With respect to exercise, I must observe,

observe, that although persons being much in an erect posture during the day, may seem to increase the swelling which comes on at night; yet as the action of the muscles has a great share in promoting the motion of the venous blood, so I am certain, that as much exercise in walking as the patient can easily bear, will often prevent that œdematous swelling which much standing, and even sitting, would have brought on.

1692. These measures, however, although they may be useful at the coming on of a dropsy, whose causes are not very powerful, will be often insufficient in a more violent disease; and such therefore will require more powerful remedies. These are, exercise and tonic medicines; which may be employed both during the course of the disease, and especially after the water has been evacuated.

1693. Exercise

1693. Exercise is suited to assist in every function of the animal œcocomy, particularly to promote perspiration, and thereby prevent the accumulation of watery fluids in the body. I apprehend also, that it may be the most effectual means for preventing the skin from being in an imbibing state; and, as it has been hinted above on the subject of emaciation (1607), I am persuaded, that a full and large perspiration will always be a means of exciting absorption in every part of the system. Exercise, therefore, promises to be highly useful in dropfy; and any mode of it may be employed that the patient can most conveniently admit of. It should, however, always be as much as he can easily bear; and in anasarca, the share which the exercise of muscles has in promoting the motion of the venous blood, induces me to think that bodily exercise, to whatever

ever

ever degree the patient can bear it, will always be the most useful. From some experience also, I am persuaded, that by exercise alone, employed early in the disease, many dropsies may be cured.

1694. Besides exercise various tonic remedies are properly employed to restore the tone of the system. The chief of these are, chalybeates, the Peruvian bark, and various bitters. These are not only suited to restore the tone of the system in general, but are particularly useful in strengthening the organs of digestion, which in dropsies are frequently very much weakened: and for the same purpose also aromatics may be frequently joined with the tonics.

1695. Cold bathing is upon many occasions the most powerful tonic we can employ; but at the beginning of dropsy,
2 when

when the debility of the system is considerable, it can hardly be attempted with safety. After, however, the water of dropfies has been very fully evacuated, and the indication is to strengthen the system for preventing a relapse, cold bathing may perhaps have a place. It is, at the same time, to be admitted with caution; and can scarcely be employed till the system has otherwise recovered a good deal of vigour. When that indeed has happened, cold bathing may be very useful in confirming and completing it.

1696. In persons recovering from dropfy, while the several means now mentioned for strengthening the system are employed, it will be proper at the same time to keep constantly in view the support of the watery excretions; and consequently the keeping up the perspiration

tion by a great deal of exercise, and continuing the full flow of the urinary excretions by the frequent use of diuretics.

SECT.

S E C T. II.

OF THE

H Y D R O T H O R A X,

OR

DROPSY OF THE BREAST.

1697. THE præternatural collection of ferous fluid in the thorax, to which we give the appellation of *Hydrothorax*, occurs more frequently than has been imagined. Its presence, however, is not always

ways to be very certainly known; and it often takes place to a considerable degree before it be discovered.

1698. These collections of watery fluids in the thorax, are found in different situations. Very often the water is found at the same time in both sacs of the pleura, but frequently in one of them only. Sometimes it is found in the pericardium alone; but for the most part it only appears there when at the same time a collection is present in one or both cavities of the thorax. In some instances, the collection is found to be only in that cellular texture of the lungs which surrounds the bronchiæ, without there being at the same time any effusion into the cavity of the thorax.

Pretty frequently the water collected consists chiefly of a great number of hydatides

datides in different situations; sometimes seemingly floating in the cavity, but frequently connected with and attached to particular parts of the internal surface of the pleura.

1699. From the collection of water being thus in various situations and circumstances, symptoms arise which are different in different cases; and from thence it becomes often difficult to ascertain the presence and nature of the affection. I shall however, endeavour here to point out the most common symptoms, and especially those of that principal and most frequent form of the disease, when the serous fluid is present in both sacs of the pleura, or, as we usually speak, in both cavities of the thorax.

1700. The disease frequently comes on with a sense of anxiety about the low-

er part of the sternum. This, before it has subsisted long, comes to be joined with some difficulty of breathing; which at first appears only upon the person's moving a little faster than usual, upon his walking up an acclivity, or upon his ascending a stair-case: but after some time this difficulty of breathing becomes more constant and considerable, especially during the night, when the body is in a horizontal situation. Commonly, at the same time, lying upon one side is more easy than upon the other, or perhaps lying upon the back more easy than upon either side. These circumstances are usually attended with a frequent cough, that is at first dry; but which, after some time, is accompanied with an expectoration of thin mucus.

With all these symptoms, the hydrothorax is not certainly discovered, as the

same symptoms often attend other diseases of the breast. When, however, along with these symptoms, there is at the same time an œdematous swelling of the feet and legs, a leucophlegmatic paleness of the face, and a scarcity of urine, the existence of a hydrothorax can be no longer doubtful. Some writers have told us, that sometimes in this disease, before the swelling of the feet comes on, a watery swelling of the scrotum appears: but I have never met with any instance of this.

1701. Whilst the presence of the disease is somewhat uncertain, there is a symptom which sometimes takes place, and has been thought to be a certain characteristic of it; and that is, when, soon after the patient has fallen asleep, he is suddenly awaked with a sense of anxiety and difficult breathing, and with a violent palpitation of the heart. These feelings immediately

diately require an erect posture; and very often the difficulty of breathing continues to require and to prevent sleep for a great part of the night. This symptom I have frequently found attending the disease; but I have also met with several instances in which this symptom did not appear. I must remark further, that I have not found this symptom attending the empyema, or any other disease of the thorax; and therefore, when it attends a difficulty of breathing, accompanied with any the smallest symptom of dropsy, I have had no doubt in concluding the presence of water in the chest, and have always had my judgement confirmed by the symptoms which afterwards appeared.

1702. The hydrothorax often occurs with very few, or almost none, of the symptoms above mentioned; and is not, therefore, very certainly discovered till

some others appear. The most decisive symptom is a fluctuation of water in the chest, perceived by the patient himself, or by the physician, upon certain motions of the body. How far the method proposed by Auenbrugger will apply to ascertain the presence of water and the quantity of it in the chest, I have not had occasion or opportunity to observe.

It has been said, that in this disease some tumour appears upon the sides or upon the back; but I have not met with any instance of this. In one instance of the disease, I found one side of the thorax considerably enlarged, the ribs standing out farther on that side than upon the other.

A numbness and a degree of palsy in one or both arms, has been frequently observed to attend a hydrothorax.

Soon

Soon after this disease has made some progress, the pulse commonly becomes irregular, and frequently intermitting: but this happens in so many other diseases of the breast, that, unless when it is attended with some other of the above-mentioned symptoms, it cannot be considered as denoting the hydrothorax.

1703. This disease, as other dropsies, is commonly attended with thirst and a scarcity of urine, to be explained in the same manner as in the case of anasarca (1673.) The hydrothorax, however, is sometimes without thirst, or any other febrile symptom; although I believe this happens in the case of partial affections only, or when a more general affection is yet but in a slight degree. In both cases, however, and more especially when the disease is considerably advanced, some

degree of fever is generally present: and I apprehend it to be in such case, that the persons affected are more than usually sensible to cold, and complain of the coldness of the air when that is not perceived by other persons.

1704. The hydrothorax sometimes appears alone, without any other species of dropsy being present at the same time: and in this case the disease, for the most part, is a partial affection, as being either of one side of the thorax only, or being a collection of hydatides in one part of the chest. The hydrothorax, however, is very often a part of more universal dropsy, and when at the same time there is water in all the three principal cavities, and in the cellular texture of a great part of the body. I have met with several instances in which such universal dropsy began first by an effusion
into

into the thorax. The hydrothorax, however, more frequently comes on from an anasarca gradually increasing; and, as I have said above, the general diathesis seems often to affect the thorax sooner than it does either the head or the abdomen.

1705. This disease seldom admits of a cure, or even of alleviation, from remedies. It commonly proceeds to give more and more difficulty of breathing, till the action of the lungs be intirely interrupted by the quantity of water effused; and the fatal event frequently happens more suddenly than was expected. In many of the instances of a fatal hydrothorax, I have remarked a spitting of blood to come on several days before the patient died.

1706. The cause of hydrothorax is often manifestly one or other of the general causes of dropfy pointed out above; but what it is that determines these general causes to act more especially in the thorax, and particularly what it is that produces the partial collections that occur there, I do not find to be easily ascertained.

1707. From what has been said above it will be evident, that the cure of hydrothorax must be very much the same with that of anasarca; and when the former is joined with the latter as an effect of the same general diathesis, there can be no doubt of the method of cure being the same in both. Even when the hydrothorax is alone, and the disease partial, from particular causes acting in the thorax only, there can hardly be any other measures employed, than the general

neral ones proposed above. There is only one particular measure adapted to the hydrothorax; and that is, the drawing off the accumulated waters by a paracentesis of the thorax.

1708. To what cases this operation may be most properly adapted, I find it difficult to determine. That it may be executed with safety, there is no doubt; and that it has been sometimes practised with success, seems to be very well vouched*. When the disease depends upon

* In the memoirs of the Academy of Sciences at Paris, for 1703, M. Du Verney relates the case of a woman who had both an Ascites and Hydrothorax. He first emptied the abdomen by tapping, and a few days afterwards he pierced the thorax with a trochar, near to the spine, between the second and third false ribs; by which opening he drew off a considerable quantity of water: the operation gave immediate relief to the patient, and she

upon a general hydropic diathesis, it cannot alone prove a cure, but may give

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she was able to return to her ordinary employments in about a month's time.

Bianchi also relates a successful operation of tapping the thorax ; but he seems to be timid in his practice, and confesses that he has seldom ventured on the operation.

The practice of evacuating water contained in the thorax by an incision is very old. We find it recommended by Hippocrates, with particular directions for performing the operation, in his second book on diseases. See the Geneva edition of Foesius's Hippocrates, pag. 483.

That the practice was frequently attended with success, in those early ages, is sufficiently evident by the context ; for Hippocrates, after describing the operation, and the subsequent management of the patient, says, " If pus appear on the plaster covering the wound on the fifth day after the operation, the patient generally recovers ; if not, he is seized with a cough and thirst, and dies."

a temporary relief; and when other remedies seem to be employed with advantage, the drawing off the water may very much favour a complete cure. I have not, however, been so fortunate as to see it practised with any success; and even where it was most promising, that is, in cases of partial affection, my expectations have been disappointed from it.

SECT.

S E C T. III.

OF

A S C I T E S, OR D R O P S Y

OF THE

L O W E R B E L L Y.

1709. THE name of *Ascites* is given to every collection of waters causing a general swelling and distension of the lower belly; and such collections are more frequent

quent than those which happen in the thorax.

1710. The collections in the lower belly, like those of the thorax, are found in different situations. Most commonly they are in the sac of the peritonæum, or general cavity of the abdomen : but they often begin by sacs formed upon, and connected with, one or other of the viscera ; and perhaps the most frequent instances of this kind occur in the ovaria of females. Sometimes the water of ascites is found entirely without the peritonæum, and between this and the abdominal muscles.

1711. These collections connected with particular viscera, and those formed without the peritonæum, form that disease which authors, have termed the *encysted dropsy*, or *hydrops saccatus*. Their precise seat, and even their existence, is very often

difficult to be ascertained. They are generally formed by collections of hydaticides.

1712. In the most ordinary case, that of abdominal dropfy, the swelling at first is in some measure over the whole belly, but generally appears most considerable in the epigastrium. As the disease, however, advances, the swelling becomes more uniform over the whole. The distension and sense of weight, though considerable, vary a little according as the posture of the body is changed; the weight being felt the most upon the side on which the patient lies, while at the same time on the opposite side the distension becomes somewhat less. In almost all the instances of ascites, the fluctuation of the water within, may be perceived by the practitioner's feeling, and sometimes by his hearing. This perception of fluctuation does not
certainly

certainly distinguish the different states of dropfy ; but serves very well to distinguish dropfy from tympanites, from cases of physconia, and from the state of pregnancy in women.

1713. An ascites frequently occurs when no other species of dropfy does at the same time appear ; but sometimes the ascites is a part only of universal dropfy. In this case, it usually comes on in consequence of an anasarca, gradually increasing ; but its being joined with anasarca, does not always denote any general diathesis, as for the most part an ascites sooner or latter occasions œdematous swellings of the lower extremities. When the collection of water in the abdomen, from whatever cause, becomes considerable, it is always attended with a difficulty of breathing : but this symptom occurs often when, at the same time, there is

no water in the thorax. The ascites is sometimes unaccompanied with any fever; but frequently there is more or less of fever present with it. The disease is never considerable without being attended with thirst and a scarcity of urine.

1714. In the diagnosis of ascites, the greatest difficulty that occurs, is in discerning when the water is in the cavity of the abdomen, or when it is in the different states of encysted dropfy above mentioned. There is, perhaps, no certain means of ascertaining this in all cases; but in many we may attempt to form some judgement with regard to it.

When the antecedent circumstances give suspicion of a general hydropic diathesis; when at the same time some degree of dropfy appears in other parts of
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the body ; and, when, from its first appearance, the swelling has been equally over the whole belly, we may generally presume that the water is in the cavity of the abdomen. But when an ascites has not been preceded by any remarkable cachectic state of the system, and when at its beginning the tumour and tension had appeared in one part of the belly more than another, there is reason to suspect an encysted dropsy. Even when the tension and tumour of the belly have become general and uniform over the whole ; yet if the system of the body in general appear to be little affected ; if the patient's strength be little impaired ; if the appetite continue pretty entire, and the natural sleep be little interrupted ; if the menses in females continue to flow as usual ; if there be yet no anasarca ; or, though it may have already taken place, if it be still confined to the lower extremities, and there be no leucophlegmatic paleness

or fallow colour in the countenance; if there be no fever, nor so much thirst, or scarcity of urine, as occur in a more general affection; then, according as more of these different circumstances take place, there will be the stronger ground for supposing the ascites to be of the encysted kind.

The chief exception to be made from this as a general rule, will, in my opinion, be when the ascites may, with much probability, be presumed to have come on in consequence of a scirrhus liver; which, I apprehend, may occasion a collection of water in the cavity of the abdomen, while the general system of the body may not be otherwise much affected.

1715. With respect to the cure of
2 ascites

ascites when of the encysted kind it does not, so far as I know, admit of any. When the collection of water is in the abdominal cavity alone, without any other species of dropsy present at the same time, I apprehend the ascites will always be of difficult cure; for it may be presumed to depend upon a scirrhus of the liver, or other considerable affection of the abdominal viscera, which I conceive to be of very difficult cure, and therefore the ascites depending upon them. At the same time, such cases may often admit of a temporary relief by the paracentesis.

1716. When the ascites is a part of universal dropsy, it may, as far as other cases of that kind can, admit of cure; and it will be obvious, that such a cure must be obtained by the same means as above

propofed for the cure of general anafarca*.

It frequently happens, that the afcites is attended with a diarrhoea; and, in that cafe, does not admit of the ufe of purgatives fo freely as cafes of anafarca commonly do. It is therefore often to be treated by diuretics almoft alone.

The diuretics that may be employed, are chiefly thofe above mentioned; but in afcites, a peculiar one has been found out. It is a long continued gentle friction of the fkin over the whole of the abdomen, by the fingers dipped in oil. This has fometimes been ufeful in exciting an increafed flow of urine; but in moft of the trials of it which I have known made it has failed in producing that effect.

1717. The

* See the notes on Article, 1683.

1717. The ascites admits of a particular means for immediately drawing off the collected waters; and that is the well-known operation of the paracentesis of the abdomen. In what circumstances of ascites this operation can most properly be proposed, it is difficult to determine; but, so far as I can judge, it must be regulated by very much the same considerations as those above mentioned with regard to the paracentesis of the thorax.

The manner of performing the paracentesis of the abdomen, and the precautions to be taken with respect to it, are now so commonly known, and delivered in so many books, that it is altogether unnecessary for me to offer any directions upon that subject here; especially after the full and judicious information and directions given by Mr BELL, in the second volume of his *System of Surgery*.

C H A P. IV.

OF

G E N E R A L S W E L L I N G S,

A R I S I N G F R O M

A N I N C R E A S E D B U L K O F T H E W H O L E
S U B S T A N C E O F P A R T I C U L A R P A R T S.

1718. **U**PON the subjects of this chapter, several nosological difficulties occur, and particularly with respect to admitting the *Physconia* into the
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the order of General Swellings. At present, however, it is not necessary for me to discuss this point, as I am here to omit entirely the consideration of *Phyſconia*; both because it can seldom admit of any successful practice, and because I cannot deliver any thing useful either with regard to the pathology or practice in such a disease.

1719. The only other genus of disease comprehended under the title of the present chapter, is the *Rachitis*; and this being both a proper example of the class of *Cachexy*, and of the order of *Intumescencie* or General swellings, I shall offer some observations with regard to it.

OF RACHITIS, OR RICKETS.

1720. THIS disease has been supposed to have appeared only in modern times,

and not above two hundred years ago. This opinion, notwithstanding it has been maintained by persons of the most respectable authority*, appears to me, from many considerations, improbable; but it is a point of too little consequence to detain my readers here. The only application of it which deserves any notice is, that it has led to a notion of the disease having arisen from the lues venerea, which had certainly made its first appearance in Europe not very long before the date commonly assigned for the appearance of rachitis; but I shall hereafter show, that the supposed connection between the Siphylis and Rachitis is without foundation †.

1721. In

* Boerhaave was of this opinion, see Van Swieten's Commentary on Aphorism 1482.

† See Article, 1727.

1721. In delivering the history of the *Rickets*, I must, in the first place, observe, that with respect to the antecedents of the disease, every thing to be found in authors upon this subject, appears to me to rest upon a very uncertain foundation. In particular, with respect to the state of the parents whose offspring become affected with this disease, I have met with many instances of it in children from seemingly healthy parents; and have met likewise with many instances of children who never became affected with it, although born of parents who, according to the common accounts, should have produced a rickety offspring; so that, even making allowance for the uncertainty of fathers, I do not find the general opinion of authors upon this subject to be properly supported.

1722. The disease, however, may be justly considered as proceeding from parents; for it often appears in a great number of the same family: and my observation leads me to judge, that it originates more frequently from mothers than from fathers. So far as I can refer the disease of the children to the state of the parents, it has appeared to me most commonly to arise from some weakness, and pretty frequently from a scrophulous habit, in the mother. To conclude the subject, I must remark, that in many cases I have not been able to discern the condition of the parents, to which I could refer it.

When nurses, other than the mothers, have been employed to suckle children, it has been supposed that such nurses have frequently given occasion to the disease:

disease* : and when nurfes have both produced and have fuckled children who became rickety, there may be ground to fufpect their having occafioned the difeafe in the children of other perfons : but I have had few opportunities of afcertaining this matter. It has in fome meafure appeared to me that thofe nurfes are moft likely to produce this difeafe, who give infants a large quantity of very watery milk, and who continue to fuckle them longer than the ufual time. Upon the whole, however, I am of opinion, that hired nurfes feldom occafion this difeafe, unlefs when a predifpofition to it has proceeded from the parents.

1723. With

* This opinion was held by Boerhaave, and notwithstanding what the Author fays at the end of this paragraph, the opinion is certainly founded on experience.

1723. With regard to the other antecedents, which have been usually enumerated by authors as the remote causes of this disease, I judge the accounts given to be extremely fallacious; and I am very much persuaded, that the circumstances in the rearing of children, have less effect in producing rickets than has been imagined. It is indeed not unlikely, that some of these circumstances mentioned as remote causes may favour, while other circumstances may resist, the coming on of the disease; but at the same time, I doubt if any of the former, would produce it where there was no predisposition in the child's original constitution. This opinion of the remote causes, I have formed from observing, that the disease comes on when none of these had been applied; and more frequently that many of them had been applied without occasioning

occasioning the disease. Thus the learned ZEVIANI alleges, that the disease is produced by an acid from the milk with which a child is fed for the first nine months of its life : but almost all children are fed with the same food, and in which also an acid is always produced ; while at the same time, not one in a thousand of the infants so fed becomes affected with the rickets. If, therefore, in the infants who become affected with this disease, a peculiarly noxious acid is produced, we must seek for some peculiar cause of its production, either in the quality of the milk, or in the constitution of the child ; neither of which, however, Mr Zeviani has explained. I cannot indeed believe that the ordinary acid of milk has any share in producing this disease, because I have known many instances of the acid being produced and occasioning various disorders,

disorders, without however, its ever producing rickets.

Another of the remote causes commonly assigned, is the child's being fed with unfermented farinaceous food. But over the whole world children are fed with such farinacea, while the disease of rickets is a rare occurrence: and I have known many instances where children have been fed with a greater than usual proportion of fermented farinacea, and also a greater proportion of animal food, without these preventing the disease. In my apprehension, the like observations might be made with respect to most of the circumstances that have been mentioned as the remote causes of rickets.

1724. Having thus offered my opinion concerning the supposed antecedents of this disease, I proceed now to mention
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the phenomena occurring after it has actually come on.

The disease seldom appears before the ninth month, and seldom begins after the second year, of a child's age *. In the interval between these periods, the appearance of the disease is sometimes sooner, sometimes later; and commonly at first the disease comes on slowly. The first appearances are, a flaccidity of the flesh, the body at the same time becoming leaner, though food be taken in pretty largely. The head appears large with respect to the body; with the fontanelle, and perhaps the futures, more open than usual in children of the same age. The head continues to grow larger; in particular, the forehead becoming unusually prominent; and
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* This admirable description of the disease merits the peculiar attention of the young practitioner.

at the same time the neck continues slender, or seems to be more so, in proportion to the head. The dentition is slow, or much later than usual; and those teeth which come out, readily become black and frequently again fall out. The ribs lose their convexity, and become flattened on the sides; while the sternum is pushed outward, and forms a sort of ridge. At the same time, or perhaps sooner, the epiphyses at the several joints of the limbs become swelled; while the limbs between the joints appear, or perhaps actually become more slender. The bones seem to be every where flexible, becoming variously distorted; and particularly the spine of the back becoming incurvated in different parts of its length. If the child, at the time the disease comes on, had acquired the power of walking, it becomes daily more feeble in its motions, and more averse to the exertion of them, losing at length

length the power of walking altogether. Whilst these symptoms go on increasing, the abdomen is always full, and preternaturally tumid. The appetite is often good, but the stools are generally frequent and loose. Sometimes the faculties of the mind are impaired, and stupidity or fatuity prevails; but commonly a premature sensibility appears, and they acquire the faculty of speech sooner than usual. At the first coming on of the disease, there is generally no fever attending it: but it seldom continues long, till a frequent pulse, and other febrile symptoms, come to be constantly present. With these symptoms the disease proceeds, and continues in some instances for some years; but very often, in the course of that time, the disease ceases to advance; and the health is entirely established, except that the distorted limbs, produced during the disease, continue for the rest of life. In

other cases, however, the disease proceeds increasing, till it has affected almost every function of the animal œconomy, and at length terminates in death. The variety of symptoms which in such cases appear, it does not seem necessary to enumerate, as they are not essential to the constitution of the disease, but are merely consequences of the more violent conditions of it. In the bodies of those who have died, various morbid affections have been discovered in the internal parts. Most of the viscera of the abdomen have been found to be preternaturally enlarged. The lungs have also been found in a morbid state, seemingly from some inflammation that had come on towards the end of the disease. The brain has been commonly found in a flaccid state, with effusions of a serous fluid into its cavities. Very universally the bones have been found very soft, and so much softened as to be readily cut by a
knife

knife. The fluids have been always found in a dissolved state, and the muscular parts very soft and tender ; and the whole of the dead body without any degree of that rigidity which is so common in almost all others.

1725. From these circumstances of the disease, it seems to consist in a deficiency of that matter which should form the solid parts of the body. This especially appears in the faulty state of ossification, seemingly depending upon the deficiency of that matter which should be deposited in the membranes which are destined to become bony, and should give them their bony hardness. It appears that this matter is not supplied in due quantity ; but, that, in place of it, a matter fitted to increase their bulk particularly in the epiphyses, is applied too largely. What this deficiency of matter depends upon, is difficult to be ascertained. It may be a fault in the organs of

digestion and assimilation, which prevents the fluids in general from being properly prepared ; or it may be a fault in the organs of nutrition, which prevents the secretion of a proper matter to be applied. With respect to the latter, in what it may consist, I am entirely ignorant, and cannot even discern that such a condition exists: but the former cause, both in its nature and existence, is more readily perceived ; and it is probable that it has a considerable influence in the matter ; as in rachitic persons a thinner state of the blood both during life and after death, so commonly appears. It is this state of the fluids, or a deficiency of bony matter in them, that I consider as the proximate cause of the disease : and which again may in some measure depend upon a general laxity and debility of the moving fibres of the organs that perform the functions of digestion and assimilation.

1726. There is, however, something still wanting to explain, why these circumstances discover themselves at a particular time of life, and hardly ever either before or after a certain period; and as to this I would offer the following conjectures. Nature having intended that human life should proceed in a certain manner, and that certain functions should be exercised at a certain period of life only; so it has generally provided, that at that period, and not sooner, the body should be fitted for the exercise of the functions suited to it. To apply this to our present subject, Nature seems to have intended that children should walk only at twelve months old; and accordingly has provided, that against that age, and no sooner, a matter should be prepared fit to give that firmness to the bones which is necessary to prevent their bending too easily under the weight of the body. Nature, however, is

not always steady and exact in executing her own purposes ; and if therefore the preparation of bony matter shall not have been made against the time there is particular occasion for it, the disease of rickets, that is, of soft and flexible bones, must come on ; and will discover itself about the particular period we have mentioned. Further, it will be equally probable, that if at the period mentioned the bones shall have acquired their due firmness, and that nature goes on in preparing and supplying the proper bony matter, it may be presumed, that against the time a child is two years old, such a quantity of bony matter will be applied as to prevent the bones from becoming again soft and flexible during the rest of life ; unless it happen, as indeed it sometimes does, that certain causes occur to wash out again the bony matter from the membranes in which it had been deposited. The account I have

now

now given of the period at which the rickets occur, seems to confirm the opinion of its proximate cause being a deficiency of bony matter in the fluids of the body.

1727. It has been frequently supposed, that a siphylitic taint has a share in producing rickets; but such a supposition is altogether improbable. If our opinion of the rickets having existed in Europe before the siphylis was brought into it, be well founded, it will then be certain that the disease may be occasioned without any siphylitic acrimony having a share in its production. But further, when a siphylitic acrimony is transmitted from the parent to the offspring, the symptoms do not appear at a particular time of life only, and commonly more early than the period of rickets: the symptoms also are very different from those of rickets, and un-

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accompanied with any appearance of the latter : and, lastly, the symptoms of siphylis are cured by means which, in the case of rickets, have either no effect, or a bad one. It may indeed possibly happen, that siphylis and rickets may appear in the same person ; but it is to be considered as an accidental complication : and the very few instances of it that have occurred, are by no means sufficient to establish any necessary connection between the two diseases.

1728. With respect to the deficiency of bony matter, which I consider as the proximate cause of rickets, some further conjectures might be offered concerning its remote causes ; but none of them appear to me very satisfying ; and whatever they might be, it appears to me they must again be resolved into the supposition

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tion of a general laxity and debility of the system.

1729. It is upon this supposition almost alone that the cure of rickets has entirely proceeded. The remedies have been such especially as were suited to improve the tone of the system in general, or of the stomach in particular : and we know that the latter are not only suited to improve the tone of the stomach itself, but by that means to improve also the tone of the whole system.

1730. Of tonic remedies one of the most promising seems to have been cold bathing ; and I have found it the most powerful in preventing the disease. For a long time past, it has been the practice in this country, with people of all ranks, to wash their children from the time of their birth with cold water ; and from the
time

time that children are a month old, it has been the practice with people of better rank to have them dipped entirely in cold water every morning: and wherever this practice has been pursued, I have not met with any instance of rickets. Amongst our common people, although they wash their children with cold water only, yet they do not so commonly practise immersion: and when amongst these I meet with instances of rickets, I prescribe cold bathing; which accordingly has often checked the progress of the disease, and sometimes seems to have cured it entirely.

1731. The remedy of *Ens Veneris*, recommended by Mr Boyle, and since his time very universally employed, is to be considered as entirely a tonic remedy. That or some other preparation of iron I have almost constantly employed, though
not

not indeed always with success. I have been persuaded, that the ens veneris of Mr Boyle, notwithstanding his giving it this appellation, was truly a preparation of iron, and no other than what we now name the *Flores Martiales**: but it appears, that both Benevoli and Buchner have employed a preparation of copper; and I am ready to believe it to be a more
powerful

* The dose of this medicine is from four to twenty grains, it must be given in the form of a bolus. The young practitioner ought to beware of prescribing *Flores martiales* in pills, which will swell and crumble to pieces if they are not composed of a considerable quantity of some gummi resin.

The *Flores martiales*, may be very conveniently given in a tincture of proof spirit. There is a formula of it in the last London pharmacopœia, under the name of *Tinctura ferri Ammoniacalis*. The dose of it is a tea spoonful in a wine glass of cold water, and it is a very elegant form of administering chalybeates.

powerful tonic than the preparations of iron*.

1732. Upon the supposition of tonic remedies being proper in this disease, I have endeavoured to employ the Peruvian bark: but from the difficulty of administering it to infants in any useful quantity, I have not been able to discover its efficacy; but I am very ready to believe the testimony of De Haen upon this subject †.

1733. Exercise,

* Copper is a very dangerous remedy, as was mentioned above in the notes on article 1336. The Author had a very high opinion of copper as a tonic.

† It is doubtless difficult to make children swallow a sufficient quantity of bark to produce any good effects, yet it is not impossible. The formula best adapted for children, is the powder of the extract; but as it some times

1722. Exercise, which is one of the most powerful tonics, has been properly recommended for the cure of rickets; and as the exercise of gestation only can be employed, it should always be, with the child laid in a horizontal situation; as the carrying them or moving them in any degree of an erect posture, is very apt to occasion some distortion. It is extremely probable, that, in this disease, friction with dry flannels may be found an useful remedy.

1734. It

times occasions constipation, this effect must be guarded against by some proper laxative, especially by Rhubarb given either with the bark or separately. The following formula is a proper dose for a child of two years old, to be repeated twice a day;

R. Extr. Cort. Peruv. dur. gr. viii.

Pulv. Rad. Rhej. gr. x.

Sacch Alb. gr. xv.

M. f. pulv.

1734. It is also sufficiently probable, that the avoiding of moisture is not only advisable, but may likewise be of service in the cure of this disease.

There is no doubt that a certain diet may contribute to the same end; but what may be the most eligible, I dare not determine. I have no doubt that leavened bread may be more proper than unfermented farinacea; but I cannot find any reason to believe that strong beer can ever be a proper remedy.

Practitioners have been divided in opinion concerning the use of milk in this disease. Zeviani, perhaps from theory, condemns the use of it: but Benevoli employed it without its impeding the cure of the disease. This last I have often remarked in the course of my own practice: As it is difficult to feed children entirely without

without milk; so I have commonly admitted it as a part of the diet of rickety children; and in many instances I can affirm, that it did not prevent the cure of the disease. In cases, however, of any appearance of rickets, and particularly of a slow dentition, I have dissuaded the continuance of a child upon the breast; because the milk of women is a more watery nourishment than that of cows: and I have especially dissuaded the continuing a child upon the breast, when I thought the nurse gave rather too much of such a watery nourishment; for, as has been above mentioned, I have had frequent occasion to suspect, that the milk of such nurses has a tendency to favour the coming on of the rickets*.

1735. Be-

* How does this accord with the last sentence of article 1722?

1735 Besides the remedies and regimen now mentioned, practitioners have commonly employed in this disease, both emetics and purgatives. When the appetite and digestion are considerably impaired, vomiting, if neither violent nor frequently repeated, seems to be of service; and, by a moderate agitation of the abdominal viscera, may in some measure obviate the stagnation and consequent swelling that usually occur in them.

As the tumid state of the abdomen, so constantly to be met with in this disease, seems to depend very much upon a tympanitic affection of the intestines; so, both by obviating this, and by deriving from the abdominal viscera, frequent gentle purgatives may be of service. Zeviani, perhaps properly recommends in particular rhubarb; which, besides its purgative quality,

quality, has those also of bitter and astringent.

1736. I have now mentioned most of the remedies commonly employed by the practitioners of former times ; but I must not omit mentioning some others that have been lately suggested. The late Mr De Haen recommends the testacea ; and assures us of their having been employed with success ; but in the few trials which I have had occasion to make, their good effects did not appear.

The late Baron Van Swieten gives us one instance of rickets cured by the use of hemlock ; but I do not know that the practice has been repeated.

B O O K III,

OF THE

I M P E T I G I N E S ;

OR

DEPRAVED HABIT, WITH AFFEC-
TIONS OF THE SKIN.

1737. **I** FIND it difficult to give any suf-
ficiently correct and proper cha-
racter of this order. The diseases compre-
hended

hended under it, depend, for the most part, upon a deranged state of the whole of the fluids producing tumors, eruptions, or other preternatural affections of the skin. Although it be extremely difficult to find a general character of the order that will apply to each of the genera and species, I shall here treat of the principal genera which have been commonly comprehended under this order, and which I have enumerated in my Nosology.

C H A P. I.

O F

S C R O P H U L A,

O R T H E

K I N G ' s E V I L.

1738. **T**H E character of this disease I have attempted in my Nosology : but it will be more properly taken from the whole of its history, now to be delivered.

1739. It

1739. It is commonly, and very generally, a hereditary disease; and although it sometimes may, yet it rarely appears, but in children whose parents had at some period of their lives been affected with it. Whether it may not fail to appear in the children of scrophulous parents, and discover itself afterwards in their offspring in the succeeding generation, I cannot certainly determine; but believe that this has frequently happened. It appears to me to be derived more commonly from fathers than from mothers; but whether this happens from there being more scrophulous men than scrophulous women married, I am not certain.

With respect to the influence of parents in producing this disease, it deserves to be remarked, that in a family of many children, when one of the parents has

been affected with scrophula, and the other not ; as it is usual for some of the children to be in constitution pretty exactly like the one parent, and others of them like the other ; it commonly happens, that those children who most resemble the scropulous parent become affected with scropula, while those resembling the other parent entirely escape.

1740.-The scrophula generally appears at a particular period of life. It seldom appears in the first, or even in the second year of a child's life ; and most commonly it occurs from the second, or, as some allege, and perhaps more properly, from the third to the seventh year. Frequently, however, it discovers itself at a later period ; and there are instances of its first appearance, at every period till the age of puberty ; after which, however, the first appearance of it is very rare.

1741. When

1741. When it does not occur very early, we can generally distinguish the habit of body peculiarly disposed to it. It most commonly affects children of soft and flaccid habits, of fair hair and blue eyes ; or at least affects those much more frequently than those of an opposite complexion. It affects especially children of smooth skins and rosy cheeks ; and such children have frequently a tumid upper lip, with a chop in the middle of it ; and this tumour is often considerable, and extended to the columna nasi and lower part of the nostrils. The disease is sometimes joined with, or follows rickets ; and although it frequently appears in children who have not had rickets in any great degree, yet it often attacks those who, by a protuberant forehead, by tumid joints, and a tumid abdomen, show that they had some rachitic disposition. In

parents who, without having had the disease themselves, seem to produce scrophulous children, we can commonly perceive much of the same habit and constitution that has been just now described.

Some authors have supposed that the small-pox has a tendency to produce this disease; and Mr De Haen asserts its following the inoculated, more frequently than the natural, small-pox. This last position, however, we can confidently affirm to be a mistake; although it must be allowed, that in fact the scrophula does often come on immediately after the small-pox. It is, however, difficult to find any connection between the two diseases. According to my observation, the accident only happens in children who have pretty manifestly the scrophulous disposition; and I have had several instances of the

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natural

natural finall-pox coming upon children affected at the same time with scrophula, not only without this disease being any ways aggravated by the small-pox, but even of its being for some time after much relieved.

1742. The scrophula generally shows itself first at a particular season of the year; and at some time between the winter and summer solstice; but commonly long before the latter period. It is to be observed further, that the course of the disease is usually connected with the course of the seasons. Whilst the tumours and ulcerations peculiar to this disease, appear first in the spring, the ulcers are frequently healed up in the course of the succeeding summer, and do not break out again till the ensuing spring, to follow again with the season the same course as before.

1743. Frequently

1743. Frequently the first appearance of the disease is the tumid and chapped lip above mentioned. Upon other occasions, the first appearance is that of small spherical or oval tumours, moveable under the skin. They are soft, but with some elasticity. They are without pain; and without any change in the colour of the skin. In this state they often continue for a long time; even for a year or two, and sometimes longer. Most commonly they first appear upon the sides of the neck below the ears; but sometimes also under the chin. In either case, they are supposed to affect in these places the conglobate or lymphatic glands, only; and not at all the salivary glands, till the disease is very greatly advanced. The disease frequently affects, and even at first appears in, other parts of the body. In particular, it affects the joints of the elbows and ankles, or those of the fingers

and toes. The appearances about the joints are not commonly, as elfewhere, fmall moveable fwellings ; but a tumour almoft uniformly furrounding the joint, and interrupting its motion,

1744. Thefe tumours, as I have faid, remain for fome time little changed ; and, from the time they firft appeared in the fpring, they often continue in this way till the return of the fame feafon in the next or perhaps the fecond year after. About that time, however, or perhaps in the courfe of the feafon in which they firft appear, the tumour becomes larger and more fixed ; the fkin upon it acquires a purple, feldom a clear rednefs : but growing redder by degrees, the tumour becomes fofter, and allows the fluctuation of a liquid within to be perceived. All this procefs, however, takes place with very little pain attending
it.

it. At length some part of the skin becomes paler; and by one or more small apertures a liquid is poured out.

1745. The matter poured out has at first the appearance of pus, but it is usually of a thinner kind than that from phlegmonic abscesses; and the matter, as it continues to be discharged, becomes daily less purulent, and appears more and more a viscid serum, intermixed with small pieces of a white substance resembling the curd of milk. By degrees the tumour almost entirely subsides, while the ulcer opens more, and spreads broader; unequally, however, in different directions, and therefore is without any regular circumscription. The edges of the ulcer are commonly flat and smooth, both on their outside and their inner edge, which seldom puts on a callous appearance. The ulcers, however,
do

do not generally spread much, or become deeper; but at the same time their edges do not advance, or put on any appearance of forming a cicatrix.

1746. In this condition the ulcers often continue for a long time; while new tumours, with ulcers succeeding them in the manner above described, make their appearance in different parts of the body. Of the first ulcers, however, some heal up, while other tumours and ulcers appear in their vicinity, or in other parts of the body and in this manner the disease proceeds, some of the ulcers healing up, at least to a certain degree, in the course of summer, and breaking out in the succeeding spring: or it continues, by new tumours and ulcers succeeding them, in the spring season, making their appearance successively for several years.

1747. In

1747. In this way the disease goes on for several years; but very commonly in four or five years, it is spontaneously cured, the former ulcers being healed up, and no new tumours appearing: and thus at length the disease ceases entirely, leaving only some indelible eschars, pale and smooth, but in some parts shrivelled; or, where it had occupied the joints, leaving the motion of these impaired, or entirely destroyed.

1748. Such is the most favourable course of this disease; and with us, it is more frequently such, than otherwise: but it is often a more violent, and sometimes a fatal malady. In these cases, more parts of the body are at the same time affected; the ulcers also seeming to be imbued with a peculiarly sharp acrimony, and therefore becoming more deep, eroding, spreading, as well as seldomer healing up. In such cases,

cases, the eyes are often particularly affected. The edges of the eye lids are affected with tumour and superficial ulcerations; and these commonly excite obstinate inflammation in the adnata, which frequently produces an opacity of the cornea.

When the scrophula especially affects the joints, it sometimes produces there considerable tumours; in the abscesses following which, the ligaments and cartilages are eroded, and the adjoining bones are affected with a caries of a peculiar kind. In these cases, also, of more violent scrophula, while every year produces a number of new tumours and ulcers, their acrimony seems at length to taint the whole fluids of the body, occasioning various disorders; and particularly a hectic fever, with all its symptoms, which at length proves!

proves fatal, with sometimes the symptoms of a phthisis pulmonalis.

1749. The bodies of persons who have died of this disease show many of the viscera in a very morbid state ; and particularly most of the glands of the mesentery very much tumefied, and frequently in an ulcerated state. Commonly also a great number of tubercles or cysts, containing matter of various kinds, appear in the lungs.

1750. Such is the history of the disease ; and from thence it may appear, that the nature of it is not easily to be ascertained. It seems to be a peculiar affection of the lymphatic system ; and this in some measure accounts for its connection with a particular period of life. Probably, however, there is a peculiar acrimony of the fluids that is the proximate cause of the
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the disease ; although of what nature this is, has not yet been discovered. It may perhaps be generally diffused in the system, and exhaled into the several cavities and cellular texture of the body ; and therefore, being taken up by the absorbents, may discover itself especially in the lymphatic system. This, however, will hardly account for its being more confined to that system, than happens in the case of many other acrimonies which may be supposed to be generally diffused. In short, its appearance in particular constitutions, and at a particular period of life, and even its being a hereditary disease, which so frequently depends upon the transmission of a peculiar constitution, are all of them circumstances which lead me to conclude, upon the whole, that this disease depends upon a *peculiar constitution of the lymphatic system.*

1751. It seems proper to observe here, that the scrophula does not appear to be a contagious disease; at least I have known many instances of found children having had frequent and close intercourse with scrophulous children without being infected with the disease. This certainly shows, that in this disease the peculiar acrimony of it is not exhaled from the surface of the body, but that it depends especially upon a peculiar constitution of the system.

1752. Several authors have supposed the scrophula to have been derived from the venereal disease: but upon no just grounds that I can perceive. In very many instances, there can hardly be any suspicion of the parents producing this disease having been imbued with siphylis, or with any siphylitic taint; and I have known several examples of parents conveying

veying siphylis to their offspring, in whom, however, no scrophulous symptoms at any time afterwards appeared. Further, the symptoms of the two diseases are very different; and the difference of their natures appears particularly from hence, that while mercury commonly and readily cures the siphylis, it does no service in scrophula, and very often rather aggravates the disease.

1753. For the cure of scrophula, we have not yet learned any practice that is certainly or even generally successful.

The remedy which seems to be the most successful, and which our practitioners especially trust to and employ, is the use of mineral waters; and indeed the washing out, by means of these, the lymphatic system, would seem to be a measure promising success: but in very many

instances of the use of these waters, I have not been well satisfied that they had shortened the duration of the disease more than had often happened when no such remedy had been employed.

1754. With regard to the choice of the mineral waters most fit for the purpose, I cannot with any confidence give an opinion.

Almost all kinds of mineral waters, whether chalybeate, sulphureous, or saline, have been employed for the cure of scrophula, and seemingly with equal success and reputation: a circumstance which leads me to think, that, if they are ever successful, it is the elementary water that is the chief part of the remedy.

Of late, sea-water has been especially recommended and employed; but after numerous

merous trials, I cannot yet discover its superior efficacy.

1755. The other remedies proposed by practical writers are very numerous ; but, upon that very account I apprehend they are little to be trusted : and as I cannot perceive any just reason for expecting success from them, I have very seldom employed them.

Of late, the Peruvian bark has been much recommended : and as in scrophulous persons there are generally some marks of laxity and flaccidity, this tonic may possibly be of service ; but in a great variety of trials, I have never seen it produce any immediate cure of the disease.

In several instances, the leaves of coltsfoot have appeared to me to be successful.

ful. I have used it frequently in a strong decoction, and even then with advantage; but have found more benefit from the expressed juice, when the plant could be had in somewhat of a succulent state, soon after its first appearance in the spring.

1756. I have also frequently employed the hemlock, and have sometimes found it useful in discussing obstinate swellings: but in this, it has also often disappointed me; and I have not at any time observed that it disposed scrophulous ulcers to heal.

I cannot conclude the subject of internal medicines without remarking, that I have never found either mercury or antimony, in any shape, of use in this disease; and when any degree of a feverish state had come on, the use of mercury proved manifestly hurtful.

1757. In the progress of scrophula, several external medicines are requisite. Several applications have been used for discussing the tumours upon their first coming on; but hitherto my own practice, in these respects, has been attended with very little success. The solution of saccharum saturni has seemed to be useful; but it has more frequently failed: And I have had no better success with the spiritus Mindereri. Fomentations of every kind have been frequently found to do harm; and poultices seem only to hurry on a suppuration. I am doubtful if this last be ever practised with advantage; for scrophulous tumours sometimes spontaneously disappear, but never after any degree of inflammation has come upon them; and therefore poultices, which commonly induce inflammation, prevent that discussion of tumors, which might otherwise have happened.

Even when scrophulous tumours have advanced towards suppuration, I am unwilling to hasten the spontaneous opening, or to make it by the lancet ; because I apprehend the scrophulous matter is liable to be rendered more acrid by communication with the air, and to become more eroding and spreading than when in its inclosed state.

1758. The management of scrophulous ulcers has, so far as I know, been as little successful as that of the tumours. Escharotic preparations, of either mercury or copper, have been sometimes useful in bringing on a proper suppuration, and thereby disposing the ulcer to heal ; but they have seldom succeeded, and more commonly have they caused the ulcer to spread more. The escharotic from which I have received most benefit is burnt alum,
and

and a portion of that mixed with a mild ointment, has been as useful an application as any I have tried. The application, however, that I have found most serviceable and very universally admissible, is that of linen cloths wetted with cold water, and frequently changed when they are becoming dry, it being inconvenient to let them be glued to the sore. They are therefore to be changed frequently during the day; and a cloth spread with a mild ointment or plaster may be applied for the night. In this practice I have sometimes employed sea-water, but generally it proved too irritating; and neither that nor any mineral water has appeared to be of more service than common water.

1759: To conclude what I have to offer upon the cure of scrophula, I must observe,

ferve, that cold bathing seems to have been of more benefit than any other remedy that I have had occasion to see employed.

CHAP.

C H A P. II.

O F

S I P H Y L I S,

O R T H E

V E N E R E A L D I S E A S E.

1760. **A**FTER practitioners have had
so much experience in treat-
ing this disease, and after so many books
have

have been published upon this subject, it does not seem necessary, or even proper, for me to attempt any full treatise concerning it; and I shall therefore confine myself to such general remarks, as may serve to illustrate some parts of the pathology or of the practice.

1.761. It is sufficiently probable, that anciently, in certain parts of Asia, where the leprosy prevailed, and in Europe after that disease had been introduced into it, a disease of the genitals resembling that which now commonly arises from siphylis, had frequently appeared: but it is equally probable, that a new disease, and what we at present term *Siphylis*, was first brought into Europe about the end of the fifteenth century; and that the distemper now so frequently occurring, has been very entirely derived from that which was imported
from

from America at the period mentioned*.

1762. This disease, at least in its principal circumstances, never arises in any person but from some communication with a person already affected with it. It is

* Various opinions have been held by different physicians about the origin of this disease; some supposing it to have existed in the old world, while others think it was imported from the new world, discovered by Columbus. The dispute produced many controversial tracts, from the perusal of which, the young practitioner can gain little advantageous knowledge. All that we certainly know about the origin of the disease is, that it was first observed among the French, when they were at Naples in the year 1493, and that it was brought into France by the French who returned thither with Charles. Columbus landed at Palos on the 15th of March in the same year, on his return from his first voyage. The disease therefore, if imported by Columbus's crew, must have spread rapidly through Europe.

is most commonly contracted in consequence of coition with an infected person; but in what manner the infection is communicated, is not clearly explained. I am persuaded, that in coition, it is communicated without there being any open ulcer either in the person communicating, or in the person receiving the infection; but in all other cases, I believe it is never communicated in any other way than by a contact of ulcer, either in the person communicating, or in the person receiving the infection.

1763. As it thus arises from the contact of particular parts, so it always appears first in the neighbourhood of the parts to which the infecting matter had been immediately applied; and therefore, as most commonly contracted by coition, it generally appears first in the genitals.

1764. After

1764. After its first appearance in particular parts, more especially when these are the genitals of either sex, its effects for some time seem to be confined to these parts; and indeed, in many cases, never extends further. In other cases, however, the infecting matter passes from the parts first affected, and from the genitals, therefore, into the blood-vessels; and being there diffused, produces disorders in many other parts of the body.

From this view of the circumstances, physicians have very properly distinguished the different states of the disease, according as they are local or are more universal. To the former, they have adapted appellations suited to the manner in which the disease appears; and to the other the general affection, they have almost totally confined the appellations of *Siphylis*, *Lues Venerea*, or *Pox*. In the
 remarks

remarks I am now to offer, I shall begin with considering the local affection.

1765. This local affection appears chiefly in the form of gonorrhœa or chancre.

The phenomena of gonorrhœa, either upon its first coming on, or in its after progress, or the symptoms of ardor urinæ, chordee, or others attending it, it is not necessary for me to describe. I shall only here observe, that the chief circumstance to be taken notice of, is the inflamed state of the urethra, which I take to be inseparable from the disease.

1766. In these well known circumstances, the gonorrhœa continues for a time longer or shorter, according to the constitution of the patient; it usually remaining longest in the most vigorous and

robust, or according to the patient's regimen, and the care taken to relieve or cure the disease. In many cases, if by a proper regimen the irritation of the inflamed state is carefully avoided, the gonorrhœa spontaneously ceases, the symptoms of inflammation gradually abating, the matter discharged becoming of a thicker and more viscid consistence, as well as of a whiter colour; till at length, the flow of it ceases altogether; and whether it be thus cured spontaneously, or by art, the disease often exists without communicating any infection to the other parts of the body.

1767. In other cases, however, the disease having been neglected, or by an improper regimen aggravated, it continues with all its symptoms for a long time; and produces various other disorders in the genital parts, which, as

commonly taken notice of by authors, need not be described here. I shall only observe, that the inflammation of the urethra, which at first seems to be seated chiefly, or only, in its anterior parts, is, in such neglected and aggravated cases, spread upwards along the urethra, even to the neck of the bladder. In these circumstances, a more considerable inflammation is occasioned in certain parts of the urethra; and consequently, suppuration and ulcer are produced, by which the venereal poison is sometimes communicated to the system, and gives rise to a general siphylis.

1768. It was some time ago a pretty general supposition, that the gonorrhœa depended always upon ulcers of the urethra, producing a discharge of purulent matter; and such ulcers do indeed sometimes occur in the manner that has
3 / been

been just now mentioned. We are now assured, however, from many dissections of persons who had died when labouring under a gonorrhœa, that the disease may exist, and from many considerations it is probable that it commonly does exist, without any ulceration of the urethra; so that the discharge which appears, is entirely that of a vitiated mucus from the mucous follicles of the urethra.

1769. Although most of the symptoms of gonorrhœa should be removed, yet it often happens that a mucous fluid continues to be discharged from the urethra for a long time after, and sometimes for a great part of a person's life. This discharge is what is commonly called a *Gleet*.

With respect to this, it is proper to observe, that in some cases, when it is cer-

tain the matter discharged contains no venereal poison, the matter may, and often does, put on that puriform appearance, and that yellow and greenish colour, which appears in the discharge at the beginning and during the course of a virulent gonorrhœa. These appearances in the matter of a gleet, which before had been of a less coloured kind, have frequently given occasion to suppose that a fresh infection had been received : but I am certain that such appearances may be brought on by, perhaps, various other causes ; and particularly, by intemperance in venery and drinking concurring together. I believe, indeed, that this seldom happens to any but those who had before frequently laboured under a virulent gonorrhœa, and have more or less of gleet remaining with them : but I must also observe, that in persons who at no period of their life had ever laboured under a virulent

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virulent gonorrhœa, or any other symptom of siphylitic affection, I have met with instances of discharges from the urethra resembling those of a virulent gonorrhœa.

The purpose of these observations is, to suggest to practitioners what I have not found them always aware of, that in persons labouring under a gleet, such a return of the appearances of a virulent gonorrhœa may happen without any new infection having been received, and consequently not requiring the treatment which a new infection might perhaps demand. When, in the cure of gonorrhœa, it was the practice to employ purgatives very frequently, and sometimes those of the drastic kind, I have known the gleet, or spurious gonorrhœa by such a practice much increased and long continued, and the patient's constitution very much hurt. Nay in order

more certainly further to prevent mistakes, it is to be observed, that the spurious gonorrhœa is sometimes attended with heat of urine, and some degree of inflammation; but these symptoms are seldom considerable, and, merely by the assistance of a cool regimen, commonly disappear in a few days.

1770. With respect to the cure of a virulent gonorrhœa, I have only to remark, that if it be true, as I have mentioned above, that the disease will often, under a proper regimen, be spontaneously cured; and that the whole of the virulent matter may be thus entirely discharged without the assistance of art; it would seem that there is nothing required of practitioners, but to moderate and remove that inflammation which continues the disease, and occasions all the troublesome symptoms that ever attend it. The sole business therefore

therefore of our art in the cure of gonorrhœa, is to take off the inflammation accompanying it: and this I think may commonly be done, by avoiding exercise, by using a low and cool diet, by abstaining entirely from fermented and spirituous liquors, and by taking plentifully of mild diluent drinks*.

D d 4

1771. The

* This simple method of curing a gonorrhœa is, in many cases, sufficient: but it can only be depended on when the disease is slight and the patient of a healthy constitution. As every virulent gonorrhœa is evidently produced by the action of the venereal poison, the judicious practitioner will seldom trust to this method, without the use of mercurials after the inflammatory symptoms have been somewhat subdued. They ought to be given in such cases in very small quantities, so as to produce only a slight effect on the mouth; and their use ought to be continued till every symptom disappears.

Mercury

1771. The heat of urine, which is so troublesome in this disease, as it arises from the increased sensibility of the urethra in its

Mercury may be used either internally or externally as occasion may require; if it does not affect the bowels nor purge, the common mercurial pill of the Edinburgh pharmacopœia is as good a formula as any we have in the shops. Its dose must be regulated by the effects it produces. In general, we begin with a four grain pill every night, and continue that quantity till the gums be slightly affected, or a coppery taste be perceived in the mouth. When either of these symptoms appear, we are certain that the mercury is received, in a sufficient quantity, into the general mass of the blood, for destroying the venereal virus; and then a pill may be given once in two or three days, so as to keep up the same slight affection of the mouth, but without increasing it. If the pill purges, we then are to have recourse to the strong mercurial ointment, half a drachm of which must be rubbed into the ham's night and morning, till the mouth be affected in the manner above described, The patient ought to wear flannel drawers during the whole time of the continuing the rubbing, which ought

its inflamed state ; so, on the other hand, the irritation of the urine has the effect of increasing the inflammation, and is therefore to be removed as soon as possible. This can be done most effectually by taking in a large quantity of mild watery liquors. Demulcents may be employed ; but unless they be accompanied with a large quantity of water, they will have little effect *. Nitre has been commonly employed as a supposed refrigerant : but, from much observation, I am convinced, that

to be regulated by the degree of affection perceived in the mouth. The use either of the pill, or of friction, must be continued eight or ten days after every symptom of the disease has disappeared.

* Lintseed tea, a very thin decoction of marsh-mallow root, or thin barley water, will, in most cases, answer the intention sufficiently well. The common almond emulsion has been recommended in these cases, and when taken in large quantities is certainly very efficacious. It may be used as the patient's common drink.

that in a small quantity it is useless, and in a large quantity certainly hurtful †; and, for this reason, that every saline matter passing with the urine generally gives some irritation to the urethra. To prevent the irritation of the urethra arising from its increased sensibility, the injection of mucilage or of mild oil into it has been practised; but I have seldom found this of much service.

1772. In gonorrhœa, as costiveness may be hurtful, both by an irritation of the system in general, and of the urethra in particular,

† The use of nitre has been strongly recommended by many practical writers, in cases of simple gonorrhœa unaccompanied with this symptom; but it must be acknowledged, as the author justly observes, to be hurtful by its irritating quality. It is certainly a refrigerant, and as such is useful in allaying the inflammatory symptoms; but it is inadmissible in cases where the ardor urinæ is violent.

particular, as this is occasioned always by the voiding of hardened fæces ; so costiveness is to be carefully avoided or removed ; and the frequent use of large glysters of water and oil, I have found of remarkable benefit in this disease. If glysters, however, do not entirely obviate costiveness, it will be necessary to give laxatives by the mouth : which, however, should be of the mildest kind, and should do no more than keep the belly regular and a little loose, without much purging*.

The practice of frequent purging,
which

* A tea spoonful of the following electuary taken occasionally will keep the belly sufficiently open.

R. Pulv. Jalap. ʒi.

Nitri ʒii.

Elect. Lenitiv. ʒi.

Syr. simpl. q. s.

M. f. Elect.

which was formerly so much in use, and is not yet entirely laid aside, has always appeared to me to be generally superfluous, and often very hurtful. Even what are supposed to be cooling purgatives, such as Glauber's salt, soluble tartar, and crystals of tartar, in so far as any part of them pass by urine, they, in the same manner as we have said of nitre, may be hurtful; and so far as they produce very liquid stools, the matter of which is generally acrid, they irritate the rectum, and consequently the urethra. This last effect, however, the acrid, and in any degree drastic, purgatives, more certainly produce.

1773. In cases of a gonorrhœa attended with violent inflammation, blood-letting may be of service; and in the case of persons of a robust and vigorous habit, in whom the disease is commonly the
most

most violent, blood-letting may be very properly employed. As general bleedings, however, when there is no phlogistic diathesis in the system, have little effect in removing topical inflammation; so in gonorrhœa, when the inflammation is considerable, topical bleeding applied to the urethra by leeches, is generally more effectual in relieving the inflammation*.

1774. When there is any phymosis attending a gonorrhœa, emollient fomentations applied to the whole penis are often
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* The good effects of leeches in these cases are confirmed by experience. They may be applied on the under side of the penis, and three or four thus applied have frequently produced amazing effects. The operation, however, is extremely painful, and is seldom submitted to a second time by a patient who has once experienced it.

of service. In such cases it is necessary, and in all others useful, to keep the penis laid up to the belly, when the patient either walks about or is sitting †.

1775. Upon occasion of frequent priapism and chordee, it has been found useful to apply to the whole of the penis a poultice of crumb of bread moistened with a strong solution of sugar of lead. I have, however, been often disappointed in this practice, perhaps by the poultice keeping the penis too warm, and thereby exciting the very symptoms I wished to prevent. Whether lotions of the external urethra
with

† In all cases of inflammation of the urethra these emollient applications give great relief. The common white bread poultice may be used during the night time, or while the patient is in bed; and warm flannels, impregnated with lintseed tea while he is sitting up.

with a solution of the sugar of lead, might be useful in this case, I have not properly tried*.

1776. With respect to the use of injections, so frequently employed in gonorrhœa, I am persuaded, that the early use of astringent injections is pernicious; not by occasioning a siphylis, as has been commonly imagined; but by increasing and giving occasion to all the consequences of the inflammation, particularly to the very troublesome symptoms of

* The sugar of lead solution may perhaps be objected against, on account of its stopping the discharge, and inducing a swelled testicle, which has sometimes followed its application. Wrapping the penis up in linen rags wet with cold water, frequently answers the purpose of preventing the violence of the symptoms, as well as any more complicated application. The cold wet rags ought to be renewed whenever they grow warm.

of swelled testicles. When, however, the disease has continued for some time, and the inflammatory symptoms have very much abated, I am of opinion, that by injections of moderate astringency, or at least of this gradually increased, an end may be sooner put to the disease than would otherwise have happened; and that a gleet, so readily occurring, may be generally prevented*.

1777. Besides

* The practice of using astringent injections is extremely common; but, as the author justly observes, their use is frequently attended with disagreeable consequences. In general they always do harm when used during the continuance of the inflammatory symptoms, or even too soon after these symptoms have disappeared. If, however (after the inflammatory symptoms are overcome, and mercury has been used for six weeks or two months in the manner described in the note on article 1772) the running still continues, we may then have recourse to these astringent injections. They may be
made

1777. Besides the use of astringent injections, it has been common enough to employ those of a mercurial kind. With respect to these, although I am convinced that

made of sugar of lead and white vitriol well diluted with water, as in the following formula.

R. Plumb. acetat.
 Zinc. vitriolat. āā ʒss.
 Aq. font. ʒviii.
 M. et cola per chartam.

Half an ounce of this injection slightly warmed may be thrown up into the urethra twice a-day; but if it produce any smarting, it ought to be diluted with more water.

Solutions of copper have also been used with advantage in these cases, but they are of so corrosive a nature, as frequently to do harm, if not very much diluted.

An imprudent or too frequent use of any of these injections, especially if they are too strong or not suffi-

that the infection producing gonorrhœa, and that producing chancres and siphylis, are one and the same; yet I apprehend, that in gonorrhœa mercury cannot be of use by correcting the virulence of the infection: and therefore that it is not universally necessary in this disease. I am persuaded, however, that mercury applied to the internal surface of the urethra, may be of use in promoting the more full and free discharge of virulent matter from the mucous glands of it. Upon this supposition, I have frequently employed mercurial injections; and, as I judge, with advantage; those injections often bringing on such a state of the con-

sistence

ciently diluted, sometimes inflames or even excoriates the urethra, and hence much mischief arises. The cautious practitioner must therefore never use them so strong as to produce much smarting.

sistence and colour of the matter discharged, as we know usually to precede its spontaneous ceasing. I avoid these injections, however, in recent cases, or while much inflammation is still present; but when that inflammation has somewhat abated, and the discharge still continues in a virulent form, I employ mercurial injections freely. I employ only those that contain mercury entirely in a liquid form, and avoid those which may deposite an acrid powder in the urethra. That which I have found most useful is a solution of the corrosive sublimate in water; so much diluted as not to occasion any violent smarting, but not so much diluted as to give no smarting at all. It is scarce necessary to add, that when there is reason to suspect there are ulcerations already formed in the urethra, mercurial injections are not only proper, but the only effectual remedy that can be employed.

1778. With regard to the cure of gonorrhœa, I have only one other remark to offer. As most of the symptoms arise from the irritation of a stimulus applied, the effects of this irritation may be often lessened by diminishing the irritability of the system; and it is well known, that the most certain means of accomplishing this is by employing opium. For that reason, I consider the practice both of applying opium directly to the urethra*, and of exhibiting it by the mouth, to be extremely useful in most cases of gonorrhœa.

1779. After

* Opium may be very conveniently applied to the urethra by injection; and for this purpose a diluted solution of opium in water is preferable to a spirituous or vinous solution. A grain of opium dissolved in an ounce of water, and the solution strained, may be injected twice or thrice a-day; and thirty or forty drops of laudanum may be given every night at bed time.

1779. After thus offering some remarks with respect to gonorrhœa in general, I ought to proceed to consider particularly the various symptoms which so frequently attend it; but it does not seem necessary for me to attempt this after the late publications of Dr Foart Simmons, and of Dr Schwediaur, who have treated the subject so fully, and with so much discernment and skill*.

E e 3

1780. The

* As a swelled testicle frequently attends a suppressed gonorrhœa, it may be proper to give the young practitioner some directions concerning the management of it.

Sometimes without any other preceding symptom, but generally on a premature stopping of a gonorrhœa, a pain is felt in the spermatic vessels and epididymis. The pain continuing, the vessels and epididymis begin to swell, and the pain and swelling are soon communicated to the testicle.

1780. The other form of the local affection of siphylis, is that of chancre. The ordinary appearance of this I need not describe,

In these cases, we must confine the patient to his bed, bleed him if the inflammatory diathesis appears to be universal; but, if not, three or four leeches may be applied to the inflamed part. A brisk purge must be given, for which purpose an ounce of Glauber's Salt, with a large quantity of water, answers sufficiently well. Cold pledgets soaked in a solution of Sugar of Lead, described in the note on Article 267. must be applied to the scrotum, and their place supplied with fresh cold ones, - as often as they grow warm by lying on the part. A warm poultice of bread and milk, must be also applied to the glans penis or to the whole penis. The patient must be kept on a very spare diet, using for his drink cold water with a scruple of nitre in each pint of it. This regimen generally allays the violence of the symptoms within twenty-four hours; but, it will be necessary to continue the use of the cold pledgets and warm poultice for three or four days, or longer, and to repeat the purge. After the pain and swelling have been completely removed, the patient may sit up, but it will

describe, it having been already so often done. Of the few remarks I have to offer, the first is, that I believe chancres never appear in any degree without immediately communicating to the blood more or less

E e 4 of

be prudent for him to use a suspensory bandage for the scrotum, as the weight of the testicles, by stretching the spermatic chords, will be apt to occasion the return of all the symptoms.

Sometimes the gonorrhœa, if it had preceded the swellings of the epididymis and testicles, will be again brought on; but, it likewise sometimes happens, that, on discussing the tumour in the scrotum, the glands of the groin begin to be painful and to swell. In these cases we must apply cold pledgets to these glands as well as to the scrotum; and rub, at the same time, some strong mercurial ointment on the inside of the thighs, in the course of the lymphatics going to these glands; and, if the penis be not inflamed, half a drachm or a scruple of mercurial ointment ought to be rubbed on the base of the glans penis in the inside of the prepuce.

Such

of the venereal poison: for I have constantly, whenever chancres had appeared, found, that unless mercury was immediately given internally, some symptoms of a general siphylis did certainly come on afterwards, and though the internal use of mercury should prevent any such appearance, it is still to be presumed that the poison had been communicated, because mercury could act upon it in no other manner than as diffused in the fluids.

1781. It has been a question among practitioners, upon the subject of chancres, Whether they may be immediately healed up by applications made to the chancres, or if they should be left open for some time

Such is the general method of treating cases of this kind, and a prudent continuation of it seldom fails of success.

time without any such application? It has been supposed, that the sudden healing up of chancres might immediately force into the blood a poison, which might have been excluded by being discharged from the chancre. This, however, is a supposition that is very doubtful; and, upon the other hand, I am certain, that the longer a chancre is kept open, the more poison it perhaps generates, and certainly supplies it more copiously to the blood. And although the above mentioned supposition were true, it will be of little consequence, if the internal use of the mercury, which I judge necessary in every case of chancre, be immediately employed. I have often seen very troublesome consequences follow from allowing chancres to remain unhealed; and the symptoms of general siphylis have always seemed to me to be more considerable and violent in proportion as chancres had been suffered to remain

main

main longer unhealed : They should always, therefore, be healed as soon as possible ; and that by the only very effectual means, the application of mercurials to the chancre itself. Those that are recent, and have not yet formed any considerable ulcer may often be healed by the common mercurial ointment ; but the most powerful means of healing them has appeared to me, to be the application of red precipitate in a dry powder*.

1782. When, in consequence of chancres,
or

* Although chancres may be very speedily healed by red precipitate alone, yet it will be necessary sometimes to use an ointment* made of the red precipitate and twice or thrice its weight of fresh hogs lard : The precipitate will by this means be more constantly kept on the part. The practitioner, however, must be cautious lest he use too great a quantity of precipitate, which, by
its

or of the other circumstances above mentioned, by which it may happen the venereal poison has been communicated to the blood, it produces many different symptoms in different parts of the body, not necessary to be enumerated and described here, that having been already done by many authors with great accuracy.

1783. Whenever

its corrosive quality, sometimes increases the ulcer it was meant to heal.

During the use of this application, it will be necessary also to use mercury either internally or externally, in the manner described in the note on article 1770.

The application of the lapis infernalis to chancres, comes recommended to us on the authority of some eminent practitioners. It is however a dangerous application, and frequently produces ulcers that are extremely difficult to heal.

1783. Whenever any of those symptoms do in any degree appear, or as soon as it is known that the circumstances which give occasion to the communication of the venereal poison has taken place, I hold the internal use of mercury to be immediately necessary; and I am well persuaded, that mercury employed without delay, and in sufficient quantity, will pretty certainly prevent the symptoms which would otherwise have soon appeared, or will remove those that may have already discovered themselves. In both cases, it will secure the person from any future consequences of siphylis from that infection.

1784. This advice for the early and full use of mercury, I take to be the most important that can be given with respect to the venereal disease: And although I must admit that the virulence of the poison
may

may be greater in one case than in another, and even that one constitution may be more favourable than another to the violence of the disease; yet I am thoroughly convinced, that most of the instances which have occurred of the violence and obstinacy of siphylis have been owing very entirely to the neglect of the early application of mercury*.

1785. Whatever other remedies † of
siphylis

* In a word, mercury is a certain specific for siphylis, and a sure antidote against the venereal poison. If it be properly used, it seldom fails of producing a cure; and this cure will always be the more speedy, in proportion, as mercury has been used in the earlier stage of the disease.

† We have no occasion to seek for other remedies than mercury; and the practitioner who risks his patient's health, and his own reputation, on the uncertain effects of other remedies, surely deserves reprehension.

siphylis may be known, or may hereafter be found out, I cannot pretend to determine : but I am well persuaded that in most cases mercury properly employed will prove a very certain and effectual remedy. With respect to others that have been proposed, I shall offer this remark only, that I have found the decoction of the mezereon contribute to the healing of ulcers which seemed to have resisted the power of mercury.

1786. With regard to the many and various preparations of mercury, I do not think it necessary to give any enumeration of them here, as they are commonly very well known, and have been lately well enumerated by Dr Schwediaur. The choice of them seems to be for the most part a matter of indifference ; as I believe cures have been, and still may be, effected by many different preparations, if proper-

ly administered. The proper administration* seems to consist, *1st*, In the choosing those preparations which are the least ready to run off by stool; and therefore the applications externally by unction are in many cases the most convenient. *2^{dly}*, In employing the unction, or in giving a preparation of mercury internally, in such quantity as may show its sensible effects in the mouth. And, *3^{dly}* without carrying these effects to a greater length, in the continuing the employment of mercury for several weeks, or till the symptoms of the disease shall have for some time entirely disappeared. I say nothing of the regimen proper and necessary for patients during the employment of mercury, because I presume it to be very well known.

1787. Among

* See the notes on Article 1770.

1787. Among the other preparations of mercury, I believe the corrosive sublimate has often been employed with advantage: but I believe also, that it requires being continued for a longer time than is necessary in the employment of other preparations in the manner above proposed; and I suspect it has often failed in making a cure, because employed while persons were at the same time exposed to the free air.

1788. Upon these points, and others relative to the administration of mercury, and the cure of this disease, I might offer some particular remarks: but I believe they are generally understood; and it is enough for me to say here, that if practitioners will attend, and patients will submit to, the general rules given above, they will seldom fail of obtaining a certain and speedy cure of the disease.

C H A P. III.

O F

S C U R V Y.

1789. **T**HIS disease appears so frequently, and the effects of it are so often fatal in fleets and armies, that it has very properly engaged the par-

ticular attention of physicians. It is indeed surprising that it had no sooner attracted the special notice both of statesmen and physicians, so as to have produced those measures and regulations that might prevent the havock which it so often occasions. Within these last fifty years, however, it has been so much attended to and studied, that we might suppose every circumstance relating to it so fully and exactly ascertained, as to render all further labour upon the subject superfluous. This perhaps may be true; but it appears to me, that there are still several circumstances regarding the disease not agreed upon among physicians, as well as different opinions formed, some of which may have had a bad effect upon the practice: and this seems to me to be so much the case, that I hope I shall be excused in endeavouring here to state the facts as they appear to me from the best authorities, and to offer

remarks

remarks upon opinions which may influence the practice in the prevention and cure of this disease.

1790. With respect to the phenomena of the disease, they have now been so fully observed, and so accurately described, that there is no longer any doubt in discerning the disease when it is present, or in distinguishing it from almost every other ailment. In particular, it seems now to be fully determined, that there is one disease only, intitled to the appellation of Scurvy; that it is the same upon the land as upon the sea; that it is the same in all climates and seasons, as depending every where upon nearly the same causes; and that it is not at all diversified, either in its phenomena or its causes, as had been imagined some time ago.

1791. The phenomena of scurvy, there-

fore, are not to be described here, as it has been so fully and accurately done elsewhere; and I shall only endeavour to ascertain those facts with respect to the prevention and cure of the disease which seem not yet to be exactly agreed upon. And, first, with respect to the antecedents that may be considered as the remote causes of the disease.

1792. The most remarkable circumstances amongst the antecedents of this disease is, that it has most commonly happened to men living very much on salted meats; and whether it ever arise in any other circumstances, is extremely doubtful. These meats are often in a putrescent state; and to the circumstance of the long continued use of animal food in a putrescent and somewhat indigestible state, the disease has been especially attributed.—Whether the circumstances of the

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the meat's being salted, has any effect in producing the disease, otherwise than by being rendered more indigestible, is a question that remains still in dispute.

1793. It seems to me, that the salt concurs in producing the effect; for there is hardly any instance of the disease appearing unless where salt meats had been employed, and scarcely an example where the long continued use of these did not produce it: besides all which, there are some instances where, by avoiding salted meats, or by diminishing the proportion of them in diet, while other circumstances remained much the same, the disease was prevented from appearing. Further, if it may be admitted, as an argument upon this subject, I shall hereafter endeavour to show, that the large use of salt has a tendency to aggravate and increase the proximate cause of scurvy.

1794. It must, however be allowed, that the principal circumstance in causing scurvy, is the living very much and very long upon animal food, especially when in a putrescent state; and the clear proof of this is, that a quantity of fresh vegetable food will always certainly prevent the disease.

1795. While it has been held, that, in those circumstances in which scurvy is produced, the animal food employed was especially hurtful by its being of difficult digestion, this opinion has been attempted to be confirmed, by observing, that the rest of the food employed in the same circumstances was also of difficult digestion. This is supposed to be especially the case of unfermented farinacea which so commonly makes a part of the sea-diet. But I apprehend this opinion to be very ill-founded; for the unfermented farina-
nacea,

nacea, which, are in a great proportion the food of infants, of women, and of the greater part of mankind, can hardly be supposed to be food of difficult digestion: and with respect to the production of scurvy, there are facts which show, that unfermented farinacea, employed in large proportion, have had a considerable effect in preventing the disease.

1796. It has been imagined, that a certain impregnation of the air upon the sea had an effect in producing scurvy. But it is altogether improbable: for the only impregnations which could be suspected, are those of inflammable or mephitic air; and it is now well known that these impregnations are much less in the air upon the sea than in that upon the land; besides, there are otherwise many proofs of the salubrity of the sea-air. If, therefore, sea-air have any effect in producing scur-

vy, it must be by its sensible qualities of cold or moisture.

1797. That cold has an effect in favouring the production of scurvy, is manifest from hence, that the disease is more frequent and more considerable in cold than in warm climates and seasons; and that even warm cloathing has a considerable effect in preventing it.

1798. Moisture may in general have an effect in favouring the production of scurvy, where that of the atmosphere in which men are placed is very considerable: but the ordinary moisture of the sea-air is far from being such. Probably it is never considerable, except in the case of unusual rains; and even then it is perhaps by the application of moisture to the bodies of men in damp cloathing only that it has any share in the production of

of

of scurvy. At the same time, I believe there is no instance of either cold or moisture producing scurvy, without the concurrence of the faulty sea-diet.

1799. Under those circumstances which produce scurvy, it commonly seems to occur most readily in the persons who are the least exercised; and it is therefore probable, that confinement and want of exercise may have a great share in producing the disease.

1800. It appears that weakness, in whatever manner occasioned, is favourable to the production of scurvy. It is therefore probable, that unusual labour and fatigue may often have some share in bringing it on: and upon the same account, it is probable, that sadness and despondency may induce a weakness of the circulation; and thereby, as has been
remarked,

remarked, be favourable to the production of scurvy.

1801. It has also been observed, that persons negligent in keeping their skin clean by washing and change of cloathing, are more liable than others to be affected with scurvy.

1802. Several of these causes, now mentioned, concurring together, seem to produce scurvy; but there is no proper evidence that any one of them alone will produce it, or that all the others uniting together will do it, without the particular concurrence of the sea diet. Alongst with this, however, several of the other circumstances mentioned have a great effect in producing it sooner, and in a more considerable degree, than would otherwise have happened from the diet alone.

1803. From

1803. From this view of the remote causes, it will readily appear, that the prevention of the disease may in some measure depend upon the avoiding of those circumstances which we have enumerated as contributing to bring on the disease sooner than it would otherwise come on. At the same time, the only effectual means will be, by avoiding the diet of salted meats; at least by lessening the proportion of these, and using meat preserved otherwise than by salt; by using in diet any kind of esculent vegetable matter that can be obtained; and especially, by using vegetable matters the most disposed to acescency, such as malt; and by drinking a large quantity of pure water.

1804. The cure of scurvy seems now to be very well ascertained; and when the necessary means can be obtained, the

disease is commonly removed very quickly. The chief means is a food of fresh and succulent vegetables, and those almost of any kind that are at all esculent. Those most immediately effectual are the acid fruits, and, as being of the same nature, all sort of fermented liquor.

1805. The plants named *alkalescent*, such as those of the garlic tribe and of the tetradynamia^{*}, are also particularly useful

* The plants of this class ought to be used in large quantities, and raw. The more active species are Horfe-radish, Mustard, Water-crefs, Garden-crefs, Scurvy-grafs: The milder species are, Radishes, Turnips, Cabbages, Cauli-flowers, Brocoli, &c.

To the above list, may be added some other antiscorbutics of different classes; as Malt, Spinach, Beet, Carrots, Celery, Endive, Lettuce, Asparagus, the young shoots of Hops, Purslain, with several others.

ful in the cure of this disease ; for notwithstanding their appellation, they in the first part of their fermentation undergo an acescency, and seem to contain a great deal of acescent matter. At the same time, they have generally in their composition an acrid matter that readily passes by urine, probably by perspiration ; and by promoting both excretions, are useful in the disease. It is probable, that some plants of the coniferous tribe, such as the spruce fir, and others possessed of a diuretic power, may likewise be of some use.

1806. It is sufficiently probable, that milk of every kind, and particularly its productions

All these fresh vegetables must be eaten in large quantities ; they ought indeed to constitute the patient's chief food, and his drink may be a fresh infusion of Malt.

productions whey and butter-milk, may prove a cure of the disease.

1807. It has been common in this disease to employ the fossil acids ; but there is reason to doubt if they be of any service, and it is certain they are not effectual remedies. They can hardly be thrown in in such quantity as to be useful antiseptics ; and as they do not seem to enter into the composition of the animal fluids, and probably pass off unchanged by the excretions, so they can do little in changing the state of the fluids.

1808. The great debility which constantly attends scurvy, has naturally led physicians to employ tonic and strengthening medicines, particularly the Peruvian bark ; but the efficacy of it seems to me very doubtful. It is surprising how soon the use of a vegetable diet restores the
strength

strength of scorbutic persons ; which, seems to show that the preceding debility had depended upon the state of the fluids ; and consequently, till the sound state of these can be restored, no tonic remedy can have much effect : but as the Peruvian bark has little power in changing the state of the fluids, so it can have little effect in scurvy.

1809. I shall conclude my observations upon the medicines employed in scurvy, with remarking, that the use of mercury is always manifestly hurtful.

1810. After having observed that both the prevention and cure of this disease are now very well known, it may seem unnecessary to enter into much discussion concerning its proximate cause : but as such discussions can hardly be avoided, and as false opinions, may in some
measure

measure corrupt the practice, I shall venture to suggest here what appears to me most probable upon the subject.

1811. Notwithstanding what has been asserted by some eminent persons, I trust to the concurring testimony of the most part of the authors upon the subject, that in scurvy the fluids suffer a considerable change.

From these authors we learn, that in the blood drawn from the veins of persons labouring under the scurvy, the crassamentum is different both in colour and consistence from what it is in healthy persons ; and that at the same time the serum is commonly changed both in colour and taste. The excretions also, in scorbutic persons, show a change in the state of the fluids. The breath is fetid ; the urine is always high-coloured, and

more acrid than usual: and if that acrid exudation from the feet, which Dr Hulme takes notice of, happens especially in scorbutic persons, it will be a remarkable proof to the same purpose. But however this may be, there is evidence enough that in scurvy the natural state of the fluids is considerably changed. Further, I apprehend it may be confidently presumed from this, that the disease is brought on by a particular nourishment introduced into the body, and is as certainly cured by the taking in of a different diet. In the latter case, the diet used has no other evident operation, than that of giving a particular state and condition to the fluids.

1812. Presuming, therefore, that the disease depends upon a particular condition of the fluids of the body, the next

subject of inquiry is, What that condition may be?

With this view, I must observe, that the animal œconomy has a singular power of changing acescent aliments, in such a manner, as to render them much more disposed to putrefaction: and although in a living state, they hardly ever proceed to an actually putrid state; yet in man, whose aliment is of a mixed kind, it is pretty certain, that if he were to live entirely upon animal food, without a frequent supply of vegetable aliment, his fluids would advance further towards putrefaction than is consistent with health. This advance towards putrefaction seems to consist in the production and evolution of a saline matter which did not appear in the vegetable aliment, and could not be produced or evolved in it, but by carrying on its fermentation to a
putrefactive

putrefactive state. That this saline state is constantly in some measure produced and evolved by the animal process, appears from this, that certain excretions of saline matter are constantly made from the human body, and are therefore presumed necessary to its health.

From all this, it may be readily understood, how the continual use of animal food, especially when already in a putrescent state, without a mixture of vegetable, may have the effect of carrying the animal process too far, and particularly of producing and evolving a larger proportion of saline matter. That such a preternatural quantity of saline matter does exist in the blood of scorbutic persons, appears from the state of the fluids above mentioned. It will be a confirmation of all this to observe, that every interruption of perspiration, that is,

the retention of saline matter, contributes to the production of scurvy; and this interruption is especially owing to the application of cold, or to whatever else weakens the force of the circulation, such as the neglect or want of exercise, fatigue, and despondency of the mind. It deserves, indeed to be remarked here, that one of the first effects of the scurvy once induced, is very soon to occasion a great debility of the system, which occasions of course a more rapid progress of the disease. How the state of the fluids may induce such a debility is not well understood; but that it does depend upon such a state of the fluids, is rendered sufficiently presumable, from what has been said above with regard to both the causes and the cure of scurvy.

1813. It is possible that this debility may have a great share in producing several

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ral of the phenomena of scurvy ; but a preternaturally saline, and consequently dissolved, state of the blood, will account for them with more probability ; and I do not think it necessary to persons who are at all accustomed to reason upon the animal œconomy, to explain this matter more fully. I have only to add, that if my opinion in supposing the proximate cause of scurvy to be a preternaturally saline state of the blood, be at all founded, it will be sufficiently obvious, that the throwing into the body along with the aliment an unusual quantity of salt, may have a great share in producing the disease. Even supposing such salt to suffer no change in the animal body, the effect of it may be considerable ; and this will be rendered still more probable, if it may be presumed, that all neutral salts, consisting of a fixed alkali, are changed in the animal body into an ammoniacal salt ; which I apprehend to be

that especially prevailing in scurvy. If I be at all right in concluding, that meats, from being salted, contribute to the production of scurvy, it will readily appear, how dangerous it may be to admit the conclusion from another theory, that they are perfectly innocent.

1814. Having thus endeavoured to explain what relates to the cure of scurvy in general, I judge it proper to leave to other authors, what relates to the management of those symptoms which require a particular treatment.

C H A P. IV.

OF

J A U N D I C E.

1815. **I** HAVE here passed over several of the titles in my nosology, because they are diseases not of this island. In these, therefore, I have no experience;

and without that, the compiling from other writers is always extremely fallacious. For these reasons I omit them; and shall now only offer some remarks upon the subject of jaundice, the last in order that I can possibly introduce in my course of Lectures.

1816. The jaundice consists in a yellow colour of the skin over the whole body, and particularly of the adnata of the eyes. This yellow colour may occur from different causes; but in the jaundice, hereafter to be more exactly characterised, I judge it to depend upon a quantity of bile present in the mass of blood; and which, thrown out upon the surface, gives its own proper colour to the skin and eyes.

1817. That the disease depends upon this, we know particularly and certainly from
from

from the causes by which it is produced. In order to explain these, I must observe, that bile does not exist in its proper form in the mass of blood, and cannot appear in this form till it has passed the secretory organ of the liver. The bile therefore cannot appear in the mass of blood, or upon the surface of the body, that is, produce jaundice from any interruption of its secretion; and accordingly, if jaundice does appear, it must be in consequence of the bile, after it had been secreted, being again taken into the blood-vessels.

This may happen in two ways; either by an interruption of its excretion, that is, of its passage into the duodenum, which, by accumulating it in the biliary vessels, may give occasion to its passing again into the blood-vessels; or it may pass into these, by its being absorbed
I from

from the alimentary canal, when it happens to be accumulated there in an unusual quantity. How far the latter cause can take place, or in what circumstances it does occur, I cannot clearly ascertain, and I apprehend that jaundice is seldom produced in that manner.

1818. The former cause of stopped excretion may be understood more clearly; and we have very certain proof of its being the ordinary, and indeed almost the universal cause of this disease. Upon this subject it will be obvious, that the interrupted excretion of the bile must depend, upon an obstruction of the *ductus communis choledochus*; the most common cause of which is a biliary concretion formed in the gall-bladder, and from thence fallen down into the ductus communis, it being at the same time of such a size as not to pass readily through the duct

duct into the duodenum. This duct may likewise be obstructed by a spasmodic constriction affecting it: and such spasm may happen, either in the duct itself, which we suppose to be contractile; or in the duodenum pressing the sides of the duct close together; or, lastly, the duct may be obstructed by a tumour compressing it, and that arising either in the duct itself, or in any of the neighbouring parts that are, or may come to be, contiguous to it.

1819. When such obstruction happens, the secreted bile must be accumulated in the biliary ducts; and from thence it may either be absorbed and carried by the lymphatics into the blood-vessels, or it may regurgitate in the ducts themselves, and pass from them directly into the ascending cava. In either way, it comes to be diffused in the mass of blood; and
from

from thence may pass by every exhalant vessel, and produce the disease in question.

1820. I have thus shortly explained the ordinary production of jaundice: but it must be observed farther, that it is at all times accompanied with certain other symptoms, such as a whiteness of the *faeces alvine*, which we readily account for from the absence of bile in the intestines; and generally, also, with a certain consistence of the faeces, the cause of which is not so easy to explain. The disease is always accompanied also with urine of a yellow colour, or at least with urine that tinges a linen cloth with a yellow colour. These are constantly attending symptoms; and though not always, yet there is commonly, a pain felt in the epigastrium, corresponding, as we suppose, to the seat of the ductus communis. This pain is often

often accompanied with vomiting; and even when the pain is not considerable, a vomiting sometimes occurs. In some cases, when the pain is considerable, the pulse becomes frequent, full, and hard, and some other symptoms of pyrexia appear.

1821. When the jaundice is occasioned by tumours of the neighbouring parts compressing the biliary duct, I believe the disease can very seldom be cured. That such is the cause of jaundice, may with some probability be supposed, when it has come on in consequence of other diseases which had subsisted long before, and more especially such as had been attended with symptoms of obstructed viscera. Even when the jaundice has subsisted long without any intermission, and without any pain in the epigastrium, an external compression is to be suspected.

1822. In

1822. In such circumstances, I consider the disease as incurable; and it is almost only when the disease is occasioned by biliary concretions obstructing the biliary duct, that we may commonly expect relief, and that our art may contribute to the obtaining it. Such cases may be generally known, by the disease frequently disappearing and returning again; by our finding, after the former accident, biliary concretions amongst the fæces; and by the disease being frequently accompanied with pain of the epigastrium, and with vomitings arising from such pain.

1823. In these cases, we know of no certain and immediate means of expediting the passage of the biliary concretions. This is generally a work of time depending upon the gradual dilatation of the biliary duct; and it is surprising to observe, from the size of the stones which
sometimes

sometimes pass through, what dilatation the duct will admit of. It proceeds, however, faster or slower, upon different occasions; and therefore the jaundice, after a various duration, often ceases suddenly and spontaneously. It is this which has given rise to the belief, that the jaundice has been cured by such a number and such a variety of different remedies. Many of these, however, are perfectly inert, and many others of them such as cannot be supposed to have any effect in expediting the passage of a biliary concretion. I shall here, therefore, take no notice of the numerous remedies of jaundice mentioned by the writers on the *Materia Medica*, or even of those to be found in practical authors; but shall confine myself to the mention of those that may with probability be supposed to favour the passage of the concretion, or remove the obstacles to it which may occur.

1824. In the treatment of this disease, it is, in the first place, to be attended to, that as the distention of the biliary duct, by a hard mass that does not easily pass through it, may excite inflammation there; so in persons of tolerable vigour, blood-letting may be an useful precaution; and when much pain, together with any degree of pyrexia, occurs, it becomes an absolutely necessary remedy. In some instances of jaundice accompanied with these symptoms, I have found the blood drawn covered with an inflammatory crust as thick as in cases of pneumonia.

1825. There is no means of pushing forward a biliary concretion that is more probable than the action of vomiting; which, by compressing the whole abdominal viscera, and particularly the full and distended gall-bladder and biliary vessels, may contribute, sometimes gently enough,

to

to the dilatation of the biliary duct. Accordingly vomiting has often been found useful for this purpose: but at the same time it is possible, that the force exerted in the act of vomiting may be too violent, and therefore gentle vomits ought only to be employed. And either when, by the long continuance of the jaundice, it may be suspected that the size of the concretion then passing is large; or more especially, when pain attending the disease gives apprehension of inflammation, it may be prudent to avoid vomiting altogether.

1826. It has been usual in the jaundice to employ purgatives; and it is possible that the action of the intestines may excite the action of the biliary ducts, and thus favour the expulsion of the biliary concretion; but this, I think, cannot be of much effect; and the attempting it by the frequent use of purgatives, may otherwise

hurt the patient. For this reason I apprehend, that purgatives can never be proper, excepting when there is a slow and bound belly*.

1827. As the relaxation of the skin contributes to relax the whole system, and particularly to relieve the constriction of subjacent parts; so, when the jaundice is attended with pain, fomentations of the epigastrium may be of service.

1828. As

* The good effects of purgatives, in removing biliary concretions in the duct, are sufficiently apparent by daily experience. It is true indeed, that all purgatives have not this effect, especially such as are of a gentle and slow operation. The drastic purges, however, whose action is both brisk, and of long continuance, have frequently been attended with good effects. Some formulæ of these brisk drastics have been described in the notes on article 1683.

1828. As the solids of the living body are very flexible and yielding; so it is probable, that biliary concretions would in many cases find the biliary duct readily admit of such dilatation as to render their passage through it easy, were it not that the distention occasions a preternatural spasmodic contraction of the parts below. Upon this account, opium is often of great benefit in jaundice, and the benefit resulting from its use, proves sufficiently the truth of the theory upon which the using of it has been founded.

1829. It were much to be wished, that a solvent of biliary concretions, which might be applied to them in the gall-bladder or biliary ducts, was discovered: but none such, so far as I know, has yet been found: and the employment of soap in this disease, I consider as a frivolous attempt. Dr White of York has found

a solvent of biliary concretions when these are out of the body : but there is not the least probability that it could reach them while lodged within.

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