Observations on the nature, causes, and cure, of those disorders, which have been commonly called nervous, hypochondriac, or hysteric. To which are prefixed, some remarks on the sympathy of the nerves / By Robert Whytt.

OBSERVATIONS,

&c. &c.

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ON THE

NATURE, CAUSES, AND CURE,

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WHICH HAVE BEEN COMMONLY CALLED

Nervous, Hypochondriac, or Hysteric.

TO WHICH ARE PREFIXED,

SOME REMARKS ON THE

SYMPATHY OF THE NERVES.

BY

ROBERT WHYTT, M. D. F. R. S.

PHYSICIAN TO HIS MAJESTY,
PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS,
AND PROFESSOR OF MEDICINE IN THE
UNIVERSITY OF EDINBURGH.

Συμπαθία πάντα.----*Hippocrat. de Aliment.* § 4.

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PREFACE.

THE diſorders which are the ſubject of the following Obſervations have been treated of by authors under the names of *flatulent*, *ſpaſmodic*, *hypoc ondriac*, or *hyſteric*. Of late they have alſo got the name of *nervous*; which appellation having been commonly given to many ſymptoms ſeemingly different, and very obſcure in their nature, has often made it be ſaid that Phyſicians have beſtowed the character of *nervous* on all thoſe diſorders whoſe nature and cauſes they were ignorant of. To wipe off this reproach, and at the ſame time to throw ſome light on nervous, hypochondriac, and hyſteric complaints, is the deſign of the following Obſervations; which are alſo intended to ſhew how far the principles laid down in my Eſſay on the Vital and other involuntary Motions of Animals may be of uſe in explaining the nature of ſeveral diſeaſes, and conſequently in leading to the moſt proper method of cure.*

Since, in almoſt every diſeaſe, the nerves ſuffer more or leſs, and there are very few diſorders

* See an Eſſay on the vital, &c. Motions, Edit. 1ſt, p. 390.

diſorders which may not in a large ſenſe be called nervous, it might be thought that a Treatiſe on nervous Diſeaſes ſhould comprehend almoſt all the complaints to which the human body is liable. The deſign, however, of the following Obſervations is far different. In them it is only propoſed to treat of thoſe diſorders which in a peculiar ſenſe deſerve the name of *nervous*, in ſo far as they are, in a great meaſure, owing to an uncommon delicacy or unnatural ſenſibility of the nerves, and are therefore obſerved chiefly to affect perſons of ſuch a conſtitution.

As many of theſe complaints depend upon that ſympathy which obtains between the various parts of the body, it ſeemed neceſſary to begin with ſome obſervations on the *ſympathy of the nerves*; a ſubject of the greateſt importance in pathology.

In reaſoning on the nature and cauſes of nervous diſorders, I have endeavoured to avoid *uncertain hypotheſes;* and therefore have had no recourſe to any imaginary *flight, repercuſſion, diſperſion, confuſion,* or jarring conteſt, of the animal ſpirits; for whoſe exiſtence we have only probability, and of whoſe

whoſe peculiar nature and properties we are altogether ignorant. But, although the minute ſtructure of the nerves, the nature of their fluid, and thoſe conditions on which depend their powers of feeling and communicating motion to the body, lie much beyond our reach, yet we know certainly that the nerves are endued with feeling, and that, as there is a general ſympathy which prevails through the whole ſyſtem, ſo there is a particular and very remarkable *conſent* between various parts of the body. From this ſentient and ſympathetic power of the nerves I have endeavoured to deduce the various ſymptoms of the nervous kind; and have thought it better to ſtop ſhort here, than to amuſe myſelf or others with ſubtile ſpeculations concerning matters that are involved in the greateſt obſcurity.

If it ſhould be ſaid, that, to account for diſeaſes from the ſenſibility or ſympathy of the nerves, while we know not wherein theſe powers conſiſt, is no better than referring them to a *facultas incognita*, or to the hypothetical *motions* and *counter-motions* of the animal ſpirits, I ſhall only anſwer, that, although we cannot explain why grief or joy

ſhould,

ſhould, by means of the nerves, excite a greater motion than uſual in the veſſels of the lachrymal glands, yet it is leading us to the truth, and advancing one ſtep farther in our knowledge, to ſhew that the increaſed ſecretion of tears, occaſioned by thoſe paſſions of the mind, proceeds from this cauſe, and not from any compreſſion of the lachrymal glands or their ducts by the neighbouring muſcles, as has been commonly imagined: And, to aſcend from ſmall things to great, although *Sir Iſaac Newton* did not pretend to explain the cauſe of gravity, yet he made no ſmall improvement in phyſical aſtronomy, when, from this principle alone, he accounted for the various motions of the planets, and baniſhed the imaginary *vortices* of *Deſcartes*, which had been contrived, but unſucceſsfully, to explain the *phænomena* of the ſolar ſyſtem.

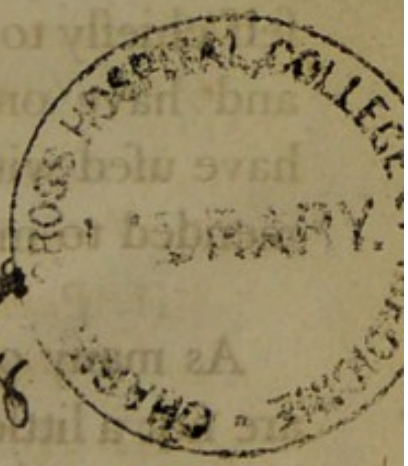
In the practical part I have confined myſelf chiefly to what experience had ſuggeſted, and have only adviſed ſuch remedies as I have uſed with ſucceſs myſelf, or had recommended to me by thoſe whom I could truſt.

As many of the ſubjects I have treated of are not a little obſcure, it cannot be expected that

that they ſhould admit of as clear an explication as matters that are leſs intricate; and this, it is hoped, will make the learned in the profeſſion overlook, with candour, the defects which may be found in the following Obſervations. However, if, with all their imperfections, they ſhall be of any uſe in conveying to the younger and leſs experienced Phyſicians a clearer notion of the nature of thoſe diſorders which have been commonly called *nervous*, *hypochondriac*, or *hyſteric*, or in any caſe direct them more happily in the cure, I ſhall have my aim, and be ſufficiently rewarded in the ſatisfaction of thinking that my labour has not been altogether uſeleſs to the Public, the good of which ought to be the principal view of every writer.

Hoc opus, hoc ſtudium, parvi properemus et ampli,
Si patriæ volumus, ſi nobis vivere chari.

Edinburgh, Nov. 15,
1764.



THE

CONTENTS.

CHAP. VII.

CHAP. VIII.

CONTENTS.

OBSERVATIONS, &c.

CHAPTER I.

OF THE STRUCTURE, USE, AND SYMPATHY OF THE NERVES.

BEFORE we enter upon the ſubject of the following Obſervations, it may be proper to make a few remarks concerning the Structure, Uſe, and Sympathy of the Nerves.

1. The nerves are thoſe ſmall cords, which, riſing from the brain and ſpinal marrow, are diſtributed to every part of the body. They appear to be no more than continuations of the medullary ſubſtance of the parts from whence they proceed, and owe their ſtrength and firmneſs to the membranes and cellular texture which ſurround them.

2. The larger nerves, (1,) are evidently compoſed of many ſmaller ones, which run parallel to each other, and ſeem to be quite diſtinct from their origin to their termination, without any ſuch communications between their branches as are obſerved every where in the ſyſtem of arteries and veins.

3. The ſmalleſt nervous filaments, that can be traced by diſſection, are ſtill compoſed of leſſer threads, ſo that we can have no idea of the exility of a ſingle nervous fibril.

4. Although it ſeems probable that the nerves, (3,) which are continuations of the medullary ſubſtance of the brain and ſpinal marrow, derive from thence a fluid, yet the extreme ſmallnéſs of the nervous tubes, and the ſubtility of that fluid which they contain, make us altogether ignorant of its peculiar nature and properties. Nor do we know certainly whether this fluid ſerves only for the nouriſhment and ſupport of the nerves, or

 whether

whether it be not the medium by which all their actions are performed.

5. The nerves communicate ſenſe and a power of motion to the body.

Since opium, without entering the blood, or being carried to the ſeveral parts of the body, leſſens or deſtroys their powers of feeling and motion, merely by acting on the extremities of the nerves to which it is applied,* it follows that the nerves muſt be the inſtruments of ſenſation, and neceſſary for performing motion. Many other experiments and arguments might be mentioned to the ſame purpoſe; but as this agency of the nerves is a point generally acknowledged, it would be unneceſſary to enter here into a more particular proof of it.

6. Although every part of the body, furniſhed with nerves, has either more or leſs of feeling,† yet there are only ſome of thoſe parts whoſe ſtructure renders them capable of motion, viz. the muſcles, and ſuch organs as are in part muſcular; and the blood veſſels, which, from the effects of bliſters, and other *ſtimuli*, appear evidently to be poſſeſſed of irritability, or a power of alternate contraction.

7. There are only two kinds of motion obſerved in the bodies of living animals, viz. voluntary, and involuntary from *ſtimuli*. In order to the performance of the firſt, the nervous power is not only neceſſary, but alſo a free communication, by means of the nerves, between the brain and the parts to be moved. The ſecond continues for ſome time, though in a much weaker degree, even in thoſe muſcles whoſe connection with the brain is wholly cut off; whence it has been concluded, that this kind of motion is independent of the nerves, and owing to ſome power or property in the muſcular fibres themſelves, or in the glutinous matter connecting the elements of which they are compoſed.‡ That this concluſion, however, is not

* See Edinburgh Phyſical Eſſays, Vol. ii. p. 304, 309, 310, &c.

† There are ſome exceptions to this, ſuch as the *bones* and *cartilages*, which, though not deſtitute of nerves, are yet, in a natural ſtate, inſenſible.

‡ Acta Gotting. Vol. ii. p. 152, &c.

not well founded, I have formerly ſhewn by ſeveral arguments and experiments;* and ſhall, therefore, at preſent, only obſerve, that ſince a ſolution of *opium*, by affecting the extremities of the nerves to which it is applied, and without being received into the blood, or carried to the brain or muſcles, deſtroys not only the power of voluntary motion in animals, but alſo renders their muſcles incapable of being excited into contraction by the ſtrongeſt *ſtimuli*,† it evidently follows, that involuntary as well as voluntary motion depends upon ſome power or influence of the nerves.‡

But, be this as it will, from the continuance of the motion of the heart, and other muſcles, after they are ſeparated from the body, one may ſafely conclude, that the contraction of irritated muſcles is not owing to the diſtenſion of their hollow fibres by a more copious influx of the nervous fluid at that time. Does this fluid act in ſome other way than by diſtending the muſcular fibres? or is it only neceſſary to keep them in a proper ſtate for being acted upon by that living principle from which all their motions are to be derived?‖

8. As

* See Edinb. Phyſical Eſſays, Vol. ii. p. 309, &c. and Phyſiological Eſſays, Edit. 2d, &c.

† See Eſſay on the Vital Motions of Animals, Edit. 2d, p. 418.

‡ See this argument farther purſued in Phyſical Eſſays, Vol. ii. p. 304, 310, &c.

‖ Since it has been the prevailing opinion among Phyſiologiſts, that the contraction of the muſcles is owing to the dilatation of their hollow fibres by a greater influx of the nervous fluid into them, it may not be amiſs briefly to mention the principal arguments which render this opinion at leaſt very improbable.

1. As far as we can judge, from experiments, the muſcles become leſs bulky in a ſtate of contraction than they were before. The hearts of frogs, when taken out of the body, become really leſs every time they contract; and their contraction ſeems not to be owing to an inflation of their fibres or veſſels, but to the particles of which they are compoſed approaching nearer to one another, and running into cloſer contact.

2. The extraordinary ſmallneſs of the nerves, and the very ſlow ſecretion and motion of their fluid, makes it improbable that muſcular motion is owing to the diſtenſion of the fibres of the muſcles by a ſudden influx of that fluid. Nor have we any reaſon to think that the nervous juice dilates the muſcular fibres by means of any rarefaction or effervescence.

3. The

8. As the nerves are continuations of the medullary ſubſtance of the brain and ſpinal marrow, it is probable that they are partly nouriſhed by thoſe veſſels which are ſpread on that production of the *pia mater* which ſurrounds them, in like manner as the brain derives its nouriſhment from the arteries of the *pia mater*. If this be true, we may readily ſee why the nerves loſe their powers when they are wholly deprived of the arterial blood; and, on the other hand, retain them, in ſome meaſure, after the brain is offified or petrified.

It has been thought by ſome, that nutrition is chiefly performed by means of the nervous fluid, becauſe thoſe parts whoſe nerves are deſtroyed, or wholly deprived of their uſual power, are obſerved to become ſmaller. But whoever conſiders the inconceivably exility of the nerves, and how ſlowly any fluid muſt be derived by their means from the brain,* will ſcarcely think that the nutrition and growth of the body can be performed in this way. Nor does the withering of ſuch muſcles as

3. The muſcles grow more tendinous by age; *i. e.* their fibres towards their extremities degenerate into ſolid threads; and this happens ſooneſt when the muſcles are much uſed: but if the contraction of a muſcle were owing to the inflation of its fibres by any fluid, the more frequently it was moved, it would be the leſs apt to become tendinous.

4. If the muſcular fibres are hollow, and of a cylindrical form, or made up of veſicles, it may be demonſtrated, that they cannot be rendered, in the firſt caſe, above one fifth, and in the ſecond above one third, part ſhorter by the influx of a fluid into their cavities; but we know that the difference between the *ſphincter pupillæ* and *ani*, and the ſtomach and bladder, in their greateſt ſtate of contraction and diſtenſion, is much more than any of theſe proportions.

5. The regular alternate contraction of the hearts of frogs, for five or ſix hours after decollation and the deſtruction of their ſpinal marrow, and for half an hour or more after they are ſeparated from their bodies, clearly proves that an influx of a fluid from the nerves into the muſcles is not neceſſary for their contraction. For although the ſpirits remaining in the nerves of the heart ſhould be ſuppoſed to occaſion a few contractions of this muſcle, yet they cannot be ſufficient for producing ſeveral thouſand diſtenſions of its hollow fibres.

The above arguments, if they do not entirely overthrow the common opinion, will at leaſt juſtify me in not having recourſe, in the following Treatiſe, to the *irregular motion*, *increaſed derivation*, *retrocuſſion*, *confuſion*, or *hurry* of the animal ſpirits, in accounting for the ſymptoms of nervous, hypochondriac or hyſteric diſorders.

* See Phyſiological Eſſays, Edit. 2. p. 22, &c.

as are totally palſied, prove that nutrition is owing to the nervous fluid; for we know, from certain experiments and obſervations, that the motion of the fluids, in the very ſmall veſſels, depends, in a great meaſure, upon the influence of their nerves; and that when this is wanting, the fluids either do not circulate at all through thoſe veſſels, or at leaſt in a very languid manner; whence the parts to which they belong collapſe, and are not properly nouriſhed.*

9. Our bodies are, by means of the nerves, not only endowed with feeling, and a power of motion, but with a remarkable ſympathy, which is either general, and extended through the whole ſyſtem, or confined in a great meaſure to certain parts.

10. That every ſenſible part of the body has a ſympathy with the whole, will ſufficiently appear from the following facts.

Cold water, thrown on any part of the body that is warm, produces a ſudden contraction of the whole veſſels and pores of the ſkin, and by that means frequently puts a ſtop to ſmall hæmorrhages. The effluvia of certain ſubſtances, when ſmelled to, inſtantly communicate new life and vigour to the whole body, while others affect ſome delicate women with fainting and convulſions. By means of different muſical ſounds, various paſſions may be excited or calmed, and diſeaſes are ſaid to have been ſometimes cured.† By doleful ſtories, or ſhocking ſights, delicate people have been often affected with faintings and general convulſions.‡

When the brain is wounded, inflamed, ſuppurated, or otherwiſe hurt, almoſt every part of the body is liable to ſuffer; and vomitings, tremors, convulſions, palſies, &c. often enſue. In animals newly dead, the whole muſcles of the trunk and extremities are ſtrongly convulſed, when a probe is puſhed down through the ſpinal marrow.

* Phyſiological Eſſays, Edit. 2. p. 49 and 50.

† Hiſtoire Acad. Royale des Sciences, An. 1717.

‡ Although in theſe caſes the changes produced in the body are owing to the paſſions of the mind, yet, as the mind is only affected through the intervention of the optic and auditory nerves, they ſeem proper enough inſtances of the general ſympathy that extends through the whole nervous ſyſtem.

When the ſtomach is in a ſound ſtate, and digeſtion is properly performed, the ſpirits are good, and the body is light and eaſy; but when that organ is out of order, a languor, debility, melancholy, watchfulneſs, or troubleſome dreams, the night mare, &c. are the conſequences. Grateful food, ſtrong wine, or other ſpirituous liquors, no ſooner touch the ſtomach of one ready to faint from emptineſs, than they communicate new life and ſtrength to the whole body. And, on the other hand, ſeveral poiſons occaſion violent ſickneſs, vomiting, fainting, tremors, convulſions, ſtupidity, an intermitting pulſe, difficult breathing, coldneſs of the extremities, and other ſymptoms. A fever, delirium, and violent convulſions, have been produced by a pin ſticking in the coats of the ſtomach.* And worms, affecting either this part or the inteſtines, occaſion a ſurpriſing variety of ſymptoms.

Epileptic fits have proceeded from a rough bone, or cartilaginous ſubſtance, irritating the nerves of the great toe, or the calf of the leg: and the wound of a tendon or nerve has been the cauſe of a fever, delirium, tremors, violent convulſions, a *tetanus*, and death.

Many more examples might be mentioned, were it neceſſary, of that general ſympathy which prevails throughout the whole body. But there is nothing which ſets this matter in ſo clear and indiſputed a light, as the effects of opium: for a ſolution of this ſubſtance injected into the great guts of a dog, in a few minutes brought on a palſy of his poſterior extremities, attended with a ſtupor and convulſions.† Some days after, a like ſolution being injected by a perforation through the teguments into the *abdomen* of the ſame dog, he became almoſt inſtantaneouſly paralytic, and died in a few minutes.‡

A ſolution of opium injected either into the ſtomach or inteſtines of frogs, or even applied to the muſcles of their belly laid bare, produces a paralytic weakneſs, a ſtupor, and death at laſt; although

* Hildan. Centur. ii. Obſervat. 34.

† Edinburgh Phyſical Eſſays, Vol. ii. p. 297. ‡ Ibid. p. 298.

although ſuch is the nature of theſe animals, that opium does not kill them near ſo ſoon as it does dogs.*

From theſe experiments it appears, that not only thoſe nerves to which opium is immediately applied are rendered incapable of performing their office, but that the brain, ſpinal marrow, and whole nervous ſyſtem, are affected in the ſame manner, *ſolely* by the action of the *opium* on the nerves which it touches. For its effects upon dogs are too inſtantaneous to allow of the ſuppoſition, that the more ſubtile parts of this poiſon are received into the blood, and by that means are conveyed to the brain. And in frogs, after the heart is taken out, and conſequently a ſtop put to the circulation, yet a ſolution of opium, injected into the ſtomach and inteſtines, has the ſame effect as when theſe animals are entire.†

11. Beſides this general conſent, (10,) which prevails throughout the whole body, there is a particular and very remarkable ſympathy between ſeveral of its organs, by means of which many operations are carried on in a ſound ſtate; and pain, convulſive motions, and other morbid ſymptoms, are often produced in ſuch parts as have no near connexion with thoſe that are immediately affected. To illuſtrate this, I ſhall give ſeveral inſtances, beginning with the head, and taking the parts in their order downwards.

(a.) The *head.* Violent pains in the head, which have their ſeat moſt commonly in the membranes of the brain or *pericranium*, are frequently attended with a ſickneſs at the ſtomach, and vomiting. The *ſpaſmus cynicus*, locking of the jaws, and an univerſal *tetanus*, have followed a wound of the left ſide of the head, by which the temporal muſcle was divided.‡ Light and noiſe are offenſive both to the eyes and ears in ſevere headachs. Wounds and contuſions of the brain generally occaſion bilious vomitings. Certain impreſſions made on the

* Edinburgh Phyſical Eſſays, Vol. ii. p. 281, 292.

† Ibid. Vol. ii. p. 281, and 302. and Eſſay on the Vital Motions of Animals, Edit. 2. p. 413.

‡ Hildan. Centur. v. Obſervat. 9.

ſenſorium commune by external objects, inſtantly give the eyes either a dull, a lively, or a fierce look.

Grief, vexation, or fear, leſſen the ſecretion of the ſaliva, deſtroy the appetite, and ſometimes occaſion a looſeneſs. The great conſent between the brain and heart appears from the ſudden and remarkable effects of the paſſions on the latter.

(b.) The *eyes*. When one eye is affected with an inflammation, a cataract, or the *gutta ſerena*, the other is often ſoon after attacked with the ſame diſeaſe. The contraction of the pupil is not owing to light acting as a *ſtimulus* on the *iris*, but ſolely to the ſympathy between this membrane and the *retina*.* There is ſuch a ſympathy between the two pupils, that, even in a *gutta ſerena*, the pupil of the morbid eye is obſerved to follow the motions of the ſound one. We ſhut both eye-lids, whether we will or no, as often as any thing threatens to hurt either eye. A bright light, coming ſuddenly on the eyes, ſometimes occaſions ſneezing. *Hippocrates* has obſerved, that the unexpected ſight of a ſerpent will make the countenance pale.† The ſight of grateful food occaſions an uncommon flux of the *ſaliva* in a hungry perſon. Yawning and vomiting are often catching.

(c.) The *ears*. The noiſe of a file, and other harſh ſounds, affect the teeth with an uneaſy ſenſation. The whetting of a knife has cauſed the gums to bleed.‡ Great and unexpected ſounds, ſuch as the exploſion of a cannon or muſket, make us inſtantly cloſe our eye lids. As the ear is frequently pained when the *fauces* are inflamed, ſo an irritation of the *meatus auditorius* will often excite coughing, and ſometimes vomiting.§ A conſtant pain of one ſide of the head, with a numbneſs of the left arm and leg, a ſuppreſſion of the menſes, and epileptic fits, have all been occaſioned by a glaſs ball, not larger than a pea, ſticking in the ear.‖

(d.) The

* See an Eſſay on the Vital Motions of Animals, Edit. 2. § vii.

† Lib. de Humoribus.

‡ Boyle's uſefulneſs of Experimental Philoſ. Part 2. p. 248.

§ Pechlin. Obſervat. Med. Lib. 2. No. 45.

‖ Hildan. Centur. i. Obſervat. 4.

(d.) The *noſe.* The effluvia of Hungary water, or ſpirit of wine, drawn ſtrongly into the noſtrils, increaſe the derivation of the ſalival juice into the mouth, and ſometimes ſtop a tickling cough. The ſmell of grateful food makes the ſaliva flow when one is hungry. Sternutatories not only increaſe the ſecretion from the noſe, but alſo from the lachrymal veſſels. After ſmelling to volatile ſalts, or eating too much ſtrong muſtard with one's meat, a pain is often felt above the eye-brows; and it is obſervable, that after taking a large draught of very cold water in winter, that part of the forehead immediately above the noſe is affected with a painful ſenſation. Acrid ſubſtances, applied to the olfactory nerves, bring the diaphragm, intercoſtal and abdominal muſcles, into convulſive motions.

Mr. Boyle mentions ſeveral who were purged by ſmelling to a cathartic medicine;* and we are told that in ſome the effect failed, when, from a *coryza*, or obſtruction of the membrane of the noſe, the olfactory nerves had loſt their power of diſtinguiſhing ſmells.

(e.) The *teeth.* A rotten tooth will ſometimes occaſion a violent pain in a ſound one, though at a diſtance from it; and the pain will ceaſe as ſoon as the ſpoilt tooth is drawn, or its nerve deſtroyed. A pain in the teeth often affects the cheek-bone, one ſide of the head, the throat, and the correſponding ear. Children, from the irritation of the gums in teething, are liable to vomiting, purging, a cough, a fever, and convulſions.

(f.) The *trachea.* An irritation of the windpipe, or any of its ſmall branches, raiſes coughing, or a convulſive motion of the muſcles employed in expiration; and a *nauſea*, vomiting, and convulſions, are ſometimes the conſequence of a violent or long continued irritation of theſe parts.

(g.) The *lungs.* The ſympathy of the lungs with the diaphragm and intercoſtal muſcles, is evident from their motion even in ordinary reſpiration; but ſtill more ſo in the laborious breathing which is always the conſequence of a difficult paſſage of the blood through the pulmonary veſſels.

* Uſefulneſs of Experimental Philoſ. Part. 2. p. 242.

(h.) The *diaphragm.* When the diaphragm is inflamed, the ſtomach, brain, and muſcles of the face, are affected by ſympathy, as appears from the delirium, vomiting, and *riſus ſardonicus*, which attend this diſeaſe.

(i.) The *ſtomach* and *inteſtines.* A diſordered ſtate of the ſtomach and inteſtines, with wind or noxious humours lodging in them, will ſometimes ſo affect the brain as to deprive people of their reaſon. At other times the ſame cauſes will produce a *vertigo*, *cephalæa*, *hemicrania*, *clavus hyſtericus*, palpitations, intermiſſions of the pulſe, difficulty of breathing, ſudden fluſhes of heat and ſweating, &c. After hard drinking, or a large doſe of opium, the eyes loſe their luſtre. The headach, after a debauch, proceeds chiefly from the ſtomach, as appears from the removal of the pain, upon drinking a few glaſſes of ſtrong wine. The diſorder of the ſtomach will ſometimes occaſion dimneſs of ſight.* I know a lady to whom every object appears as if covered with a thick ſmoke as often as her ſtomach is loaded with an acid; and who therefore finds vomits, abſorbent powders, and bitters, her beſt opthalmic medicines. Another lady, with tender eyes, ſeldom has any conſiderable pain or ſickneſs at ſtomach without her head being affected, and her eyelids or eyes becoming in ſome degree inflamed. In little more than half an hour after ſwallowing fifteen or twenty grains of the *extractum cicutæ*, I have been often affected with a weakneſs and dazzling of my eyes, together with a giddineſs and a debility of my whole body, eſpecially the muſcles of my legs and arms; ſo that when I attempted to walk, I was apt to ſtagger like a perſon who had drank too much.

A convulſive motion of the ſtomach and inteſtines often ſpreads to the throat, where it occaſions a difficulty of breathing, and a ſenſe of ſuffocation. On the other hand, an irritation of the *fauces*, or *pharynx*, excites vomiting. A *nauſea*, or diſagreeable ſenſation in the ſtomach, makes the pulſe quicker and ſmaller, raiſes a ſweat, and ſometimes

* Lommii Obſervat. Med. Lib. ii.

times greatly increaſes the ſecretion of the ſaliva or urine. When the ſtomach is empty, and affected with a ſenſe of hunger, the ſalival juice flows much more copiouſly into the mouth than after a full meal, or when the natural appetite for food is wanting. An inflammation of the ſtomach and bowels is attended, in the beginning, with a ſhuddering of the whole body, and a great coldneſs of the hands and feet. Long continued vomiting and purging occaſion violent cramps of the muſcles of the legs and thighs; and the dry belly-ach brings on a palſy of the extremities. A tremor of the hands is often leſſened or removed, for a while, by a dram, or ſome ſtrong wine; and this effect is owing ſolely to the action of theſe liquors on the ſtomach, and not to their having entered the blood, which does not happen ſo ſoon. The particular ſympathy of the ſtomach with the diaphragm and abdominal muſcles, appears from their convulſive motions in vomiting, and in the hiccup. A violent ſpaſmodic pain in the ſtomach, or inteſtines, often renders the pulſe much ſlower than natural.

An inflammation of the inteſtines is frequently attended with vomiting and a ſuppreſſion of urine. An *opiſthotonus*, or a *tetanus*, is often occaſioned, in hot climates, by a retention of the *meconium*, or other acrid humours, in the bowels of infants. That itching of the noſe, which is a common ſign of worms, ſeems to indicate a particular ſympathy between this part and the inteſtines; and the many other ſymptoms produced by worms, which I ſhall have occaſion to mention afterwards, ſhew a remarkable and extenſive conſent between the firſt paſſages and many other parts of the body.

(k.) The *liver*. Stones irritating the biliary ducts, frequently occaſion a nauſea and vomiting. An inflammation of the liver is generally accompanied with a vomiting and the hiccup, and often with a pain between the *vertebræ* of the neck and top of the ſhoulder. In a ſuppuration of the liver, I have twice ſeen the patients affected with a numbneſs and debility of the right arm, thigh and leg.

(l.) The *kidneys* and *ureters*. A nauſea, vomiting, coſtiveneſs, and inflation of the bowels,

are often produced by an inflammation in the kidneys, or ſtones in the ureters. A ſtone in the *pelvis* of the kidney, or in the *ureter*, ſometimes occaſions a frequent inclination to make urine, and a heat in the extremity of the *urethra*. When one of the kidneys is inflamed, little urine is ſeparated by the other, probably on account of a ſpaſmodic ſtricture of its ſecretory veſſels. When a ſtone is paſſing through the ureter, the teſticle of the ſame ſide is ſometimes drawn upwards, and ſwells; and an erect poſture is then painful.

(m.) The *bladder* and *rectum*. An irritation of the neck of the bladder, or extremity of the *rectum*, is the cauſe of a conſtant contraction of the diaphragm and abdominal muſcles. A ſtranguary and *teneſmus* mutually occaſion each other. The pain of the hæmorrhoids is ſometimes accompanied with a ſickneſs at the ſtomach and faintiſhneſs. A ſtone or ulcer in the bladder is attended with a ſharp pain near the end of the *urethra*, eſpecially after making water. I had ſome years ſince a patient with an ulcer in the bladder, who, when he paſſed his urine, had not only a violent pain in the point of the *penis*, but this pain deſcended down his thighs and legs, and affected the ſoles of his feet, as if he had been ſtanding barefooted on burning coals.

(n.) The *genitals* in *men*. At the time of puberty, not only the voice, but the whole body, undergoes a ſenſible change, which is probably owing to the *ſtimulus* communicated to the nerves of the genital parts by the *ſemen*; for we certainly know that other *ſtimuli* applied to the nerves of the noſe or ſtomach, according to their nature, will either inſtantaneouſly impart new vigour to the whole body, or ſoon occaſion a general ſtupor and debility. It is owing to a ſympathy with the glans, that the *veſiculæ ſeminales* are contracted in time of coition; and when the membrane which lines the lower part of the *urethra* is ſtimulated by the *ſemen*, the *acceleratores urinæ* are excited into convulſive motions.

(o.) The *uterus*. The great variety of ſymptoms in the hyſteric diſeaſe is the reaſon why a more extenſive

tenſive ſympathy has been aſcribed to the womb than to any other part, except the brain. But, although theſe ſymptoms proceed from the womb much leſs frequently than has been imagined, yet the vomiting, which generally accompanies an inflammation of that organ, the nauſea, and depraved appetite after conception, the violent contraction of the diaphragm and abdominal muſcles in delivery, the headach, and the heat and pain in the back and bowels about the time of menſtruation, are ſufficient proofs of the *conſent* between the *uterus* and ſeveral other parts of the body. But there is no part ſo much affected by the different ſtates of the womb as the breaſts, which become more turgid before every appearance of the menſes, and ſubſide after the period is over. The changes that happen to the breaſts in time of pregnancy, and after delivery, are ſtill more remarkable.

(p.) The *extremities*. Strait ſhoes give ſome people a headach; while ſinapiſms applied to the ſoles, or bliſters to the legs, often leſſen, and ſometimes remove, a delirium. In an obſtinate coſtiveneſs, cold water thrown on the feet and legs has ſometimes opened the body, after many other remedies had failed. By tickling the ſoles, not only the muſcles of the legs, but of the whole body, may be thrown into convulſions. An *opiſthotonus*, with convulſions returning every day, has been owing to a wound in the ſole of the foot by a nail;* and the *ſpaſmus cynicus* to a violent pain in the toes.† The locking of the jaws ſometimes happens after amputations of the extremities, or lacerations of the nerves or membranes.

Many other examples of *ſympathy*, both in a ſound and morbid ſtate of the body, might be mentioned; but the above will be ſufficient at preſent, as I ſhall have afterwards frequent occaſion to touch on the ſame ſubject.

12. All *ſympathy* or *conſent* ſuppoſes feeling, and therefore muſt be owing to the nerves, which are the ſole inſtruments of ſenſation, (5.) The truth of this ſeems to be fully evinced by the following experiment.

* Nova Act. Acad. Cæſar. Natur. Curioſ. Tom. i. p. 16.

† Hoffman. Syſtem. Med. Tom. iii. ſect. 1. cap. 5. No 30.

experiment. When the hinder toes of a frog are wounded, immediately after cutting of its head, there is either no motion at all excited in the muſcles of the legs, or a very inconſiderable one. But if the toes of this animal be pinched, or wounded with a pen-knife, ten or fifteen minutes after decollation, the muſcles, not only of the legs and thighs, but alſo of the trunk of the body, are, for the moſt part, ſtrongly convulſed; and the frog ſometimes moves from one place to another. In this caſe, is not the irritation of the toes, immediately after decollation, rendered ineffectual to produce any motion in the muſcles of the legs and thighs, by the greater pain occaſioned by cutting off the head? And are not the muſcles of the poſterior extremities, as well as of the trunk of the body, brought into action by wounding the toes fifteen minutes after decollation, becauſe the pain produced by cutting off the head, is now ſo much leſſened, as not to prevent the animal from feeling very ſenſibly when its toes are hurt?

But, further, that all *ſympathy* is owing to feeling, and conſequently proceeds from the nerves, appears evident; becauſe the changes in the body, occaſioned by the ſympathy of the parts, are ſtopt by whatever effects the nervous ſyſtem ſo ſtrongly as to overcome the ſenſations that produced thoſe changes. Thus the hiccup is ſtopt by terror, fear, ſurpriſe, or other ſtrong paſſions. An irritation of the noſe will not occaſion ſneezing, when the firſt effort to ſneeze is attended with an acute pain in ſome of the muſcles of the back or ſides from a rheumatic cauſe. Hungary water, or volatile ſpirits, drawn ſtrongly into the noſe, will often ſtop a tickling cough; and laudanum, taken by the mouth, or given in a clyſter, by weakening the ſentient power of the nerves, will leſſen or remove the ſympathetic vomiting ariſing from a ſtone in the kidney or ureter; and the violent contractions of the diaphragm and abdominal muſcles, occaſioned by a *teneſmus* or ſtrangury.

Could we ſuppoſe the circulation of the blood were to remain after a total abolition of the ſentient power of the brain and nerves, there would

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be no more ſympathy between the parts of ſuch an animal body, than between thoſe of any hydraulic machine. As in this caſe the motion of the fluids would be merely mechanical, ſo every change made in any of its parts muſt be the reſult of mechaniſm alone, and conſequently wholly different from *conſent*, which, as it depends upon *feeling*, cannot be explained upon mechanical principles.

13. Thoſe ſympathies which have been aſcribed by ſome authors to the *tela celluloſa*, blood-veſſels, membranes, and the ſimilarity of parts, if duly conſidered, will appear either to proceed from the nerves, or not to deſerve the name of *conſent* or *ſympathy*.

With regard to the cellular membrane, as in a natural ſtate, it has little or no ſenſibility; ſo that it muſt, of all other parts, be the leaſt ſubject to ſympathetic affections. Its cells have every where a free communication; and therefore air, water, purulent matter, or other humours, are often conveyed, by their means, from one part of the body to another. But this cannot be properly referred to ſympathy, and is no more than what happens to a ſponge, a piece of ſugar, or other porous ſubſtances.

The ſyſtem of blood veſſels affords us no more inſtances of true ſympathy than the *tela celluloſa*, except what may be owing to the nerves which belong to theſe veſſels. The changes made in the circulation, and the morbid ſymptoms produced, or removed, by the force of the blood being turned upon different parts of the body; the abſorption of the venereal contagion, of pus, or other humours, and their tranſlation to diſtant parts; are not, ſtrictly ſpeaking, inſtances of *conſent*, but are ſolely the conſequences of the circulation of the fluids, and the communication between the ſeveral parts of the vaſcular ſyſtem. The changes, indeed, produced in the motion of the blood, and in the various ſecretory organs, by different affections of the mind, are undoubtedly owing to *ſympathy*: not, however, of the blood veſſels, but of the brain and nerves, as will appear afterwards.

The

The various inſtances of conſent from the continuity of membranes, are, ſtrictly ſpeaking, owing to the nerves themſelves with which thoſe membranes are ſupplied; for, were they deſtitute of nerves and feeling, no ſuch conſent could happen. If the heat and pain in the extremity of the *urethra*, from a ſtone or ulcer in the bladder, and the itching in the noſe, from worms in the inteſtines, and ſuch like ſymptoms, were owing to the continuity of the membranes affected, the gullet and *fauces* ought to ſuffer more than the noſe; and the lower or middle parts of the *urethra* ſhould be more pained than its extremity. Further, if theſe inſtances of ſympathy were merely owing to the continuity of membranes, why does not the bladder ſuffer in a gonorrhœa, where there is a great irritation and pain near the extremity of the *urethra?*

Although a deafneſs has been ſometimes cured by purging, this no more argues a ſympathy between the ears and inteſtines from the continuity of the membrane that lines them,* than the cure of an opthalmia, by the ſame remedy, proves a ſympathy between the eyes and bowels. The effect in both caſes is chiefly owing to the derivation of the humours from the parts affected; and hence bliſtering the head often affords a more ſpeedy relief in thoſe diſeaſes than purging.

The ſympathy between the breaſts and the *uterus* has been derived from the ſimilarity of their ſtructure, or of the liquors ſecreted by them. But although thoſe parts were much more ſimilar in theſe reſpects than they really are, yet, if there were no connection between them by means of blood veſſels, or conſent by means of nerves, it would be difficult to conceive how the condition of the one could be ſo much affected by that of the other; and much more, how a titillation of the one ſhould communicate a particular ſenſation to the other. The ſimilarity of ſtructure between the muſcles of the legs and arms, between the teſticles, and between the parotid glands, is conſiderably greater than between the womb and breaſts; and yet the former have no ſuch ſympathy as the latter.

14. Although

* Haller. Prim. Lin. Phyſiolog. § 555.

14. Although it may appear, from what has been ſaid, that all real conſent between the different parts of the body is owing to the nerves, yet it will be found very hard to account particularly for the various inſtances of ſympathy either in a ſound or morbid ſtate.

The prevailing opinion has been, that theſe ſympathies are owing to the communications between the nerves, and particularly to the connexion which the intercoſtals have with the fifth, ſixth, and eighth pairs, and with almoſt all thoſe which proceed from the ſpinal marrow.* Upon this principle it has been thought eaſy to trace the various ſympathies, not only between the ſeveral parts of the *abdomen*, but alſo between them and the head, neck, *thorax*, and extremities. But however plauſible this theory may appear at firſt view, and how readily ſoever it may ſeem to explain many remarkable inſtances of conſent, yet a more ſtrict examination will ſhew it to be liable to inſuperable difficulties.

(a.) Since

* *Hippocrates* was not ignorant of a general ſympathy between the parts of the body; and *Galen* treats particularly of thoſe diſeaſes which ariſe from ſympathy or conſent: but he was ſo far from having any notion that ſympathetic affections were owing to the nerves, that he aſcribes thoſe headachs, which do not proceed from any fault in the head, to vapours aſcending from the ſtomach or *uterus*. The following writers, even as far down as *Fernelius* and *Sennertus*, ſeem to do little more than copy what *Galen* had ſaid on this ſubject. *Andreas Laurentius*, who wrote about the year 1600, aſcribes the ſympathy between the *mammæ* and *uterus*, partly to the intercoſtal nerve, which ſends ſome branches to the organs of generation, and partly to the *vena azygos*, which terminates in the left ſpermatic vein. He deduces the vomiting in a *nephritis* partly from the nerves which the kidneys have from the ſtomachic *plexus*, and partly from their exterior coat being a continuation of that which covers the bottom of the ſtomach. *Caſper Bauhinus* derives the conſent between the noſtrils and exterior parts of the *abdomen* from the communication between the epigaſtric and mammary veins. *Riolan*, who flouriſhed before the middle of the ſeventeenth century, has not, with all his learning, made any improvement in the doctrine of ſympathy; and his cotemporary, *Riverius*, aſcribes ſympathetic diſeaſes to five cauſes, viz. the connexion, ſituation, vicinity, or ſimilarity of the parts, or to their having the ſame kind of office. *Doctor Willis*, who has given a more accurate deſcription of the brain and nerves than any anatomiſt before him, endeavoured firſt to explain the various inſtances of ſympathy between the parts of the body from the connexion or communication of their nerves. This doctrine was afterwards further illuſtrated by *Vieuſſens*, and has been embraced by moſt of the later writers.

(*a.*) Since every individual nerve appears to be quite diſtinct from every other, not only in its riſe from the medullary ſubſtance of the brain, or ſpinal marrow, but alſo in its progreſs to that part where it terminates, (2.) it follows, that the various inſtances of ſympathy obſerved between the different parts of the body, cannot be owing to any communication or *anaſtomoſis* of their nerves; and conſequently, that it can be here of no uſe minutely to enquire into the numerous connexions which the intercoſtal nerves have with the fifth, ſixth, and eighth pairs, and with thoſe of the ſpinal marrow.

But leſt it ſhould be alledged, that the courſe of the nervous filaments in the *ganglia* is ſo intricate that it is not altogether clear whether they may not intermix or communicate with one another in their paſſage through thoſe bodies, it will be neceſſary to offer ſome leſs doubtful arguments for proving that the ſympathy of the ſeveral parts does not depend on any union or *anaſtomoſis* between their nerves.

(*b.*) If there were any *anaſtomoſis*, or real communication, between the nerves of the ſame or different trunks, either in the *ganglia* or elſewhere, it is natural to think that a confuſion would neceſſarily happen in our ſenſations, as well as in the motions of our ſeveral muſcles; for the impreſſions of external objects would be communicated, at the places of union, to other nerves than thoſe affected; and the change produced by the will in any nerve at its origin in the brain or ſpinal marrow, in order for moving a particular muſcle, would affect all thoſe nerves with which it has any communication by means of the *ganglia* or otherwiſe.

(*c.*) It does not appear that there is any ſympathy between the nerves that are derived from the ſame trunk by means of the membranes that ſurround them. If the *dura mater* were endowed with that degree of ſenſibility, and with thoſe powers of oſcillation, which have been aſcribed to it by ſeveral authors, this opinion would not appear altogether improbable; but as the membranes of the brain, and thoſe productions of them which ſur-

round

round the nerves, ſeem, in a natural ſtate, to be poſſeſſed only of a very obtuſe kind of feeling,* and are altogether deſtitute of motion, we have no reaſon to aſcribe the various inſtances of ſympathy between the different parts of the body to their ſenſibility or moving power.

(d.) We obſerve a remarkable ſympathy between many parts whoſe nerves have certainly not the ſmalleſt communication with one another. Thus the dimneſs of ſight occaſioned by a diſorder of the ſtomach, the *nauſea* upon ſeeing others vomit, and the flux of the *ſaliva* into the mouth of a hungry perſon at the ſight of ſavoury food,† are proofs that the ſtomach and ſalivary glands ſympathize with the *retina*, though there is no communication between the optic nerves and any other. A ſhuddering is excited by particular ſounds; and yet the *portio mollis* of the auditory nerve, after it leaves the brain, does not appear to communicate with the *portio dura*, nor any other nerve. Although the optic nerves unite at the *cella turcica*, yet it has been ſhewn that their fibres do not croſs, intermix, or truly communicate with each other:‡ nevertheleſs, there is a conſiderable ſympathy between the two eyes. Although the nerves of the two kidneys do not appear to have any connexion with each other, yet, when one of theſe glands is inflamed, or irritated by a ſtone, the ſecretion from the other is frequently much diminiſhed. We know for certain, that the different ſize of the pupil in different lights, is owing to a conſent between

* The experiments of the learned *M. de Haller*, although they do not prove theſe membranes to be wholly inſenſible, yet they certainly ſhew them to have no painful or acute feeling in a ſound ſtate. Vid. Acta Gottingen. Vol. ii. and Phyſiological Eſſays, Edit. 2.

† In theſe inſtances the change in the ſtomach and ſalivary glands are produced through the intervention of the brain and ſentient principle: for thinking ſtrongly on ſavoury victuals, or diſagreeable medicines, will have almoſt the ſame effect on ſome people as ſeeing them. But ſince an impreſſion on the optic nerve can, by means of the brain, occaſion vomiting, and an increaſed diſcharge of the ſalival juice, why may not impreſſions on the other nerves produce various other ſympathies in the ſame manner? But of this more hereafter.

‡ See Veſal. Anatom. Corp. Human. Lib. iv. cap. iv. and Santorin. Obſervat. Anatom. p. 63.

tween the *retina* and *uvea*; and yet the optic nerves, and thoſe belonging to the *uvea*, have no communication in their courſe from the brain to the eye. Nor can any ſympathy be ſuppoſed to ariſe from the nerves of the *uvea* paſſing between the *retina* and *tunica choroidea*, as there is no *anaſtomoſis*, nor any other kind of union between them. The nerves with which the *uvea* of the two eyes are furniſhed have no connexion, and yet we find a moſt remarkable ſympathy between the motions of the two pupils.

Almoſt the whole muſcles of the body may be brought into convulſive motions by tickling the ſoles or the ſides; nay, the dread of this will affect ſome people. Now, theſe motions cannot reaſonably be deduced from the connection of the intercoſtol nerves with thoſe of the ſpine; or, if they could, it would follow, that the ſtomach and bowels ſhould ſuffer at leaſt equally with the *diaphragm* and muſcles of the trunk of the body.

(e.) If the conſent between the *viſcera* of the *abdomen* and the other parts of the body, be owing to a communication of nerves by means of the intercoſtals, why do not all thoſe parts ſympathize whoſe nerves are either derived from, or communicate with, the intercoſtals? Why in the *nephritis* does the ſtomach ſuffer more than the inteſtines? and why are not the lungs and other parts at all affected in this diſeaſe? Why does not an irritation of the bladder from a ſtone commonly occaſion a nauſea and vomiting; ſince the bladder, as well as the kidneys, has its nerves partly from the eighth pair and intercoſtals? Why does an irritation of the noſe occaſion ſneezing only, and not coughing, vomiting, purging, or the hiccup? Why does not a bliſter, applied from the ear to the top of the ſhoulder, bring on a convulſive motion, or ſome other affection, of the diaphragm, ſince the connection of the phrenic nerves with the ſecond and third cervical pairs is much greater, and leſs remote than with the nerves of the noſe?* If

* The pain between the *vertebræ* of the neck and top of the ſhoulder, which ſometimes attends an inflammation of the liver or diaphragm, has been aſcribed to the connexion between the phrenic nerves

If the delirium which generally attends an inflammation of the diaphragm, were owing, as has been alledged, to the remote connection between the phrenic and fifth pair of nerves, which ſends filaments to the *durà mater*, why ſhould not an inflammation of the lungs, ſtomach, and inteſtines, be attended with that ſymptom as often, and in a greater degree; ſince the fifth pair of nerves have a more immediate connection with the intercoſtal than with the phrenic nerves? Why does an irritation of the ſphincters of the *anus*, or bladder, occaſion a continued contraction of the diaphragm and abdominal muſcles, rather than an alternate motion of thoſe parts, as in coughing and the hiccup, when either the *trachea*, or left orifice of the ſtomach, is irritated? Since the diaphragm ſympathiſes with the noſe, lungs, *uterus*, *rectum*, and bladder, why do not theſe parts ſuffer equally when that muſcle is inflamed, or otherwiſe violently affected? If the ſympathy between the noſe and diaphragm be owing, not to the olfactory nerves, but to a branch of the fifth pair ſent to the noſe, why do not ſternutatories excite convulſive motions of the muſcles of the face (to which the fifth pair is diſtributed) as well as ſpaſms of the diaphragm, whoſe nerves can have only a remote connection with the fifth pair by means of the intercoſtals?* And why does not the great irritation of

nerves and the ſecond and third cervical pairs: but if this were the caſe, why ſhould this ſymptom be ſo rarely obſerved in a *paraphrenitis* as to be omitted by moſt authors? and why ſhould not the diaphragm be diſturbed in its motions when the ſecond and third pairs of cervical nerves are irritated by bliſters, the extirpation of tumours, or other cauſes? It is not eaſy to ſay what may be the cauſe of that pain in the neck and top of the ſhoulder which often attends a *hepatitis*; but there ſeems to be good reaſon to doubt of its proceeding from any connexion between the phrenic and the ſecond and third cervical nerves. Some of the older phyſicians aſcribed this ſymptom to the weight of the inflamed and ſwelled liver drawing downwards, and ſtretching the membranes that line the thorax.*

* When ſneezing is ſtopt, by preſſing, with one's finger and thumb, the noſe near the internal angle of each eye, this effect is not owing, as ſome have thought, to the preſſure made on the nerves ſent to the noſe from the opthalmic branch of the fifth pair; for ſneezing may be ſtopt almoſt as readily by preſſing hard with one's fingers on the forehead.

* N. Piſo de cognoſcend. et curand. Morb. Lib. iii. cap. xxv.

of ſome of the filaments of the fifth pair of nerves in the toothach produce the convulſive motion of ſneezing? If the flux of tears occaſioned by grief or joy, were owing, as *Dr. Willis* alledges, to the communication between the fifth pair of nerves, which ſerves the lachrymal glands, and the intercoſtals which are diſtributed to the *præcordia*,§ why do not thoſe affections of the mind produce an increaſed excretion of the ſalival as well as lachrymal juice? If the diſturbance of the motion of the heart, from certain ſounds, were owing, as *Vieuſſens* imagines, to the ſeventh and eighth pair of nerves being partly compoſed of medullary fibres, derived from a particular *faſciculus* ariſing from the *cerebellum*,* why ſhould not the muſcles which are ſupplied with nerves from the ſixth pair, and the *portio dura* of the ſeventh, be equally affected; ſince their connection, at their origin, with the *portio mullis* is not leſs than that of the eighth pair?† Or why, in violent palpitations of the heart, are not the auditory nerves at all affected? The truth is, the changes in the motion of the heart, occaſioned by external objects, acting either on the organs of ſight or hearing, are not owing to any communication of their nerves with thoſe of the heart, but to the impreſſions made on the *ſenſorium commune*, and the affections of the mind excited thereby.‡ If the ſympathy between the different parts be owing to their nerves being derived from the ſame trunk, why is there not the ſame conſent between the ſeveral muſcles of the foot, of the leg, and of the thigh, as between the kidneys and the ſtomach, or between the noſe and the diaphragm? Laſtly, if an irritation of the alimentary canal, in hyſteric women, ſometimes produces convulſions of the legs, by reaſon of the communication between the intercoſtals and the two laſt lumbar nerves, why are not the ſtomach and bowels ſeized with ſpaſms, or convulſive motions,

forehead. In both caſes ſneezing is prevented in the ſame manner, *viz.* by the uneaſy ſenſation occaſioned by ſtrongly preſſing on the brow or noſe.

§ Anatom. Cerebri. Edit. in 4to. p. 288.

* Neuro Graph. Lib. iii. cap. 4. † Ib. Lib. i. cap. 12.

‡ See No. 17.

tions, from the violent pain of the gout in the knees, ancles, or feet? Theſe queſtions, I doubt, will ſcarce admit of a ſatisfactory anſwer, upon the principle of ſympathy depending on the communication or connexion of nerves.

15. If, therefore, the various inſtances of ſympathy cannot be accounted for from any union or *anaſtomoſis* of the nerves in their way from the brain to the ſeveral organs, and if there are many remarkable inſtances of conſent between parts whoſe nerves have no connection at all, it follows, that all ſympathy muſt be referred to the brain itſelf, and ſpinal marrow, the ſource of all the nerves.

But, for a more direct proof of this, we may obſerve, that the conſent of the ſeveral parts inſtantly ceaſes when their communication with the origin of the nerves is interrupted. Thus, though the muſcular coat of the ſtomach, in an animal newly dead, is excited into contraction by irritation, yet the diaphragm is noways affected by this ſtimulus. In like manner, when any of the muſcles of the legs of a frog are pricked, moſt of the muſcles of the legs and thighs contract, even after cutting off its head, if the ſpinal marrow be left entire; but when that is deſtroyed, although the fibres of the ſtimulated muſcle are affected with a weak tremulous motion, yet the neighbouring muſcles remain wholly at reſt.

Further, the effects of pain, and of fear and other paſſions, in preventing ſeveral ſympathetic motions, ſeem to ſhew, that the cauſe of that conſent which obtains between the parts of animals, is to be referred to the origin of the nerves: and, ſince certain affections of the mind, excited by the action of external objects on the organs of ſenſe, produce extraordinary motions, and other effects, in the body, merely by affecting the brain, why may not impreſſions made on the nerves in other parts, produce, likewiſe, through the intervention of the brain, various motions, and other effects, in diſtant parts of the body? The analogy is obvious. Laſtly,

Laſtly, notwithſtanding the many ſympathetic motions which are daily obſerved by Pyſicians to ariſe from an irritation of the nerves in different parts of the body, yet, when the nerve going to any muſcle is irritated, there is no motion excited in any part, except in the muſcle to which it is diſtributed.* Does it not hence appear highly probable, that the various ſympathetic motions of animals produced by irritation, whether in a ſound or morbid ſtate, are owing, not to any union or connection of their nerves, but to particular ſenſations excited in certain organs, and thence communicated to the brain or ſpinal marrow? For, if this were not the caſe, why ſhould not the diaphragm, for example, be convulſed, by irritating the nerves that go to the bladder and *inteſtinum rectum*, as well as when theſe parts themſelves are affected by an unuſual ſtimulus?

If the ſympathies obſerved between the different parts of the body be owing to particular ſenſations excited in them, and thence communicated to the brain, we may eaſily ſee why an irritation of the *inteſtinum jejunum* does not affect the *diaphragm* ſo much as an irritation of the *rectum*; for, though the *jejunum* is not leſs ſenſible than the *rectum*, and the nerves of both have the ſame remote connection with the nerves of the *diaphragm*, yet the ſenſations excited by the ſame *ſtimuli* acting on the *jejunum* and *rectum* are very different, and therefore muſt affect the brain, or common *ſenſorium*, differently. An irritation of the nerves of the face does not produce any ſuch convulſive motion of the muſcles of reſpiration as happens in ſneezing, becauſe it does not occaſion that kind of ſenſation which is excited by *ſtimuli* applied to the noſe: and the diaphragm, which is brought into a continued contraction when the extremity of the *rectum*, or neck of the bladder, is painfully affected, is agitated with alternate convulſions, when the left orifice of the ſtomach is irritated, becauſe very different ſenſations are excited by an irritation of thoſe parts. Further,

* Memoire ſur la Nature ſenſible et irritable, Tom. i. p. 237.

Further, when the *meatus auditorius* is irritated, by introducing into it a feather, or any ſuch ſubſtance, an inclination to cough is often excited, eſpecially if the membrane of the *trachea* has been rendered more ſenſible than uſual by catching cold: but when the *meatus auditorius* is violently pained, in conſequence of an inflammation in it, no coughing is occaſioned: from which it follows, that the ſympathy between that *meatus* and the organs of reſpiration in the former caſe, cannot be owing to any connection between their nerves, or indeed to any mechanical cauſe, but proceeds from a particular feeling, and muſt be referred to the *ſenſorium commune*. In like manner, neither an acrid injection of a ſolution of the corroſive ſublimate in water, nor the introduction of a catheter into the *urethra*, occaſions any alternate convulſive motions of the *muſculi acceleratores urinæ*; although the *ſemen*, which ſtimulates the nerves of the *urethra* much more gently, produces this effect. Laſtly, on this head, although, when the ſides or ſoles of the feet are tickled, the body is often thrown into convulſive motions, yet nothing of this kind happens when theſe parts are either inflamed or wounded; from which it evidently follows, that thoſe motions are occaſioned by the particular ſenſation excited by the tickling, and do not proceed from any ſympathy which the nerves of the ſides and ſoles have with thoſe of the other parts of the body, in conſequence of any connection between them.

16. But although, from what has been ſaid, it may appear probable, that all nervous conſent proceeds from the brain, yet we cannot pretend, from this principle, to account, in a ſatisfactory manner, for all the various inſtances of ſympathy obſervable in the bodies of animals, ſince many of them may depend on ſuch a ſtate of the brain, and other parts, as cannot be the object of our ſenſes.*

* If it ſhould be objected, that it is as difficult to account for a ſympathy between the nerves at their origin in the brain, as in their courſe to the ſeveral parts where they happen to be connected, I anſwer, that the purpoſe of theſe obſervations is not to explain how the

The ſympathy between every individual nerve and the whole ſyſtem,‡ will be readily allowed to be owing to the mediation of the brain, and not to any connection or communication among the nerves proceeding from it. I ſhall, however, mention one experiment as the moſt deciſive of this queſtion.

A ſolution of *opium*, applied to the abdominal muſcles of a frog, whoſe brain and ſpinal marrow had been deſtroyed, did not ſtop the motion of the heart near ſo ſoon as it would have done if the brain and ſpinal marrow had been entire:* a clear proof that the power of opium, to deſtroy the motion of thoſe parts which it does not touch, is owing ſolely to the mediation of the brain and ſpinal marrow, and not to any other communication among the nerves.

'Tis true, when a frog is deprived of the brain and ſpinal marrow, upon applying a ſolution of opium to the abdominal muſcles, its heart will ceaſe from motion ſomewhat ſooner than it would otherways do: but this effect is not to be aſcribed to the action of the opium on the nerves which it touches, but to ſome of its finer parts being taken up by the abſorbent veins,† and carried with the blood to the heart.

That life and vigour, which is almoſt inſtantaneouſly communicated to the whole body by volatile ſpirits applied to the noſe, or cordial medicines

the different parts of the body can be endued, by means of the nerves, either with a ſentient or a ſympathetic power; but to endeavour to trace the ſympathy of the nerves to its true ſource, which I take to be the brain and ſpinal marrow. It would be in vain to inquire further into this matter, unleſs we knew the minute ſtructure and connections of the ſeveral parts of the brain, and were better acquainted with the laws of union between the body and ſoul, to whoſe ſentient power the ſympathy of the nerves, at their origin, muſt be at laſt referred. For if *conſent* ſuppoſes *feeling*, (12,) and if feeling cannot, any more than intelligence, be a property of *matter*, however modified, it muſt follow, that *ſympathy* depends upon a principle that is not mechanical; and that, to ſuppoſe it may be owing ſolely to the particular ſituation, arrangement, or connexion of the medullary fibres of the brain, or to the union of the nerves proceeding from it, is as unreaſonable, as to imagine that *thought* may be the reſult of a motion among the particles of the animal ſpirits, or other ſubtile matter in the brain.

‡ See No. 10.

* See Edinburgh Phyſical Eſſays, Vol. ii. p. 28—288, and p. 305.

† Ibid. p. 304 and 305. and Phyſiological Eſſays, Edit. ii. p. 305.

cines received into the ſtomach, are, like the effects of opium, to be referred to ſome ſtimulus or impreſſion communicated to the brain by the nerves of the noſe and ſtomach. A dram of brandy acts in the ſame manner, when it ſettles a ſhaking of the hands: and as thoſe epileptic fits, which are occaſioned by ſome extraordinary irritation of the nerves of the arms, legs, or toes, do not begin till after a certain ſenſation has been propagated from the part irritated to the head, we may ſafely conclude, that theſe ſympathetic motions proceed from the brain, and not from any connexion which the nerves of the parts affected can have, by means of the intercoſtals, with the other nerves of the body.* Nor is it more ſurpriſing that an uncommon irritation of any ſenſible part ſhould, eſpecially in thoſe of a delicate frame, produce convulſive motions of almoſt the whole body, through the intervention of the brain, than that opium, applied to the nerves of the ſtomach, inteſtines, or abdominal muſcles, ſhould quickly deſtroy the powers of feeling and motion throughout the whole nervous ſyſtem.†

17. Nothing makes more ſudden or more ſurpriſing changes in the body than the ſeveral paſſions of the mind. Theſe, however, act ſolely by the mediation of the brain, and in a ſtrong light ſhew its ſympathy with every part of the ſyſtem.

Such is the conſtitution of the animal frame, that certain ideas or affections excited in the mind, are always accompanied with correſponding motions or feelings in the body; and theſe are owing to ſome change made in the brain and nerves by

* *Doctor Hilary* has remarked, in the *colica pictonum*, that when the pain in the bowels has continued long, and at laſt begins to abate, a pain in the ſhoulder-points and adjoining muſcles comes on, with an unuſual ſenſation and tingling along the ſpinal marrow, that ſoon extends itſelf from thence to the nerves of the arms and legs; which members firſt become weak, and afterwards quite paralytic. Vid. Hilary on the Epidemical Diſeaſes of Barbadoes, p. 184 and 185. Does not this obſervation ſeem to ſhew, that the palſy of the extremities, occaſioned by *colica pictonum*, is not owing to any communication between the nerves of the bowels and of thoſe parts, but proceeds from the ſpinal marrow, which is firſt affected?

† Vid. Edinburgh Phyſical Eſſays, Vol. ii. p. 303.

the mind or ſentient principle;* but what that change is, or how it produces thoſe effects, we know not. As little can we tell why ſhame ſhould raiſe a heat and redneſs in the face, while fear is attended with a paleneſs. Theſe, and many other effects of the different paſſions, muſt be referred to the original conſtitution of our frame, or the laws of union between the ſoul and body.

But although, in theſe matters, we muſt confeſs our ignorance, yet, from what we certainly know of the action of the nerves, we can eaſily ſee that a change in them may occaſion many of thoſe effects which are produced by the paſſions.

As the force of the heart, and the regularity with which it contracts, depend, in a great meaſure, on the ſtate of its nerves, ſo does the action of the arterial ſyſtem in carrying on the circulation; and particularly thoſe alternate contractions with which the minuter veſſels are continually agitated, and to which the motion of the fluids in them is in a great meaſure owing.†

The other muſcles of the body are often, by an uncommon exertion of the nervous power, affected either with alternate convulſive motions, or a continued ſpaſm. It is reaſonable, therefore, to think, that the heart and vaſcular ſyſtem may ſuffer

* By the *ſentient principle* I underſtand the mind or ſoul in man, and that principle in brutes which reſembles it. Vid. An Eſſay on the Vital and other involuntary Motions, Edit. ii. p. 307——323.

† It has been ſhewn, from a variety of facts, as well as from analogy, (Phyſiological Eſſays, Edit. ii. p. 35. &c.) that the very ſmall veſſels, to which the direct force of the heart does not ſeem to reach, are endued with a power or motion, excited by the ſtimulus of the fluids as they paſs along; and that theſe vibratory or oſcillatory motions of thoſe veſſels are much increaſed when they are more than ordinarily irritated, or when, through ſtrong paſſions, or other cauſes, the nerves are greatly affected.

The ſpeedy inflammation of the eyes, by acrid ſubſtances, the inflammation of the ſkin by bliſters and ſinapiſms, and the increaſed ſecretion from the noſe and ſalivary glands, when ſtimulating ſubſtances are taken into the mouth, or applied to the noſtrils, can only be accounted for, from an increaſed motion of the ſmall veſſels of thoſe parts. And that the circulation of the fluids, in the very ſmall veſſels, depends greatly on ſome influence communicated to them by the nerves, appears from *Dr. Nuck's* having obſerved the ſecretion by the glands to be much diminiſhed, or entirely ſtopt, after their nerves were obſtructed or compreſſed.*

* Adenograph. curioſ. p. 16.

ſuffer in the ſame manner; and that, when the influence of the nerves is much weakened, or in ſome meaſure ſuſpended, the veſſels will be relaxed, the circulation will become languid, and an univerſal debility will enſue.

The increaſed force of the heart, and ſometimes, indeed, of the whole muſcles of the body, from great anger or rage, is to be aſcribed to a ſtronger exertion of the nervous power; while the trembling and debility produced by fear ariſe from a contrary cauſe.

The palpitation of the heart from terror ſeems to proceed from the blood returning to it in too great a quantity, in conſequence of a ſudden ſpaſm or contraction of the veins. It is alſo, in part, occaſioned by the heart being rendered more irritable, or being otherwiſe diſturbed by the violent agitation of the nervous ſyſtem.

The redneſs and glow of the face, from a ſenſe of ſhame, are moſt probably owing to an increaſed motion of the ſmall arteries of that part; for the florid colour, and ſudden warmth, ſeem to be more the conſequences of a quicker motion of the blood in theſe veſſels, than a ſtagnation of it from any compreſſion or ſpaſm of the veins, which would produce but a livid redneſs, and leſs heat. Beſides, we know that a greater degree of redneſs is inſtantly brought on the eyes, and, in a ſhort time, on the ſkin, by an increaſed motion of their ſmall veſſels, upon the application of acrid ſubſtances to them.

Some grow pale upon anger, which effect may be owing to a ſpaſm, or continued contraction of the ſmall arteries of the face, by which the motion of the blood in them will be retarded.

The paleneſs from fear may ariſe from a different cauſe, viz. a deficiency of the nervous power: hence, though the ſmall veſſels are not affected with any ſpaſm, as in anger, yet they are, in a great meaſure, deprived of their alternate contractions, to which the motion of the blood in them is principally owing. But the more than uſual flow of the blood towards the heart, occaſioned by terror,

ſeems to ſhew, that the veins at leaſt are ſuddenly contracted.

The diminution of perſpiration attending ſuch paſſions as affect us with ſadneſs, may be owing to the impaired force of the heart and arteries: and the *diarrhœa* from fear, may be a conſequence of obſtructed perſpiration, or of that debility and relaxation which fear or grief is obſerved to bring on the alimentary canal.

The increaſed ſecretion of tears from grief, and the great flux of limpid urine, which is often occaſioned by fear or vexation, are owing to an increaſed motion, excited by theſe paſſions, in the ſmall arteries and excretory ducts of the lachrymal glands and kidneys.

The dull look of the eyes in grief, and their lively appearance from joy, depend upon a diminution or increaſe of the motion of the fluids through the ſmall veſſels of that organ, particularly of the *cornea*, in conſequence of their vibratory motions being leſſened or augmented by the change which thoſe different paſſions produce in their nerves.

It would be eaſy, upon the ſame principles, to account for various other effects produced by the paſſions; but what is already ſaid will be ſufficient for ſhewing in what manner we can reaſon upon this ſubject.

18. Becauſe the nerves are obſerved, in many parts of the body, to ſurround the arteries and veins like ſmall cords, it has been thought that the ſudden changes in the motion of the fluids, made by the paſſions, are owing to theſe veſſels being contracted by ſuch ligatures. But this opinion, though ſupported by authors of great character,* will, upon a further inquiry, appear inconſiſtent with what we know for certain of the nature and uſe of the nerves.

Every part endowed with a power of contraction, owes that action either to its muſcular ſtructure, or to its elaſticity; but as the nerves are in no ſenſe muſcular, ſo they have been proved to be among the leaſt elaſtic parts of the body. Further,

* Willis, Viuſſens, &c.

ther, in a natural ſtate, the nerves lie pretty looſe in that cellular ſubſtance which ſurrounds the arteries, and are never on the ſtretch: and, upon making the experiment, we ſhall find, that the trunks of thoſe nervous branches, that encompaſs the large arteries and veins, muſt be conſiderably pulled before theſe veſſels can be ſenſibly contracted. There is no example of any motion being performed by a contraction of the nerves, whoſe action does not conſiſt in pulling, or in growing more tenſe at one time than another, but in ſupplying the muſcular fibres with that influence, or power, which ſeems to be immediately neceſſary for their contraction.

Laſtly, it appears, from experiments, that the nerves are utterly incapable of any ſuch contraction as is here ſuppoſed. Nothing occaſions a more ſudden or ſtronger exertion of the nervous power, than an irritation of the brain, ſpinal marrow, or nerves; as appears from the violent convulſions in the muſcles, and muſcular organs, when thoſe parts are injured: but, on ſuch occaſions, it has never been obſerved that the nerves themſelves became ſhorter, or underwent any ſenſible change. Nay, the illuſtrious *M. de Haller* has, after many experiments, juſtly concluded, that the nerves are not endowed with irritability, or a power of contraction when ſtimulated.*

But, ſuppoſing the nervous filaments could, like cords, ſtraiten the blood-veſſels, as ſeveral writers have imagined, yet, upon reflection, we ſhall be convinced, that the changes produced in the body by the ſeveral paſſions, cannot be explained upon that principle.

Thus the redneſs and glow of the face attending a conſciouſneſs of ſhame, cannot be owing to a conſtriction of the temporal or jugular veins by the nervous cords ſurrounding them;† for this

* It may be proper here to take notice, that although *M. de Haller* had embraced the doctrine of the nervous *laquei*, and ſaid more in ſupport of it than any other author, yet he has candidly given up this opinion, upon finding it not confirmed by any of thoſe numerous experiments he has made on living animals. Vid. Memoires ſur la Nature ſenſible et irritable, Tom. i. p. 238 and 239.

† Vieuſſens Neurograph. Lib. iii. cap. iv.

would not raiſe a florid colour, but a redneſs of a different kind, and accompanied but with little heat.

In like manner a compreſſion of the veins of the *penis* by the nerves will not account for its erection,* which is owing more to an increaſed motion of the blood in the arteries than to any obſtruction of its veins.† Nor is it leſs credible that the ſmall arteries of the *penis* ſhould, in conſequence of an affection of the mind, be agitated with an uncommon motion, than that the ſmell, ſight, or even remembrance, of grateful food, ſhould affect the ſalivary veſſels of a hungry perſon in a ſimilar manner.

A convulſive contraction of the *plexus renalis*, occaſioned by fear, might render the urine limpid by ſtraitening the ſecretory veſſels of the kidneys; but, upon the ſame principle, it ought alſo to leſſen its quantity, contrary to what happens.

I ſhall only add, that it may appear, from what has been ſaid, that ſuch expreſſions as the increaſed *motions*, *convulſions*, or *ſpaſmodic contractions*, of the nerves, are all improper, although they have been frequently uſed by many learned writers.

19. There are many of the moſt remarkable ſympathetic motions, both in a ſound and diſeaſed ſtate, in which we can plainly perceive a wiſe intention. Thus the contraction of the pupil, when light offends the eyes, and of the eye-lids, when groſſer bodies threaten to hurt them; the vomiting from a ſtone in the kidneys and ureters; the coughing, occaſioned by an irritation of the *meatus auditorius*; the continued contraction of the abdominal muſcles and diaphragm in a *teneſmus*, a ſtrangury, and during the pains in labour; the alternate contractions of the ſame muſcles in ſneezing, coughing, and in the hiccup; the increaſed motion of the organs of reſpiration in the fit of an aſthma; the copious ſecretion of tears and the ſaliva when ſtimulating ſubſtances are applied to the eyes, or taken into the mouth; and the uncommon flux

* Duvernoy in act. Petropol. Tom. ii. p. 379. 383. 384.

† See an Eſſay on the Vital Motions, § vi. and the celebrated Albinus's Annotationes Academicæ, Lib. ii. cap. xviii.

flux of humours to every part that is irritated: all theſe, and many more, are the efforts of nature to free the body of ſomething hurtful; and are ſo many inſtances of that principle of ſelf-preſervation ſo conſpicuous in all animals. Theſe motions, therefore, cannot, in my opinion, be referred to any connexion or communication among the nerves, but to the brain itſelf, and to that ſentient *being* which animates our whole frame, and which endeavours, at all times, to free the body of whatever occaſions pain or uneaſineſs.

Indeed, when theſe efforts are unable to expel the offending cauſe, as in great inflammations of the ſtomach, or when a large ſtone is lodged in the kidneys or bladder, they often become hurtful, and increaſe the pain they were intended to remove. Nay, as in many other inſtances, the beſt things may, by exceſs, become the worſt; ſo this endeavour to free the body, or any of its parts, from what is noxious, is ſometimes ſo ſtrong and impetuous, as to have fatal conſequences. But, in general, this principle of preſervation is highly uſeful, ſince without it we ſhould often cheriſh, within our bodies, ſuch cauſes as would ſooner or later end in our ruin.

Nor can we conſider the mind as acting either ignorantly or perverſely, when it ſometimes excites ſuch motions in the body as increaſe its own pain, and, in the end, prove more hurtful than beneficial; for theſe motions do not proceed, as the followers of *Stahl* have imagined, from any rational views in the mind, or a conſciouſneſs that the welfare of the body demands them, but are an immediate conſequence of the diſagreeable perception which excites it into action.*

20. There are various inſtances of ſympathy, which ſeem to be chiefly occaſioned by the vicinity of the parts.† Of this kind is perhaps the con-

* See this point further illuſtrated in an Eſſay on the vital and other involuntary Motions of Animals, Edit. ii. p. 315——321 and 340——343.

† Parts may ſuffer from vicinity, although their nerves have no particular ſympathy with one another. Thus, pain cauſes inflammation, not only in the veſſels immediately affected, but alſo in thoſe contiguous

ſent between the neck of the bladder and extremity of the *rectum*, whence a violent *tèneſmus* and ſtrangury mutually excite each other. The vomiting occaſioned by an inflammation of the liver; the pain, ſwelling, and inflammation of the hand and arm, from a *paronychia*; the increaſed ſenſibility of the *retina*, from an inflammation of the *conjunctiva* or *cornea*; the pain and ſwelling of the face from the toothach, and the pain in the ear from an inflammation of the back part of the *fauces*; the ſuppreſſion of urine from an inflammation of the inteſtines or meſentery, or from a ſevere nephritic paroxyſm in either kidney; the ſympathy between the *larynx* and *pharynx*, and ſeveral others, may be, in a great meaſure, owing to the ſame cauſe.

To this head alſo may be referred thoſe ſympathies which are ſometimes occaſioned by hard tumours preſſing upon or irritating the nerves that are contiguous to them. Thus, a hard ſwelling on one ſide of the neck has occaſioned an uneaſy ſenſation near the end of the *radius*, a little above the wriſt: and the ſwelling and drawing up of the teſticle, from a ſtone deſcending through the *ureter*, is probably owing to an irritation of the nerves of the teſticle, where they run along the *pſoas* muſcle, over which the *ureter* paſſes. But it may be proper to obſerve, that the heavineſs of the eyes, and ſleepineſs after a full meal, drinking largely of ſtrong liquors, or a doſe of opium, which have been aſcribed to the compreſſion of the third pair of nerves, by the diſtenſion of a branch of the carotid artery, which paſſes over them near their origin, are owing ſolely to the change produced in the nerves of the ſtomach, whence the ſenſibility of the whole ſyſtem is impaired. May

contiguous to them. Further, any conſiderable obſtruction, though attended with little or no inflammation, may, in ſome caſes, occaſion ſympathetic affections in the neighbouring parts, by changing the diſtribution of the blood through the veſſels of thoſe parts.

When one of the fingers is inflamed, in conſequence of a wound below the nail, or ſome acrid matter lodged there, the hand, and ſometimes the arm, may become ſwelled and inflamed, not only by means of the pain, which occaſions a greater derivation of fluids to the veſſels of the finger and hand, but alſo from a kind of inflammation being propagated up the arm along the coats of the nerves, which are diſtributed to the fingers.

May not the complaints of the ſtomach and bowels, from a ſuppreſſion of the *menſes*, and ſoon after conception, be owing not only to a particular ſympathy between their nerves, but partly alſo to the change made in the quantity of the blood thrown upon theſe parts by the obſtruction of the uterine veſſels? And does not the ſudden relief obtained by a ſmall evacuation of blood from the hæmorrhoidal veins, ſhew, that many diſorders may be either occaſioned, or cured, by a ſmall change made in the diſtribution of the blood to the different parts of the body?

The pain in the head, ſometimes the conſequence of wearing ſtrait ſhoes, is, perhaps, rather to be aſcribed to a greater determination of blood to the veſſels of the *pericranium*, than to any particular ſympathy between the nerves of that part and the feet. And the effect of ſinapiſms applied to the ſoles, in leſſening a delirium, is chiefly owing to the pain they excite; which, by affecting the whole nervous ſyſtem, leſſens the perception of that irritation in the brain, or its membranes, which is the cauſe of the delirium: and hence it is that ſinapiſms, applied to the hams, or other ſenſible parts, have produced the ſame effects as when laid to the feet.

22. Laſtly, in morbid caſes, we meet with a variety of anomalous ſympathies, which we can neither explain from the vicinity of the parts, the connexion or communication between their nerves, nor from that general tendency to the welfare and preſervation of the body, which is ſo obſervable in many ſympathetic motions, that take place in a ſound as well as morbid ſtate.

Of this kind are the purging from ſmelling to a cathartic medicine; that pungent ſenſation felt on the top of the left ſhoulder-blade when a pimple a little below the out-ſide of the right knee was ſcratched;* that burning pain, which, upon making water, has been felt in the ſoles of the feet by a perſon affected with an ulcer in the bladder; the *ſpaſmus cynicus* from a wound in the foot, and the locking of the jaws after an amputation. Thus

* See Hale's Statical Eſſays, Vol. ii. p. 60.

what reaſon can be given why, ſometimes, after cutting off an arm or leg, thoſe muſcles which raiſe the lower jaw ſhould be affected with a ſpaſm rather than any other muſcles? I ſhall allow that ſome ſymptom of this kind might be expected from the irritation of the nerves of the ſtump, or from ſome acrid humour abſorbed by the veſſels of the ſore, and carried to the brain; but, in either caſe, why do the temporal and maſſeter muſcles only ſuffer?

I think it moſt probable, that the anomalous ſympathies above-mentioned, and many others, whoſe cauſe appears equally obſcure, proceed from that general ſympathy which prevails through the whole nervous ſyſtem; and which, in certain caſes, in conſequence of the uncommon weakneſs or delicacy of a particular organ, makes it ſuffer, although the other parts of the body are not ſenſibly affected. The following caſes, compared together, will ſerve to illuſtrate this.

A middle aged woman, who had ſprained her right foot and ancle, ſome weeks after, not only complained of a pain and ſtiffneſs in theſe parts, but alſo felt, though in a much leſs degree, a tenſion and ſoreneſs over her whole body. On the other hand, a girl of nine years, as often as one of her feet was extended ſo as to bring it nearly to a right line with the leg, and conſequently greatly to ſtretch its ligaments and tendons, was inſtantly ſeized with a moſt violent convulſive cough, which continued without intermiſſion as long as the foot was kept in that poſition.

In the former caſe, it will readily be allowed, that the ſtiffneſs and ſoreneſs felt through the whole body, proceeded from that general ſympathy which obtains between all its parts by the mediation of the brain, which, however, would not have produced ſuch an effect, but for the peculiar delicacy of the nervous ſyſtem in that patient.

In the latter caſe, the convulſive cough, occaſioned by extending the foot, could not proceed from any particular ſympathy between this part and the lungs, in conſequence of any connexion or communication between their nerves, ſince the

nerves

nerves of many other parts have an equal or greater connexion with thoſe which ſerve the feet. This convulſive cough, therefore, muſt be aſcribed to a peculiar delicacy or uncommon ſenſibility of the lungs; whence, in conſequence of that general ſympathy which prevails through the whole nervous ſyſtem, they were affected with a diſagreeable ſenſation, as often as the ligaments and tendons of the ancle and foot were overſtretched; which, however, produced no uneaſineſs nor ſympathetic motion in the other parts of the body, becauſe they were endued with no ſuch morbid delicacy or uncommon ſenſibility.

As a further proof of this, I knew a woman, poſſeſſed of a moſt delicate ſtomach, who, when this organ was more than uſually indiſpoſed, was apt to fall a retching as often as ſhe made the neceſſary effort to paſs water; and I have had ſeveral patients affected, in conſequence of a virulent gonorrhœa, with a gleet and a tenderneſs, and ſome degree of ſoreneſs in the *urethra*, who, as often as they drank two or three glaſſes of wine, immediately felt an uncommon uneaſineſs in that part. This extraordinary ſympathy, however, between the ſtomach and *urethra*, ceaſed as ſoon as the latter beame quite ſound.

Since we obſerve that only thoſe whoſe nervous ſyſtem is remarkably delicate are affected with general and violent convulſive motions or ſpaſms from the paſſions of the mind, diſorders in the *primæ viæ*, and other cauſes, have we not reaſon to conclude, when, in conſequence of an irritation of any one part, an uncommon ſympathetic motion is produced in a diſtant organ, with which it has leſs connexion, either by the nerves or blood-veſſels, than with many other parts which are noways diſturbed, that ſuch ſympathetic motion is owing to a peculiar delicacy or mobility of that organ; and that, were the other moving organs of the body equally delicate and ſenſible, univerſal, or at leaſt more general, convulſions or ſpaſms would have been the conſequence?

But, ſuppoſing we could neither explain ſatisfactorily, nor even conjecture with probability, concerning

concerning the cauſe of many uncommon and anomalous ſympathies, it would be no more than what happens to us every day in our inquiries into the more abſtruſe operations of nature. In every part, even of the inanimate world, we find inexpreſſible difficulties: what wonder, then, if, in the human body, a ſyſtem ſo curious, ſo ſubtile and compounded, we ſhould meet with many appearances which we cannot at all account for? The farther we puſh our inquiries into nature, the more ſhall we be convinced of our ignorance, and how ſmall a portion is known of the works of the *Great Creator!* "*Scarcely do we gueſs aright at the things that are upon earth, and with labour do we find the things that are before us.*"*

CHAP. II.

OF NERVOUS, HYPOCHONDRIAC, AND HYSTERIC DISORDERS IN GENERAL.

THE nerves, like the other parts of the body, are liable to various diſeaſes, which may ariſe from a fault either in their coats, their medullary ſubſtance, or in the brain and ſpinal marrow, from which they all proceed.

The coats of the nerves may be obſtructed, or inflamed, compreſſed by hard ſwellings, or irritated by acrid humours. With regard to their medullary ſubſtance, if a ſingle nervous filament, excluſive of the membranes ſurrounding it, be an extremely ſmall canal, we may conceive it, according to the different ſtates of the body, to be endued with different degrees of firmneſs or laxity, whence the action of the nerves may perhaps be conſiderably affected.

This nervous canal may likewiſe be obſtructed; though ſuch obſtruction is rather more likely to ariſe from ſome external cauſe, than from any ſwelling

* Wiſdom, Chap. ix. ver. 16.

ſwelling in the medullary ſubſtance of which its ſides conſiſts, or from the viſcidity of the fluid it contains. In the ſmall arterial veſſels, obſtructions may often happen from a ſpaſm; but, although the nerves communicate a power of motion to other parts, yet it does not appear that they themſelves have any motion.

If the medullary part of the nerves be ſimple, and not made of veſſels, like the other parts of the body, it can neither be liable to obſtructions nor inflammations, but may ſuffer greatly from the irritation of acrid ſubſtances.

With reſpect to that fluid which the nerves are ſuppoſed to contain, as we are wholly ignorant of its nature, both in a ſound and morbid ſtate, we can never know when the diſeaſes of the nerves ariſe from a fault in this fluid, although their action muſt be conſiderably affected whenever it is vitiated.

When the brain or ſpinal marrow is obſtructed, compreſſed, irritated, or otherwiſe diſeaſed, the nerves will ſuffer almoſt equally as if they themſelves were primarily affected.

It would be of little uſe to inſiſt further on thoſe faults in the brain or nerves which may produce diſeaſes, ſince the ſubtility of theſe parts makes it often impoſſible for us, either before or after death, to diſcover preciſely from what cauſe ſuch diſeaſes proceed; nor have we any ſigns to diſtinguiſh from one another thoſe morbid ſymptoms, which may ariſe from a fault in the coats, the medullary ſubſtance, or the fluids of the nerves. But how much ſoever we may be in the dark about the immediate cauſes of the diſeaſes of the nerves, yet their effects may all be reduced to ſome change in that ſenſibility or moving power, which the nerves communicate to the different parts of the body.

The ſentient power of the nerves may be either too acute, obtuſe, depraved, or wholly wanting; and that power in them which is neceſſary for muſcular motion, may be either weakened or quite deſtroyed.

1. *(a.)* When the feeling of the nerves is too acute, diſagreeable or painful ſenſations, and violent

lent or irregular motions, will be excited in the body, by the application of ſuch ſubſtances to the nerves of the different organs, as, in a more healthy and firmer ſtate, would either occaſion leſs uneaſineſs and diſturbance, or none at all. In ſuch a condition of the nervous ſyſtem, the paſſions of the mind, errors in diet, and changes of heat and cold, or of the weight and humidity of the atmoſphere, will be apt to produce morbid ſymptoms; ſo that there will be no firm or long continued ſtate of health, but almoſt a conſtant ſucceſſion of greater or leſs complaints.

(b.) On the other hand, when either the whole nerves, or a part of them, are deprived of a proper degree of ſenſibility, although the body in general will then be leſs apt to be affected by the cauſes above-mentioned, yet, as ſome of its organs will not be ſufficiently irritated by the *ſtimuli* deſigned by nature to excite them into action, the action of thoſe parts will be imperfect. Thus, when the nerves of the inteſtines are leſs diſpoſed than uſual to be affected by their natural *ſtimuli*, the irritation of the aliments, air, and bile, will only be able to raiſe a languid periſtaltic motion, and therefore the perſon will become coſtive. When the ſenſibility of the *retina* is impaired, objects are ſeen leſs diſtinctly; and when the auditory nerves loſe ſome part of their exquiſite ſenſibility, the ear cannot accurately diſtinguiſh the various muſical ſounds.

(c.) When the feeling of the nerves in any of the organs of the body becomes unnatural or depraved, the moſt diſagreeable ſenſations and alarming ſymptoms are ſometimes raiſed by the application of ſuch ſubſtances as in a ſound ſtate would produce no manner of diſturbance: and hence we may underſtand the ſurpriſing effects of certain ſmells, aliments, and medicines, on many delicate people.

This uncommon or depraved feeling of the nerves does not always conſiſt in a more acute ſenſibility; for water will raiſe violent convulſions in a hydrophobia, whilſt the *fauces* and *æſophagus* are not at all affected in that manner by ſolid food; and a ſmall quantity of honey will ſometimes occaſion more violent gripes than many of the ſtronger purgatives.

(d.) When

(d.) When any of the nerves loſe their power of feeling entirely, the organs, or parts to which they are diſtributed, become quite inſenſible. When the whole nerves of the organs of ſenſe and voluntary motion are thus affected, whilſt the heart and muſcles of reſpiration continue to act, we call the diſeaſe an apoplexy.

2. *(a.)* A greater degree of that power in the nerves which is neceſſary for motion, can only give more force and ſteadineſs to the muſcles when they all poſſeſs it in an equal degree: the increaſe, therefore, of this power is hardly to be accounted a diſtemper: it is never exerted, except in conſequence of an effort of the will, of ſome affection of the mind, or of the action of ſome ſtimulus on the brain or nerves; to the two laſt of which are to be aſcribed all the depraved and irregular motions obſerved in the body, and not to any real depravation of the nervous power itſelf, which ſeems only to occaſion diſeaſes, when it is either weakened, or wholly deſtroyed. Thus a tetanus, or unuſual ſpaſmodic contraction of any muſcle, is not owing to an increaſe of that power in its nerves which is neceſſary for muſcular motion, but to an extraordinary exertion of it, in conſequence of ſome uncommon irritation or affection of the brain and nerves.

(b.) A diminution of the moving power of the nerves produces a debility of the whole body.

(c.) A total want of this power occaſions either a partial or univerſal palſy, according as only a few of the nerves or the whole ſyſtem is affected. When any of the muſcles are deprived of the nervous influence, they are not only rendered paralytic, but ſoon after become ſmaller; becauſe the circulation of the fluids cannot be carried on, as uſual, through the very ſmall veſſels when they are deprived of the nervous power.*

But here it will be proper to obſerve, that, as there is ſcarce any part of the body without nerves, and very few altogether without feeling, the nerves muſt not only ſuffer, when they themſelves, or the brain and ſpinal marrow, are primarily affected, but

* See Chap. i. No. 8.

but alſo when the other parts are diſeaſed; and hence the difficulty, perhaps the impoſſibility, of fixing a certain criterion, by which nervous diſorders may be diſtinguiſhed from all others.

All diſeaſes may, in ſome ſenſe, be called affections of the nervous ſyſtem, becauſe in almoſt every diſeaſe the nerves are more or leſs hurt; and, in conſequence of this, various ſenſations, motions, and changes, are produced in the body. However, thoſe diſorders may peculiarly deſerve the name of *nervous*, which, on account of an unuſual delicacy, or unnatural ſtate, of the nerves, are produced by cauſes which, in people of a ſound conſtitution, would either have no ſuch effects, or at leaſt in a much leſs degree.

To illuſtrate this by a few examples. We do not call the toothach a nervous diſeaſe becauſe the nerves of the teeth are greatly pained; but if, from a particular delicacy of conſtitution, the patient is, by this pain, thrown into convulſions and faintings, we call theſe ſymptoms nervous. An obſtruction in the coats of the ſtomach, or other hypochondriac *viſcera*, is not, ſtrictly ſpeaking, a nervous diſeaſe; but if the nerves of theſe parts are ſo changed from their natural ſtate, that low ſpirits, melancholy, or madneſs, are the conſequence of this obſtruction, then theſe ſymptoms deſerve the name of nervous. Again, although the fever excited by the painful inflammation of the finger in a *paronychia*, and the fever and vomiting occaſioned by a *nephritis*, ariſe from the ſympathy of the nerves, yet ſuch ſymptoms are not commonly accounted nervous diſorders, becauſe they do not indicate any particular unſound ſtate of the nerves, and happen, in ſome degree, to every one ill of a *paronychia* or *nephritis*; but if convulſions or faintings are added, then theſe laſt ſymptoms, being the effects of an uncommon delicacy of the nervous ſyſtem, may be juſtly called nervous. In like manner, the convulſions ſometimes preceding the eruption of the ſmall-pox deſerve this name, becauſe they only ſeize thoſe whoſe nervous ſyſtem is eaſily moved, while the quick pulſe, and other feveriſh ſymptoms, though excited by the variolous matter acting

acting as a ſtimulus on the nerves, are not reckoned nervous. To conclude, even a *gutta ſerena*, from a tumor preſſing upon the optic nerve, is not, in our ſenſe, ſo much a nervous diſeaſe, as that dimneſs of ſight which is ſometimes occaſioned by a diſorder of the ſtomach; for the cauſe now mentioned will produce the *gutta ſerena* in every perſon equally; whereas this dimneſs will only happen to ſuch as have a peculiar delicacy of nerves.

In treating, therefore, of nervous diſorders, I ſhall confine myſelf chiefly to thoſe complaints which proceed, in a great meaſure, from a weak or unnatural conſtitution of the nerves; and of this kind, I preſume, are moſt of thoſe ſymptoms which phyſicians have commonly diſtinguiſhed by the names of *flatulent*, *ſpaſmodic*, *hypochondriac*, or *hyſteric*.

As the ſagacious *Sydenham* has juſtly obſerved, that the ſhapes of *Proteus*, or the colours of the *chamæleon*, are not more numerous and inconſtant than the variation of the hypochondriac and hyſteric diſeaſe,* ſo thoſe morbid ſymptoms which have been commonly called nervous, are ſo many, ſo various, and ſo irregular, that it would be extremely hard either rightly to deſcribe or fully to enumerate them. They imitate the ſymptoms of almoſt all other diſeaſes; and, indeed, there are few chronic diſtempers with which they are not more or leſs blended or intermixed. Hence it is that the late celebrated *Dr. Mead* ſays of the hypochondriac affection, *non unam ſedem habet, ſed morbus totius corporis eſt.*† I ſhall not, therefore, undertake to give a full or exact deſcription of theſe diſorders, nor pretend to exhibit a complete liſt of all the morbid ſymptoms which have been commonly reckoned of the nervous, hypochondriac, or hyſteric kind; but ſhall content myſelf with mentioning the following, as being the moſt common and remarkable.

Wind in the ſtomach and inteſtines, heart-burning, ſour belchings, ſqueamiſhneſs, and vomiting of a watery ſtuff, tough phlegm, or a black liquor like

* Sydenham. Oper. Epiſt. ad D. Cole.

† Monita et Præcept. Med. Cap. xvii.

like the grounds of coffee; want of appetite and indigeſtion, or an uncommon craving for food and quick digeſtion; a debility, faintneſs, and ſenſe of great emptineſs about the ſtomach, when hungry; a ſtrong deſire for rare or uncommon ſorts of food, or for things that can afford no nouriſhment; a viſible ſwelling or inflation of the ſtomach, eſpecially after eating; ſometimes a ſevere pain with cramps in it; an oppreſſion about the *præcordia*; an uneaſy, though not painful, ſenſation about the ſtomach, attended with low ſpirits, anxiety, and ſometimes great timidity; ſtrong pulſations within the belly; ſpaſms in the bowels, and diſtenſions of certain portions of them; violent cholic pains; a grumbling noiſe from wind paſſing through the inteſtines; the body ſometimes too lax, oftener bound; pains in the back and belly, reſembling thoſe of the nephritic kind; a ſenſe of irritation and heat in the neck of the bladder and *urethra*, with a frequent deſire to make water; a great diſcharge of limpid urine; at other times a frequent ſpitting.

Sudden fluſhes of heat over the whole body, ſhiverings; a ſenſe of cold in certain parts, as if water was poured on them, at other times an unuſual glow; flying pains in the arms and limbs; a troubleſome pain in the back, and between the ſhoulders; pains, attended with a hot ſenſation, ſhifting often from the ſides or back to the interior parts of the *abdomen*; cramps or convulſive motions of the muſcles, or of a few of their fibres; ſudden ſtartings of the legs and arms; almoſt conſtant involuntary motions of the muſcles of the neck and head, or arms and legs; a general convulſion affecting, at once, the ſtomach, bowels, throat, legs, arms, and, indeed, almoſt the whole members of the body, in which the patient ſtruggles as in a violent epileptic fit; long faintings, in ſome caſes, following one another, after ſhort intervals.

Palpitation or trembling of the heart; the pulſe very variable, frequently natural, ſometimes uncommonly ſlow, and other times quick, oftener ſmall than full, and, on certain occaſions, irregular

gular or intermitting; a dry cough with difficulty of breathing, or a conſtriction of the lungs, ſometimes returning periodically; yawning, the hiccup, frequent ſighings, and a ſenſe of ſuffocation, as if from a ball or lump in the throat; fits of crying, and convulſive laughing. Although in the day-time the patients are generally pretty cool, and the pulſe ſometimes ſlower than natural, yet in the night, eſpecially in time of ſleep, hot flushes often ſpread over almoſt the whole body, the pulſe becomes quicker and ſtronger, and a faintneſs, or ſome degree of ſickneſs at the ſtomach is felt.

A giddineſs, eſpecially after riſing up haſtily; pains in the head, ſometimes returning periodically; a violent pain in a ſmall part of the head, not larger than a ſhilling, as if a nail was driven into it; a ſinging in the ears; a dimneſs of ſight, and appearance of a thick miſt, without any viſible fault in the eyes. Objects are ſometimes ſeen double, and unuſual ſmells are perceived; obſtinate watchings, attended ſometimes with an uneaſineſs, which is not to be deſcribed, but which is leſſened by getting out of bed; diſturbed ſleep, frightful dreams, the night-mare; ſometimes a drowſineſs, and too great inclination to ſleep; fear, peeviſhneſs, ſadneſs, deſpair, at other times high ſpirits; wandering thoughts, impaired memory, ridiculous fancies; ſtrange perſuaſions of their labouring under diſeaſes of which they are quite free; and imagining their complaints to be as dangerous as they find them troubleſome; they are often angry with thoſe who would convince them of their miſtake.

Patients, after having been long afflicted with many of theſe ſymptoms, (for all of them never happen to any one perſon,) ſometimes fall into melancholy, madneſs, the black jaundice, a dropſy, tympany, *phthiſis pulmonalis*, palſy, apoplexy, or ſome other fatal diſtemper.

Thoſe patients who are liable to the above complaints, ſome of which deſerve the name of nervous much better than others, may be diſtinguiſhed into three claſſes.

1. Such

1. Such as, though uſually in good health, are yet, on account of an uncommon delicacy of their nervous ſyſtem, apt to be often affected with violent tremors, palpitations, faintings and convulſive fits, from fear, grief, ſurprize, or other paſſions; and from whatever greatly irritates or diſagreeably affects any of the more ſenſible parts of the body.

2. Such as, beſides being liable to the above diſorders from the ſame cauſes, are almoſt always more or leſs troubled with indigeſtion, flatulence in the ſtomach and bowels, a lump in the throat, the *clavus hyſtericus*, giddineſs, flying pains in the head, and a ſenſe of cold in its back part, frequent ſighings, palpitations, inquietude, fits of ſalivation, or pale urine, &c.

3. Such as, from a leſs delicate feeling, or mobility of their nervous ſyſtem in general, are ſcarce ever affected with violent palpitations, faintings or convulſive motions, from fear, grief, ſurprize, or other paſſions; but, on account of a diſordered ſtate of the nerves of the ſtomach and bowels, are ſeldom free from complaints of indigeſtion, belching, flatulence, want of appetite, or too great craving, coſtiveneſs or looſeneſs, fluſhings, giddineſs, oppreſſion or faintneſs about the *præcordia*, low ſpirits, diſagreeable thoughts, watching or diſturbed ſleep, &c.

The complaints of the firſt of the above claſſes may be called *ſimply nervous*; thoſe of the ſecond, in compliance with cuſtom, may be ſaid to be *hyſteric*; and thoſe of the third, *hypochondriac*.

The hypochondriac and hyſteric diſeaſes are generally conſidered by phyſicians as the ſame; only in women, ſuch diſorders have got the name of *hyſteric*, from the antient opinion of their ſeat being ſolely in the womb; while in men they were called *hypochondriac*, upon the ſuppoſition, that in them they proceeded from ſome fault in thoſe *viſcera* which lie under the cartilages of the ribs.

The learned *Hoffman*, diſſenting from moſt of the later writers, affirms that the hypochondriac and hyſteric are different diſeaſes, whether we regard their ſymptoms, cauſes, or termination.* But we

* Syſtem. Med. Tom. iii. p. 4. cap. v. § v. et vi.

we cannot agree to this opinion, as their ſymptoms are of ſo ſimilar a nature, and as the hypochondriac diſeaſe is not more unlike the hyſteric, than this laſt is often unlike to itſelf. It is true that, in women, hyſteric ſymptoms occur more frequently, and are often much more ſudden and violent, than the hypochondriac in men; but this circumſtance, which is only a conſequence of the more delicate frame, ſedentary life, and particular condition of the womb in women, by no means ſhews the two diſeaſes to be, ſtrictly ſpeaking, different. Nor does it appear more reaſonable to pronounce the hyſteric diſorder of a different kind from the hypochondriac, becauſe the former may have its ſeat frequently in the *uterus*, and the latter in the alimentary canal, than it would be to diſtinguiſh the hypochondriac complaints into as many different diſeaſes as the cauſes from which they may ariſe; or to divide hyſteric fits, as they are called, in women, into nervous, ſtomachic, and hyſteric, becauſe they often proceed from violent affections of the mind, or a diſordered ſtate of the ſtomach, as well as from a fault in the *uterus*.

But further, it is to be obſerved, that, in women, the ſymptoms commonly called hyſteric, are leſs frequently owing to the unſound ſtate of the womb, than to faults ſomewhere elſe in the body; for virgins are often free of ſuch complaints, while married women, and even thoſe who bear children with eaſy labours, are ſometimes afflicted with them. Add to this, that women who are regular, and have no ailment about the *uterus*, do not always eſcape the hyſteric diſeaſe; while thoſe who labour under ſchirrous tumours, and other diſorders of that part, are often not affected, at leaſt with its worſt ſymptoms. Laſtly, in thoſe who have long and greatly ſuffered by this malady, the womb, after death, has frequently been obſerved to be found.

Upon the whole, therefore, the ſymptoms of the hyſteric diſeaſe in women ſeem only to differ from thoſe of the hypochondriac in men, in ſo far as the former ſometimes proceed from the *uterus*, and are, on account of the more delicate frame of the

the ſex, more frequent, and often more violent, than the ſymptoms of the hypochondriac affection in men.

But, whether theſe two diſtempers be conſidered as the ſame or diſtinct, ſince the ſymptoms of both are ſo much akin, we ſhall conſider them under the general character of *nervous*, and begin with inquiring into the cauſes from which they moſt commonly proceed.

The antient phyſicians, with ſeveral of the moderns, have agreed in placing the ſole, or, at leaſt, the chief ſeat of the hyſteric diſeaſe, in the womb; but, with regard to the parts affected in the hypochondriac, the opinions have been various and contradictory.

Many authors have aſcribed this diſorder in men to obſtructions in the ſpleen, liver, and meſentery. *Highmore*, to a vitiated conſtitution of the ſtomach.* *Willis*, to an indiſpoſition of the brain and nerves, or to a fault of the ſpirits. *Etmuller*, who confounds the hypochondriac diſeaſe, when in a higher degree, with the ſcurvy, has written a diſſertation to prove that its ſeat is not in the ſpleen, but in the inteſtines, eſpecially in that part of the *colon* which lies in the left hypochondre, in which the excrements often ſtagnate, and where much wind is pent up.† *Sydenham* aſcribes the ſame diſtemper to an ataxy or confuſion of the ſpirits.‡ *Mandeville*, to a diſordered chylification, and a deficiency or paucity of the ſpirits.‖ *Junckerus* makes the *cauſa proxima* of the hypochondriac affection to conſiſt in an obſtructed motion of the blood in the *vena portarum* and *viſcera* connected with it.§ *Boerhaave* derives it from an atrabiliary humour lodging in the pancreas, ſpleen, ſtomach, and neighbouring organs.** *Hoffman*, from a perverted periſtaltic motion of the ſtomach and inteſtines.†† And laſtly, *Dr. Cheyne* is of opinion that

* Exercitationes de Paſſione Hyſter. et Affection. Hypochondr.

† Oper. p. 1820. ‡ Epiſt. ad D. Cole.

‖ A Treatiſe of the hypochondriac and hyſteric Paſſions, Dialogues i. and ii.

§ Junckeri Conſpect. Medicinæ, p. 186.

** Aphoriſm. de cognoſcend. Morb. § 1098.

†† Syſtem. Med. Tom. iii. part. iii. cap. v.

that all great nervous diſorders proceed from ſome glandular obſtruction in the ſtomach, bowels, liver, ſpleen, meſentery, or other organs of the lower belly.*

But, although it is not to be doubted that the hypochondriac and hyſteric affections often proceed from a morbid ſtate of the alimentary canal, *uterus*, or other *viſcera* of the *abdomen*, yet, as there are ſeveral of their ſymptoms which ſeem independent of any diſorder in thoſe parts, and as there has often no trace of thoſe diſeaſes appeared, after death, in any of the abdominal organs, it ſeems highly probable, they may frequently ariſe from ſome leſs viſible fault in the body.

We ſhall, therefore, proceed to enquire into the moſt common cauſes of thoſe nervous, hypochondriac or hyſteric ſymptoms above-mentioned, treating, firſt, of ſuch cauſes as render the body more liable to theſe diſorders; and, ſecondly, of thoſe which, meeting with the former, actually produce them. The firſt have been called the prediſpoſing cauſes; the ſecond the occaſional cauſes.

CHAP. III.

OF THE PREDISPOSING CAUSES OF NERVOUS DISORDERS.

THESE may be reduced to two, viz. I. A too great delicacy and ſenſibility of the whole nervous, hypochondriac, or hyſteric ſyſtem. II. An uncommon weakneſs, or a depraved or unnatural feeling, in ſome of the organs of the body.

1. A too great delicacy and ſenſibility of the whole nervous ſyſtem may be either natural, that is, an original defect in the conſtitution, or produced by ſuch diſeaſes or irregularity in living as weaken the whole body, eſpecially the nerves. Long or repeated fevers, profuſe hæmorrhages, great fatigue, exceſſive or long-continued grief,

* Engliſh Malady, Part ii. chap. vii.

luxurious living, and want of exerciſe, may increaſe, or even bring on, ſuch a delicate ſtate of the nervous ſyſtem.

As the whole animal frame is contrived with the greateſt wiſdom, ſo we cannot but admire, in particular, how the nerves, though all are endued with the general ſenſe of feeling, have yet, in different organs, certain ſenſations quite different from each other, and are perfectly well adapted to thoſe things which are deſigned by nature to be applied to them. Thus, for example, as pure air gives no uneaſineſs to the nerves of the wind-pipe, and is refreſhing to thoſe of the lungs; ſo to a craving ſtomach wholeſome food is highly grateful: but air collected in the ſtomach ſeldom fails to produce a diſagreeable ſenſation; and not only ſolid food, but even the mildeſt liquids, falling by accident into the wind-pipe, bring on violent fits of coughing, which do not ceaſe till the ſenſe of irritation is leſſened. In like manner, warm blood, which does not affect the heart, or vaſcular ſyſtem, with any diſagreeable ſenſation, occaſions, in the ſtomach, faintneſs, heavy ſickneſs and vomiting. The nerves of the noſe, tongue, and ſtomach, are all endowed with ſenſations of different kinds; whence ſome ſubſtances, very ungrateful to the palate, are often agreeable to the ſtomach. Several ſubſtances, which hurt the eyes, give no uneaſineſs to the alimentary canal; and, on the other hand, antimonial wine, or an infuſion of ipecacuanha in water, which neither irritate much the tongue or other ſenſible parts, affect the ſtomach ſo diſagreeably as to occaſion violent vomiting.

But further, as the nerves, in many of our organs, have very different feelings, ſo, in different people, or even in the ſame perſon, at different times, the feeling of the ſame nerves varies conſiderably, and is more or leſs acute or blunt, and ſometimes unnatural or depraved: and hence it is that the very ſame things applied to the ſame nerves, or organs, have very different effects, according to the conſtitution of the perſons, or their ſtate of health at the time.

In

In ſome, the feelings, perceptions, and paſſions, are naturally dull, ſlow, and difficult to be rouſed: in others, they are very quick, and eaſily excited, on account of a greater delicacy and ſenſibility of the brain and nerves.

All children, when compared with adults, have their nervous ſyſtem very ſenſible and eaſily moved, and are in this reſpect ſomething like thoſe grown people who are moſt ſubject to the higheſt nervous or hyſteric ſymptoms: and hence it is that children are ſo liable to convulſive fits from the pain of teething, from worms, acrid humours in their ſtomach or bowels, and other cauſes, which, in people of a more advanced age, and leſs ſenſible nerves, would produce no ſuch effects.

A delicate or eaſily irritable nervous ſyſtem muſt expoſe a perſon to various ailments, from cauſes, affecting either the body or mind, too ſlight to make any remarkable impreſſion upon thoſe of firmer and leſs ſenſible nerves. Thus, any accident occaſioning ſudden ſurpriſe, will, in many delicate people, produce ſtrong palpitations of the heart, and ſometimes fainting with convulſions. I have known ſome, even men, whoſe nervous ſyſtem was ſo delicate and movable, that a vomit, a ſmart purge, or the pain raiſed by a bliſter, would throw them into convulſive fits. Nay, there was lately a paralytic patient in the Royal Infirmary here, who felt a remarkable uneaſineſs through his whole body when it was charged with the electrical fluid, by means of a wire held in his hand, although there was no ſhock given him, nor any ſparks drawn from him. We are told of a Lady, who, upon hearing the ſound of a bell, or any loud noiſe, would fall into fits of ſwooning, which were ſcarce to be diſtinguiſhed from death.* And I have ſeen the pain of the toothach throw a young woman, of weak nerves, into convulſions and inſenſibility, which continued for ſeveral hours, and returned upon the pain becoming again more acute. †

* Boyle's Uſefulneſs of exp. Philoſophy, Part ii. p. 248.

† The following caſe, communicated to me by Mr. *James Spence*, Surgeon in Dunkeld, is a remarkable inſtance of the many violent and uncommon

Some women, from a too great delicacy or ſenſibility of the nervous ſyſtem, are, after conception, ſo much affected with a heat and uneaſy ſenſation in their back, colick-pains, and other ſymptoms, as to be in hazard of miſcarriage. In ſuch caſes, when the danger neither ariſes from too much blood, nor too great a laxity of the uterine veſſels, but merely from an uncommon weakneſs and delicacy of the nerves, bleeding will do harm, and aſtringent and cooling medicines will prove ineffectual, whilſt laudanum, given from time to time, in proper doſes, will produce the beſt effects: for, by leſſening the too great ſenſibility of the nervous ſyſtem, it not only quiets all the uneaſy ſenſations, but calms the mind itſelf, and renders it leſs liable to be ruffled by ſlight cauſes.

Women, in whom the nervous ſyſtem is generally more movable than in men, are more ſubject to nervous complaints, and have them in a higher degree. On the other hand, old people, in whom the nerves have become leſs ſenſible, are little afflicted with thoſe diſorders. Nay, *Dr. Cheyne* has obſerved, that an advanced age ſometimes proves a cure. Laſtly,

uncommon ſymptoms which may ariſe from a ſmall cauſe in perſons of a very delicate nervous ſyſtem.

An unmarried woman, of twenty-three years of age, immediately after having been ſtung in the neck by a bee, felt a ſharp pain with a violent itching in that part, and over the whole head and face, which, together with her arms, felt ſtiff and ſwelled. In a few minutes the pain ſpread to her throat, and then to her ſtomach, occaſioning a great anxiety and difficulty of reſpiration. At this time a large dram of malt ſpirits was given her, which, though it was immediately vomited up again, relieved the pain for a little: but ſoon after it was felt violently in the lower belly, and was followed by a looſe ſtool. She complained now of an uncommon heat in her face and head, and of a great faintneſs. Her pulſe was ſmall and irregular, her tongue and throat dry, her extremities cold, and the whole body affected with a tremor. After taking a draught of warm water, and having the part that was ſtung rubbed with warm oil of olives, ſhe was put to bed, and found conſiderable relief from flannel-cloths, wrung out of a hot decoction of ſome emollient herbs, applied to the *abdomen* and feet. After this, a draught with ſome of the *elixir paregoricum*, ſoon produced a profuſe ſweat, and freed her of the pain, inclination to vomit, and other ſymptoms. Next day her ſkin being hot, and her pulſe full, a new ſweat was procured by a draught with *ſp. minder* and *ſal. vol. ammon.* and before the evening ſhe was free of every complaint.

Laſtly, although the variolous matter in the blood, by its ſtimulus, frequently produces, in children, convulſions before the eruption, yet, in grown people, whoſe nerves are leſs delicate, this ſymptom rarely, if ever, happens. On the other hand, people whoſe ſolids are leſs firm, and their nerves more delicate and eaſily affected, although ſubject to many complaints, yet are ſeldom attacked with ardent fevers, or violent inflammatory diſeaſes; which ſeems to be chiefly owing to the weak ſtate of their blood and veſſels.

To the different ſenſibility of the nerves in general, or, at leaſt, of the heart, is owing, in a great meaſure, the variety of the quickneſs of the pulſe in healthy people. A late Phyſician told me of one of his patients, whoſe pulſe, in a healthy ſtate, did not beat above thirty-eight or forty times in a minute. And I know a young woman whoſe natural pulſe, when ſitting, is rarely under one hundred and twenty, yet has no complaint, and ſeems to enjoy good health. Near nine years ago, when I attended her in a fever, her pulſe beat upwards of one hundred and eighty in a minute; and ſhe was, at that time, troubled with the greateſt ſtartings and tremors I had ever ſeen. Nay, ſo very irritable was her heart, that, after the fever was much abated, and when, in a horizontal poſture, her pulſe beat under one hundred and forty, by only ſitting up in her bed for a little while, it became ſo quick, that, with difficulty, I could count it; but, after repeated trials, found it to be nearly two hundred and twenty in a minute.

Is not the quickneſs of the pulſe in children chiefly owing to the greater ſenſibility of their heart? And does not the pulſe generally grow ſlower with age, becauſe the heart becomes leſs ſenſible; and in a very advanced age, perhaps, in ſome degree, callous? Laſtly, is not the pulſe, *cæteris paribus*, quicker in ſmall than in large animals, chiefly becauſe the nerves are endued with a greater degree of ſenſibility in the former than in the latter?*

 Since,

* The ſlowneſs of the pulſe in larger animals is, no doubt, partly owing to the ventricles of their heart, on account of their greater capacity, requiring a longer time for the performance of their ſeveral motions.

Since, as we have obſerved, the nerves, in the different organs, are endued with various kinds of feeling, and are very differently affected by the ſame things, will not morbid humours in the blood be more apt to produce diſeaſes in thoſe parts whoſe nerves are moſt ſtrongly affected by them, than in others which ſuffer leſs? And may not this be partly the reaſon why, in certain diſeaſes, ſome parts of the body are much more commonly affected than others? and why, in ſome epidemics, the eyes, noſe, or fauces, and, in others, the breaſt or inteſtines, are moſt apt to ſuffer? This alſo may partly be the cauſe why thoſe organs which have ſuffered by ſome former diſeaſes, are moſt liable to be attacked when the body is ſeized with any new diſorder; for this does not ſeem to be owing ſolely to the weakneſs of the veſſels, but to their being more eaſily irritated by any acrimony in the blood, or by its increaſed force. Further, it may be proper to take notice here, that the different operations of various medicines are not ſo much owing to their powers, either of diſſolving the blood, or changing it in other reſpects, as to the particular nature of the nerves of the different organs, diſpoſing them to be very differently affected by the ſame kind of ſtimulating ſubſtances.

Thus cathartic medicines applied to the belly of children, in the form of a plaiſter, do not ſenſibly increaſe the ſecretion from the liver, or from the ſalivary or lachrymal glands; but they ſo affect the nerves of the inteſtines as to occaſion a greater flux of humours from their veſſels, and accelerate the periſtaltic motion, and ſo bring on a purging. And this does not ſeem to be owing ſo much to the finer parts of thoſe medicines, which enter the blood, and may be conveyed with it to the bowels, acting immediately on their nerves or ſmall veſſels, as to a particular ſympathy between the nerves diſtributed to the teguments of the *abdomen* and thoſe of the inteſtines; otherwiſe an aloetic plaiſter, applied to the back or the head, ſhould open the body as much as when laid to the belly. Nitre, which proves often highly diuretic, does not ſeem to affect the ſecretions of the other glands remarkably.

ably. The finer parts of *cantharides*, entering the blood by the application of bliſters, rarely produce vomiting or purging, or diſagreeably affect any part, except the urinary paſſages, where the nerves are ſo formed, as, by the acrimony of the flies, to be more irritated than thoſe of the other organs. Nor can the ſtrangury, occaſioned by *cantharides*, be owing, as ſome have thought, to their particles not paſſing freely through the veſſels of the kidneys and bladder, ſince the veſſels of the brain are much ſmaller than theſe, and ſince the kidneys are not near ſo much affected by them as the neck of the bladder. Does not mercury, when mixed with the blood, generally increaſe the ſecretion of the *ſaliva* much more than that of any other humour, becauſe the ſmall veſſels of the ſalivary glands are more ſtrongly affected by its peculiar ſtimulus than thoſe of any other ſecretory organ? Laſtly, does it not appear, from what has been ſaid, that the virtue of a medicine, which is ſpecifically to promote the ſecretion of the bile, ſemen, urine, or the ſaliva, muſt conſiſt in its being peculiarly fitted for ſtimulating, and conſequently increaſing, the vibratory motions of the ſmall ſecreting veſſels of the liver, kidneys, teſticles, or ſalivary glands, more than thoſe of the other parts? And do not ſuch medicines alone, if any ſuch there be, deſerve, in a ſtrict ſenſe, the name of *emenagogue*, which not only tend, by their general ſtimulating or attenuating power, to promote the menſtrual evacuation, but alſo, by their particular quality, are fitted to ſtimulate the nerves and veſſels of the womb more than any other?

But, to return from this digreſſion.

II. Beſides a too great ſenſibility of the nervous ſyſtem in general, there is often an uncommon weakneſs or delicacy, or an unnatural or depraved feeling in various parts of the body, which expoſes certain perſons to violent, and ſometimes very extraordinary, affections, from cauſes which would ſcarce produce any diſturbance in people of a ſound conſtitution.

Thus, ſeveral delicate women, who could eaſily bear the ſtronger ſmell of tobacco, have been

thrown into fits by muſk, ambergreaſe, or a pale roſe, which, to moſt people, are either grateful, or, at leaſt, not diſagreeable. The ſmell of cheeſe has, almoſt always, occaſioned a bleeding of the noſe in ſome.* *Mr. Boyle* tells of a Nobleman who was apt to faint away when tanſy was brought near him; and there lately lived, in this country, a Lady, who was affected with a general uneaſineſs as often as there was any ſellery in the room where ſhe ſat. The ſight of a cat, nay, even the inviſible effluvia from that animal, have occaſioned anxiety, faintneſs, and ſweating.‡ I had, ſeveral years ſince, a patient, who was always affected with an itching and uneaſineſs over her whole body, when ſhe either ſwallowed nutmeg, or applied it externally. There have been ſome who were ready to faint when they ſmelled to cinnamon: and *Mr. Boyle* mentions a Lady who had ſuch an antipathy to honey, that a little of it, put into a poultice, without her knowledge, and laid to a ſlight wound, threw her into great diſorder, which continued until that application was removed.† I knew a woman, who, ſoon after conception, always contracted an averſion to ſnuff, and did not recover her taſte for it until ſome time after her delivery. And it is well known, that, in time of pregnancy, the nerves of the ſtomach are ſo much changed, that moſt women are then troubled with a nauſea, vomiting, or depraved appetite. Laſtly, certain perſons, in conſequence of an uncommon delicacy, or unnatural ſenſibility, of the nerves which terminate in the *bronchia*, or veſicles of the lungs, are apt to ſuffer an aſthmatic fit from the effluvia of particular ſubſtances, which produce no ſuch effect on thoſe whoſe pulmonary nerves are differently diſpoſed.

But there is no organ of the body, the unnatural ſtate of whoſe nerves is ſo frequently the cauſe of nervous, hypochondriac, and hyſteric diſorders, as the alimentary canal, eſpecially the ſtomach.

An

* Kaau Boerhaave impet. faciens, § 409.

‡ Ibid.

† Uſefulneſs of experimental Philoſ. Part ii. p. 260.

An uncommon delicacy of the nerves of the ſtomach and inteſtines, which may be either, in a great meaſure, natural, or brought on by diſeaſes, improper aliment, irregular living, exceſſive grief, or other cauſes, is to be diſtinguiſhed from that acute feeling, or increaſed ſenſibility, which is the conſequence of an inflammation, or of an aphthous ſtate of theſe parts, ſince in theſe laſt caſes every acrid ſubſtance gives them pain; whereas, in the former, many inſipid, and ſeemingly innocent, aliments, produce great uneaſineſs in the ſtomach and bowels; while volatile ſpirits, ſtrong wine, brandy, and ſpiceries, are not only inoffenſive, but often neceſſary for allaying thoſe diſorders which are produced in the firſt paſſages by ſuch cauſes as would ſcarce give any diſturbance in a ſound ſtate.

Further, this morbid or delicate ſtate of the ſtomach and bowels does not conſiſt ſolely in their weakneſs, but chiefly in the uncommon diſpoſition of their nerves, which have a feeling very different from what is natural. As a proof of this, we obſerve, that in ſuch a ſtate of the alimentary canal, the appetite is often not only good, but beef and mutton, even when ſalted and dried, will be more eaſily digeſted, and give leſs diſturbance, than many vegetables, which in healthy perſons ſit much lighter on the ſtomach.*

It is ſurpriſing how much the condition of the ſtomach and inteſtines, and the diſpoſition of their nerves, will vary, even in the ſame perſons, at different times.

* It is a miſtake to think, as ſome have done, that vegetable food in general is worſe to digeſt than animal. The contrary ſeems to be demonſtrated by *Walæus*'s experiments on dogs; from which it appears, that bread and herbs are much ſooner digeſted than butcher's meat, even by theſe animals, which are naturally carnivorous; the former remaining in the ſtomach only four or five hours, and the latter ſeven or eight. Vid. Epiſt. de mot. chyl. et fang. ad Thom. Bartholin. Agreeably to this, people, whoſe ſtomach and inteſtines are quite ſound, find themſelves lighter, and much ſooner hungry, after a dinner of white bread, herbs, roots, or ripe fruit, than one of beef, mutton, or pork. It is not owing, therefore, to their being more difficult to digeſt, or their remaining longer in the ſtomach, that many vegetable aliments give ſuch diſturbance to ſome delicate people, but to their affecting diſagreeably the nerves of the alimentary canal. For the ſame reaſon it is, that roaſted meat agrees better with them than broth or boiled meat, and old cheeſe than new preſſed curds.

Thus cabbage, onions, leeks, and other vegetables, will lie long on the ſtomach, and occaſion flatulence and looſe ſtools in many who formerly found no ſuch inconvenience from them; and the ſame thing is true of honey and other aliments. Nay, *Mr. Boyle* tells us of a perſon who was more violently vomited by coffee than *crocus metallorum*, or other ſtrong emetics; and was made ſick even by the ſmell of this liquor, as he paſſed by a coffee-houſe, although formerly he had uſed to drink it without feeling any diſagreeable effects.* In ſome people the ſtate of the nerves of the ſtomach is ſo very uncommon, that laudanum, inſtead of relieving, will excite vomiting, and occaſion violent cramps in that organ. Nay, there have been perſons with whom pills of opium always diſagreed when newly made, but occaſioned no diſturbance after being kept ſome weeks.

That many of thoſe complaints, which have been commonly called nervous, proceed, in a great meaſure, from a particular, unnatural, or depraved ſenſibility of the nerves of the alimentary canal, appears evidently from this, that although, in many caſes, the ſtomach and inteſtines are much diſeaſed, yet the patients are not affected with any remarkable nervous or hypochondriac ſymptoms, while others are greatly troubled with theſe complaints who have a good appetite, a quick digeſtion, and no tough phlegm, or other noxious humour, in their ſtomach. Add to this, although children, on account of the great ſenſibility of their nerves, are liable to convulſive diſorders, and other nervous complaints, yet they are rarely affected with the hypochondriac diſeaſe, becauſe the nerves of their ſtomach and inteſtines have not that unnatural or depraved feeling which is common in this malady; and which, when it is, on certain occaſions, much increaſed by ſome acrid matter in the blood falling on them, becomes not only the prediſpoſing cauſe, but conſtitutes the hypochondriac diſeaſe itſelf, and gives riſe to moſt of its ſymptoms. In

* Uſefulneſs of Exp. Philoſ. Part ii. p. 260.

In a weakly and delicate, or an unnatural ſtate of the ſtomach and bowels, improper aliments, exceſs in eating or drinking, wind, ſharp humours, and ſtrong paſſions, ſuch as grief, anger, and the like, will occaſion much more violent ſymptoms, than in perſons whoſe alimentary canal is firm and ſound. Thus a draught of cold water will inſtantly affect ſome very delicate women with a violent pain and cramp in their ſtomach; and the ſight of one vomiting, or of certain diſagreeable aliments, or medicines, will produce a nauſea, and even vomiting, in perſons whoſe ſtomachs are eaſily moved. Nay, in ſome caſes, ſo very delicate is the ſtate of the ſtomach, that turning the body haſtily in bed, or raiſing one's ſelf, will immediately occaſion a faintneſs, giddineſs, a general weakneſs, and ſometimes an inclination to vomit. This laſt ſymptom has been remarked by Sydenham in hyſteric women; and I have had ſeveral patients in continued fevers, who, together with an uncommon debility and faintneſs, were, upon the ſmalleſt motion in their bed, ſeized with a nauſea and retching to vomit.

Further, a delicate ſtate of the firſt paſſages, or an unnatural ſenſibility of their nerves, not only diſpoſes people to many complaints in theſe parts, but the whole nervous ſyſtem is thereby rendered more moveable, and liable to be affected by the ſlighteſt cauſes. Thus, I have known ſome women of a delicate frame, in whom, from an obſtruction or irregularity of the *menſtrua*, the nerves of the ſtomach had acquired ſuch an uncommon ſenſibility, that, after eating freely of any ſolid meat, they were not only ſeized with a pain and ſickneſs at the ſtomach, and a ſenſe of ſtiffneſs and rigidity in the trunk of the body, but ſometimes alſo with faintings, attended with a quick trembling pulſe, and ſmall convulſions of the muſcles of the legs and arms. A woman of a delicate conſtitution, who was attacked with a quotidian intermittent, ſeven weeks after child-bearing, as often as ſhe ſwallowed ſome *magneſia alba*, felt immediately a kind of quivering motion propagated through her whole body. The ſame perſon, as often as ſhe took

took a draught of lime-water, obſerved the palms of her hands, which before were ſoft and moiſt, become at once dry and hard. It was remarkable, that neither crabs' eyes, nor chalk, occaſioned any ſuch uneaſy feeling as the magneſia did.

When my ſtomach and bowels have been out of order, and affected with an uneaſy ſenſation from wind, I have not only been ſenſible of a general debility and flatneſs of ſpirits, but the unexpected opening of a door, or any ſuch trifling unforeſeen accident, would inſtantly occaſion an odd ſenſation about my heart, extending itſelf from thence to my head and arms, and, in a leſſer degree, to the inferior parts of my body. At other times, when my ſtomach is in a firmer ſtate, I have no ſuch feelings, or at leaſt in a very ſmall degree, from cauſes which might be thought more apt to produce them.

From what has been ſaid, we may ſee, that faintings, tremors, palpitations of the heart, convulſive motions, and great fearfulneſs, may be often owing more to the infirm ſtate of the firſt paſſages, than to any fault either in the brain or heart. But it would be unneceſſary to inſiſt farther on this head, as the powers which the alimentary canal, when its nerves are diſagreeably affected, muſt have in producing diſorders in the moſt diſtant parts of the body, cannot be doubted of by thoſe who attend to that wonderful and widely extended ſympathy which obtains between it and almoſt the whole ſyſtem.* What has been ſaid may be ſufficient to ſhew, how much a delicate or unnatural ſtate of the nerves of the alimentary canal muſt diſpoſe people to nervous, hypochondriac, and hyſteric complaints. But further, when, through the fault of the ſtomach and inteſtines, the digeſtion is imperfectly carried on, the ill-prepared chyle may lay a foundation in the blood for exciting a variety of nervous ſymptoms, as will afterwards more fully appear.

Since the ſtronger or weaker effects of emetics and cathartics muſt depend entirely on the different conſtitution of the nerves of the *primæ viæ*, and the

* See Chapter I. No. 11.

the quantity of mucus defending them, it is eaſy to ſee that the doſes of thoſe medicines can neither be certainly determined by the ages nor ſizes of the patients, nor by the quantity of blood in their veſſels.

It is owing alone to the different ſenſibility which the nerves of the alimentary canal, in different perſons, have of various *ſtimuli*, that the ſeveral vomiting and purging medicines have ſuch different effects; that the ſtrongeſt emetics ſcarce move ſome people, while, in others, the mildeſt are apt to have too great an operation; that a few grains of rhubarb ſhall purge and gripe one patient ſeverely, and a drachm of the ſame medicine have no ſenſible effect on another; that a drachm and a half of *ſoluble tartar* ſhall prove a ſtronger purgative to ſome than four ounces of ſacred tincture; that children are often harder to purge than ſome adults; * that worms, tough phlegm, and other noxious humours, lodging in the ſtomach and bowels, produce very different effects in different perſons; and that the bark, which generally makes the body coſtive, occaſions gripes and purging in ſome. And is it not to be aſcribed chiefly, if not ſolely, to the different conſtitution of the nerves in different animals, that what is highly noxious to ſome, proves wholeſome food to others? Thus the *cicuta aquatica*, which is eat by goats without any harm, † is a deadly poiſon to men and other animals.

Wherein conſiſt the various kinds and degrees of ſenſibility which the nerves of the alimentary canal and other organs poſſeſs, we no more know than we do their peculiar ſtructure, or how they come to be endued with ſenſation at all: but that the particular ſenſibility of the nerves of the gullet, ſtomach, and inteſtines, is often greatly changed by diſeaſes, even when the nervous ſyſtem in general

* It is here to be obſerved, that, in children, frequently, and alſo ſometimes in adults, vomiting and purging medicines have much leſs effect than might be expected, conſidering the delicacy of their nerves, on account of the ſtomach and inteſtines being lined either with a great deal of natural mucus, or morbid ſlime.

† Swencke Diſſertat. de Cicut. Aquat. Geſneri.

neral is not much altered, we know from experience.* Nor is there, perhaps, to be found a ſtronger inſtance of this than in the *hydrophobia* conſequent on the bite of a mad dog; where the pureſt water excites ſuch convulſive motions of the gullet, ſtomach, diaphragm, and abdominal muſcles, that, after a few attempts to ſwallow it, the ſight of any fluid, and eſpecially if it touches the patient's lips, will inſtantly affect him with horror, and throw him into violent convulſions and vomiting. In ſome caſes (although theſe more rarely happen) the nerves alſo of the inteſtines become ſo far depraved in their feeling, that liquors can no more be admitted by injection into the great guts, than into the ſtomach by deglutition. Nay, it ſhould ſeem that, ſometimes, not only the nerves of the alimentary canal are ſtrangely altered in this diſeaſe, but alſo thoſe of the face, and perhaps of the whole ſurface of the body, ſince we are told of hydrophobic patients who could not even bear a blaſt of cool air.†

How this change is produced in the nerves of the firſt paſſages, or other parts, in the *hydrophobia*, or in what it conſiſts, is, perhaps, one of thoſe difficulties which phyſicians may deſpair of being ever able to explain. One thing, however, is certain, that, in men as well as dogs, who have died of that diſeaſe, the gullet and ſtomach have been often found free of any viſible inflammation; whence the diſeaſe muſt have had its ſeat either in the nerves themſelves, or in veſſels ſmaller than thoſe which carry red blood. But whatever may be the change made by this diſtemper on the nerves of the alimentary canal, or in what manner ſoever the canine poiſon produces this change, we know that

* Since it is probable that the nerves are partly nouriſhed by the fluids diſtributed to that production of the *pia mater* which ſurrounds their medullary ſubſtance, it is eaſy to ſee that the nerves of a particular organ may have their ſenſibility increaſed, diminiſhed, or otherwiſe changed, by fluids that are improper, or of an acrid nature, being ſent to them; when, in the mean time, the brain and nervous ſyſtem, in general, may be ſound, and ſuffer in no other way, but by ſympathy with that organ whoſe nerves are morbidly affected.

† Philoſ. Tranſact. abridged, Vol. 5. p. 366, and Act. Acad. Moguntin. Tom. i. p. 341.

that if, from any cauſe, the nerves of the fauces, gullet, and ſtomach, ſhould acquire a ſenſibility ſomething ſimilar to that which the nerves of the *larynx* and *trachea* are naturally endued with, the moſt violent convulſive motions of thoſe parts, and retchings to vomit, would enſue, upon attempting to ſwallow even the mildeſt liquors. In this, however, the ſenſibility of the *fauces* and gullet in the *hydrophobia* differs from that of the *larynx* and *trachea* in a natural ſtate, that theſe laſt parts ſuffer ſtill more from ſolids than liquors of a mild nature; whereas the former are diſagreeably affected by liquids alone.

But to return. As a too great ſenſibility of the nervous ſyſtem in general, or an unnatural delicacy of the ſtomach and inteſtines, or other organs, in particular, do not commonly of themſelves produce thoſe various ſymptoms which go by the name of nervous, hypochondriac, and hyſteric, I come next to enquire into thoſe ſeveral occaſional cauſes which, meeting with the prediſpoſing ones abovementioned, may bring on this numerous train of diſeaſes.

CHAP. IV.

OF THE OCCASIONAL CAUSES OF NERVOUS, HYPOCHONDRIAC, AND HYSTERIC DISORDERS.

THESE are either to be found in the blood, or they have their ſeat in ſome particular organ of the body. The former I ſhall call general; the latter particular occaſional cauſes.

The general occaſional cauſes may be reduced to three, viz. I. Some morbid matter bred in the blood. II. The diminution or retention of ſome accuſtomed evacuation. III. The want of a ſufficient quantity of blood, or of blood of a proper denſity.

I. Something

I. Something bred in the blood, and not carried off by any of the excretories, diſagreeably affecting the nerves, as often as it comes into contact with them; or forming obſtructions in the ſmall veſſels, and producing different ſymptoms, according to the parts it attacks.

That many of the ſymptoms commonly called *nervous*, *hypochondriac*, or *hyſteric*, are frequently owing to ſome noxious matter in the blood, affecting, at different times, different parts of the body, I have been fully convinced by many caſes which have occurred in my practice, but ſhall only mention two, which ſeem to prove this point ſufficiently.

1. A boy, of ten years of age, of a very ſenſible nervous ſyſtem, who, in December, 1747, had been ſeized with a palpitation of his heart, fell from his horſe about the beginning of January. From this time the palpitation left him; but, in a few days after, he was attacked with a violent headach, returning ſometimes once a day, at other times only every third or fourth day. During the fit his pulſe became ſmaller and quicker, and often intermitted: his feet were cold; but, by the violence of the pain, a plentiful ſweat broke out and relieved him. As theſe headachs continued to increaſe, the patient loſt his ſtomach and fleſh, and looked pale. By the uſe chiefly of an electuary of the bark and valerian, in leſs than three weeks the pain in the head abated greatly; but his appetite grew worſe, and he often complained of a nauſea. Theſe ſymptoms, however, were all removed, in four or five days, by ſome warm ſtomachic and cordial medicines; but were ſucceeded by an intolerable pain a-croſs the middle of his belly, which, in the ſpace of eight days, returned five or ſix times, and not only affected his pulſe, as the headach had done, but ſometimes occaſioned a difficulty and pain in making water. This pain no ſooner left his belly, than the headach returned with greater violence than ever, ſo that the boy would faint in ſome of the worſt paroxyſms. It had no certain periods, coming ſometimes twice a day, ſometimes only once in two days, and was attended

attended with a ſenſe of ſuffocation from wind, and a lump in his throat. He was eaſieſt in the night, when he ſlept or lay quiet; but any conſiderable motion of his body always raiſed his headach. Before the fits, he was obſerved to be uncommonly lively, and diſpoſed to laugh. On the 21ſt of February, at two in the afternoon, he was ſeized with fits of involuntary laughter, between which he complained of a ſtrange ſmell, and of pins pricking his noſe. He talked incoherently, ſtared in an odd manner, and his complexion changed to a livid colour. Immediately after, he was ſeized with convulſions, and then fell into a fainting fit, which laſted near half an hour. When his pulſe, breathing, and ſenſes, returned, he complained of a great coldneſs and pain in the back part of his head, and vomited his dinner, with ſome tough phlegm. At this time his appetite was good, and afterwards it became greater than it uſed to be in perfect health.

On the 9th of March ſome purulent matter was diſcharged from his right noſtril; and much about the ſame time a ſmall quantity more came from the right ear; after which he had ſcarce any violent fits of the headach, but a continued, though leſs ſevere, pain in the back-part of the head; which being greatly increaſed by motion, he lay conſtantly a-bed, and moſtly on his back. Although he had a conſiderable thirſt, and drank plentifully, yet, during the whole month of March, he did not make above ſix ounces of water in twenty-four hours, and ſweated none.

About the beginning of April the complaints of of his head were ſo much abated, that he could bear ſitting up in a chair: he began to make water more plentifully, and, when any thing ruffled him, voided great quantities of quite limped urine. During the month of May he continued to grow better; and before the end of June he had perfectly recovered.

In February, 1748, he began to complain of a conſtant headach, which, though worſe at times, yet was never ſo violent as the year before, nor affected his pulſe or ſtomach: but now he frequently

quently ſaw objects double. In the beginning of March ſome purulent matter came from one of his noſtrils, and ſoon after the headach abated; but he loſt his appetite, and was attacked with a pain in the left ſide of his belly, between the ſhort ribs and *os ilium*, confined to a ſpace little larger than the breadth of a ſhilling. This pain was often ſo ſevere as to make him ready to faint; ſometimes it ſhifted, and then he was ſeized with fatiguing fits of involuntary laughter. His head was always eaſy when the pain in his belly was worſt. In the ſummer he recovered his health as the year before; and next winter complained little or nothing of his head, but, for ſome months, had a weakneſs and painful feeling in his left eye when expoſed to the leaſt light. As there was no inflammation in this eye, the pain ſeemed to be owing to too great a ſenſibility of the *retina*.

2. An unmarried woman, aged between twenty-five and thirty, had an irregular ague in Auguſt and September, 1757, of which no ſymptoms remained in October, except a ſweating every other day if ſhe lay long in bed. This ſhe prevented by getting up before breakfaſt; but in eight or ten days after ſhe was ſeized with a tightneſs in her breaſt, which occaſioned a cough, but without expectoration. This oppreſſion at her breaſt, with the cough increaſing, although the pulſe was good, I thought it proper to make her loſe eight ounces of blood; but neither this evacuation, nor a bliſter afterwards applied to her back, gave any relief. She uſed a mixture with the *acetum ſcilliticum*, was vomited, purged with ſacred tincture, took camphire, caſtor, *aſa fœtida* and *laudanum*, with very little benefit. At laſt, about the beginning of November, a muſk julep taken for a fortnight almoſt quite freed her of her diſorder.

After having continued during the winter in pretty good health, ſhe began, in April, to complain of pains in her legs and knees, but moſtly in her body. Although her pulſe was not altered, yet twelve ounces of blood were taken away, which had a thin ſizy ſkin of a bluiſh colour. Some days after the pain in her ſides, ſtomach, *ſternum*, and back

back increaſed; ſhe was much troubled with wind in the firſt paſſages, and made very little water. The ſenſe of ſuffocation and dry cough, which ſhe had in October, returned; and ſhe was ſeized, eſpecially in the evenings, with ſuch violent catchings, or convulſive motions, of her legs, thighs, and almoſt her whole body, as not only to ſhake the bed, but the room in which ſhe lay. At this time ſhe was vomited, bliſtered on the back, and took draughts of *ſp. minderer.* with *ſal. vol. ammon.* but without any advantage. By the uſe, however, of boluſes of camphire and muſk, with ſmall doſes of laudanum at bed-time, ſhe was got pretty free of the catchings; and the tightneſs and dry cough were alſo leſſened; but the pains in her ſides, bowels, and legs, continued as bad as ever. On the 7th of May ſhe complained of a ſwelling in one of her arm-pits, which daily increaſed; and her pulſe, which had generally beat only between ſixty and ſeventy times in a minute, now exceeded an hundred. She loſt ten ounces of blood, which was very ſizy. Emollient fomentations, and ſuppurating poultices, were applied to the arm-pit; notwithſtanding which, the pain increaſed to ſuch a degree, that ſhe was obliged to take every night a large doſe of laudanum to procure reſt. From the time this ſwelling and pain began under her arm, the ſenſe of ſuffocation, the cough, the other pains and catchings abated, and left her entirely, about the 20th of May, after the tumor had broke and diſcharged ſome bloody matter. During both illneſſes ſhe continued perfectly regular.

From theſe two caſes it appears, that various ſymptoms of the nervous kind may be owing to ſome morbid matter in the blood, occaſioning different complaints, according to the parts upon which it falls, even when there is no reaſon to ſuſpect any obſtruction in the *viſcera* of the *abdomen*, or fault in the *uterus*. In the firſt caſe, it is not eaſy to ſay what gave riſe to the diſeaſe; but in the ſecond an aguiſh diſorder imprudently checked, leaving a taint in the blood, produced a ſenſe of ſuffocation, the dry cough, pains in various parts of the body, and ſpaſmodic contractions

of

of the muſcles; which complaints were never entirely cured till ſome noxious matter was diſcharged by the ſuppuration of a gland in the arm-pit. Nor can it appear ſtrange that ſo ſmall an evacuation ſhould purify the blood, and relieve the patient, when, in the plague itſelf, a proper ſuppuration of one of the glands of the neck, arm-pit, or groin, will prove a perfect *criſis*.

As a further proof that complaints of the nervous or hyſteric kind often proceed from ſome morbid humour in the blood, I have frequently ſeen them relieved by an itching between the toes, red puſtules appearing on the breaſt and belly, or ſome other cutaneous eruption.

That taint or morbid matter in the blood, which occaſions many ſymptoms of the nervous kind, may proceed from very different cauſes; ſuch as improper food, a ſcorbutic * or ſcrophulous habit, fevers which have had imperfect criſes, or other diſeaſes not fully cured, eſpecially the cutaneous diſorders; when the morbid matter, inſtead of being thrown off by the ſkin, is reaſſumed into the blood, and depoſited on ſome of the internal parts. But by far the moſt frequent taint in the blood affecting the nerves, is an arthritic matter, falling at different times on different parts of the body.

Aræteus has long ago taken notice, that in ſome the gout wanders through the whole body;† the truth of which obſervation has been confirmed by later writers,‡ and would have been more carefully attended

* By *ſcorbutic* is not here meant that fault in the blood which produces the true ſcurvy, to which people who live at ſea and in marſhy places are ſo ſubject, but that humour which has been commonly, though improperly, called ſcorbutic, and which, when it is carried to the ſkin, inſtead of livid blotches, produces dry, ſcurfy eruptions, ſcabs, tetters, &c. and when in a high degree, the *lepra Græcorum*.

† De Cauſis et ſignis Morborum, lib. xi. cap. xii.

‡ "Enimvero uſu medico vel parum exercitatos, hoc latere nequit; "arthritide (præcipue frigida, inerti, languida; maxime vero omnium ea ſuppreſſa, retuſaque) ægrotantes, interdum humeri, pectoris, dorſi, lumborum, aliarumque in ambitu corporis partium "dolore vago tanquam rheumatico; ſæpe etiam capitis affectibus, "more prorſus hyſterico; alias, aliis in corpore malis, quaſi ſcorbuticis urgeri; ſæpiſſime vero valetudine dubia, et in tempus diuturnum incerta, et neutra eſſe. Qui quidem eorum ſtatus ac condi-

"tiones,

attended to by phyſicians, if thoſe ſymptoms which aroſe only from an imperfect gout, had not been, for the moſt part, either ſlurred over under the ſpecious name of *nervous*, without any particular enquiry into their real cauſe, or conſidered merely as the effects of the hypochondriac or hyſteric diſeaſe, or of the ſcurvy; eſpecially in ſuch as, having never had a regular fit of the gout, were not ſuſpected of any arthritic humour.

Were it neceſſary, many caſes might be produced to ſhew, that nervous, hypochondriac, and hyſteric complaints, are often owing to an imperfect gout wandering through the body; but I ſhall only mention the two following.

1. A gentleman, aged fifty-eight, temperate, and ſubject to no diſtemper, except a rheumatiſm, of which, for ſome years, he had frequent returns in his loins, in Auguſt, 1752, after a ſevere fit of this kind had ſuddenly left him, was ſeized with a great depreſſion of ſpirits, often attended with a ſickneſs at ſtomach, and a particular ſenſation about the epigaſtric region, which he could not well deſcribe. In leſs than two months, by proper medicines and exerciſe, he got free of thoſe complaints; but had not long enjoyed good health, when he began to feel frequently a ſlight palpitation of his heart, which was attended with an intermiſſion of his pulſe. This was ſucceeded by the *lumbago*, during which he found his appetite and ſpirits better than at other times, and indeed as good as in his beſt health. Afterwards he had frequent returns about his ſtomach, with low ſpirits, and a nauſea, eſpecially in the morning; and complained ſometimes of a difficulty of breathing, but without any cough or ſpitting. This perſon, who never had had the gout, nor ſuſpected it, being told, that all his complaints were owing to an arthritic matter wandering through his body, ſeemed

" tiones, ſenſu remiſſiori et leniori gradu morboſæ natales ſuos arthri-
" tico miaſmati, cœco, in corpus ſubrepenti, et eo loci clam agenti,
" ſe debere, ultro videntur agnoſcere: quinetiam aliquando, multos
" poſt annos, dubium hunc in modum actos; tandem apparente
" paroxyſmo arthritico ideopoti[illegible] originem et natura ma-
" lorum arthritica, omnis tollata dubitatio eſt." Muſgrave de arthritide Anomala, cap. xix. p. 316.

ſeemed ſurpriſed at firſt, but was ſoon after convinced, by a ſlight pain and inflammation which ſeized one of his great toes; and, during the few days it laſted, relieved him of his lowneſs of ſpirits, and complaints of his ſtomach. He was for ſeveral years, both before and after this fit of the gout, affected, at times, with a ſmall running from the urethra, and a pain in the left groin, which ſometimes attacked the teſticle of that ſide. Theſe ſymptoms I conſidered, as well as the others, to be purely arthritic, ſince he had never in his life had any venereal infection.

Tea, coffee, and all flatulent aliments, hurt this patient. Fleſh-meats, old cheeſe, wine, porter, and bitters with the bark, ſteel, and exerciſe, eſpecially riding, did him moſt ſervice.

2. A gentleman, aged forty, generally healthy, who, from June, 1752, had been troubled with pains in his heels, and ſometimes in the middle of his left foot, in the end of May, 1755, about ſeven in the morning, awaked with an unuſual ſenſation in his breaſt, and a faintneſs, but without any ſickneſs at his ſtomach, or ſwimming in his head: his pulſe was ſurpriſingly irregular and intermitting. Twelve ounces of blood were taken from him of a natural appearance; he ſwallowed ſome warm wine and water, *ſp. corn. cerv. tinct. caſtor*, and a ſolution of *aſa fœtida*, but without any remarkable effect.

Upon getting up, and walking through the room, he found himſelf quite free of a pain, which, for ſome months, he had felt in the middle of his left foot. About ten he began to make pale urine, and, in five hours, voided five Engliſh pints of it, although what he had drank up during this time did not amount to half that quantity. About noon, partly to abate this immoderate diſcharge, and partly to leſſen the two great irritability of the heart, by bracing the viſcera of the lower belly, he girded himſelf very tight with a broad belt, and in three or four minutes after the languor, and that unuſual ſenſation within his breaſt, ceaſed at once, and his pulſe became regular and natural. Next day he began to be troubled with wind in his ſtomach and bowels, which did not occaſion any

ſharp

ſharp pain, but a diſagreeable ſenſation and great lowneſs of ſpirits.

After theſe ſymptoms had continued by fits for four or five days, he rode out ſome miles for exerciſe, and returned home entirely free from his complaints; only, by being expoſed to a cold eaſt wind, he got a ſwelling and a ſmall degree of inflammation in one of his tonſils. Having ſupped as uſual, he went to bed, and, after a ſhort ſleep, waked quite free of the inflammation in the throat, but with a great faintneſs, attended with a very quick and ſmall pulſe. A glaſs or two of claret, and a bit of bread, removed this faintneſs for the time; and, upon its return, it was cured by the ſame remedy. For ſome weeks after he was much troubled with flatulencies in his ſtomach and bowels, with low ſpirits ſometimes, though in a much leſs degree than before, and did not entirely recover his health and ſtrength in ſeveral months. The pain in his heels, which he had felt little during moſt of this time, returned, and continued pretty conſtant till the end of Auguſt, 1757, when he had a ſlight fit of the gout, with a ſwelling and inflammation in his right heel. After that period, as well as before it, he was often troubled with a giddineſs, and flying pains in his head, arms, and hands, frequent pains in his heels, and wind in the *primæ viæ*.

Theſe caſes need no comment. The ſymptoms with which the patients were affected muſt have proceeded from an irregular gout, the matter of which, inſtead of going to the extremities, wandered through the body. The ſtomach complaints could not be owing to any tough phlegm, or other crudities; for the laſt perſon had never, in his life, thrown up, by a vomit, any thing of this kind; and the other, who took ſeveral vomits during his illneſs, never appeared to have much of a foul ſtomach; nay, though he was often oppreſſed with a heavy ſickneſs, and a nauſea in the night and morning, yet he grew eaſy before dinner, and then eat with as good an appetite and digeſtion as in his beſt health.

From what has been ſaid, it may appear, that ſome morbid matter in the blood, either arthritic,

or

or of another kind, may be often the cauſe of nervous complaints. When this matter is carried ſmoothly along with the blood, without forming obſtructions in any of the veſſels, or irritating the nerves, it gives little trouble: when it remains fixed in the extremities, or the muſcular parts of the trunk of the body, it will only occaſion aching pains of the goutiſh or rheumatic kind: but when it is depoſited on ſuch of the *viſcera* as are very ſenſible, or by ſympathy are apt ſtrongly to affect almoſt the whole body, it may produce the moſt of thoſe ſymptoms which have been commonly called nervous, hypochondriac, or hyſteric. This matter may, in general, act either by its viſcidity in obſtructing the ſmaller veſſels, and thereby ſtretching too much their ſenſible fibres and nervous filaments, or by its acrimony in diſagreeably affecting the extremities of thoſe nerves which it touches.*

It is to be obſerved, however, that the kind and violence of the ſymptoms occaſioned by this morbific matter, will not only be different according to the parts which it affects, but in proportion to the greater or leſſer natural delicacy or ſenſibility of the patient's nerves. Hence it ſeems to be, that men of otherways hale and ſtrong conſtitutions, and ſome robuſt women, are liable to a regular gout, and but little to nervous complaints. Their firmer fibres, and leſs delicate nerves, do not predispoſe them to the latter; and the ſtrength of their digeſtive organs, and vaſcular ſyſtem, enables them to throw off the arthritic matter on the extremities, by which means the body is cleared of it.

Men of a middle conſtitution, between the delicate and ſtrong, are, from this morbid matter, affected with pains of the cold rheumatic kind, and

* It is probable that the morbid matter in the blood, producing nervous complaints, generally proves hurtful by its acrimony, and but rarely by its viſcidity: at leaſt we know, that in the ſmall-pox, meaſles, and continued fevers, an acrimony in the blood, by ſtimulating the brain and nerves, frequently produces a delirium, tremors, twitchings, convulſions, and other nervous ſymptoms: and the *horror febrilis*, or ſhuddering upon the attack of a fever, is rather owing to a ſpaſmodic contraction of the ſmall veſſels than an obſtruction of them from viſcid blood.

and various nervous ſymptoms in a leſſer degree; and ſometimes alſo with a fit of the true gout. But in them this diſtemper is not commonly ſo compleatly formed as to clear the habit of the arthritic matter, at leaſt for any conſiderable time; for ſoon after the imperfect fit of the gout their old complaints begin to return.

On the other hand, women of a more delicate habit, and men of weak fibres, and very ſenſible nerves, have more rarely any diſorder like the true gout; either becauſe in ſuch conſtitutions the arthritic matter is imperfectly formed, or, what is more probable, becauſe the vital organs are unable to throw it off upon the joints and extremities. Hence this morbid cauſe in the blood, inſtead of being depoſited on the *aponeuroſes*, tendons, ligaments, and membranes of the feet, hands, or other joints, falls upon different parts of the body, and produces ſymptoms almoſt as different as are the parts which it attacks. Such, for inſtance, are the flying pains, ſpaſmodic contractions, and ſudden ſenſations of heat and cold in the muſcles and exterior parts of the body; a want of appetite, or too great craving and faintneſs, a nauſea or vomiting, flatulent ſwellings, *borborygmi*, watching, low ſpirits, cramps, convulſions, and violent pains in the ſtomach and bowels; an increaſed ſecretion of ſaliva, from an irritation of the veſſels of the ſalivary glands; the *globus hyſtericus* in the gullet; a ſpaſmodic aſthma in the lungs; palpitations and irregular motions in the heart; an exceſſive flow of pale urine, or ſometimes nephritic pains in the kidneys; a *hemicrania*, the *clavus hyſtericus*, or ſhooting pains in the head. Beſides theſe, I have ſeen many other ſymptoms occaſioned by an imperfect or irregular gout, ſuch as a delirium and mania; an inflammation in one of the tonſils; a troubleſome dyſuria; a violent itching between the toes; a ſevere pain about the *cartilago enſiformis*, returning twice or thrice a-day, eſpecially upon any ſtrong affection of the mind or effort of the body, and ſometimes attended with a painful ſenſation in the middle of each arm; a ſenſe of a burning heat over the whole ſurface of the body,

except the legs, while, in the mean time, the ſkin was ſcarce ſenſibly hotter than in a ſtate of health, and the pulſe was under eighty in a minute. In one patient I met with a ſlight but frequently returning gonorrhœa, from a gouty humour falling on the nerves or veſſels of the *urethra*; and in another, an uneaſy itching of the *ſcrotum*. I have ſeen three caſes of a ſharp pain in the teſticles from the ſame cauſe. In one of theſe there was a conſiderable ſwelling along with the pain, both which went off upon the gout coming into both the feet.

All this is confirmed by obſerving, that perſons who have been but little troubled before with thoſe ſymptoms, commonly called nervous, upon the rheumatic or rather gouty pains leaving their feet, hands, or loins, have been ſeized with an irregular intermitting pulſe, giddineſs, faintneſs, difficulty in breathing, nauſea and vomiting, flatulence in the ſtomach and bowels, depreſſion of ſpirits, and other ſymptoms of the like kind.*

Such complaints, if the patient has never had the gout, are generally called *nervous*; but if he has been ſubject to it, are readily enough aſcribed to the arthritic matter leaving the extremities, and fixing upon the head, or *viſcera* of the *thorax* or belly.

This difference, however, may be obſerved, that the ſymptoms ariſing from the retroceſſion of the true gout are generally more violent than thoſe which are occaſioned by a rheumatic or imperfect arthritic humour wandering through the body.

Upon the whole, it may appear, that one very frequent occaſional cauſe of many nervous, hypochondriac,

* As the arthritic matter affecting the nerves of the ſtomach, not only occaſions the ſymptoms now mentioned, but ſometimes extraordinary languors, an univerſal debility, anxiety, and faintings, it is noways improbable, that the ſudden death of ſeveral, ſubject to a wandering gout, may have been ſometimes owing to its affecting the nerves of the ſtomach at once, and in ſo ſtrong a manner as not only to occaſion fainting, but a total ſuſpenſion of the motion of the heart: and this will appear ſtill more probable by obſerving, that ſuch perſons have often, immediately before their death, complained of a ſharp pain or ſickneſs, or other unuſual ſenſation, in their ſtomach. In ſuch caſes, the cauſe of the death will be in vain ſought for in the heart, lungs, brain, or, indeed, in any other part of the body; for the arthritic matter affecting the ſtomach is too ſubtile to be ſeen, although active enough to deſtroy.

chondriac, and hyſteric ſymptoms, is ſome acrid matter in the blood, commonly no other than the arthritic humour, the cauſe likewiſe of the chronic rheumatiſm and true gout.*

It may be proper to obſerve, that, although a gouty humour in the blood may be much oftener the cauſe of nervous ſymptoms in men than in women, yet, in the latter, many complaints of this kind do certainly flow from that ſource. Of this I could relate many inſtances which have occurred in my practice; but, that I may not be tedious, I ſhall only mention one.

A lady, aged ſixty, of a delicate conſtitution, and who had been often liable to complaints in her ſtomach, upon her becoming free from ſlight rheumatic pains, which ſhe uſed to feel in her arms, began to be affected with an averſion to food, a heavy ſickneſs, and ſometimes a vomiting; an acute or burning pain in her ſtomach, ſometimes ſhifting from it to her bowels; flatulence, belching, palpi-

 tations,

* It may be objected, that nervous and hyſteric complaints cannot be owing to any noxious matter in the blood or finer fluids, ſince violent pains, and other ſymptoms of this kind, are obſerved to ſhift ſo ſuddenly from one place to another, that we can ſcarcely conceive this to be owing to the tranſlation of any morbid matter. But although here, as well as on many other occaſions, we are obliged to own our ignorance, yet we have no more reaſon to deny that nervous, ſpaſmodic, or hyſteric, diſorders are owing to ſome acrid humour irritating the nerves of the parts affected, or of ſome other parts with which they have a remarkable ſympathy, than that the gout or rheumatiſm proceed from ſuch a cauſe, becauſe they often move ſuddenly from one place to another, eſpecially upon the imprudent application of topical remedies. When the gout leaves the head or ſtomach, and immediately ſeizes the feet, is the arthritic matter, which affected the veſſels of the former parts, inſtantly carried to the latter? Or is it not more reaſonable to ſuppoſe, that the gouty matter, which abounds in the blood or finer fluids, as ſoon as it falls particularly on the feet, by exciting a great pain there, leſſens or deſtroys the diſorder in the ſtomach or head; and, perhaps, by removing ſome ſpaſmodic contraction in their very ſmall veſſels, allows the gouty matter, that was fixed in them, to paſs through, and mix itſelf with, the general maſs of fluids? It is further to be obſerved, that many ſymptoms of the nervous or hyſteric kind ſeem to be owing not to any acrid matter immediately irritating the parts which ſuffer, but only affecting the ſtomach and inteſtines; whence, by means of their remarkable ſympathy with moſt other parts of the body, a variety of ſymptoms are occaſioned, which either increaſe or abate, or ſhift from place to place, according as the nerves of the firſt paſſages are variouſly affected.

tations, and, on ſome occaſions, a ſenſe of faintneſs at the ſtomach, or a difficulty of breathing. After being affected with theſe various ſymptoms, which ſucceeded one another, without any regularity, for three or four weeks, or longer, they generally abated, and ſometimes went quite off, upon ſharp pains coming into the thighs, legs, and feet, which laſt not only felt hot, but were often ſwelled. I ſhall only add, that, as in thoſe women who were quite regular as to the monthly evacuation, or long paſt that time of life when it naturally ceaſes, I have found hyſteric complaints to be owing very often to a rheumatic or gouty humour affecting them differently at different times; ſo the moſt attentive obſervation has convinced me, that by far the moſt frequent cauſe of the hypochondriac diſeaſe in men, is no other than a humour of the ſame kind affecting chiefly the nerves of the ſtomach and bowels, which, from an original weakneſs, had been more expoſed to its attacks than the other parts of the body. This humour, in thoſe of a melancholic temperament, beſides other ſymptoms, generally occaſions watching, timidity, a great depreſſion of ſpirits, and ſometimes very uneaſy diſtracting thoughts. In others, of a different conſtitution, the ſame cauſe produces a variety of complaints in the ſtomach and bowels, and other parts of the body, with much leſs watching, and without any great degree of low ſpirits.

The arthritic matter may be bred either in conſequence of ſome hereditary defect in the conſtitution, or from high living, whereby the ſtomach and bowels are ſo weakened, or loaded with rich, heavy, or hot aliments, as to convey very improper chyle into the blood.

Phyſicians have widely differed about the nature of that humour which is the cauſe of the gout, ſome making it tartareous or acid, others urinous or alkaline. But, ſenſible how vain all ſuch diſquiſitions are, I ſhall not attempt to define the nature of that noxious matter in the blood, ſo often the cauſe of nervous, hypochondriac, and hyſteric diſorders, further than as I have already endeavoured to ſhew that it is moſt commonly of the arthritic

arthritic kind; and I ſhall now add, that it may be ſometimes a ſcorbutic or ſcrophulous taint, or ſome other fault, in conſequence of other diſeaſes imperfectly cured. Indeed, there is no reaſon to believe, that whatever is hurtful to the human body muſt be either acid or alkaline, or of ſome other known ſpecies of acrimony. What is the acrimony of *ipecacuanha*, antimonial wine, of *ſemen hyoſcyami*, *opium*, *rhus*, *myrtifolia Monſpeliaca*, and of the roots of the *cicuta aquatica*? Moſt of theſe ſubſtances ſhew no remarkable ſharpneſs or pungency to the taſte; and yet, when received into the ſtomach, they quickly occaſion either ſickneſs and vomiting, raving or inſenſibility, epileptic fits, or even death. What peculiar acrimony have the effluvia of muſk, ambergreaſe, or a pale roſe, which throw ſome women into hyſteric fits? In like manner, with regard to that morbid matter in the blood, the cauſe of ſo many nervous complaints, and even of the gout, all we know is, that it is apt to ſtick in the ſmaller veſſels, that it diſagreeably affects the nerves as often as it falls upon them, and thereby occaſions various ſymptoms, more or leſs violent, according to the ſenſibility of the parts affected, and the conſtitution of the patient; but in what manner, or by means of what particular kind of acrimony, it produces theſe effects, we are yet entirely ignorant, and, indeed, likely to continue ſo.

II. A ſecond occaſional cauſe exciting nervous diſorders may be the retention of ſome accuſtomed evacuation, ſuch as the *menſes* or hæmorrhoids. The nauſea, vomiting, depraved appetite, faintings, and other complaints to which many women are liable for ſome months after conception, ſhew that a change of the circulation in the womb, an obſtruction and diſtenſion of its veſſels, or whatever irritates the uterine nerves, may produce many of thoſe ſymptoms commonly called *nervous* or *hyſteric*. The ſame remark may be made upon the various diſorders which happen upon the ſuppreſſion, diminution, or irregularity, of the menſes, and at that time of life when this evacuation ceaſes. 'Tis true theſe complaints are much leſs remarkable in ſome than in others. Thus, while many

are only affected with a nauſea, want of appetite, flatulence in the ſtomach and bowels, a cough, difficulty in breathing, headach, or flying pains through the body, there are others who, beſides ſeveral of theſe ſymptoms in a higher degree, are alſo ſubject to uncommon hæmorrhages, faintings, and violent hyſteric convulſions, on account of a greater delicacy and mobility of their nervous ſyſtem.

An obſtruction or ſuppreſſion of the menſes may produce nervous or hyſteric diſorders, either from the ſympathy of the womb with the other parts, from a redundancy of blood, or from the retention of ſomething hurtful to the nerves.

1. That many parts of the body may be affected through the conſent of their nerves with thoſe of the womb, will not appear improbable, after what has been ſaid of the remarkable ſympathy that takes place between the various parts of the body.* But it may be proper to obſerve, that when the menſes are obſtructed, the ſtomach generally ſuffers firſt, and, by means of its conſent with almoſt every part of the body, gives riſe to many of the complaints which follow. Thus the hyſteric convulſions, and other violent ſymptoms, which are ſometimes occaſioned by a ſudden ſtoppage of the menſes, do not ſeem to proceed immediately from the *uterus*, but commonly from the ſtomach and bowels, whoſe nerves are firſt affected either by their ſympathy with thoſe of the womb, or by the blood which ſhould have been diſcharged by this organ being partly turned upon the alimentary canal. For,

2. Although it is probable that the menſtrual evacuation is not owing to a general plethora, or increaſe of the maſs of blood at the end of every month, but to the particular ſtructure of the womb, yet as the body, after being long accuſtomed to any regular evacuation, ſeldom fails to ſuffer from a ſtoppage of it, ſo it is not to be doubted, that in women, and eſpecially in the more ſanguine, ſome degree of a plethora may be often the conſequence of a ſuppreſſion of the menſes.

Agreeably

* See Chapter I. No. 11. (*o.*)

Agreeably to this we obſerve, that bleeding is often the beſt remedy for the complaints incident to women at that time of life when their courſes leave them.

3. If we conſider that by means of the other excretory organs ſome humour is thrown off, which, if retained, would prove noxious to the body, it will not appear altogether improbable that the menſtrual evacuation, when ſuppreſſed, may become hurtful by its quality as well as quantity: and this ſeems to be confirmed by thoſe uncommon hæmorrhages from the eyes, ears, ends of the fingers, and other parts, upon the total ſuppreſſion of the menſes; for ſuch hæmorrhages cannot be owing to a general plethora occaſioning too great a diſtenſion of the whole vaſcular ſyſtem: were this the caſe, the veſſels of the lungs, and other internal parts, muſt burſt before any blood could paſs by the pores of the ſkin. When one runs faſt, or walks up a ſteep hill, the force of the blood is much more increaſed than it can be from any plethora that may be ſuppoſed to happen to women who are obſtructed; and yet we never find that violent exerciſe makes the blood iſſue from the points of the fingers, or the pores of the *meatus auditorius*, although it ſometimes occaſions an hæmorrhage from the lungs. Further, if a general plethora were the cauſe of thoſe uncommon hæmorrhages which happen in conſequence of a ſuppreſſion of the menſes, bleeding would always prevent them, which, however, it ſeldom does. An inſtance of this I had many years ſince in a patient, who, though ſhe had loſt by the lancet about forty ounces of blood in the ſpace of a month, yet continued to have a ſmall hæmorrhage from the left ear once in twelve or fourteen days. Another caſe, no leſs remarkable, was that of a woman aged thirty-four, who, near ſix weeks after bearing her ſecond child, to which ſhe gave ſuck, was ſeized with a pain in the middle of her fore-arm ſtriking down to the middle finger of the left hand. Next day ſhe felt a pain in the point of that finger where there had been for two or three days a red ſpot, from which there iſſued about four ounces of blood.

At the diſtance of twenty-four hours ſhe loſt near an ounce of blood in the ſame manner; and notwithſtanding ſhe was blooded once and again, yet for ſome days, almoſt at the ſame hour, this hæmorrhage returned, but always in ſmaller quantity. In this woman the *lochia* had ſtopt ſoon after delivery.

If theſe periodical evacuations of blood cannot, then, be accounted for from a general plethora, is it not probable, that, when the menſes are ſtopt, ſomething hurtful may be retained, which, falling on certain parts in people whoſe nervous ſyſtem is eaſily affected, may throw the ſmall veſſels of thoſe parts into ſuch violent alternate contractions as to force the red blood, inſtead of the thinner fluids, through their dilated orifices? When in this manner the offending matter is moſtly evacuated, the extraordinary motions of the ſmall veſſels, and conſequently the flux of blood from them, will ceaſe.*

In like manner thoſe various other complaints conſequent on the obſtruction of the menſes may be often owing to the quality of what is retained, which ſoon becoming acrid, diſagreeably affects the nerves of thoſe parts upon which it falls.

What has been ſaid of obſtructed menſes as the cauſe of nervous diſorders, may be, in a great meaſure, applied to the ſuppreſſion of the hæmorrhoids in ſuch as have been accuſtomed to them. And it may not be amiſs, when treating of the ſuppreſſion of the menſes and hæmorrhoids, to add the diſcharges of iſſues, ſetons, or other old ſores ſuddenly dried up, as producing ſimilar effects. Further, ſince cold feet, or cold and moiſture in general, by ſtopping the perſpiration, is obſerved to increaſe nervous diſorders, is it not probable that ſome acrid matter may be then retained, which, by falling on the ſtomach and other internal parts, ſometimes gives riſe to nervous as well as other morbid ſymptoms? Hence we find that, during

* See Chap. I. No. 17. Alſo Phyſiological Eſſays, Edit. ii. p. 35, &c. where I have endeavoured to ſhew, by a variety of facts, that the ſmall veſſels, when affected with any unuſual ſtimulus, are agitated with uncommon contractions.

during the dry warm weather in our climate, and the dry and temperate weather of hotter countries, the nervous, hyſteric, and hypochondriac complaints are leſs frequent than at other times.

III. A third general occaſional cauſe of nervous diſorders may be the want of a ſufficient quantity of blood, or of blood of a proper denſity; and hence it is, that an immoderate flux of the *menſes*, *lochia*, and hæmorrhoids, or any other great hæmorrhage, will often occaſion violent ſymptoms of this kind.

Hippocrates has obſerved, that convulſions may ariſe from inanition as well as repletion: and as the ſtrength and firmneſs of the whole body depend upon proper fluids, and a due quantity of them, may not very irregular and ſtrange diſorders happen from a want of blood, or from a too watery ſtate of it, eſpecially in thoſe whoſe nervous ſyſtem is very delicate, and eaſily affected? For when there does not remain in the veſſels a quantity of blood ſufficient for carrying on the ſeveral functions in a proper manner, the regular circulation of all the fluids muſt be diſturbed, and the diſtribution or exertion of the nervous *moving power* will become irregular.

But, in whatever way great loſs of blood may give riſe to nervous diſeaſes, we are ſo certain of the fact, from experience, that, perhaps, the following caſes, in proof of it, may be thought ſuperfluous.

1. A young gentleman of ſeventeen, complaining of a pain in his right ſide, after a fall from his horſe, was blooded very largely. Some days after he felt a coldneſs in his ſtomach, which was ſoon ſucceeded by fits of violent pain and ſpaſms in that part, ſometimes laſting twenty minutes or half an hour at a time. Theſe ſymptoms returned after no regular intervals, but generally twice or oftener in twenty-four hours, and gradually increaſed to ſuch a height, that the patient was obliged to be held down in his bed by two or three people, in order to prevent his tearing his hair, and doing himſelf other miſchief. The pain and cramps were always preceded with a ſenſation of

coldneſs in the ſtomach, and frequently went off in an inſtant. Ginger with hot brandy felt cold in the ſtomach at the acceſſion of the fit. After the patient had ſuffered in this manner for three weeks, the diſorder gradually abated; and, by uſing a few ſtomachic medicines, a proper diet and exerciſe, he perfectly recovered.

On another occaſion, after loſing a great deal of blood, he was attacked with the ſame ſymptoms, but in a much leſs violent degree.

2. A gentleman, between forty and fifty, for theſe thirteen years paſt has ſeldom been much blooded, or ſweated, and lived low for a few days, in order to get rid of a cold, rheumatiſm, or other caſual diſorder, without making a great quantity of pale water, eſpecially in the night, which has, ſometimes, continued for two or three weeks, and has not been ſtopt without uſing large quantities of the bark, riding, and other remedies.

3. A gentlewoman, in whom the menſes flow too plentifully, is frequently troubled with a gnawing pain, and ſometimes a flatulent diſtenſion, of her ſtomach when ſhe is not with child; but during the time of pregnancy ſhe is generally free of any ſuch complaints.

4. In the Philoſophical Tranſactions, No. 174, we have a remarkable caſe by *Dr. Cole*, of a lady, ſubject to hyſterics, who, after being much reduced by an uncommon loſs of blood in child-bearing, was for a long time affected with violent periodic convulſions, accompanied with a great flux of limpid urine, returning every fourth or fifth day at a certain hour.

Under this head of general occaſional cauſes may alſo be comprehended watching, great fatigue, and exceſſive venery; all of which not only tend to break the conſtitution, and diſpoſe the body to nervous diſeaſes, but alſo to create them, eſpecially in ſuch as are already prediſpoſed to them.

Having thus far treated of the *general* occaſional cauſes, we ſhall proceed next to mention the chief of thoſe occaſional cauſes, which we call *particular*, from their having their ſeat in certain parts of the body.

CHAP.

CHAP. V.

OF THE PARTICULAR OCCASIONAL CAUSES OF NERVOUS, HYPOCHONDRIAC, AND HYSTERIC DISORDERS.

THESE may be reduced to the ſix following, viz. I. Wind, II. a tough Phlegm, and III. worms, in the ſtomach and bowels. IV. Aliments improper in their quantity or quality. V. Scirrhous or other obſtructions in the *viſcera* of the lower belly. VI. Violent affections of the mind.

I. Wind in the ſtomach and inteſtines, though of itſelf a very common ſymptom in nervous diſorders, yet deſerves a place among their occaſional cauſes, as giving riſe to many uneaſy ſenſations. Although all our food abounds more or leſs with air, yet, in the time of digeſtion, it is ſeldom ſeparated in ſuch a quantity as to give any trouble, unleſs when the ſtomach and bowels are weak, or when their nerves are endued with an uncommon ſenſibility: but in ſuch circumſtances the complaints it occaſions are various, ſuch as want of appetite, nauſea, faintneſs, low-ſpirits, watching, ſwelling of the ſtomach and bowels, violent pains in them, tightneſs and oppreſſion about the *præcordia*, difficult breathing, a ſenſation of a weight in the ſtomach, belching, the *globus hyſtericus*, giddineſs, ſhooting pains in the head, &c. Nay, I have frequently felt in myſelf a plain connexion between wind in the *primæ viæ* and pains in my legs and feet, and the uneaſy ſenſation ſometimes, as it were, coming and going between theſe parts.

The manner in which wind produces ſo many and ſuch various complaints, may be underſtood from its diſtending the ſtomach and inteſtines, and thereby occaſioning ſpaſms in thoſe parts, or otherwiſe diſagreeably affecting their nerves, which have ſo great a ſympathy with the other parts of the body.*

 However,

* See Chap. I. No. 11.

Some have imagined that the flatulence produced in the ſtomach and bowels paſſes freely by means of the abſorbent veins into the blood, with

However, it may be proper to obſerve, that the effects of wind in the firſt paſſages are not only various in different perſons, but in the ſame perſon at different times. In people whoſe ſtomach and bowels are in a ſound ſtate, if wind happens to be collected, it may create ſome uneaſineſs, but does not quicken their pulſe, or affect them with that diſagreeable ſenſation, anxiety about the *præcordia*, or depreſſion of ſpirits, ſo often its conſequences in thoſe whoſe alimentary canal is endued with a more delicate feeling. Nay, the ſame perſons are, at different times, very differently affected by wind, juſt as the nerves of the ſtomach and inteſtines happen to be more or leſs ſenſible, or their feeling more or leſs different from what it is in a natural ſtate. Thus, when an arthritic or rheumatic humour in the blood is turned upon thoſe *viſcera*, the wind produces a much more uneaſy ſenſation than at other times. Further,

with which it circulates through the body, and produces a variety of ſymptoms, ſuch as ſhooting pains in the head, the *clavus hyſtericus*, or flying pains in the arms, legs, and other parts; palpitations of the heart, a fluttering motion of ſome of the fibres of the voluntary muſcles, and puffy ſwellings below the ſkin. At other times, when theſe complaints ceaſe, and the firſt paſſages ſuffer more from wind, they ſuppoſe that the flatulence finds a ready way from the blood into the ſtomach and inteſtines by their pores or exhaling arteries. This opinion, however, is ill founded; for experiments made on animals newly dead ſhew, that neither the ſtomach nor inteſtines, nor even the *peritonæum*, which is much more thinner, are pervious to elaſtic air; and we know, from other experiments, that capillary tubes, or abſorbent veſſels, do not attract elaſtic air as they do watery fluids; nay, ſmall portions of air, when they get into ſuch tubes, prevent their attracting any more of other fluids.

In hypochondriac and hyſteric patients, I have obſerved little ſwellings or elevations of the ſkin, of a pale colour, and of different ſhapes. Theſe, in a few minutes, acquired their full ſize, and, after half an hour, or more, would quickly vaniſh. In hyſteric women, alſo, we meet with ſoft puffy ſwellings below the ſkin, which, becauſe of their ſudden riſing and diſappearance, have, by ſome, been aſcribed to wind ſhifting from one part of the cellular membrane to another. But this is no ways probable; and both theſe puffy ſwellings, and thoſe riſings of the ſkin, ſeem to be owing to the ſame cauſe, viz. an increaſed alternate motion of the ſmall arteries of the parts, occaſioned by an uncommon irritation of them, or their nerves; whence there muſt happen an effuſion of a ſerous or lymphatic fluid in the ſpaces of the *tella celuloſa*, or in the interſtices of the ſkin, which, as ſoon as the extraordinary motion of the ſmall veſſels ceaſes, will be quickly abſorbed; and conſequently thoſe ſwellings will diſappear.

Further, the great diſtenſion of the inteſtines, and ſometimes alſo of the ſtomach, in a tympany, without thoſe uneaſy complaints that attend wind in hypochondriac or hyſteric caſes, ſhews, that, unleſs there be a particular indiſpoſition of the nerves of theſe organs, flatulence alone will not give very remarkable diſturbance.

II. A tough phlegm in the ſtomach and inteſtines.

Patients generally imagine that this is produced by their food, which they believe is all turned into phlegm: but they are miſtaken; for while the ſtomach remains diſordered, be the aliments ever ſo little of a glutinous nature, this ſubſtance will be continually generated.

In the alimentary canal, beſides the fine exhaling arteries, which furniſh the gaſtric and inteſtinal lymph, there are many ſmall glands, which ſecrete a liquor of a more glutinous nature. In a ſound ſtate, this *mucus* is in no greater quantity than neceſſary to defend the delicate nerves of thoſe parts from the heat, cold, acrimony, or attrition of the food; but when the ſecreting veſſels have loſt their tone, or are affected with an unnatural ſtimulus, not only the mucous glands, but alſo the exhaling arteries, may throw out, in a greater quantity, a viſcid fluid, which, by lying ſome time, may acquire a ſtill greater degree of coheſion.

When much phlegm is collected in the ſtomach and inteſtines, their nerves are rendered leſs ſenſible of the ſtimulus of the aliments, their abſorbent veſſels are partly obſtructed, and the gaſtric and inteſtinal lymph are more ſparingly ſecreted, or, at leaſt, become more viſcid. Hence the digeſtion and abſorption of the finer parts of the food are in a great meaſure prevented; whilſt this phlegm, by diſagreeably affecting the nerves of the alimentary canal, eſpecially when they are in a delicate ſtate, occaſions want of appetite, ſometimes an unnatural craving for food, a nauſea, flatulence, gripes and looſeneſs, cold and hot fits, a quick pulſe, weakneſs, faintings, lowneſs of ſpirits,

ſpirits, ſleepineſs, ſighing, convulſive motions,* and giddineſs. Nay, I have had ſome patients who, from a viſcid phlegm in their ſtomach, were affected with a ſlight delirium, and had their eyes like thoſe of people in liquor. Nor will it appear ſtrange that ſo many and ſuch different ſymptoms ſhould proceed from a diſorder in the ſtomach and bowels only, if we attend to that ſympathy which I have ſo often mentioned as taking place between them and the other parts of the body.

III. Worms in the firſt paſſages, eſpecially in children, are frequently the cauſe of nervous ſymptoms, ſuch as great craving for food, inflations of the alimentary canal, hiccup, vomiting, dry cough, difficult breathing, ſighing, irregularities of the pulſe, palpitations, tremors, convulſions, epileptic fits, drowſineſs, raving, inſenſibility, &c.

Worms produce moſt of theſe ſymptoms, by preventing the proper digeſtion of the food, or by irritating, with their frequent motions or biting, the ſenſible nerves of the ſtomach or bowels, whence every other part may be affected by ſympathy.

Several of the above ſymptoms may alſo be occaſioned by acrid humours in the *primæ viæ*, as will appear by the following caſe:

A boy of fourteen, on the 12th of January, 1757, was ſeized with a pain in his head and belly, and ſoon after became delirious, and made no anſwer when ſpoke to. When awake, he ſometimes cried out in a wild manner, as if complaining, or praying to be freed from his trouble; but his words had generally little connexion. He ſlept well, had a ſharp appetite, was not coſtive, and his pulſe was full and ſlow, but ſomewhat irregular. Theſe ſymptoms continued till the 16th of January, when I ſaw him firſt, and ordered ſeven ounces of blood

* A Girl of fourteen, who had been troubled with the *chorea Sancti Viti*, was ſeized with the meaſles. A few days after her recovery, ſhe had a return of her former diſtemper, which, after it had continued near a fortnight with little abatement, notwithſtanding the uſe of ſeveral medicines, was entirely removed in a few days by a natural looſeneſs, by which ſhe voided a great deal of ſlimy ſtuff. It may be worth remarking, that, during the continuance of this convulſive diſorder, her appetite was much greater than uſual.

blood to be taken away, a bliſter between his ſhoulders, and a clyſter. On the 17th no better: the bliſter had occaſioned a ſtrangury. On the 18th took a bolus of calomel and rhubarb, but ſoon vomited it up again. On the 19th ſwallowed five grains of calomel at bed-time, and next morning had three ſtools, after which he became much more ſenſible, but ſtill complained of his head. On the 21ſt had a natural ſtool, in which were two ſmall worms of the *aſcarides* kind. Upon this he was ordered *pulvis ſtanni*, and another doſe of calomel and rhubarb, which brought away a great deal of ſlime, but no worms. On the 25th he was free of all his complaints.

This patient, in July, 1758, having had a return of the ſymptoms above mentioned, he was blooded without any benefit; but was greatly relieved by a doſe of rhubarb and calomel, and entirely cured by a repetition of it, although no worms were found in his ſtools. At this time, as well as in his former illneſs, he had a greater appetite than uſual, eſpecially when the diſeaſe began to yield.

IV. Aliments improper in their quantity or quality.

The moſt wholeſome food in too great a quantity oppreſſes the ſtomach and bowels, is not properly digeſted, but becomes either acrid or putrid, and generates much wind; whence the nerves of thoſe parts being diſagreeably affected, a variety of complaints are produced.

On the other hand, the want of a due quantity of aliments occaſions faintneſs and wind, and, in time, ſo much weakens the ſtomach and bowels, as to render them unfit either to receive or to digeſt what is neceſſary for ſupporting the body.

But although food be taken with neither too full nor too ſparing a hand, yet its quality may diſpoſe it to produce nervous diſorders. Thus high-ſeaſoned and heavy meats, ſtrong ſauces and wines, will not only, by degrees, enervate the tone of the ſtomach, and prevent or deſtroy the natural feeling of its nerves, but will corrupt the blood, perhaps breed the arthritic matter, and bring on a

diſeaſed

diſeaſed ſtate of the whole body. On the contrary, a watery and flatulent diet, by diſagreeably affecting the nerves of the firſt paſſages, generating a great deal of wind, and not affording proper nouriſhment, will be the cauſe of many ailments.

It is, however, to be obſerved, that aliments, either hurtful in their nature or quantity, will chiefly produce nervous ſymptoms in thoſe, who, from the peculiar ſtate of their alimentary canal, are moſt liable to ſuch diſorders.

Thus, wind or crudities in the *primæ viæ*, occaſioned by diet, will often give no great uneaſineſs to thoſe of firm nerves, and whoſe ſtomach and bowels are ſtrong; but in more delicate people, on account of the particular ſenſibility of theſe organs, ſuch cauſes will either excite painful ſpaſms, or other diſagreeable ſenſations, attended with lowneſs of ſpirits.

I have before obſerved, that in ſome the ſtomach becomes ſo very delicate, that even a ſudden change of poſture will be apt to occaſion a naufea or vomiting: and there are others, who, when their ſtomach is empty, eſpecially after a late error in diet, feel an uneaſy craving, faintneſs, and giddineſs, which ſymptoms are almoſt as certainly relieved by a little ſolid food, or a glaſs of wine, as pain is by opium. To this faintneſs and diſagreeable ſenſation in the ſtomach, when empty, thoſe are moſt liable, who, beſides a particular weakneſs of that organ, carry an arthritic matter in their blood frequently affecting it.

V. Scirrhous or other obſtructions in the ſtomach, inteſtines, liver, ſpleen, pancreas, meſentery, *uterus*, and *ovaria*, often produce ſymptoms of the hypochondriac or hyſteric kind; ſuch as want of appetite, naufea, cramps in the ſtomach, vomiting ſometimes of a black or bloody-coloured matter, flatulence and crudities in the firſt paſſages, hectic heats, cold ſweats, low ſpirits, and other complaints, more or leſs violent, according as the patient's nerves are more or leſs delicate.

Such obſtructions in the ſtomach and bowels ſeem to occaſion many of the above effects, by hindering the free circulation of the fluids through

theſe

theſe parts, by affecting their nerves with an uneaſy ſenſation, and by preventing digeſtion: in the liver and ſpleen, by impeding the ſecretion of bile, and, by their weight, occaſioning a diſagreeable ſenſation, not only in theſe, but the neighbouring parts, by ſympathy: * in the meſentery, by preventing the further preparation of the chyle, and its courſe towards the thoracic duct: in the *uterus* and *ovaria*, by diſturbing the functions of theſe parts, and by conſent affecting the ſtomach and bowels. Further, hard ſwellings in the *uterus*, or other abdominal *viſcera*, by irritating ſuch nerves as are contiguous to them, more at one time than another, may give riſe to ſpaſmodic contractions of the inteſtines in ſome parts, and flatulent diſtenſions of them in others; and may ſo affect the whole nervous ſyſtem, as to occaſion hyſteric faintings and convulſions.

As obſtructions in the ſtomach, liver, &c. may be often the cauſe of low ſpirits, ſo, on the other hand, melancholy, or long-continued grief, frequently gives riſe to hypochondriac and hyſteric complaints, and ſometimes to obſtructions in thoſe *viſcera*. For ſuch a ſtate of the mind not only diſorders the nerves of the ſtomach, liver, and bowels, and occaſions a want of appetite and digeſtion, with its various conſequences; but, by means of the agency of thoſe nerves, it may alſo produce, in ſome of the ſmall veſſels of theſe *viſcera*, ſuch a fixed ſpaſmodic contraction, as to lay the foundation of an irreſolvable obſtruction; in much the ſame manner as a ſudden fright has given riſe to a *ſcirrhus*, and afterwards a cancer in the breaſt. Further, the ſlow interrupted breathing, and the ſedentary life, of thoſe who are much affected with grief, will make the fluids more apt to ſtagnate, and conſequently to form obſtructions in the ſmall veſſels of the hypochondriac *viſcera*.

* In the bodies of thoſe who have died of the hypochondriac diſeaſe, the meſeraic and other veins which meet to form the *vena portarum*, have been often found greatly diſtended with blood. But this diſtenſion of thoſe veins, if any thing preternatural, was probably only a conſequence of ſome obſtruction in the liver, and not to be reckoned, as it has been by ſome others, the cauſe of that diſtemper.

1. A gentleman, aged ſixty, who had been above three years ſubject to cramps and pains in his ſtomach, want of appetite, belching, fits of ſickneſs, and vomiting, began, in the ſpring of 1748, to throw up a dark-coloured liquor like coffee-grounds, and to void the ſame by ſtool. In the end of April, 1749, he vomited a greater quantity of this black ſtuff than ever, and ſoon after he threw up about an Engliſh quart of blood, moſtly clotted, which reduced him ſo low that he never recovered his fleſh or colour. Throughout the ſummer, he continued in a declining way, being much oppreſſed with belching, ſickneſs at ſtomach, and frequent retchings to vomit, though rarely bringing up any thing but a tough phlegm, till the beginning of October, when, after heavy ſickneſs, he vomited a great deal of blackiſh-coloured ſtuff one morning, and in the evening a conſiderable quantity of clotted blood. On the 15th of the ſame month, about eleven in the forenoon, after retching to vomit, he complained ſuddenly of a ſharp pain below the falſe ribs of his left ſide: immediately after his pulſe began to ſink, and he died at two.

This body being opened, the coats of the ſtomach were found thick and ſcirrhous in ſeveral parts, eſpecially about its left orifice. In thoſe morbid parts ſeveral ſmall ulcerations and chops were obſerved; and near the bottom of the ſtomach a hole as broad as a ſhilling. This part, which had been thinner than the reſt of the ſtomach, ſeems to have given way on the morning before the patient died; and the laceration was probably the cauſe of that ſharp pain he complained of in his left ſide. There was nothing in the ſtomach, as all its contents had been emptied into the cavity of the *abdomen*.

It can hardly be doubted that the black-coloured liquor which this patient frequently vomited, as well as the clotted blood, came from the veſſels of thoſe ſcirrhous parts of the ſtomach in which the ſmall ulcerations and chops were obſerved. The blood, that ouzes ſlowly into the ſtomach from very ſmall veſſels, may lie for a conſiderable

conſiderable time before it is thrown up, and acquire a dark brown or blackiſh colour; but when it flows in greater quantity, and from larger veſſels, it is vomited up, either partly coagulated, or quite fluid, if it has remained only a very little time in the ſtomach.

It may be proper to obſerve, that the black as well as bloody vomitings were probably increaſed, if not firſt occaſioned, by the frequent emetics which the patient had taken to remove the ſickneſs, want of appetite, and other complaints of his ſtomach; and, undoubtedly, whenever there is a confirmed ſcirrhous in the ſtomach, ſtrong vomits muſt increaſe, exaſperate, or inflame it, and probably break ſome of the veſſels leading to the tumor. In ſuch caſes, therefore, inſtead of ipecacuanha and antimonials, the patient ſhould uſe nothing but warm water, or a decoction of camomile-flowers, which will be ſufficient to relieve the ſtomach when foul, without occaſioning ſuch violent convulſive contractions in it, as the ſtronger emetics do.

2. A maiden Gentlewomen, about thirty, in September, 1755, began to complain of want of appetite, and wind in her ſtomach, and loſt her fleſh and ſtrength. From the beginning of March following her pulſe became quicker than natural, and ſhe then began to bring up every thing ſhe ſwallowed two or three hours after; and ſeldom went to ſtool without a clyſter. When her ſtomach was empty of victuals, ſhe threw up tough phlegm, which, a few days before her death, was mixed with ſome blackiſh matter. She never complained of any acute pain, but only of an uneaſineſs and tightneſs about the ſtomach. Her bowels were much diſtended with wind, which gave her a great deal of trouble; and the air ſhifting frequently from one place to another, produced conſiderable ſwellings, which could be eaſily felt outwardly. After trying various medicines to little purpoſe, ſhe died about the end of May.

Upon opening her body, the *colon* was obſerved to be much contracted in ſeveral places, and, in the right ſide, to adhere to the *peritoneum*; but the

the chief cauſe of her complaints and death appeared to be a ſcirrhous tumour, which ſpread over the whole *pylorus*, and a ſmall part of the ſtomach adjoining to it. The ſides of the *pylorus* conſiſted of a firm cartilaginous ſubſtance, near an inch thick; and the paſſage was ſo ſtraitened as ſcarcely to admit a quill. On the inſide of the *pylorus* were found ſome ſmall chops and inequalities, from which, as I imagine, a conſiderable part of the phlegm which ſhe vomited might come. Be that as it will, it is ſcarce to be doubted, that the black-coloured ſtuff was furniſhed by the mouths of the ſmall blood-veſſels in thoſe ruptured parts of the *pylorus*. If theſe veſſels had been larger, this matter would have had more of a dark brown or reddiſh colour; or the blood itſelf, either fluid or clotted, would have ſometimes appeared. At no rate could this matter come from the liver, for that part was ſound; nor, ſuppoſing it otherways, could any thing have eaſily paſſed from the *duodenum* into the ſtomach on account of the ſtraitneſs of the *pylorus*.

3. A female child, which, from its birth, had been afflicted with wind, gripes, and violent convulſions, died at the age of five months, after many remedies had been uſed unſucceſsfully. Nothing preternatural was diſcovered upon diſſection, except a portion of the *colon*, about five inches in length, quite ſcirrhous.

4. A Gentlewoman, who had borne ſeveral children, and had been generally healthy, in the 59th year of her age, ten years after the menſes had left her, began to complain of pains in her back, groins and belly, above the *os pubis*, the violence of which brought on the *fluor albus*, and frequently a diſcharge of blood from the *vagina*. Theſe pains laſted uſually five or ſix hours, and returned every day nearly at the ſame time. During the fit, ſhe had always this hæmorrhage, but at other times the white flux only.

Notwithſtanding the uſe of ſeveral medicines for twelve or fourteen months, her complaints were increaſed; the pains which now began in her legs and thighs, and roſe to the lower parts of her belly,

belly, returned regularly every morning at ten, and were ſo acute, that ſhe cried out almoſt the whole time they laſted; nor had ſhe now any perfect intervals of eaſe. During the paroxyſm, her pulſe was ſmall and quick, and her body cold, although all over in a ſweat. Her pains were always moſt ſevere and laſting when ſhe was coſtive, which happened often. The matter diſcharged from the *vagina* had no offenſive ſmell. She was much troubled with wind in her ſtomach and bowels. While the fit laſted, ſhe never made any water, but ſpit a great deal more than uſual. By the continuance of her diſeaſe, ſhe gradually waſted away, and at laſt died.

As I was only conſulted for this perſon at a diſtance, I never learned whether her body was opened or not; but I think there can be little doubt that almoſt all her complaints, and particularly the ſharp periodic pains in the hypogaſtric region, were owing to a *ſchirrus* in the *uterus*, beginning to turn cancerous.

VI. Violent affections of the mind.

Nothing produces more ſudden or ſurprizing changes in the body than violent affections of the mind, whether theſe be excited by external objects, or by the exerciſe of the internal ſenſes. Thus doleful or moving ſtories, horrible or unexpected ſights,* great grief, anger, terror, and other paſſions, frequently occaſion the moſt ſudden and violent nervous ſymptoms. The ſtrong impreſſions made in ſuch caſes on the brain and nerves often throw the perſon into hyſteric fits, either of the convulſive or fainting kind. Long-continued grief and anxiety of mind weaken the tone of the ſtomach, deſtroy the appetite, digeſtion, occaſion thirſt, a white tongue, flatulence, and other complaints.† Great fear produces

* It is ſaid that the great *Lord Verulam* was wont to faint when he ſaw an eclipſe of the ſun: and we are told of a Lady, who, upon looking through a teleſcope at the comet of 1688, was ſtruck with ſuch terror, that ſhe died in a few days. Pechlin. Obſervat. Med. Lib. iii. Obſerv. xxiii.

† "Qui laborant animi pathemate, potiſſimum corripi ſolent morbis ventriculi, ut inter cætera obſervavi in mœrentibus, qui conqueruntur

duces paleneſs of the countenance, an univerſal debility and ſhaking, palpitations of the heart, anxiety about the breaſt, quick breathing, and a looſeneſs, or a large diſcharge of limpid urine. By ſudden terror, delicate women or children have been not only thrown into fainting and convulſions, but rendered ſubject, all their life-time, to epileptic fits. Anger quickens the pulſe and reſpiration, and increaſes the force of the heart; hence it has been immediately followed by an uncommon excretion of the ſaliva, by bilious vomitings,* bleeding at the nipples,† and a rupture of ſuch veſſels as were lately cicatrized. In women, it frequently occaſions ſpaſmodic contractions in the bowels, and a flatulent or hyſteric cholic. Some of the more violent paſſions have all at once occaſioned a kind of *tetanus*, or catalepſy; ſo that the perſon has appeared liker a ſtatue than any thing alive; nay, exceſſive fear, grief, joy, and ſhame, have been ſometimes followed by ſudden death.

Bonetus has recorded the caſe of a Lady, who, among other hyſteric ſymptoms, owing to grief and diſappointments, was ſeized with frequent fainting fits, which ſometimes laſted half an hour.‡ And ſeveral years ago I had a patient, who, upon the unexpected death of her huſband, fell into ſuch fits, generally holding her from five to fifteen minutes. In theſe faintings ſhe lay like a dead perſon, without any apparent breathing, or motion of the breaſt; only, when a candle was held near her mouth, the flame was obſerved to move a little. Her pulſe, however, was ſcarce changed, only ſomewhat ſlower and feebler than uſual. She came out of theſe faintings with ſighings and crying, and generally relapſed into them in little more than a quarter of an hour. In this way ſhe continued for two days.

Baglivius mentions a young man of Dalmatia, who, from looking at a perſon in an epileptic fit, was

" queruntur primo de languore ventriculi, mox inappetentia, oris " amaritie, ſiti circa horas matutinas, cruditatibus, flatibus et " tenſionibus hypochondriorum." Baglivii Opera, 4to, p. 565.

* Pechlin. Lib. iii. Obſervat. xxv.

† Stalpart. Vander Wiel, Cent. i. Obſ. lxxiv.

‡ Sepulchret. Anatom. Lib. ii. § xxxiii. Obſ. ix.

was himſelf affected in the ſame manner.* And it has frequently happened in the Royal Infirmary here, that women have been ſeized with hyſteric fits from ſeeing others attacked with them. But one of the moſt remarkable inſtances of this kind happened in the poor's-houſe at Haerlem, in the time of the learned *Dr. Boerhaave*, and is recorded by his nephew in the following manner.

" In domo, qua pauperes ex eleëmoſynis publicè aluntur, in civitate Harlemenſi, perterrita puella incidit in morbum nervorum convulſivum, certis paroxyſmis reducem: Adſtantium et adjuvantium in eam intenta itidem corripitur eodem morbo, poſtridie altera, deinde tertia, quarta, imo fere omnes, tam pueri quam puellae: Status miſerrimus! Corripitur hic, corripitur illa, imo fere omnes eodem tempore, dum unum alter aſpicit, proſternuntur. Medici ſolertes fruſtra adhibent, quae dictat ars, ſaluberrima antiepileptica medicamina. Confugitur tandem ad *Boerhaavium*, qui miſertus infelicis pauperum ſortis, petiit Harlemum, et dum rem examinat, invadente in unum paroxyſmo, vidit convelli plures ſpecie epilepſiae. Datis incaſſum optimis remediis a medicis ſapientibus, et ad imaginationem ex uno in alterum traducto morbo, ritè perpenſis, hanc avertendo, credidit, poſſe curam obtineri, et obtinuit. Scilicet praemonitis ephoris, praeſentibus omnibus, juſſit per cameram diſponi fornaces portatiles, prunis ardentibus inſtructas, atque iis imponi ferreos hamulos, ad certam figuram adaptatos, tum ita mandavit; quia omnia fruſtra forent, ſe aliud neſcire remedium, quam, ut qui primus puer foret vel puella, infauſto morbi paroxyſmo arriperetur, locus quidam nudati brachii candente ferro ad os uſque inureretur; utque gravitate pollebat dicendi, perterriti omnes ad crudele remedium, dum inſtare ſentiunt paroxyſmum, omni mentis intentione, et metu dolorificae inuſtionis, eidem reſiſtunt fortioris oblatione ideae: et certe quantum valeat hic ab objecto animae intentae revulſio, docet epilepſia diverſimode curata, ut quidem ipſe terror

* Praxis Medica, Cap. xiv. § ii. See alſo Nat. Curioſ. 1730, p. 302.

terror eandem ſuſtulerit, febris epidemica, quartana, ptyaliſmus, matrimonium, virga." *

There is a diſeaſe very common in the Iſland of Zetland, which is known there by the name of the *convulſive fits*. It begins with a violent palpitation of the heart; ſoon after which the patients fall to the ground, unleſs they are ſupported: their arms and legs are alternately contracted and relaxed; and in ſome caſes their joints become ſo rigid that they cannot be bent. Their reſpiration ſeems to be difficult; and they cry terribly while the fit laſts, which is generally leſs than a quarter of an hour; although in ſome rare caſes it has continued above an hour. This diſorder ſeldom attacks married women; but young women, and even girls of twelve or ten years of age, are liable to it. Some boys, and two young men, in the iſland have been alſo affected with it. In the church, or other public meetings, as ſoon as any one is ſeized, all ſuch as have been formerly ſubject to the diſtemper are attacked with it, which often occaſions great diſturbance; and ſome, who never had theſe fits, will be affected upon ſeeing, or even hearing the noiſe, of ſuch as are ſeized with them.

This diſeaſe does not ſeem to impair the health of the patients; for the young women ſubject to it are generally as ſtrong, and, in other reſpects, as healthy as any in the iſland.

We have before ſhewn,† that there is a remarkable ſympathy, by means of the nerves, between the various parts of the body; and now it appears that there is a ſtill more wonderful ſympathy between the nervous ſyſtems of different perſons, whence various motions and morbid ſymptoms are often transferred from one to another, without any corporeal contact or infection.

In theſe caſes, the impreſſion made upon the mind, or *ſenſorium commune*, by ſeeing others in a diſordered ſtate, raiſes, by means of the nerves, ſuch motions or changes in certain parts of the body, as to produce ſimilar affections in them; and

* Abr. Kaau Boerhaave impet. faciens Hippocrati dictum, § 406.

† See Chap. I. No. 10 and 11.

and hence it is, that the ſight only of a perſon vomiting has often excited the ſame action in others; that ſore eyes become ſometimes infectious; that yawning is propagated from one perſon through a whole company; and that convulſive diſorders are caught by looking on thoſe who are affected with them. Now, although we cannot explain how different impreſſions made on the *ſenſorium commune* ſhould occaſion, by means of the nerves, thoſe various changes in the body; yet, that the nerves are really capable of producing very ſudden changes in the circulation and diſtribution of the fluids, when the mind is variouſly affected, we have full proof in that redneſs of the face which accompanies a ſenſe of ſhame, that increaſed flux of ſaliva which happens to a hungry perſon upon the ſight of grateful food, and that plentiful diſcharge of tears which is often produced by piteous objects or tragical ſtories.

Thus far we know, from certain experience, that when the nervous ſyſtem is extremely delicate, a ſmall impreſſion on any of the organs of ſenſe will often throw the whole body into diſorder. For example, I have known people of weak nerves, ſubject to wind in their ſtomach, and a ſwimming of their head, who, by looking into a mirror that was kept conſtantly moving before them, became ſo giddy, as to be in hazard of falling. Others, upon the ſudden opening of a door, or any other unexpected noiſe, have been liable to be ſeized with convulſions. Nay, there have been ſome whoſe brain and organs of ſenſe were ſo ſuſceptible of impreſſions, that they could ſcarce abſtain from imitating every motion and geſture they ſaw performed by others.*

On the other hand, it is to be obſerved, that ſtrong nervous ſymptoms are ſeldom occaſioned by fear, terror, grief, the force of imagination, or any ſudden impreſſion on the organs of ſenſe, in perſons whoſe nerves are firm and leſs ſenſible; but when the contrary is the caſe, the cauſes abovementioned will often produce the moſt ſudden and violent hyſteric fits, or convulſive diſorders, with-

* Philoſophical Tranſact. abridg. Vol. iii p. 8.

out any fault in the womb, alimentary canal, or other parts of the body.

To conclude our obſervations on the cauſes of nervous diſeaſes, it may be proper to take notice, that although it appears, from the diſſections of thoſe who have died of them, that the ſtomach and inteſtines, liver, ſpleen, *omentum*, meſentery, or *uterus*, have frequently been found obſtructed, ſcirrhous, or otherwiſe unſound, yet, as in many other caſes of the ſame diſorders, no ſuch morbid appearances have been obſerved in the body after death, it follows, that theſe ſymptoms may frequently proceed from cauſes, which, eluding our ſenſes, are not to be diſcovered by diſſection. Nay, obſtructions, *ſchirri*, and other diſorders of the *viſcera*, obſerved in thoſe who have died after long ſuffering from nervous ailments, ſeem ſometimes to have been the conſequences of a long ſtate of bad health rather than the cauſes of it; particularly by the frequent attacks of that arthritic or other morbid matter which is often the cauſe of theſe diſorders; and by the pains and ſpaſms attending them, ſome obſtructions may at length be formed in the ſmall veſſels of the ſtomach or neighbouring parts, to which every new return adds a little, juſt as new inflammations of the *cornea* always increaſe ſpecks on that membrane.

CHAP. VI.

OBSERVATIONS ON SOME OF THE MOST REMARKABLE SYMPTOMS OF THE NERVOUS, HYPOCHONDRIAC, AND HYSTERIC KIND.

I. AN uncommon ſenſe of cold or heat in different parts of the body ſometimes ſucceeding each other.

The natural heat of animal bodies is owing to the regular and uninterrupted circulation of the fluids. As this degree of heat, however, is nearly the

the ſame in every part that is defended from the external cold, and is what we are accuſtomed to, we are commonly no more conſcious of it than of the beating of the heart, or of the alternate contraction of the inteſtines. But as often as there is a more rapid motion of the fluids through the whole body, or only in the ſmaller veſſels of ſome part, we feel a greater heat than the natural. In like manner, a ſenſation of cold proceeds from a diminiſhed circulation or a ſtagnation of the fluids in the ſmaller veſſels.

In hypochondriac and hyſteric caſes, a quicker or ſlower motion of the fluids, and conſequently an unuſual ſenſation of heat or cold in the veſſels of the head, back, arms, legs, and other parts, may ariſe either from the veſſels themſelves or their fluids. From the veſſels, when theſe, from ſome fault or irritation of the nervous ſyſtem, or from ſympathy between their nerves and thoſe of the ſtomach, or ſome other very ſenſible part, are either thrown into an unuſual alternate motion, or affected with a continued ſpaſmodic ſtricture. From the fluids, when, by their acrimony or viſcid quality, the very ſmall veſſels are either excited into uncommon vibratory contractions,* or become in a great meaſure obſtructed.

It is obſervable, that in thoſe parts of the body in which patients complain of an unuſual heat or cold, we can often neither by our feeling, nor the thermometer, diſcover a greater or leſs degree of heat than in the neighbouring parts, where there is no ſuch ſenſation. This may be owing to the heat or cold, in ſuch caſes, being felt below the ſkin and *membrana adipoſa*, viz. in the muſcles: or, perhaps, a violent alternate motion excited in the very ſmall veſſels, by ſome acrid fluid, may give a fallacious ſenſe of heat to the perſon, when there is really no greater degree of it, as far as can be diſcovered by the thermometer. In like manner, the ſtagnation of ſome viſcid humour in the ſame veſ-

* That acrid humours and affections of the brain and nerves may excite a violent alternate motion in the ſmall veſſels, or affect them with a continued ſpaſm or tetanus, we have ſhewn in Chap. I. No. 17.

ſels may produce a ſenſe of cold, although the real heat is little, if at all, diminiſhed. 'Tis true, that, in bluſhing, the increaſed motion of the fluids through the veſſels of the face is accompanied with a glow; but it is to be conſidered that the increaſed motion here is in the veſſels of the ſkin, and ſuch alſo as carry red blood, which ſeems more apt to acquire heat by friction or agitation than the thinner fluids.

The ſenſe of cold and ſhivering in the beginning of moſt fevers and inflammations, ſeems not to be owing, as ſome have imagined, to viſcid fluids ſtagnating in the ſmall cutaneous veſſels, but to a ſpaſmodic contraction of theſe veſſels, in conſequence of that irritation which the nervous ſyſtem ſuffers from the febrile ſtimulus, or the beginning inflammation. However, although all fevers proceed from irritation, and conſequently from an affection of the nerves, and many fevers of the low kind have had the name of nervous peculiarly beſtowed on them, yet a regular intermittent ſeems to deſerve that appellation better than almoſt any other ſpecies of fever; for its paroxyſms, like thoſe of the epilepſy, or other convulſive diſorders, are owing, not ſo much to any fixed obſtruction in the vaſcular ſyſtem, or general acrimony, or viſcidity of the maſs of fluids, as to an irritation or affection of the nerves of ſome particular part, ſuch as the ſtomach or inteſtines; whence the whole ſyſtem ſuffers by ſympathy, and a ſhuddering is produced, which is ſucceeded by a hot fit and ſweating, that for the time removes the cauſe of the diſeaſe. And as an intermittent agrees with epileptic and other convulſive diſorders as to its cauſe, ſo its returning paroxyſms, like theirs, may be often prevented, or weakened, by raiſing, a ſhort time before the approach of the fit, an acute pain or any great commotion in the body.

II. Pains in different parts of the body ſuddenly moving from one place to another. Theſe pains are ſomething a-kin to thoſe of the rheumatic kind, but generally have their ſeat in the ſkin, membranes, and muſcles, and not in the ligaments and joints. Their ſhifting ſuddenly, and their ſeeming

ſometimes

ſometimes to have a connexion with the flatulent complaints of the ſtomach, has induced ſome phyſicians, as well as the patient, to aſcribe them to the motion of air between the ſkin and muſcles, from one part of the body to another. But their true cauſe ſeems to be, either ſome viſcid or acrid matter ſticking for a ſhort time in the ſmall veſſels of certain parts, and irritating them, or ſpaſmodic contractions of theſe veſſels from a ſympathy between their nerves and thoſe of the ſtomach and inteſtines, or ſome other very ſenſible part.*

From the ſame cauſes affecting the veſſels or nerves of the *pericranium*, or other parts of the head, proceed flying pains in this part, and the *clavus hyſtericus*, which *Sydenham*, who imagined the hyſteric diſeaſe to proceed from a confuſion of the animal ſpirits, aſcribed to the whole ſpirits of the body being contracted into a ſmall part of the head, and producing much the ſame ſenſation as if a nail was driven into it.†

That thoſe pains in the head often proceed from a ſympathy with the ſtomach, is rendered probable by the violent vomiting which ſometimes accompanies the *clavus hyſtericus*, and by obſerving that people, much troubled with wind in their ſtomach, and flying pains in their head, are not ſo often affected with theſe pains when they are free from the flatulence.

III. Hyſteric faintings, and convulſions. Many hyſteric women are liable to be ſeized with faintings, during which they lie as in a deep ſleep; only their reſpiration is ſo low as ſcarce to be perceived. Others, along with faintings of this kind, are affected with catchings and ſtrong convulſions. Theſe fits come on differently in different patients. In ſome, a coldneſs, attended with a ſenſe of ſtiffneſs, is firſt perceived in the legs, or in the trunk of the body: after this, a yawning and ſtretching of their arms; a lowneſs of ſpirits, with an oppreſſion about the præcordia; the ſtomach,

* It is obſervable, that *Diocles Caryſtius* mentions, among the ſigns of diſorders of the belly, pains flying through the body, without any apparent cauſe. Vid. Epiſt. ad Regem Antigonum.

† Sydenhami Oper. Epiſt. ad D. Coſe.

or ſome part of the inteſtines, is diſtended with wind; they often feel, as it were, a ball in their throat; their breathing becomes quick; the heart flutters, or is affected with a ſtrong palpitation; a giddineſs, a noiſe in the ears, and a loſs of ſight, as well as of the other ſenſes, ſucceed, together with convulſive motions of the extremities and other parts of the body. Fits of this kind may be owing to various cauſes; ſuch as,

1. An irritation of the nerves of the ſtomach or inteſtines, from wind, acrid humours, or other cauſes, whence the whole ſyſtem is often brought into conſent. Nor can it admit of any doubt, that hyſteric fits frequently proceed from this cauſe, ſince the patients are often ſenſible of their beginning with an uneaſy ſenſation in thoſe parts.

2. A ſudden ſuppreſſion of the menſes often gives riſe to hyſteric fits: and in ſome a fatal apoplexy, attended with a violent ſpaſm of the muſcles of the *glottis*, has been the conſequence of the menſtrual evacuation being ſuddenly ſtopt; as in the following caſe.

An unmarried woman, aged twenty, of a delicate habit, having expoſed herſelf to cold at the return of the monthly period, was, next morning at four, ſuddenly ſeized with a ſtupor, and a difficulty in ſpeaking, and moving any of her limbs. She was ſoon after blooded, and a bliſter was applied between her ſhoulders. At eight, when I firſt ſaw her, ſhe could neither ſpeak nor ſwallow, but was troubled with a hiccup: her face was pale, her ſkin cold, although her pulſe and breathing were natural. About half an hour after ten ſhe began to breathe with labour, and with a ſnorting noiſe. This ſtruggle, however, eſpecially in expiration, did not ariſe from any fault in the lungs or muſcles of reſpiration, but from a ſpaſm of thoſe muſcles of the *larynx* which ſhut the *glottis*; and it came by fits, which continued three or four minutes, and ſometimes more. In the intervals, which were ſomewhat longer than the acceſſions, ſhe breathed pretty eaſily. The *oleum ſuccini*, held to the noſe, leſſened, at firſt, the ſpaſmodic contraction of the

glottis,

glottis, and made her breathe eaſier. She was blooded again, and had a purging clyſter. About eleven the fore-part of her neck, around the *larynx*, and under the ſterno-maſtoid muſcles, was much ſwelled, as if the cellular membrane had been diſtended with air. A poultice of theriaca and camphire, applied to this ſwelling, ſeemed to leſſen the violence of the fits of difficult reſpiration. In the afternoon her pulſe becoming quick and full, and her ſkin hot, ſhe was blooded a third time; but, notwithſtanding this and other remedies, ſhe died that night at ten, eighteen hours after ſhe was firſt taken ill.

3. A very acute pain in any of the more ſenſible parts of the body, or violent affections of the mind, as terror, grief, anger, or diſappointments, will ſometimes ſo ſtrongly affect the whole nervous ſyſtem, as to bring on hyſteric faintings, with convulſions, although the body be in every reſpect healthful and ſound, bating the too great delicacy or ſenſibility of the brain and nerves.

IV. A *catalepſis* and *tetanus*.

Of all the nervous or ſpaſmodic diſorders, there is none more ſurpriſing than the *catalepſis*, or *ſtupor vigilans*, as it is called by *Fernelius*.* In this the patient becomes either wholly, or in a great meaſure, inſenſible of what is doing about him, and remains exactly in the ſame poſture in which he was firſt ſeized. His joints are ſometimes ſo ſtiff that they can ſcarcely be bent; or, if they are, they remain in whatever ſituation they are placed. The pulſe is often low and irritating. This diſeaſe may be owing to ſome violent affection of the mind diſordering the brain and nerves, or to ſome acrid matter affecting them, either by its immediate contact, or by ſympathy with the ſtomach, inteſtines, *uterus*, or ſome very ſenſible parts. To the ſame general cauſes are likewiſe to be aſcribed the *emproſthotonus* and *opiſthotonus*, and *tetanus*. And here we muſt reſt; for to endeavour to explain more particulary, either how the paſſions, or an irritation of the brain, or other ſenſible parts, brings on alternate convulſions or fixed ſpaſms of

* Pathalog. Lib. v. cap. ii.

the muſcles, would be to no purpoſe, till we are better acquainted with the ſtructure of theſe organs, and with that cauſe which immediately produces their contraction; points which will, probably, for ever elude our reſearches. All we know is, that whatever irritates, or diſagreeably affects, the brain, nerves, or any of the more ſenſible parts, occaſions continued ſpaſms or convulſive motions, either in the parts themſelves, if muſcular, or in thoſe with which they have any conſiderable ſympathy; and that, when the nervous ſyſtem is delicate, or the irritation great, almoſt the whole muſcles will be ſometimes agitated with alternate contractions, or affected with a *tetanus* or general rigidity.

V. Wind in the ſtomach and bowels. All our aliments, eſpecially thoſe of the vegetable kind, abound with air. In the time of digeſtion, part of this air is ſeparated, and produces that flatulence or wind in the ſtomach and bowels with which many people are greatly troubled. But although flatulence ariſes from our aliments, ſome of which produce it more than others, yet ſtrong and healthful people are ſeldom troubled with wind, unleſs they either over-load their ſtomach too much, or ſwallow liquors that are in a fermenting ſtate, and conſequently full of elaſtic air. While, therefore, the matter of flatulence proceeds from our aliments, the cauſe which makes air ſeparate from them in ſuch quantity, as to occaſion uneaſy complaints in the *primæ viæ*, is almoſt always a fault there; for when, on account of a weakneſs of the ſtomach and bowels, or an unnatural ſtate of their nerves, the digeſtion does not go on properly, not only more flatulence is produced, but leſs of it returns again to a fixed ſtate. Further, when, through the weakneſs of the coats of the ſtomach and inteſtines, the preſſure upon its contents is conſiderably diminiſhed, the air emitted by the aliments in digeſtion, will not only be in greater quantity, but will expand itſelf more than in people of ſtronger organs. Agreeably to this, it is obſerved, that dogs are much troubled with wind

and

and *borborygmi*, after tying the eight pair of nerves, which ſend many branches to the alimentary canal.

Air in the ſtomach being often hindered from riſing by a ſlight ſpaſm of the *cardia*, or lower part of the gullet, either occaſions an inflation of that organ, with other uneaſy ſymptoms, or paſſes into the inteſtines; where, joined to more that is generated there, it diſtends them in ſome places, and conſequently occaſions a contraction in others. Hence pain; and when the ſpaſm gives way, the air ruſhing through a narrow paſſage of ſome of the bowels, makes a rumbling noiſe: but when the ſpaſm in any part of the inteſtines, eſpecially the *colon*, is greater, or laſts longer, than uſual, the air is more and more rarefied by the heat of the body, whence their coats being over-ſtretched, great pain is occaſioned, which is often attended with a vomiting. This is what is commonly called a flatulent or hyſteric colic. In ſome caſes, certain parts of the alimentary canal are affected with ſuch a fixed ſpaſmodic contraction, that ſcarce any air paſſes either upward or downward; and more being daily generated, the ſtomach and bowels become at length greatly diſtended, or a tympany is produced. In this diſeaſe, I have ſeveral times obſerved the ſwelling of the belly fall greatly, and the diſeaſe go almoſt quite off, while in the mean time very little wind was diſcharged. This ſhews, when the alimentary canal returns to a ſound ſtate, that not only leſs air is generated from the food, but what has been produced may be moſtly deſtroyed, or reduced to a more fixed condition.

VI. A great craving for food. This may be owing to ſome humour in the cavity of the ſtomach ſtimulating its nerves, or to thoſe nerves being ſo changed, that they are almoſt always affected with that ſenſation we call hunger, unleſs when food is newly taken into the ſtomach.

Doctor Lower has obſerved, that hypochondriac and hyſteric people are often troubled with an uncommon hunger, or *fames canina*; and while this laſts, they are almoſt quite free of other complaints; but that their uſual ailments return with

their natural appetite. In other caſes, however, the morbid matter, affecting the nerves of the ſtomach in hypochondriac and hyſteric patients, ſometimes occaſions a want of appetite and nauſea. In like manner, the true gout, when turned upon the ſtomach, according to the different ſenſibility of the nerves of that organ, or its being more or leſs fixed upon theſe nerves, produces very different effects; ſuch as an oppreſſion, a languor, flatulence, want of appetite, and a ſenſe of coldneſs in the ſtomach, or a violent pain, with cramps and vomiting.

The *malacia* and *pica*, common to women with child, and to girls affected with the *chloroſis*, proceed either from an acid or ſome other acrid humour in the ſtomach; or from its nerves being ſo changed by the ſtate of pregnancy, as to produce a longing for certain foods, and other ſubſtances, which, in theſe caſes, are generally moſt grateful to the taſte, as well as apt to remedy the diſorder of the ſtomach.

VII. A black vomiting. Although not a few of the moderns, following the opinion of the antient Phyſicians, have ſuppoſed the hypochondriac diſeaſe to be owing to an artrabiliary humour produced in the ſtomach, liver, or ſpleen, yet in many hypochondriac patients there is no ſuch humour; and where it is obſerved, it is only a ſymptom or conſequence of that diſeaſe, but not its original cauſe.

Patients who have been long afflicted with violent pains and cramps, and other diſorders in their ſtomach, often throw up ſome dark-coloured ſtuff, which is commonly nothing but blood that has loſt its colour; for, although, when blood is poured into the cavity of the ſtomach in a large quantity, it is ſoon vomited, either in its fluid ſtate, or coagulated, yet, when it ouzes ſlowly from the ſmaller veſſels, it loſes its red colour by long lying, and when thrown up, reſembles coffee-grounds. This kind of black vomiting is generally owing to ſome of the following cauſes, viz.

1. Violent pain or cramps in the ſtomach; the firſt of which may greatly increaſe the motion of the

the fluids in the ſmall veſſels, and the laſt may ſqueeze the globules of blood through the orifices of the ſmall arteries, deſigned for conveying the gaſtric lymph only into the cavity of the ſtomach.

2. Scirrhous tumors in the ſtomach beginning to ulcerate, or a rupture of ſome of the ſmall veſſels leading to them.*

3. A ſuppreſſion of the menſes or hæmorrhoids, whence the blood that uſed to be evacuated by the

 uterus

* Further, ſcirrhous tumors in the ſtomach, by obſtructing, in a great meaſure, the courſe of the blood through the indurated part, may occaſion a more copious influx of this fluid into the neighbouring veſſels; whence the orifices of ſome of the exhaling arteries in the villous coat of the ſtomach may be ſo dilated as to allow globules of red blood to eſcape with the thinner humours. This ſuppoſition is rendered at leaſt not improbable by the following inſtance of bloody urine, occaſioned by the womb preſſing upon the neighbouring parts in time of pregnancy.

A Gentlewoman, aged nineteen, began, in the fourth month of her firſt pregnancy, to make bloody urine, which continued till within fifteen days of her time. This conſtant diſcharge, though weakening, yet was not attended with a quick pulſe, nor any pain in the back or belly. After being delivered, ſhe recovered, and enjoyed perfect health, 'till about three or four months after ſhe had conceived again, when the bloody urine returned, and continued, as formerly, till a fortnight before ſhe was brought to bed. In her third pregnancy ſhe was affected in the ſame manner, only ſhe was much troubled with coſtiveneſs, which increaſed the other diſorder; and after this delivery, before ſhe fell with child again, ſhe had ſometimes returns of the bloody urine. During her fourth pregnancy, which happened in the 25th year of her age, the ſame ſymptom returned, but her loſs of blood was now greater, and more conſtant, than ever, ſo that ſhe complained of a great weakneſs, of a giddineſs, and loſs of appetite; her pulſe was quick and ſmall, and for above a month together ſhe had quotidian feveriſh paroxyſms, generally of ten or twelve hours continuance. About the middle of the ninth month, her water returned to the natural colour; but, after lying in, and recovering ſlowly, in ſix or ſeven weeks ſhe grew as ill as ever. Her blood was now become ſo thin, that, when ſhe happened to cut her finger, it would ſcarcely tinge linen.

This diſeaſe, to which this perſon ſeems to have been prediſpoſed by a laxity of the veſſels of the kidneys, was moſt probably owing to the preſſure of the womb on the iliac arteries, by which means the blood was thrown with greater force upon the emulgents; for, if the cauſe of this hæmorrhage had been merely the ſuppreſſion of the menſes, it ought to have appeared much ſooner than the fourth month. But however that may be, the patient found great benefit from the tincture of roſes, the bark with elixir of vitriol, a ſtrengthening plaiſter, and a diet conſiſting chiefly of mucilaginous ſubſtances, gellies, and the lighter fleſh meats, with a little claret.

uterus or *rectum* is turned upon the ſtomach, and partly diſcharged by ſome of its exhaling arteries.

I have known ſome hyſteric patients, affected with ſevere pains and ſpaſms in their bowels, who did not vomit any black ſtuff, but often paſſed it by ſtool. In this caſe the black purging was owing to red blood making its way, in ſmall quantities, into the cavity of the inteſtines; for that this atrabiliary humour, as it has been called, did not come from the liver, I was convinced, by obſerving, that ſuch patients as paſſed it by ſtool, frequently vomited up at the ſame time bile of a natural colour. However, as hypochondriac and hyſteric patients ſometimes throw up a dark green bilious humour, there may be, perhaps, a few caſes, in which a blackiſh liquor, coming from the liver or gall-bladder, may paſs from the *duodenum* into the ſtomach, and be afterwards diſcharged by vomiting.

VIII. A ſudden and great flux of pale urine. This is reckoned by *Sydenham* the pathognomic ſign of the hypochondriac and hyſteric diſeaſe.* It has been abſcribed by *Hoffman* to a ſpaſm of the ſphincter of the bladder;† and by *Dr. Cheyne* to an obſtruction of the perſpiration;‡ but without ſufficient reaſon.

The real proximate cauſe of this ſymptom is always the ſame, viz. an increaſed motion, together with ſome degree of conſtriction, of the ſecretory veſſels of the kidneys. The firſt augments the quantity, and the ſecond occaſions the pale colour, of the water; although it muſt be owned, that this colour is principally owing to the quickneſs of the ſecretion of the urine and of its paſſage through the bladder, before the finer parts are abſorbed, and it has had time to acquire the common ſmell and taſte as well as colour of that fluid.

The cauſes of ſuch an increaſed motion of the ſecretory veſſels of the kidneys may be reduced to the following:

1. Sudden or violent affections of the mind. Thus people of a delicate frame, and very mov-

able

* Epiſt. ad D. Cole.

† Syſtem. Med. tom. iv. part. iii. cap. vi. § xvi.

‡ Engliſh Malady, part. ii. chap. ix.

able nerves, will, ſoon after a fright, anger or vexation, make great quantities of pale water. The whole nervous ſyſtem being in ſuch caſes violently agitated, the ſecretory veſſels of the kidneys are thrown into ſtronger and quicker alternate contractions than uſual, and ſo make a larger ſecretion of urine. Add to this, that, as the perſpiration is generally checked by diſorders of the mind, the watery parts of the blood will be turned more upon the kidneys.

2. An increaſed motion of the renal veſſels is often owing to ſympathy. Thus as pain in the kidneys produces a nauſea and vomiting, ſo a diſagreeable ſenſation in the ſtomach and bowels, from wind, crudities, or other cauſes, frequently affects the veſſels of the kidneys with ſuch an increaſed alternate motion, as greatly to quicken the ſecretion of urine. Further, when the body is thrown into a general diſorder, which happens in hyſteric fits, the nerves of the kidneys are affected as well as others; and if the renal veſſels are weaker or more irritable than thoſe of the other glands, the fluids, which are put into violent motion, will run off this way in the form of pale water. If the inteſtines are particularly weak, the perſon will be ſeized with a purging.

In children breeding teeth, the irritation of the nerves of the gums ſometimes affects the kidneys by conſent, ſo as to occaſion a conſiderable diſcharge of urine of this kind.

3. Since *Sydenham* has obſerved, that the hyſteric diſeaſe will often ſeize the kidneys, and occaſion a pain like that of a nephritic paroxyſm,* may not that noxious matter in the blood, which is often the cauſe of nervous diſorders, be thrown ſometimes in ſuch a manner on thoſe parts, as, though not to produce pain, yet ſo to ſtimulate their ſecretory veſſels, as greatly to increaſe the quantity of the urine? Nor is this more ſurpriſing, than that the ſame matter, affecting the nerves of the ſtomach, ſhould produce, at different times, very different complaints. I have met with ſeveral inſtances

* Epiſt. ad D. Cole,

ſtances of a great and long-continued flux of urine from an arthritic humour turned on the kidneys.

Further, ſince a ſtoppage of urine, with a pain at the neck of the bladder, will, in ſuch patients, ſometimes proceed from the morbid matter producing a ſpaſm there, may not a diminiſhed ſecretion of urine, without any pain in the bladder or *urethra*, be owing, in ſome caſes, to a ſpaſmodic contraction of the ureters, or ſecretory veſſels of the kidneys?

I have had patients, who, after a long fever, or ſome other tedious and weakening diſtemper, made a great quantity of pale water in the night, but in the day-time no more, ſometimes leſs, than uſual, and of a natural colour. This increaſed ſecretion did not generally begin at any certain hour in the evening, but ſoon after going to bed; and in the morning, after getting up, it gradually abated. Nay, a Gentleman, who had been in uſe, for ten or twelve days, to make from four to ſix Engliſh pints of pale water in the night, finding himſelf greatly weakened thereby, reſolved to try what getting out of bed would do; and accordingly, at two in the morning, after having that night paſſed about a pint and a half of urine at twice, he roſe, and ſat up for two hours, and then was able to make but about half a gill. After this he went to bed again, and, in two hours more, made near three quarters of a pint of pale water. This experiment was repeated ſome nights after with the ſame event.

Thoſe who are troubled with this flux of limpid urine in the night, find themſelves ſtronger, cooler, and in the beſt ſpirits, in the evening, at which time their pulſe is ſloweſt; but ſoon after going to bed, their pulſe becomes quicker, they grow warmer, and begin to make water in great quantity. They are not refreſhed with ſleep; and, in the morning, they feel thirſty and languid, and have a quicker pulſe than at other times.

This exceſs of pale urine, though moſt incident to people of weak nerves, yet, to diſtinguiſh it from the true hyſteric *profluvium*, may be called hectical or colliquative, as coming in the place of

thoſe

thoſe night-ſweats which often exhauſt ſuch as have had their veſſels weakened, and their blood impoveriſhed, by ſome diſeaſe. When the veſſels of the kidneys are relaxed, and yield too eaſily, or are too irritable, the fever raiſed in the night by the heat of the bed, will naturally throw off the humour by them, rather than by the pores of the ſkin: but, in the day-time, the whole body, and the loins in particular, being kept cooler, the blood will be leſs rarefied, and will move with leſs force, whence the dilatation, or increaſed alternate motion, of the renal veſſels will abate, and conſequently the urine will be ſeparated in much leſs quantity.

An increaſed ſecretion of the ſaliva is, like the copious limpid urine, owing to an unuſual motion of the veſſels of the ſalivary glands: and it may be obſerved, that in patients whoſe ſalivary veſſels are weakeſt and moſt irritable, a ſalivation will oftener happen, while, in thoſe whoſe kidneys are moſt apt to be affected by any diſorder in the body, a flux of pale water will be more frequent.

IX. A nervous Atrophy.

A *maraſmus*, or ſenſible waſting of the body, not attended with ſweatings, any conſiderable increaſe of the excretions by urine or ſtool, a quick pulſe or feveriſh heat, may deſerve the name of *nervous*. Not that I would be thought by this to inſinuate, that ſuch a diſeaſe proceeds from a diminiſhed ſecretion of the animal ſpirits, or from their vitiated quality. The fluid of the nerves does not ſeem to be that *nutritious juice* by means of which the daily waſte of the body is repaired;* and we know too little of its properties, to make it the foundation of our reaſoning on the nature or cure of diſeaſes. But this kind of atrophy, though not, perhaps, owing to any fault in the ſpirits, or even in the brain, or nervous ſyſtem in general, may yet deſerve the name of *nervous*, as it ſeems frequently to proceed from an unnatural or morbid ſtate of the nerves of the ſtomach and inteſtines.

The influence of the ſtomach in the animal œconomy, is greater than is perhaps generally imagined. It not only contributes to the digeſtion of the

* See Chap. I. No. 9.

the aliment, but the whole ſyſtem is either invigorated, or affected with a languor, according to the different diſpoſition of its nerves. By proper food the nerves of the ſtomach are gratefully ſtimulated, and the whole body is thence enlivened and ſtrengthened; ſo that, beſides its uſe for nutrition, food in the ſtomach becomes, on account of its ſtimulus, altogether neceſſary in ſome delicate nervous people, for keeping up the ſtrength of the body, and the due exerciſe of all its functions: and hence it is, that ſuch perſons become often faintiſh as ſoon as the greateſt part of the food has paſſed into the inteſtines; that ſtrong broths, though they may afford as much or more nouriſhment than ſome kinds of ſolid meat, yet do not ſatisfy the ſtomach, at leaſt for any conſiderable time, or enable us to endure much labour; and that, according to the different diſpoſition of the nerves of the ſtomach, different aliments will be moſt grateful to it, and moſt invigorating to the body.

We know that an unnatural ſtate of the nerves of the ſtomach may either produce a craving or an averſion to food; that low ſpirits and melancholy often proceed from that cauſe: nor is it to be doubted, that when the nerves of the ſtomach are, from certain cauſes, affected in a manner ſomewhat different, an indifference for food, a weak digeſtion, a languor and coldneſs, a ſlow pulſe, and waſting, may be the conſequences.*

The morbid affection of the nerves of the ſtomach, by ſympathy, impairs the vigour and energy of the whole ſyſtem; whence the motion of the heart, and circulation of the blood, will become ſlower and more languid, the body will be deprived

* Long-continued grief, and other paſſions, too great application of mind, a gouty humour, or the morbid matter of ſome diſeaſe, imperfectly cured, remaining in the body, and thrown upon the ſtomach, as well as other cauſes, may bring on ſuch a ſtate of the nerves of that organ, eſpecially in thoſe whoſe nervous ſyſtem and alimentary canal are naturally too delicate and ſenſible. I had ſome time ſince a patient ſubject to fits of the gout at the diſtance of ſeveral years, who, after labouring under ſuch an atrophy as I am now treating of, for eight or ten months, and uſing various medicines with no great benefit, was cured by a return of the gout to one of his great toes.

prived of its natural heat, and be affected with a general weakneſs. The patient decays daily, though exhauſted by no exceſſive evacuations, becauſe his food is not converted into good chyle; and the nutritious fluid, in the blood, either does not poſſeſs its uſual properties, or, on account of the languid manner in which all the operations of the body go on, is not applied to the ſeveral parts in ſuch a way as to repair the waſte they daily ſuffer. Further, the watching, or want of refreſhing reſt, and low ſpirits or melancholy, which generally accompany this diſeaſe, may contribute to prevent the proper nutrition of the body.

This atrophy is generally attended with great coſtiveneſs, and ſometimes with belchings, and other ſigns of flatulence in the alimentary canal. In ſome caſes the urine does not exceed the natural quantity; there is no thirſt, and the tongue is clean. In others, the diſcharge by urine comes at length to be conſiderably increaſed, a drought prevails, and the patient decays faſter.

The pulſe often differs little from what it is in health, except that it beats with leſs force. In ſome it has a ſmall degree of quickneſs; and in others it becomes a great deal ſlower than is natural.

After a nervous atrophy has continued long, and reduced the patient much, obſtructions ſometimes begin to be formed in the lungs, either from the languid circulation, or the fault of the fluids; a dry cough comes on, the pulſe grows quick, and a hectic fever is kindled, which, together with the original diſeaſe in the ſtomach, increaſes the decay, and haſtens the patient's fate.

Sometimes this diſeaſe, after it has brought the patient very low, will take a ſudden turn, without any apparent cauſe. The patient, who had little inclination to eat, will get an uncommon craving and quick digeſtion even of ſolid food, which uſed to lie remarkably heavy on his ſtomach: his pulſe will become quicker than natural, and his ſkin warm: his veins, which were contracted, will appear ſwelled with blood: from being low ſpirited, he will become chearful, and daily grow ſtronger

and

and plumper: * all which effects ſeem to proceed, in a great meaſure, if not ſolely, from ſome change in the nerves of the ſtomach and bowels.

In other caſes, this diſorder goes off as ſlowly as it came on, and the patient does not recover fully till after a long time.

X. A nervous or ſpaſmodic aſthma. Every difficulty of breathing, which is owing to a ſpaſm of the bronchial veſſels, or veſicles of the lungs, may, in a large ſenſe, be called a *nervous* or *ſpaſmodic* aſthma; but as in moſt aſthmatic ailments, where the lungs are obſtructed, or loaded with phlegm, there is generally more or leſs of a ſpaſmodic contraction excited in the air-veſſels of the lungs, I ſhould chuſe to define a ſpaſmodic aſthma to be that ſpecies of difficult breathing, which is not owing to any obſtruction in the lungs, or load of humours compreſſing their veſſels, but to an uncommon contraction of their bronchial tubes and veſicles, whereby they do not yield, as uſual, to the preſſure of the air in inſpiration.

The prediſpoſing cauſe of this diſeaſe is a particular weakneſs and delicacy or ſenſibility of the pulmonary veſſels and nerves, which renders the muſculo-tendineous membrane connecting the annular cartilages of the *bronchia* liable to be affected with a ſpaſmodic contraction from ſuch occaſional cauſes as in a ſound ſtate of the lungs would not produce this effect.

Theſe cauſes may be reduced to the following:

1. Any acrid or noxious matter in the blood, whether of the arthritic, rheumatic, or ſome other kind, thrown on the lungs, and irritating their nerves. As a proof of this, I have known a perſon, affected with a fit of the ſpaſmodic aſthma, ſuddenly relieved by a gouty pain in his great toe, and become worſe after a day or two, when this went off.

2. Sympathy with the ſtomach. When the nerves of this organ are diſagreeably affected by wind, phlegm, or crudities, the lungs, if they are more than uſually irritable, often ſuffer by ſympathy,

* See a caſe of this kind in a young lad of fourteen, deſcribed under No. xiii. of this Chapter.

pathy, and are ſeized with a ſpaſm. Further, when the ſtomach is much diſtended by wind, it may, by preſſing upon the diaphragm, increaſe an aſthmatic fit.

3. As hyſteric fits and ſpaſmodic colics are often occaſioned by violent affections of the mind, ſo I have known ſudden fear bring on an aſthmatic paroxyſm in a woman who was ſubject to frequent attacks of this diſeaſe.

4. A ſudden diminution of the perſpiration, or contraction of the cutaneous veſſels from cold, may, by turning the humours in too great quantity upon the lungs, occaſion a fit. The cold affecting the cutaneous nerves may alſo, by ſympathy, produce ſome kind of ſpaſm in the air-veſſels of the lungs.

5. Too great loſs of blood will, in thoſe who have very delicate or irritable lungs, be ſometimes apt to produce aſthmatic fits, rather than other nervous ſymptoms.*

6. Some fixed obſtruction in the lungs, which at all times makes the breathing ſomewhat leſs free than in perfect health, eſpecially if any conſiderable exerciſe is uſed, and which, when ſome of the above-mentioned cauſes concur, produces an aſthmatic fit, which, indeed, ſtrictly ſpeaking, is of the mixed kind. And here it may be proper to obſerve, that, among the many patients liable to periodical fits of the aſthma, there are but very few who have not ſome obſtruction, or other obſtacle, conſtantly remaining in their lungs; ſo that a true nervous or ſpaſmodic aſthma, without any other fault in the lungs than an uncommon delicacy, or irritability of their nerves, is a diſeaſe which we ſeldom meet with; and, on this account, I have ſubjoined the following caſe:

A girl, healthful, well made, and of a ſeemingly good conſtitution, began, at the age of ſeven, to complain of a pain at the lower part of the *ſternum*. This pain, which returned at no certain intervals, became gradually more ſevere during the ſpace of near two years; after which, in place of it, the patient

* See an inſtance of this in *Dr. Barry*'s Treatiſe on the Three Digeſtions and Diſcharges of the Human Body, p. 294.

patient began to be affected, at times, with a difficulty of breathing, which returned frequently, without obſerving any certain periods; as a week, a fortnight, or a month, would ſometimes intervene between the fits. She was generally ſeized with the fits all at once; and after breathing with the utmoſt difficulty for half an hour, ſometimes more than an hour, ſhe would, of a ſudden, become perfectly well, and fall a-dancing immediately after with her companions. It was obſervable that this girl had no complaint of her ſtomach, no cough, nor other apparent fault in her lungs; nor did ſhe uſually expectorate phlegm when the fit went off; and, except in time of the aſthmatic paroxyſm, breathed with the ſame eaſe as any perſon in perfect health. After having been ſubject to returns of this ſpaſmodic aſthma for above two years, ſhe died of a continued fever, in which her head was greatly affected.

Was this diſtemper owing to ſome morbid matter in the blood, which firſt affected the parts about the *ſternum*, or, perhaps, the *mediaſtinum*, with a painful ſenſation, and afterwards falling on the lungs, and irritating their nerves, occaſioned a ſpaſm or true cramp of their æreal veſſels? I ſhall only add, that fits of the ſpaſmodic aſthma are ſometimes preceded by a great diſcharge of pale urine; ſo that the patients can foretell them a day or two before they are attacked.

XI. A nervous cough. A cough may be called nervous when it does not proceed from any phlegm, obſtruction, or other irritating cauſe in the lungs themſelves, but from ſympathy with ſome other part whoſe nerves are diſagreeably affected. Of this kind is that dry cough which is occaſioned by worms, or by teething in children. A cough with very unuſual ſymptoms has alſo been owing to water in the *pericardium*, and other diſorders of the heart, when the lungs themſelves appeared to be ſound. But, inſtead of making any further obſervations on this ſubject, I ſhall give a particular account of a very extraordinary cough of the truly nervous or ſympathetic kind. A girl,

A girl, aged eight, in January, 1760, was ſeized with a dry cough, which continued for two or three months, notwithſtanding ſeveral remedies that were uſed to remove it. In October following the cough returned with as much violence as before, with this difference only, that it was rather more ſevere when ſhe ſat up than when ſhe lay in bed. Although her ſkin was cool, her pulſe ſcarce quicker than uſual, ſome blood was taken away, and a vomit was given, but without any good effect. Upon a ſuſpicion that this cough might be owing to worms in the ſtomach or inteſtines, ſhe took ſome powder of tin, and two doſes of rhubarb with calomel. The cough ceaſed in eight or ten days after uſing theſe medicines, although no worms were brought away by them.

Towards the end of December, 1760, this girl, after having been in good health for ſix or ſeven weeks, was again ſeized with a dry cough, for which ſhe was twice blooded without any advantage; but ſhe found ſome relief, for a few days, by a bliſter applied to her back.

About the middle of January the cough became more conſtant and ſevere when ſhe ſat up, but never affected her when ſhe lay in bed. On the third of February, when I was called, I found the following ſymptoms.

While ſhe lay in bed, ſhe had no cough, no difficulty in breathing, nor any pain or uneaſineſs in her breaſt; her ſkin was cool, her tongue moiſt and clean, her appetite good; and ſhe was as chearful as uſual. Her pulſe beat then about ninety times in a minute; it was of a moderate ſtrength, but a little irregular. When ſhe ſat up in bed, her pulſe became quicker by ten or twelve ſtrokes in a minute; but ſhe ſtill was free from the cough, and every other complaint; and in this poſture ſhe continued moſt part of the day. When ſhe ſtood either on the bed, or on the floor, or when ſhe ſat on the bedſide, or on a chair, ſhe was immediately ſeized with the cough, which continued without intermiſſion till ſhe lay down again. The cough was dry and convulſive, for ſhe could not reſtrain it for one moment; it was attended with a pain in the

the ſternum, about an inch or more above the *xiphoid cartilage*, which pain ſhe never felt in any degree when ſhe lay down, or ſat up in her bed.

When ſhe ſtood on her feet, her pulſe became very ſmall and irregular, and beat at the rate of two hundred times in a minute.

At different times, in the months of February and March, I frequently repeated the following experiments with a view to diſcover more of the nature and cauſe of this uncommon cough.

1. When ſhe lay on her back, a-croſs the bed, with her legs hanging over it, ſhe was free from the cough; but was immediately troubled with it when ſhe ſat up.

2. When ſhe ſat up in the bed, or ſat on the floor, with her thighs and legs in a horizontal poſture, ſhe coughed none.

3. When ſhe ſat in the bed, and drew up both her legs as cloſe as ſhe could to her thighs, ſhe was then attacked with the cough, and with the pain in her breaſt.

4. When ſhe ſat in her bed on the bolſter and pillow, with her thighs and legs inclining a little downwards, ſhe had no cough.

5. When ſhe kneeled down, either on the floor or in the bed, with her body erect, ſhe was immediately ſeized with the cough, and the pain in her breaſt.

6. When ſhe lay on her back, with her head and ſhoulders as low or a little lower than her body, ſhe coughed without intermiſſion, as ſhe did alſo in an erect poſture.

7. In a prone poſture, with her head as low or lower than her body, ſhe coughed inceſſantly, and was like to be ſuffocated; but as ſoon as her face was a little raiſed, and ſupported on the bolſter or pillow, the cough ceaſed.

The cough, the pain in her breaſt, and ſenſe of ſuffocation, were greater, and her pulſe was ſmaller, quicker, and more irregular, when her head was low, than when ſhe ſtood upright; but lying low on her face ſeemed to give her ſtill greater uneaſineſs than lying low on her back. 8. She

8. She lay on either ſide with eaſe, and without coughing, unleſs when her head was as low or lower than her body.

9. When ſhe ſat or ſtood with her feet in warm water, ſhe had neither any difficulty in breathing, nor inclination to cough, nor pain in her breaſt; but ſhe coughed without intermiſſion the moment her feet were taken out of the water.

When ſhe ſat with her feet in the warm water, her pulſe beat one hundred and twenty times in a minute; and when ſtanding in it, between one hundred and thirty and one hundred and forty times. When ſhe ſtept out of the water, and ſtood on the floor, the cough inſtantly returned, and her pulſe roſe to two hundred in a minute.

10. When the heat of the water was reduced (by pouring ſome cold water ſlowly into it) from above one hundred degrees of Farenheit's ſcale, to about ſeventy, the cough returned with its uſual violence; and although ſhe ſat in a chair, her pulſe roſe from about one hundred and twenty to near one hundred and ninety, and turned ſmall and irregular. After this, upon gradually adding boiling water, ſo as to raiſe the heat of the bath to eight-eight or ninety degrees, the cough ſtopt, and her pulſe became fuller, much ſlower, and more regular.

11. When ſhe coughed the moſt violently, if her ſoles were only made to touch the warm water, ſhe grew immediately eaſy, and continued ſo, although her feet were not wholly immerſed.

12. When one of her feet was taken out of the bath, the cough was not prevented, by increaſing the quantity of warm water, ſo as to make it not only cover the other foot, but alſo a good part of the leg.

13. After her feet had been, for ſome minutes, in water, heated to about one hundred and fourteen degrees, one of them was taken out of it, and that inſtant the cough returned with its uſual violence; notwithſtanding that foot and ancle continued, for ſome time, to be warmer than the body naturally is, or than was neceſſary to prevent coughing upon putting the foot into the warm water.

14. When

14. When one of her legs was taken out of the water, (warmed to about ninety-ſix degrees,) and wrapt in a dry or wet piece of flannel, whoſe heat was at leaſt one hundred and fourteen degrees, ſhe coughed as uſual, but was relieved as ſoon as her foot was again put into the warm water.

15. When her feet were covered with dry ſand, heated to above one hundred and ten degrees, ſhe coughed with the ſame violence ſhe uſed to do on the floor. Nor was the cough, either when ſhe ſat or ſtood, prevented by the flannel wrung out of hot water, and applied round her feet and legs, although an equal or a greater degree of heat was, by this means, communicated to theſe parts than by the *pediluvium*.

16. When her hands were dipt in warm water ſhe continued as free from the cough as when her feet were bathed. But a bottle filled with hot water, and held between her hands, had no ſuch effect.

17. When one of her feet was taken out of the bath, although the hand of that or the other ſide was put into water of an equal or a greater heat, ſhe coughed without intermiſſion; but as ſoon as both hands were dipt in the warm water, ſhe coughed no more.

18. I made her breathe over the ſteam of hot water, when one of her feet was taken out of the *pediluvium*; but this did not prevent the cough.

19. When ſhe lay with her head as low, or lower, than her body, (No. 6 and 7,) warm water then applied to her hands or feet had no effect in preventing or leſſening the cough; but in every other poſture it kept her quite eaſy.

20. If one or both hands were dipt in cold water, ſhe was preſently ſeized with the cough, and with the pain in her breaſt, whether ſhe lay in bed, or ſat with her feet in warm water. The ſame thing happened when her palms were applied to a quart bottle of cold water; with this difference, that the cold water inſtantly raiſed her cough, whereas the cold bottle took two or three ſeconds before it could produce that effect. The cough was alſo raiſed by applying a bottle full of cold water to her ſtomach.

21. When

21. When ſhe lay with her legs hanging over the bedſide (No. 1.) ſhe began to cough as ſoon as her ſoles touched ſome cold water.

22. The putting her hands in cold water, when ſhe lay in bed, not only excited the cough, but raiſed her pulſe from about ninety to above one hundred and eighty ſtrokes in a minute.

Theſe experiments were often repeated between the 3d of February and the 8th of March; but ſome time after this I found the following difference with reſpect to ſome of the above-mentioned ſymptoms:

23. On the 1ſt and 4th of April, when ſhe lay acroſs the bed with her head ſupported by a pillow, and her legs hanging over, (No. 1.) ſhe was immediately attacked with the cough, and her pulſe turned ſo ſmall and quick that I could not exactly count it; but I was ſure it did not beat leſs than eighteen or twenty times in five ſeconds, (No. 9.) Upon raiſing her legs, ſo as to bring them to a horizontal poſture, the cough immediately ceaſed, and her pulſe in a minute after beat only ten times in five ſeconds. As ſoon as her legs were allowed to hang down again, the cough returned with its uſual violence.

24. April 4th, upon putting one of her hands into cold water when a-bed, ſhe was ſeized with the cough, and her pulſe became very ſmall, and beat at leaſt twenty times in five ſeconds. (No. 22.)

Of late, ſhe felt more uneaſineſs and pain in her breaſt, with a greater ſenſe of ſuffocation, when ſhe was ſeized with the cough, either upon a change of poſture, or putting her hands into cold water. And her pulſe, which uſed to be about ninety when ſhe lay in bed, was now at ninety-ſix in a minute: but her ſkin continued cool, ſhe had no thirſt, and her appetite was good. It will be proper to add, that ſhe has had no expectoration from the beginning.

From the above facts it appears,

(a.) That an erect poſture does not excite the cough, unleſs either the legs or thighs be much bent, or in a depending or perpendicular ſituation. See No. 1, 2, 3, 4, and 5. *(b)* That

(b.) That a depending ſituation of the legs did not, at firſt, occaſion the cough, unleſs when the body was erect; but afterwards, that poſture of the legs had this effect, although the body lay horizontal. (No. 1 and 23.) Her pulſe alſo became a great deal quicker in this attitude than it had formerly been, either when ſhe ſat up, or when ſhe ſtood; whence it would ſeem that the cauſe of the diſeaſe had been gradually increaſing from the 3d of February to the 1ſt of April. No. 9, 10, 23 and 24.

(c.) That when the head and ſhoulders were as low, or lower, than the body, the cough was ſtill more ſevere than when ſhe ſtood upright. No. 7.

(d.) From the experiments already related, I was ready to imagine that the cough might be owing to ſome tumor or other fixed cauſe in the breaſt, which, in certain poſtures, ſo ſtrongly irritated that part of the lungs which it touched, as to occaſion a conſtant convulſive motion of the muſcles of reſpiration; but the following experiment, which I frequently repeated, ſoon diſſipated this theoretical illuſion.

When my patient lay in bed, upon extending one of her feet, ſo as to bring it nearly to a right line with the leg, ſhe coughed violently, and her pulſe roſe from ninety-four in a minute to eighteen in five ſeconds: but when her hands were either ſtrongly bent inwards, or extended outwards, or when ſhe pulled ſtrongly, or raiſed a conſiderable weight with them, no coughing enſued.

When the cough was raiſed by ſtretching her feet, warm water applied to her hands immediately put a ſtop to it.

From this experiment, as well as No. 23, it may appear, that this extraordinary cough did not depend on any fixed obſtruction or tumor within the *thorax* irritating the lungs in certain poſtures. But in this patient the nerves of the lungs ſeem to have been endued with an uncommon degree of ſenſibility, and to have had a peculiar ſympathy with the legs and feet; whence, as often as they were in a depending ſituation, or the nerves, tendons, and ligaments at the ancles, were ſtretched,

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an uneaſy ſenſation was felt in the lungs, which occaſioned an inceſſant cough. Although the ſympathy between the lungs and the other parts appears to have been leſs remarkable, yet the ſhock which their nerves ſuffered from cold water (No. 20 and 21.) was ſo ſtrongly felt in the lungs, as to occaſion a pain in the breaſt, together with the cough.

When the head and ſhoulders were lower than the body, the cough was more ſevere than in any other ſituation, probably becauſe in that poſture the reſpiration is leſs free, and the blood would paſs with more difficulty through the lungs.

(e.) Warm water did not, by its preſſure on the nerves or blood-veſſels of the feet, prevent the cough, becauſe it was excited by cold water, whoſe weight is greater. Neither did the *pediluvium* produce this effect by its heat alone, or even by its heat and moiſture; for ſand, or wet flannel, of an equal or greater degree of heat, applied to the feet, did not prevent the cough. No. 15 and 16.

(f.) As the effects of the *pediluvium* cannot be deduced from its rarefying the blood by its heat, neither can they be owing to any derivation of this fluid towards the inferior extremities, becauſe warm water, whether it was applied to the hands or the feet, had the ſame influence in ſtopping the cough; and as ſoon as the ſoles of her feet touched the water, the cough ceaſed. No. 16 and 11.

(g.) It remains, therefore, that warm water, by its particular action on the extremities of the nerves to which it is applied, renders the whole ſyſtem leſs ſenſible of any irritation; whence the too delicate lungs would be leſs affected in conſequence of their ſympathy with the inferior extremities, *(d.)* However, when the patient lay with her head lower than her body, the warm water did not then prevent the cough; becauſe in that poſition the irritation in the lungs was too great to be wholly removed by the anodyne power of the warm water: and, for the ſame reaſon, it ſeems to have been, that the *pediluvium* did not prevent the pain within her breaſt and the cough, which were raiſed by dipping her hands in cold water. No. 6, 7, 19, and 20.

(h.) It

(h.) It appears, from the above experiments, that warm water affects our nerves very differently, not only from a dry heat, but also from warm steams, or cloths dipt in hot water; a fact which seems not to have been known, or, at least, not sufficiently attended to, and which, perhaps, may afford some useful hints in practice. No. 14 and 15.

(i.) Since warm water, applied to the nerves, has a superior anodyne effect, not only to substances that are warm and dry, but even to warm steams or vapour; it is easy to see, how clysters of warm water may give relief in pains of the bowels, and other abdominal viscera, although they do not communicate more heat to the great guts than they possessed before.

(k.) Lastly, the effects of the warm water in this case appear the more remarkable, as a pill, consisting of half a grain of *opium*, and three grains of *asafœtida*, given every evening and morning, for several days, had not the least effect in either preventing or lessening the cough.

Between the 20th of January and the 25th of March, a variety of remedies were prescribed for this patient, without any advantage, viz. vomits, blisters, and an issue between the shoulders, the bark, powder of tin, rhubarb with calomel, pills of *opium* with *asafœtida*, boluses of theriaca with camphire and valerian.

Towards the end of March, I put her on a course of pills made of the extract of hemlock, which she continued for two months. About the middle of May she began to have less pain in her breast, and less sense of suffocation and coughing, when she sat up out of bed, or walked through the room. Upon the 22d of May these complaints left her altogether; and on the 28th of that month, the cough was neither raised by standing nor walking, nor when her head was laid lower than her body. Also cold water applied to her hands, had now no effect in exciting the cough or pain in her breast. On the 30th of May, after walking a little abroad, the cough returned for a day or two. Upon the 3d of June, after having made a journey of about ten English miles in a chaise, the cough

attacked

attacked her with as great violence as ever. Being now fully convinced that this ailment was not owing to any fixed obſtruction in the lungs, but to an uncommon delicacy or ſenſibility in their nerves, I ordered for her pills of extract of gentian and *limatura martis*, which ſhe took twice a day for about ten weeks. Towards the end of July the violence of the cough began to abate, and for the firſt eight or ten days of Auguſt ſhe was ſeldom troubled with it. On the 10th of Auguſt it returned, and continued to the 2d of September, when it left her entirely. In the month of November following ſhe had a ſlight attack of the cough and uneaſineſs in her breaſt; which ſymptoms returned, for one day, in September, 1762, ſince which ſhe has been very rarely affected with them in any conſiderable degree. It was obſerved, that the returns of her cough after September, 1761, were always owing to her uſing exerciſe too freely.

XII. Palpitations of the heart.

1. In thoſe whoſe nervous ſyſtem is eaſily moved, any ſudden and ſtrong paſſion, but eſpecially fear, will produce palpitations, and an irregular motion of the heart, by rendering it more irritable, and, at the ſame time, by forcing upon it the venous blood in greater quantity than uſual.*

2. The regular motion of the heart may be alſo diſturbed by its ſympathy with the ſtomach, when this organ is diſordered by wind, noxious humors, worms, or other cauſes; by the ſuppreſſion of ſome habitual evacuation; by ſome acrid matter in the blood falling on the heart itſelf; † by inflammations or obſtructions in it or the *pericardium*, and by *polypi*, or oſſified valves; for theſe cauſes either render the heart more irritable than in a natural ſtate, or diſturb the free motion of the blood through the great veſſels adjoining to it.

* Fear or ſurprize ſeems to occaſion a ſudden contraction of the right *ſinus venoſus*, and, perhaps, alſo of the adjoining trunks of the *venæ cavæ*; for I frequently feel, upon any ſurprize, a ſudden contraction about my heart, while the veins in my hands and fingers feel as if they were diſtended with blood.

† I have often ſeen palpitations, which, as far as I could judge, were owing ſolely to an arthritic humor affecting the heart.

XIII. The pulſe often varying in quickneſs, ſtrength, and fulneſs, not only in different patients, but in the ſame at different times.

To account for theſe variations of the pulſe, it will be ſufficient to mention, briefly, the general cauſes of a ſtrong and weak, hard and ſoft, quick and ſlow pulſe.

1. As a ſtrong pulſe is owing to the ventricles of the heart expelling with a conſiderable force that quantity of blood which they can contain, ſo a weak pulſe may proceed from a debility of the ventricles, whence a proper impulſe is not given to that fluid; or it may be owing to a too great irritability, whereby the ventricles contract before they are ſufficiently filled; or to the want of a free circulation of the blood through the lungs, whence it returns in too ſmall a ſtream to the heart.

2. A hard pulſe is owing either to a too great denſity of the blood, or to an obſtruction, or, oftener, a ſpaſmodic contraction, of the vaſcular ſyſtem, particularly the capillary arteries; in which caſe the blood, paſſing with difficulty into the veins, the arteries muſt feel tenſe and hard.*

This pulſe often occurs in pleuriſies, and other inflammatory diſeaſes. It is to be obſerved, however, that in inflammations of ſuch parts as are very ſenſible, and have a remarkable ſympathy with the heart, while the pain produces a kind of ſpaſmodic contraction of the arterial ſyſtem, it often renders the heart ſo irritable, that, though the pulſe feels ſomewhat hard, yet it is very ſmall; becauſe the ventricles contract before they are ſufficiently filled with the returning blood; and this is frequently the caſe in inflammations of the ſtomach, bowels, and *uterus*.† On the other hand, when the lungs or liver are inflamed, the pulſe is generally ſofter and fuller, becauſe theſe parts have but little painful feeling; and therefore the vaſcular ſyſtem is ſeldom affected with any ſpaſm. It is,

* I have known ſome people, whoſe pulſe, in a natural ſtate, was harder than that of moſt others in the greateſt inflammatory diſeaſes. Is it not probable that in ſuch the coats of the arterial ſyſtem were more tenſe, and the paſſage from the arteries into the veins ſtraiter than uſual.

† Phyſiological Eſſays, Edit. ii. p. 66.

is, however, to be obſerved, that an inflammation of the external membrane of the liver, or lungs, is attended with conſiderable pain, and a hard pulſe, as in a pleuriſy.

3. A too ſoft pulſe is owing either to a laxity of the whole veſſels, and particularly of the capillary arteries, or to a thinneſs or watery ſtate of the blood, which paſſes into the veins and ſecretory veſſels ſo eaſily, that it can exert little of its force in dilating the arteries

A ſoft pulſe is more common than a hard one in thoſe patients who are ſubject to nervous or hyſteric complaints; becauſe too thin blood, and a laxity of the vaſcular ſyſtem, are more common in ſuch, than denſe blood, and a too great tenſion or ſpaſmodic contraction of the arteries, which occaſion a hard pulſe.

4. A pulſe quicker than natural muſt be owing to one or more of the following cauſes, viz. an increaſe of the ſtimulating quality of the blood, its quicker return to the heart, or a greater degree of ſenſibility, and conſequently a greater aptitude for motion in the heart.

(a.) The ſtimulating quality of the blood is increaſed by its becoming too denſe or fizy; by external heat; by freſh chyle, ſuch eſpecially as is prepared from animal food, or acrid and heating aliments; and by the mixture of any noxious humours bred in the body, or of malignant or poiſonous effluvia received from the air.

(b.) The blood is made to return in greater quantity to the heart by all kinds of exerciſe, ſudden fear, and other ſtrong paſſions.

(c.) The ſenſibility, and conſequently the irritability, of the heart * is increaſed by various affections of the mind, or whatever increaſes the general ſenſibility of the nervous ſyſtem; by ſympathy with the other parts, eſpecially the ſtomach and inteſtines, when theſe are pained, or affected with a diſagreeable ſenſation; by an arthritic, ſcorbutic,

* See Phyſiological Eſſays, Edit. ii. p. 185, &c. and p. 252, &c. and Edinburgh Phyſical Eſſays, Vol. ii. Art. xx. p. 310, &c. where it is proved, from undoubted experiments and Obſervations, that the irritability of the muſcles of animals depends on their ſenſibility.

ſcorbutic, or ſome other morbid humour thrown upon the heart; and by obſtructions and inflammations in any part of the body, but eſpecially in the lungs, *pericardium*, or in the heart itſelf.

5. A pulſe ſlower than natural muſt be owing either to a diminution of the ſtimulating quality of the blood, its ſlower return to the heart, or a leſs degree of ſenſibility, or aptitude for motion in that organ.

(a.) The ſtimulating quality of the blood is leſſened by external cold; by too weak or too ſpare diet; and by the blood being not of a proper denſity, but poor and watery from a weakneſs of the vaſcular ſyſtem. Hence, after great evacuations, the pulſe not only often becomes low, but very ſlow. I have ſeen, in patients recovering from fevers, or in women ten or twelve days after childbearing, the pulſe fall under fifty ſtrokes in a minute, and riſe afterwards to about ſeventy, its natural ſtandard, when the patients were ſtronger, and their veſſels fuller. In ſuch caſes, beſides the poorneſs of the blood, and the want of a ſufficient quantity of it, a general languor, and debility of the whole body, probably concurred to make the pulſe ſo very ſlow.

(b.) The return of the blood to the heart becomes ſlower when the body is at reſt, eſpecially in a horizontal poſture, and when the mind is not diſturbed by paſſions.

(c.) The ſenſibility and irritability of the heart are leſſened by age, deep ſleep, and every medicine or diſtemper that impairs the general ſenſibility of the brain and nervous ſyſtem, as opium, a lethargy, coma, apoplexy, &c. Further, as the heart is often rendered more irritable by its conſent with the ſtomach and bowels, when theſe parts are diſagreeably affected by wind, the arthritic matter, or other cauſes; ſo its irritability ſeems, in ſome caſes, to be leſſened by its ſympathy with theſe parts, when their nerves are affected in a different manner.* Thus, worms, or viſcid phlegm, in the ſtomach and bowels, or a violent pain of the ſpaſmodic

* "Venæ —— plerumque ſatis ſano corpore, ſi ſtomachus infirmus eſt, ſubeunt et quieſcunt." Celſus de Medicina, Lib. iii. cap. 6.

ſpaſmodic kind affecting them, will ſometimes make the pulſe much ſlower than natural, as well as irregular: and long-continued grief, melancholy, or low ſpirits, by impairing the vigour of the whole nervous as well as vaſcular ſyſtem, may render the pulſe ſlower than in its natural ſtate, unleſs ſome morbid cauſe quickens the motion of the heart.

From what has been ſaid of the cauſes of the quickneſs, ſlowneſs, ſtrength, and fulneſs of the pulſe, it will eaſily appear, why, in nervous, hypochondriac, and hyſteric diſorders, the pulſe is often ſo different, not only in various perſons, but in the ſame perſon at different times. I ſhall, therefore, only add a few inſtances of the effect of thoſe ailments in making the pulſe quicker or ſlower than uſual.

1. A Lady, aged thirty-eight, who had loſt a great deal of blood in child-bed, on the eighteenth day after her delivery, at ſix in the morning, was ſeized with a ſharp pain above the *os pubis*, darting towards the *anus*. This pain ſometimes extended upwards, and then over to the right ſide in the direction of the *colon*. Notwithſtanding her having taken twenty-five drops of laudanum, ſhe complained of a nauſea and inclination to vomit about half an hour paſt ſeven, and before two in the afternoon ſhe vomited ſix or ſeven times. About eleven in the forenoon having got a clyſter with *aſa fœtida*, ſhe had two ſtools, and paſſed a great deal of wind. Her pulſe, which, when ſhe was taken ill, beat ſixty times in a minute, about ſeven in the morning began to grow quicker, and, before two in the afternoon, roſe to one hundred and thirty, but became feebler and ſmaller in proportion to its quickneſs. At this time, as ſcarce any thing would ſtay on her ſtomach, ſhe got a broth clyſter, with about forty drops of laudanum in it; after which ſhe lay quiet for two hours, and her pulſe came down to an hundred and twenty. From four in the afternoon to ten, ſhe took every hour ſome panada, with a little claret and cinnamon, by which her pulſe was reduced to an hundred in a minute, and began to be fuller. After this, as the complaints in her ſtomach and bowels decreaſed,

her pulſe returned to its natural ſtrength and ſlowneſs.

A quick pulſe, as in the above caſe, is carefully to be diſtinguiſhed from a quick pulſe occaſioned by an inflammation, or a common fever. In the former it is ſoft, and neither full, hard, nor contracted; it becomes ſmaller as it increaſes in quickneſs; nor is it commonly attended with any great heat or thirſt; but the ſureſt mark is, that it becomes ſlower upon eating a little fleſh-meat, drinking a glaſs of claret, or uſing caſtor and opium; all which are hurtful when the pulſe is quickened by inflammation, and, for the moſt part, in fevers, 'till their decline.

However, it may be proper to obſerve, that a quick pulſe, occaſioned by pain from ſpaſms or wind in the ſtomach or bowels, may, eſpecially in ſuch as are plethoric, upon continuing long, change its nature, and, from being merely nervous or ſpaſmodic, become, at laſt, inflammatory; that is the conſequence of an inflammation produced in the part affected with pain.

(2.) An unmarried Lady, between thirty and forty, was ſeized with a ſevere pain in her lower belly, and had been ill of it near two days before I was called. I found her pulſe at ſeventy ſtrokes in a minute, and of a natural ſoftneſs. I ordered her, at bed-time, twenty-five drops of laudanum with as many grains of rhubarb. She was eaſy through the night; but next morning, when the effects of the laudanum were over, and the rhubarb had begun to operate, her pains returned with greater violence, and ſhe had two ſtools. About noon the pains increaſed, and then her pulſe, which in the morning had been juſt as the day before, became ſmaller and ſlower, ſo that at two in the afternoon it was not above fifty-ſix in a minute. At that time ſhe complained of a lowneſs, and a coldneſs through her whole body. I directed her to take ſome panada with wine and nutmeg, and ordered a clyſter with fifty drops of laudanum in it. This ſoon removed the pain, and reſtored the pulſe to its natural fulneſs and quickneſs; the coldneſs went off, and her ſkin grew rather warmer than uſual.

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In theſe two caſes, we ſee, from the ſame general cauſe, viz. a ſharp pain in the bowels, oppoſite effects; a quick pulſe in the firſt, and a ſlow one in the ſecond; and by the ſame medicine and diet, viz. laudanum, panada and wine, we find the pulſe made ſlower and fuller in the one, and quicker and fuller in the other. What might be the reaſon of ſuch a difference is hard to ſay. Was it owing to the different kind of ſtimulie affecting the nerves of the bowels, or rather to the different conſtitution of theſe two patients?

An acute pain in any part generally brings on an inflammation, and quickens the pulſe; but in people ſubject to nervous or hyſteric complaints, a violent pain in one ſide of the head, in the ſtomach or inteſtines, often renders the pulſe ſlower and more languid.

When pain produces inflammation, it not only excites the veſſels of the part into ſtronger and more frequent alternate contractions than uſual, but the heart and whole arterial ſyſtem are by ſympathy rendered more irritable. On the contrary, when an irritation or pain in any part occaſions a ſpaſm or continued contraction of its veſſels, no inflammation is produced in it; and the heart and vaſcular ſyſtem, being, by ſympathy, alſo commonly affected with ſome degree of ſpaſm, perform their alternate motions with leſs freedom and readineſs; whence the pulſe becomes ſlow, ſmall, and ſometimes irregular, and the whole body feels cold.

Does then the difference between pain, with or without inflammation, conſiſt in the veſſels of the part affected being agitated in the former caſe with an uncommon alternate contraction, and in the latter with a continued ſpaſm?

When, in delicate people, we meet with pain producing a quick but ſoft and feeble pulſe, and without any conſiderable increaſe of the heat of the body, we may ſuppoſe either, that although the veſſels of the pained part be affected with a ſpaſm, yet the heart does not ſuffer in this way, but is only rendered more irritable by the pain; or that, notwithſtanding thoſe veſſels may be agitated with a greater alternate motion than uſual, yet, on ac-

count of the weak ſtate of the blood, or laxity of the ſolids, ſcarce any degree of inflammation is produced.

(3.) A Gentleman, betwixt thirty and forty, who, for ſeveral years, had been much troubled with flatulent complaints, was, after an error in diet, ſeized with a pain about the middle of the *abdomen*, and ſtriking into his back, which ſoon became ſo intolerable, that, after having vomited up ſeveral doſes of laudanum, and got clyſters to no purpoſe, he was obliged to have recourſe to the *ſemicupium* for relief. His pulſe, which in a natural ſtate beat about ſixty-four times in a minute, was, by the violence of the pain, reduced to forty-four ſtrokes in that time, and was, beſides, ſmall, feeble, and often irregular. The warm bath not only relieved the pain in the bowels almoſt inſtantaneouſly, but alſo rendered his pulſe full, ſoft, and regular, though ſomewhat quicker than it uſed to be when he was in health. Some time after he came out of the warm bath the pains returned with conſiderable violence, and his pulſe alſo became ſlow, ſmall, and irregular: but, upon having recourſe to it again, he was immediately made eaſy, and the pulſe returned nearly to its natural ſtate.

(4.) A youth, of fifteen, of a ſtrong make, and ſeemingly healthy conſtitution, had for ſome time been ſubject, once in ſix or eight weeks, to a violent pain in his belly, with an apprehenſion of immediate danger. During the time he was moſt troubled with theſe colic pains, his pulſe commonly beat only fifty times in a minute; but as ſoon as, by the uſe of laxatives, and aromatic bitters, he had got free of this complaint, it returned to its natural quickneſs, which was about eighty ſtrokes in that time.

(5.) Another lad, of fourteen, of a thin and delicate habit, and of quick and lively feelings, whoſe pulſe, in health, uſed to be between ſeventy and eighty in a minute, about the beginning of June, 1757, was obſerved to be low-ſpirited and thoughtful, to loſe his appetite, and have a bad digeſtion. Although he fell away daily, yet he had no night-ſweats, no extraordinary diſcharge

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of urine, and was coſtive. His tongue was clean, his ſkin cooler than natural, and, when in bed, his pulſe beat only forty-three times in a minute; nay, about the middle of July, when reduced almoſt to ſkin and bone, his pulſe, in a horizontal poſture, did not exceed thirty-nine. About the end of Auguſt his diſtemper took a ſudden turn; he then began to have ſuch a craving for food, with a quick digeſtion, that he grew faint, unleſs he eat almoſt every two hours; he had two or three ſtools a day; his pulſe beat from ninety-ſix to one hundred and ten; his ſkin was warm; and his veins, which ſcarce could be ſeen before, became now turgid with blood. The ſtrong apprehenſions he formerly had of dying left him; he was ſure he ſhould recover; and accordingly, by the middle of October, he was plumper than ever he had been before. Towards the end of November his appetite became moderate, and his pulſe gradually returned to its natural ſtate.

It was obſervable, that the pulſe was ſloweſt towards the evening, and generally of a proper ſtrength and fulneſs.

Since, with all my attention, I neither could diſcover the cauſe of this patient's firſt complaints, nor of the ſudden and contrary turn which they took afterwards, I ſhall not pretend to reaſon on his caſe; but I thought it deſerved to be mentioned, as a good inſtance of a nervous atrophy, and of the effect of ſuch diſorders in making the pulſe much ſlower than ever it has been obſerved in a natural ſtate.

XIV. Periodical headachs.

Theſe either affect almoſt the whole head, eſpecially the fore-part, or only one ſide of it; ſometimes no more than one of the eyes, with part of the fore-head and temple of the ſame ſide. They generally return once a-day, nearly at the ſame hour, and as regularly as the fit of a quotidian ague. In ſome caſes they are attended with a viſible ſwelling not only of the eye affected, but alſo of that ſide of the fore-head. Sometimes the eye ſeems to ſink within its orbit: at other times, nothing can be obſerved but that the eyes want their uſual

uſual luſtre, and look as if the perſon had watched long, or drank too much.

The moſt common cauſes of periodic headachs in thoſe who are ſubject to nervous diſorders, are,

1. Sympathy with the ſtomach, by which the nerves chiefly of the fore-part of the head ſuffer; and the ſmall veſſels to which they are diſtributed, are either affected with a continued ſpaſm, or agitated with uncommon alternate contractions and relaxations; in conſequence of which the patient feels a pain, ſtraitneſs, fulneſs and pulſation about the fore-head and temples.

2. A viſcid or acrid humour obſtructing or irritating the ſmall veſſels of the *pericranium*, muſcles of the head, or *dura mater*, and conſequently affecting the nerves of thoſe parts with a painful ſenſation. This may be often no other than a rheumatic, gouty, or ſcorbutic humour falling chiefly on the head.

3. A particular weakneſs, delicacy and ſenſibility of the nerves of thoſe parts of the head; whence, from ſudden changes of weather, errors in diet, fatigue of body, ſtrong paſſions, intenſe application of mind, ſuppreſſion of ordinary evacuations, or even from ſlighter cauſes, theſe nerves being eaſily ſuſceptible of pain, the ſmall veſſels to which they are diſtributed become affected either with violent alternate contractions and relaxations, or a fixed ſpaſm. This ſeems to be confirmed by obſerving, that women liable to theſe periodic head-achs ſuffer moſt ſeverely about the menſtrual periods; at which time it is well known, that iſſues and other ſores become generally more painful and inflamed, as being more irritable and eaſily affected than the other parts. In any general indiſpoſition, thoſe parts which are leaſt firm and ſound ſuffer moſt.

How theſe head-achs ſhould return every day, or ſometimes once in two days, is a hard queſtion. We know that intermitting fevers obſerve very regular periods: and I have ſeen epileptic patients have fits once or twice every day, or once in two days, almoſt preciſely at the ſame hour. Hyſteric convulſions,

convulſions, and other diſeaſes, have alſo been obſerved ſometimes to be regularly periodical.

Does the morbid matter, in ſuch caſes, after being diſlodged by the violence of the paroxyſm, require a certain time before it is again collected or depoſited on the parts affected in ſuch a quantity as is ſufficient to produce a new fit? Such is the obſcurity of nature in many of her operations, that we meet almoſt every where with appearances of which we are unable to give any ſatisfactory explanation. However, both in natural philoſophy and medicine, it is often ſufficient, at leaſt for the purpoſes of life, to know the certainty of ſome particular phænomena, although we cannot account for them. *Sufficit ſi quid fiat intelligamus, etiamſi quomodo quidque fiat ignoremus.* Cicero.

XV. A giddineſs.

This may proceed from ſome of the cauſes which have been mentioned above, as producing periodic headachs, eſpecially when they affect the anterior part of the brain or *dura mater*.

Many people, of a delicate, nervous, and vaſcular ſyſtem, after ſtooping, and ſuddenly raiſing their head, are apt to be ſeized with a vertigo, which is ſometimes accompanied with a faintneſs. In this caſe the veſſels of the brain, being too weak, ſeem to yield more than uſual to the weight of the blood when the head is inclined; and afterwards, when it is ſuddenly raiſed, and the blood at once deſcends towards the heart, thoſe veſſels do not contract faſt enough, ſo as to accommodate themſelves to the quantity of blood remaining in them: at the ſame time the brain, on account of its too great ſenſibility, is more affected than uſual by any ſudden change in the motion of the fluids through its veſſels.

It ſeems to be owing to an uncommon delicacy and ſenſibility of the *retina*, and, indeed, of the whole nervous ſyſtem, that ſome people become ſo giddy as to be in hazard of falling, if they look ſtedfaſtly into a glaſs that is kept conſtantly moving before them, or at any object that is turned ſwiftly round.

XVI. A

XVI. A dimneſs of ſight, without any viſible fault in the eyes. This ſometimes proceeds from the ſtomach;* in which caſe the patients are only affected with it at particular times, when that organ is out of order, and, by ſympathy, affects the *retina*, optic nerves, or that part of the brain from which they take their riſe. I know a Lady much troubled with a ſourneſs in her ſtomach, who, when this increaſes to a greater degree than uſual, ſees every thing indiſtinctly, as if a thick ſmoak or miſt were before her eyes; nor does ſhe get quite free of this, till, by chalk, or crabs eyes, lime-water, *magneſia alba*, vomits and bitters, ſhe has deſtroyed, in a great meaſure, the acidity in her ſtomach.

I had ſome years ſince a patient of a very delicate nervous ſyſtem, whoſe eyes, when his ſtomach was much troubled with acidity and flatulence, were ſometimes rendered ſo very ſenſible, that looking ſtedfaſtly on a crimſon colour, or coming ſuddenly from a bright light into a dark room, or from this laſt into the ſun ſhine, would occaſion a giddineſs and pain above his eyes, together with a dimneſs of ſight, and a bilious vomiting.

XVII. Low ſpirits, melancholy, and a *mania*.

1. In caſes of an irregular gout, when the arthritic matter falls upon the ſtomach and bowels, it frequently produces a nauſea, flatulence, low ſpirits, and other uneaſy ſymptoms. In ſuch, wind, pent up in the ſtomach or inteſtines, occaſions a diſagreeable, though not painful, ſenſation, attended with a faintneſs, languor, and depreſſion of mind. But at other times, when this arthritic matter has left theſe parts, we may obſerve, that a greater degree of flatulence, occaſioned by errors in diet, will have no ſuch effect. Low ſpirits, therefore, in hypochondriac and hyſteric caſes, may be frequently owing to ſome morbid matter in the blood, flatulent and improper aliments, or other cauſes affecting the ſtomach and bowels with a particular ſenſation, which, though not painful, nevertheleſs is attended with great dejection of mind.

2. Low

* See Lommii Obſervat. Med. lib. ii.

2. Low ſpirits may be occaſioned by obſtructions in the hypochondriac *viſcera*, viz. the ſtomach, liver, &c. But as obſtructions often happen in thoſe parts without any remarkable dejection of mind, whenever they are attended with this ſymptom, it muſt be owing principally to the nature of the obſtructing matter, or rather to a particular morbid ſtate of the nerves of thoſe *viſcera*.

3. A *mania*, and the higher degrees of melancholy, may proceed from ſome noxious matter in the blood, carried from the *viſcera* of the lower belly, or other parts, where it was chiefly lodged, to the brain. Of this I ſhall give an inſtance or two that ſometime ago occurred in my practice.

(a.) A Gentlewoman, upwards of thirty, who had been long troubled with wind in her ſtomach and bowels, indigeſtion, faintneſs, languor, palpitations, and ſudden fits of terror, with a pulſe generally quick, but variable, having been for ſome little time much freer of theſe complaints than uſual, on the 24th of Auguſt became all at once deprived of her reaſon. During the nights, and in the mornings, ſhe talked incoherently, but throughout the day ſhe had ſome intervals of reaſon. While ſhe continued in this way, her pulſe was better than uſual, and ſhe was quite free of her ordinary nervous ſymptoms. She had no ſharp pain in her head, but complained of an uneaſy ſenſation and great confuſion in it. Being coſtive, ſhe took ſome aloetic pills; but could not be prevailed on to uſe any other medicine. However, in a few days ſhe grew much better, and by the fifth of September entirely recovered the uſe of her reaſon; but relapſed, in ſome degree, into her old complaints of flatulence, indigeſtion, and palpitation.

(b.) A Gentleman, aged between ſixty and ſeventy, after having been for ſome years free of the gout, began to have conſtant complaints in his ſtomach and bowels, and at laſt was ſeized, all at once, with a delirium, which, by the application of ſinapiſms to his ſoles, went off in a few hours. In two days the delirium returned, when, by bliſtering his legs, a pain came into one of his great toes,

toes, upon which he recovered his ſenſes entirely. In this manner the gouty humour moved backwards and forwards, between his head and feet, for near two months, 'till at laſt, being more fixed in the brain, it brought on a continued and violent madneſs, which no remedy could leſſen. In this ſtate he obſtinately refuſed almoſt every kind of food, and died in a few weeks.

4. Sudden terror, exceſſive grief, or other violent paſſions of the mind, in people whoſe nervous ſyſtem is very delicate, may affect the brain ſo as to produce a continued mania or melancholy. But in what manner the paſſions, or the morbid matter of nervous diſeaſes, change the ſtate of the brain, or common ſenſorium, and occaſions ſuch diſorders, is entirely unknown.

XVIII. The *incubus*, or night-mare.

In this diſeaſe the patient, in time of ſleep, imagines he feels an uncommon oppreſſion or weight about his breaſt and ſtomach, which he can by no effort ſhake off; but groans, and ſometimes cries out, though oftener he attempts to ſpeak in vain. He imagines himſelf to be ſtruggling with ſtrong men or devils, to be in a houſe on fire, or in danger of being drowned in the ſea or ſome river. In attempting to run away from danger, or climb up a hill, he fancies he falls back as much after every ſtep as he had advanced before. The terror excited by the frightful ideas attending the night-mare, ſometimes occaſions a tingling of the ears, and a tremor over the whole body. This diſorder has been commonly ſuppoſed to proceed from a ſtagnation of the blood in the *ſinuſes* of the brain, or in the veſſels of the lungs, or from too great a quantity of blood being ſent to the head.

The horizontal poſture in time of ſleep, and the preſſure of the ſtomach upon the *aorta* in a ſupine ſituation, have been thought ſufficient to occaſion a more than uſual diſtenſion of the *ſinuſes* and other veſſels of the brain, and the weight of the heart preſſing on the left auricle and large trunks of the pulmonary veins, may, it is ſaid, prevent the eaſy return of the blood from the lungs, and ſo produce an oppreſſion, and ſenſe of weight and ſuffocation,

in

in the breaſt.* But, not to enter into a particular examination of theſe opinions, which are far from being ſatisfactory, I ſhall only obſerve, that, if they were true, ſome degree of the night-mare ought to happen to every perſon that lies on his back, eſpecially after eating a full meal. Further, if a horizontal ſituation could overcharge the brain with blood ſo as to occaſion the *incubus*, how comes it that people who remain for ſome time in an inverted poſture do not feel this diſeaſe beginning to attack them? And why does a ſlighter degree of the night-mare ſometimes ſeize people who ſleep in an erect ſituation in a chair?† As the weight of the ſtomach, even when filled with food, can have ſcarce any effect upon the motion of the blood in the *aorta*, ſo the preſſure of the heart is by much too ſmall to be able, ſenſibly, to retard the motion of that fluid in the pulmonary veins; otherways people, exhauſted by tedious diſeaſes, who generally lie on their back, would be conſtantly affected with the *incubus*.

We know that certain medicines, or poiſons, worms, and even corrupted bile, or other humours, by diſagreeably affecting the nerves of the ſtomach, produce an oppreſſion about the *præcordia*, wild imaginations, frightful dreams, raving and inſenſibility: and there is no doubt that low ſpirits, melancholy, and diſturbed ſleep, often proceed from a diſordered ſtate of the ſtomach. Is it not probable that the night-mare has its ſeat chiefly in the ſame organ? If epileptic fits often proceed from the ſtomach, why may not the *incubus*, which has been conſidered by *Galen* as a nocturnal or ſlighter epilepſy, have its ſeat in that part? People troubled with nervous and hypochondriac ailments, and who have delicate or flatulent ſtomachs, are more ſubject than others to this diſorder. A heavy or flatulent ſupper greatly increaſes the night-mare in thoſe who are prediſpoſed to it. The ſympathy of the ſtomach with the head,

* See *Dr. Bond's* Eſſay on the Incubus, Chapter ii.

† Something of this kind I have experienced myſelf, not only after eating, but alſo before ſupper, when my ſtomach was out of order, and troubled with wind.

head, heart, lungs, and diaphragm, is ſo remarkable, that there can be no difficulty in ſuppoſing the ſeveral ſymptoms of the *incubus* to ariſe from a diſagreeable affection of the nerves of that organ.

When my ſtomach has been out of order, and troubled with wind, I have often perceived a ſlighter *incubus* ſeize me before I was fully aſleep, the uneaſineſs of which would make me get up ſuddenly. As ſoon as I was quite awake, I was generally ſenſible I had been affected with a weight and uneaſineſs about my ſtomach, attended with a faintneſs, and ſome ſort of oppreſſion or ſuffocation about my breaſt, as if the circulation in my lungs had been a great deal obſtructed. While I ſat up in bed, or lay awake, I felt nothing of theſe ſymptoms, except, perhaps, ſome degree of uneaſineſs about my ſtomach; but when I was juſt about to fall aſleep, they began to return again. In this way I have often gone on for two hours or more in the beginning of the night. At laſt I found that a dram of brandy, after the firſt attack, kept me eaſy the whole night. This remedy has never failed to ſucceed with me the few times I have had occaſion to try it; for of late, ſince my ſtomach has been pretty ſound, I have ſeldom felt in my ſleep any of thoſe uneaſy ſenſations which reſemble the night-mare.

From what has been ſaid, it ſeems probable, that in the *incubus* the ſtomach is commonly the part primarily affected: I ſay *commonly*, becauſe ſymptoms like thoſe of the night-mare may ſometimes ariſe without any fault in the ſtomach. Thus I have known aſthmatic patients, whoſe lungs were much obſtructed, who, in time of ſleep, were greatly oppreſſed with a ſenſe of ſuffocation, and diſturbed with uneaſy dreams: And *Dr. Lower* mentions a patient, who, though he could ſleep pretty eaſily with his head inclined forward, yet in the oppoſite ſituation he was always ſoon awaked with horrid dreams and tremors; the cauſe of which appeared, after his death, to have been a great quantity of water in the ventricles of the brain.

The incubus is moſt apt to ſeize perſons when lying on their back; becauſe in this poſition, on account

account of the ſtomach and other abdominal viſcera preſſing more upon the diaphragm, we cannot inſpire with the ſame eaſe as when we ſit up, or lie on one ſide. Further, in that ſituation of the body the food ſeems to lie heavier on the ſtomach, and wind in it does not eſcape ſo readily by the *æſophagus* or *pylorus* as in an erect ſtate, when theſe paſſages are higher than the other parts of the ſtomach.*

We are only affected with the night-mare in time of ſleep, becauſe the ſtrange ideas excited in the mind, in conſequence of the diſordered ſtate of the ſtomach, are not then corrected by the external ſenſes as when we are awake ;† nor do we, by an increaſed reſpiration, or other motions of the body, endeavour to ſhake off any beginning uneaſy ſenſation about the ſtomach or breaſt. The *incubus* generally ſeizes one in his firſt ſleep, but ſeldom towards the morning, becauſe at this time the ſtomach is much leſs loaded with food than in the beginning of the night.

If the night-mare were owing to a ſtagnation of the blood in the lungs from the weight of the heart, or in the *ſinuſes*, and other veſſels of the brain, from the horizontal poſture of the body, it would become greater the longer it continued, and would ſcarce ever go off ſpontaneouſly: but we know that this diſeaſe, after affecting people for ſome time, often gradually ceaſes, and is ſucceeded by

* When I have been liable to be attacked with a ſenſation of faintneſs at my ſtomach, I have found it always worſt when I lay on my back in the night-time, and become better when I got out of bed, or ſat up in it. And a middle aged woman, who, in the morning, was frequently ſubject to faintings, found that ſhe could prevent them by getting up as ſoon as ſhe perceived them about to come on. Further, when the miliary eruption does not come out properly in women after child-bearing, they are often affected with a ſenſe of faintneſs, and with an oppreſſion in their breathing, which ſymptoms are commonly worſe when they lie on their back than when they ſit up in bed.

† I had, ſome years ſince, a patient affected with an *eryſipelas* in his face, who, when awake, was free of any confuſion in his ideas; but no ſooner did he ſhut his eyes, although not a-ſleep, than his imagination began to be greatly diſturbed. He thought himſelf carried ſwiftly through the air to diſtant regions; and ſometimes imagined his head, arms, and legs, to be ſeparated from his body, and to fly off different ways.

by refreſhing ſleep; for as ſoon as the load of meat, or wind, or other cauſe diſagreeably affecting the nerves of the ſtomach, is removed, the oppreſſion and weight on the breaſt, wild imaginations, frightful dreams, &c. will vaniſh; as all theſe proceed originally from the diſorder of the ſtomach. It is worth while, however, to obſerve, that, as neither wind, tough phlegm, nor crudities in the ſtomach, will occaſion the ſymptoms of the hypochondriac diſeaſe, unleſs the nerves of that organ be indiſpoſed, ſo neither a horizontal poſture, ſleep, nor heavy ſuppers, will produce the night-mare, at leaſt in any conſiderable degree, unleſs the perſon be prediſpoſed to it from the particular condition of the nerves of his ſtomach. And here I ſhall juſt remark, that a *plethora*, as well as other cauſes, may ſo affect the nerves of the ſtomach as to give riſe to the *incubus*. Hence a ſuppreſſion of the menies in women ſometimes occaſions this as well as other diſorders of that organ. It muſt, however, be acknowledged, that a plethora, by rendering the circulation through the lungs leſs free, may help to produce, or at leaſt increaſe, the oppreſſion of the breaſt in the night-mare: and hence it is, perhaps, that young men who abound in blood are often troubled with this diſorder.

It has been before obſerved, that violent or long-continued complaints of the nervous, hypochondriac, or hyſteric kind, ſometimes terminate in an apoplexy, palſy, jaundice, dropſy, tympany, or phthiſis. Now, from what has been ſaid it will not appear ſtrange, that the brain and nerves may, by the continuance or frequent repetition of ſuch ſhocks, be ſo weakened or diſordered, that not only fatuity, a deep melancholy, or mania, but alſo a palſy or an apoplexy may enſue. Further, as nervous diſorders are often owing to ſome morbid matter in the blood, when this leaves the ſtomach and inteſtines, or other parts where it uſed chiefly to fix, and is thrown, in a great meaſure, on the brain or origin of the nerves, it is eaſy to conceive how a palſy or apoplexy may be the conſequence.

Again,

Again, ſince hypochondriac and hyſteric diſorders are ſometimes occaſioned by obſtructions in the abdominal *viſcera*, and often give riſe to them, and as, from a bad digeſtion, the chyle muſt be ill prepared, it will appear why thoſe diſeaſes do ſometimes terminate in the jaundice or dropſy.

It has been obſerved alſo, that patients much afflicted with thoſe ailments have at length fallen into a tympanites, which may be thus accounted for. I have already ſhewn, that the great predispoſing cauſe of nervous, hypochondriac, and hyſteric diſorders, is a particular weakneſs and delicacy, or uncommon ſenſibility, of the ſtomach and bowels; whence, from ſlight cauſes, they will be often affected with ſpaſms. Now, when the ſpaſmodic contractions of the alimentary canal do not continue long, the wind that was pent up is allowed to move from one place to another, and is at laſt expelled either upwards or downwards: but when the ſtomach and inteſtines, by reaſon of their weakneſs, and ſmall, but continued ſpaſms, have been inflated by ſlow degrees, the irritation occaſioned by this diſtenſion increaſes the ſpaſm ſo much, that the air, continually generated by the aliment in time of digeſtion, is moſtly retained, or at leaſt is not diſcharged in ſuch a quantity as to relieve the patient, or ſenſibly to diminiſh the ſwelling of the belly.

Laſtly, a *phthiſis pulmonalis* may alſo be the conſequence of nervous diſorders, when the morbid matter producing them falls chiefly upon the lungs; or when the vitiated chyle or blood forms obſtructions in that organ.

And here it may be worth obſerving, that while the morbid matter producing the hypochondriac diſeaſe chiefly affects the ſtomach and bowels, the patients are always apprehenſive, and often greatly alarmed, from any trifling increaſe or variation of their complaints, as if they were in immediate danger of dying; but after this matter has left its old ſeat, and, by fixing on the lungs, has brought on an incurable phthiſis, they generally ceaſe to be apprehenſive or fearful, and cheriſh the hopes of life to the laſt. The reaſon is, that when the lungs

lungs are affected there are no ſuch uneaſy feelings excited in the body, nor fear and deſpondency in the mind, as when the ſtomach and inteſtines ſuffer, which are not only poſſeſſed of a much more delicate ſenſibility than the lungs, but have alſo a more remarkable ſympathy with the brain and whole nervous ſyſtem.

CHAP. VII.

OF THE CURE OF NERVOUS, HYPOCHONDRIAC, AND HYSTERIC DISORDERS.

ALTHOUGH it may be ſaid, in general, that theſe diſorders are more troubleſome and laſting than dangerous, yet, as they proceed from various cauſes, the danger, as well as the cure, muſt be often very different. Thus, when they are owing to an original delicacy of the whole nerves, or a debility of thoſe belonging to the ſtomach and inteſtines, they ſeldom prove quickly fatal, but ſcarce ever admit of a thorough cure. When they are occaſioned by an arthritic matter in the blood, their cure will be almoſt as difficult as that of a chronic rheumatiſm, or of the gout itſelf; and in ſuch a caſe, perhaps, the beſt that can happen, is for the morbid matter to throw itſelf off by regular fits in the extremities. When they ariſe from too great or too ſmall a flux of the menſes, if the *uterus* can be reſtored to a ſound ſtate, the nervous ſymptoms will vaniſh of courſe. When great and confirmed ſcirrhous obſtructions in the abdominal *viſcera* are the cauſes of hypochondriac or hyſteric complaints, they are not only incurable, but likely to prove ſoon fatal. When they proceed from worms, phlegm in the ſtomach and bowels, or violent affections of the mind, they may be often, and ſometimes ſpeedily, cured. Laſtly, when intemperance in eating or drinking has brought on nervous ailments, they may be almoſt

almoſt always leſſened, and ſometimes cured, by a proper diet, moderate exerciſe, and a few medicines.

But, however troubleſome and obſtinate nervous diſorders often may be, they have ſome advantages attending them; for the weak ſtate of the blood and vaſcular ſyſtem, in many of theſe caſes, renders ſuch patients much leſs ſubject to inflammatory diſeaſes than thoſe of a ſtronger conſtitution.

From the account I have given of nervous, hypochondriac, or hyſteric diſorders, it will appear, as has been already obſerved, that their cure, far from being the ſame, muſt differ according to the various cauſes from which they proceed; and that the numerous warm, aromatic, ſtimulating, and fœtid medicines, which have been called nervous, or anti-hyſteric, however proper they may be in ſome caſes, are, nevertheleſs, hurtful in others.

In treating, therefore, of the cure of thoſe diſeaſes, I ſhall not attempt to lay down any general method, to anſwer, in all caſes or circumſtances, even for the ſame ſymptoms, but ſhall endeavour to point out that particular treatment which ſeems beſt ſuited to the caſe, according to the various cauſes from which it may ariſe.

But, before I proceed, it will be proper to obſerve, that, as it is generally in the power of medicine to relieve, it is frequently beyond the art to eradicate the diſorders we now treat of; and therefore it may be often of uſe to intimate this to our patients, eſpecially to ſuch as have fortitude enough to bear thoſe evils, which can neither be wholly prevented, nor fully cured. It is further neceſſary to acquaint every patient, that, without a long perſeverance in a courſe of medicines, diet, and exerciſe, no great or laſting benefit can be expected. To this purpoſe is the following paſſage of *Montanus*, which equally deſerves the attention of ſuch patients as are affected with nervous ailments, and of the phyſicians who undertake their cure: "*In curatione hujus morbi (ſciz. hypochon-*
"*driaci) non licet præfiuire tempus menſis unius, aut*
"*anni, ſicut in aliis contingat, ſed oportet in toto vitæ*

"*ſuæ tempore curationi operam dare*; *interdum cura-*
"*tioni, interdum præſervationi, attendendo.*" *

The general intentions in the cure of nervous diſorders may be reduced to the two following, viz.

I. To leſſen or remove thoſe prediſpoſing cauſes in the body which render it peculiarly liable to nervous ailments.

II. To remove or correct the occaſional cauſes which, eſpecially in ſuch as are prediſpoſed, produce the numerous train of nervous, hypochondriac, or hyſteric ſymptoms mentioned in the preceding part of this work.

I. The great prediſpoſing cauſe of nervous diſorders is, as I have ſhewn, a too great delicacy or uncommon ſenſibility of the nerves in general, or of thoſe of the ſtomach and inteſtines, or other organs, in particular. If this fault in the conſtitution could be effectually cured, we ſhould always have it in our power to leſſen the violence of nervous ſymptoms from whatever cauſe they might ariſe, and to prevent moſt of thoſe which proceed from ſudden impreſſions made on the mind. But when the fault in the nervous ſyſtem, alimentary canal, or other parts, is original, i. e. natural to the conſtitution, and not the conſequence of ſome diſeaſe or irregularity in living, it does not admit of a perfect cure: the utmoſt that can be done is to leſſen it.

The beſt remedies to anſwer the firſt intention of cure, are either ſuch as not only ſtrengthen the ſtomach and bowels, but the whole body; or thoſe which, by their peculiar action on the extremities of thoſe nerves to which they are applied, leſſen, for a time, the too great ſenſibility of the whole ſyſtem.

1. The remedies which have been found by experience to communicate greater ſtrength to the body are,

(*a.*) *Bitters.* Of theſe I moſt commonly uſe the *radix gentianæ*, *ſummitates centaurii minoris*, and *cortices aurantiorum*: the two former, as being leſs nauſeous and heating than many of the other bitters; and the laſt, partly on account of its agreeable

* Conſil. 230.

able flavour. Theſe bitters may be put into any of the ſtronger white wines; but if the patient be troubled with acidity in the firſt paſſages, they ought to be infuſed in brandy or boiling water. The watery infuſion will be rendered more agreeable to many ſtomachs, by adding to each Engliſh pint of it three ounces of the *aqua cinnamomi fortis*, or *aqua aromatica* of our Diſpenſatory.*

The ſtrength as well as the doſe of theſe bitters muſt be adapted to the conſtitution and circumſtances of the patient. If they heat too much, they muſt be weakened, or taken along with ſome drops of the elixir of vitriol.† When bitters lie heavy on the ſtomach, and leſſen inſtead of mending the appetite, they ought to be omitted, and the cure muſt be attempted by other remedies.

(b.) The *bark*. This is more ſtrengthening and leſs heating than any of the bitters. It may be given either in ſubſtance or decoction, or infuſed in cold or in boiling water, in lime-water, wine, brandy or rum.

The bark in ſubſtance frequently diſagrees with delicate ſtomachs, and occaſions ſickneſs, gripes, and ſometimes a looſeneſs. An infuſion or decoction of it in water, eſpecially if ſome grateful aromatic, ſuch as cinnamon or nutmeg, be added, is leſs apt to produce theſe effects; but when infuſed in brandy, with ſome bitters or aromatics, it will agree well with moſt people. The bark in ſubſtance often ſits lighter on the ſtomach if a glaſs of red port be taken after every doſe of it; and the gripes and purging, which it occaſions in ſome, may be certainly prevented, by adding, for a few days, the *confectio Japonica* to it; for after the ſtomach and bowels have been accuſtomed to the uſe of the bark, it generally occaſions either much leſs diſturbance, or none at all.

For ſeveral years paſt I have frequently joined the bark and bitters in the following form:

* The officinal compoſitions mentioned in theſe obſervations are always underſtood to be thoſe of the Edinburgh Diſpenſatory, unleſs the contrary is expreſſed.

† Mead Monita Medica, p. 109.

R. Cort. Peruvian. Pulv. unc. iv.
Rad. Gentian.
Cort. Aurant. ana unc. i. ſs. Miſce.
Infunde in ſpir. vin. Gall. lib. iv. in balneo arenæ per dies vi. et cola.

Of this tincture I generally give one table ſpoonful, with four or five ſpoonfuls of water, every morning an hour and a half before breakfaſt, and between ſeven and eight in the evening. I ſometimes add to each pound of this tincture an ounce or more of the *ſp. lavend. comp.* which improves its taſte, and makes it ſit better on ſome ſtomachs.

I have myſelf taken the above tincture in the morning for eight months together, and with remarkable advantage. For three or four years before, I had been much troubled with wind in my ſtomach, a giddineſs, and ſometimes a faintneſs. I obſerved in the morning, ſoon after taking this medicine, a grateful ſenſation in my ſtomach, accompanied with better ſpirits than I had at any time through the day, or than I ever found from drinking wine, even when I uſed it freely. I have ordered this tincture to many patients, who have taken it for two or three months running, and, after intermitting it for ſome time, have begun again. Moſt of them have found benefit, and thoſe moſt who uſed it longeſt. The caſes were chiefly weak and windy ſtomachs, with a general delicacy or debility of the nervous ſyſtem.*

When

* A married Lady, aged forty, of a thin habit and delicate nerves, had been complaining for ſome years of a general weakneſs and feebleneſs through her whole body, eſpecially in her limbs, with a pain ſometimes in her ſtomach and belly, which ſhe attributed to wind. I preſcribed for her the tincture of the bark, &c. which ſhe took once a-day for near two years, intermitting now and then a week or ten days. It had a moſt ſenſible effect in ſtrengthening her, and never failed to raiſe her ſpirits. When, after intermitting this medicine for a longer time than uſual, her old complaints have begun to return in a leſs degree, a few doſes of it have almoſt always put her to rights again. Another married Lady, aged between thirty and forty, of a delicate nervous ſyſtem, and affected with wind in her ſtomach, giddineſs, flying pains through her body, frequent fits of looſeneſs in a morning, feebleneſs, and low ſpirits, was, by the uſe of the ſame tincture for near two years, (intermitting it now and then a month or more at a time,) cured, in a great meaſure, of all her complaints, except that ſhe continued ſometimes to be troubled with the pains, and ſomething of the low ſpirits, though in a much leſs degree than formerly.

When the ſtomach and bowels do not diſagree with acids, twenty or thirty drops of the elixir of vitriol may ſometimes be taken with advantage in each doſe of the tincture. This elixir, taken twice a-day, in this or a larger doſe, in ſpring water alone, has often good effects in ſtrengthening the ſtomach, and reſtoring a decayed appetite; and is generally an excellent cooler when the ſtomach complaints are attended with any degree of febrile heat, a white tongue, and a thirſt.

Although the bark is preferable as a ſtrengthener to any of the bitters, yet it does not wholly ſuperſede their uſe. The bark alone will not ſit ſo well on many ſtomachs as when it is joined with an agreeable bitter; and I think I have found more benefit myſelf from the above tincture than from the bark alone, either in ſubſtance or decoction. With regard to the ſafety of taking, for a long time, the bark, againſt which many have had great prejudices, I can ſay, that I do not recollect its proving hurtful in any caſe in which I have ordered it, unleſs where it happened to diſagree with the patient's ſtomach. About fourteen years ſince I ſwallowed, in ſixteen days, near four ounces of it in ſubſtance, when I laboured under a catarrhous cough, without feeling any bad effects from its aſtringent quality. In a tertian intermittent, attended with a cough and ſpitting, after the uſe of vomits and ſome pectorals, I have preſcribed the bark in the uſual quantity, without the breaſt being any ways hurt by it. I have had repeated experience of its virtues in curing a hoarſeneſs after the meaſles, unattended with a fever or difficult breathing; and in the chin-cough, when given early, and before any obſtructions are formed in the lungs, I have found it one of the beſt remedies. Laſtly, the ſucceſs of the bark in reſolving indolent glandular ſwellings,* may ſhew that it is not poſſeſſed of any conſiderable obſtructing quality.

(c.) Steel. There are few medicines that ſo remarkably ſtrengthen the ſtomach and bowels, and indeed the whole body, as iron and its preparations.

* See Medical Enquiries and Obſervations, Vol. i.

parations. The aſtringent quality of this metal was not unknown to *Dioſcorides*, who recommends, for a weakneſs of the ſtomach and inteſtines, water in which a red-hot iron has been extinguiſhed.

The *ſal martis* was in great eſteem with *Riverius*; but *Sydenham* preferred the filings of iron to all its preparations.*

The filings have been commonly preſcribed from five to fifteen or twenty grains; but although this laſt quantity will heat many people, yet ſo different are conſtitutions, that ſome will bear a much greater doſe: nay, I know a Gentleman, who, for a weakneſs in his ſtomach and indigeſtion, has taken every day, for ſome months together, about two hundred and thirty grains of the filings of iron, divided into three doſes. It is obvious, however, to obſerve, that theſe filings will act variouſly, as they are finer or coarſer, and according to the quantity of an acid in the ſtomach and bowels. They ſometimes occaſion, eſpecially in the more delicate conſtitutions, a diſorder in the firſt paſſages; in which caſe *Sydenham* has adviſed a few drops of *laudanum* to be taken with them at bed-time; but fifteen grains or a ſcruple of *theriaca* will have as good or a better effect.

Thoſe who cannot take the *limatura martis*, will often bear *Mynſicht*'s tincture, the chalybeate wine, and Pyrmont or other ſteel waters of a weaker nature. I know a Lady whom ſix or eight grains of the filings of iron purge more ſtrongly than an ordinary doſe of rhubarb, and yet fifteen or twenty drops of the *tinctura martis Mynſichti* give her no diſturbance.

I ſometimes order this tincture, or the *mars ſaccharatus*, to be taken at the ſame time with the tincture of the bark and bitters before mentioned; but commonly I adviſe the chalybeates only at thoſe times when the patients intermit the bitters.

The chalybeate waters, although they contain but a very ſmall proportion of iron, are often obſerved to have remarkable effects in ſtrengthening the body; particularly the waters of Bath, in Somerſetſhire, have been of great uſe to many, who, from

* Diſſert. Epiſtol. ad D. Cole.

from a weak ſtate of the ſtomach and bowels, were affected with low ſpirits, and other nervous complaints.

It may be worth while to obſerve, that, notwithſtanding the remarkable effects of chalybeates in many diſeaſes, yet theſe medicines, in a ſtate of ſolution, or in a ſaline form, do not ſeem to enter the blood; for the late ingenious *Dr. Wright*, having made a dog, who had faſted thirty-ſix hours, ſwallow a pound of bread and milk, with which he had mixed an ounce and an half of *ſal martis*, diſſolved in a ſufficient quantity of water, and filtrated, he opened the dog an hour after, and collected from the thoracic duct near half an ounce of chyle, which did not ſuffer the leaſt change of colour by dropping it into a tincture of galls; although this ſame chyle, after a quarter of a grain of *ſal martis* was diſſolved in it, acquired a deep purple colour from that tincture.*

If *ſal martis*, and other preparations of iron, do not enter the blood, it is obvious they muſt produce their effects ſolely by ſtrengthening the ſtomach and inteſtines; whence not only the digeſtion of the aliment will be better performed, but by means of that remarkable ſympathy which ſubſiſts between the alimentary canal and the whole ſyſtem, a greater degree of vigour will be communicated to every part of the body: for there is nothing more certain, than that we feel ourſelves either vigorous and healthful, or feeble and ſickly, as the nerves of the ſtomach and bowels are in a ſound or an infirm ſtate.

The above medicines (*a*, *b*, *c*,) are to be uſed not for days or weeks only, but often for many months together, otherwiſe no great or laſting benefit is to be expected from them. In ſome caſes it may be neceſſary not to omit their uſe wholly for years; for when the cauſe of any diſeaſe is deeply rooted in the conſtitution, thoſe medicines which are proper for removing it, muſt be taken almoſt like our diet, not only regularly, but for a very long time.

In ſuch caſes it may be beſt to take the bark and bitters chiefly in the winter and ſpring-ſeaſon, intermitting

* See Philoſophical Tranſact. for 1750, Vol. L. Part. ii. p. 595.

termitting their uſe now and then for a week or or two; and in the ſummer to drink either ſome of the chalybeate waters at the wells, or a gill or more of the Pyrmont or Hartfell-Spa * thrice a day on an empty ſtomach.

(*d.*) The *cold-bath.* Nothing, perhaps, ſtrengthens the nervous ſyſtem more ſenſibly, or gives a greater ſpring to all the veſſels, than cold bathing; for although the water only acts immediately on the cutaneous nerves and veſſels, yet its ſtrengthening power is, by ſympathy, communicated to the inmoſt parts of the body. The cold bath, like the former remedies, ought to be long continued. The moſt proper ſeaſons for it are the ſpring, ſummer, and autumn. It is enough, eſpecially for thoſe of a ſpare habit, to go into the cold bath three or four times a week; but as it tends to make people thinner, thoſe who are too plump may uſe it daily. When the ſtomach, liver, or other viſcera, are much obſtructed, or otherwiſe very unſound, the cold bath is improper, ſince, by turning the blood with more force than uſual upon theſe parts, it may increaſe, inſtead of leſſening, the patient's complaints.

Many inſtances might be given of the good effects of cold bathing in ſtrengthening people of delicate conſtitutions, and making them leſs ſubject to nervous ailments; but as ſo much may be found to this purpoſe in *Sir John Floyer's* Hiſtory of Cold Bathing, I ſhall only obſerve, that I have known it of great ſervice to ſeveral women, who, chiefly from a weakneſs of their nervous ſyſtem, were very liable to ſuffer abortion; and that a young Lady, whoſe nerves ſeemed to have a very great

* The Hartfell-Spa is a water which iſſues from a mountain of that name near Moffat, in North Britain. It has a ſtrong chalybeate, together with an aluminous taſte; is much ſaturated with iron; and ſeems alſo to contain an aluminous ſalt. It is deſtitute of that ſpirit obſervable in the Pyrmont water, and thoſe of Spa, near Liege; but retains its virtues longer, and may be carried to a great diſtance without being ſenſibly weakened. It is an excellent ſtrengthener, and has often been found ſerviceable in weakneſſes of the ſtomach and inteſtines with indigeſtion and flatulence. For a more particular account of this water, See Eſſays Phyſical and Literary, vol. i. and Philoſoph. Tranſact. vol. L. part. i.

great degree of ſenſibility from the intolerable pain which ſhe felt from bliſters, and from the very uneaſy ſenſation which was occaſioned by every red pimple that roſe on her face, found more benefit from a long courſe, firſt of the cold bath, and afterwards of ſea-bathing, than from bark, bitters, chalybeate waters, and various other remedies.

To prevent miſtakes, it may be proper to mention here, that while I recommend bitters, the bark, elixir of vitriol, chalybeates, and cold bathing, as the beſt ſtrengtheners of a delicate nervous ſyſtem, I do not mean that all theſe are to be uſed, eſpecially at once, by the ſame patient. In ſome caſes, the tincture of the bark with ſome bitters will be ſufficient. In others, more benefit may be found from ſteel in ſubſtance, or from the chalybeate waters; and ſometimes cold bathing may ſucceed, or at leaſt make the cure more compleat, after internal ſtrengtheners have in a great meaſure failed. I ſhall only add, that when nervous complaints, ariſing principally from a delicacy of the nervous ſyſtem, are attended with a quick pulſe and a preternatural heat, bitters and ſteel are improper; but an infuſion of the bark in cold water, with elixir of vitriol, will often prove uſeful.

(e.) Air. As a cool and dry air braces and imparts vigour to the whole body, ſo nothing tends more to relax and weaken than hot air, eſpecially that which is rendered ſo by great fires, or by ſtoves in ſmall rooms.

When the ſtomach and bowels are weak, the body ought to be well guarded againſt cold, eſpecially in winter, by wearing a thin flannel waiſtcoat next the ſkin; for this will keep up an equal perſpiration, and defend the alimentary canal from many impreſſions it would be otherwiſe ſubject to upon every ſudden change from warm to very cold weather.

(f.) Aliment. The food ought to be nouriſhing, but of eaſy digeſtion, and ſuited to the ſtomach of the patient. Fat meats and heavy ſauces are hurtful. All exceſs is to be avoided. Valetudinarians ought never to eat more at once than they can di-

geſt with eaſe. Every time the ſtomach is overloaded, its ſtrength is impaired, and its nerves are diſordered; but when one eats moderately, not only the ſtomach, but the whole body, is invigorated and repaired. Above all things, heavy ſuppers ought to be avoided, ſince the ſtomach is more apt to be oppreſſed with the ſame quantity of food in a horizontal than in an erect poſture; and ſince the digeſtion goes on ſlower in time of ſleep than when we are awake.

Wine, in exceſs, enfeebles the body, and impairs the faculties of the mind. A few glaſſes in time of eating, or after it, may be uſeful; but more will load a weak ſtomach, and retard digeſtion. The beſt time to drink a *little* wine, is upon an empty ſtomach; for the liquor being, in that caſe, leſs weakened, and more readily applied to the nerves there, muſt have the greater effect in ſtrengthening them. When my ſtomach has been weak, and when, after having been indiſpoſed, I had hot palms, was languid, and apt to ſweat upon motion, I have often found myſelf much better for a glaſs of claret and a bit of bread an hour or more before dinner. In this caſe the wine cooled me, made my pulſe ſlower, and gave me more ſpirits and ſtrength. I have ordered claret in the ſame way to others, before dinner, and between ſeven and eight in the evening, with advantage. When children are weakly, have a tendency to the ſcrophula, or are inclined to the rickets, or when they have been much reduced by a fit of teething, I find a little claret, once or twice a day, upon an empty ſtomach, an excellent ſtrengthener, and the beſt ſuccedaneum to the bark, which many children will not take.

Theſe good effects of wine, *thus* uſed, ſeem not to have been altogether unknown to Celſus, who tells us, "*Si quis vero ſtomacho laborat, non aquam, "ſed vinum calidum, bibere jejunus debet.*" *

Wine, in general, is preferable to malt liquor, as being lighter, leſs apt to ferment, and leſs flatulent. For common drink, water alone, or with a little wine, is the lighteſt and beſt; but when the

* De Medicina, Lib. 1. cap. viii.

the ſtomach and bowels are troubled with acidity, water mixed with a ſmall proportion of rum or brandy is greatly preferable to wine or malt-liquor.

Under this head, it may not be improper to obſerve, that the frequency, now-a-days, of ſtomach complaints, and nervous ailments, as they are commonly called, may be partly owing to the too great uſe of tea. I once imagined tea to be in a great meaſure unjuſtly accuſed, and that it did not hurt the ſtomach more than an equal quantity of warm water; but experience has ſince taught me the contrary. Strong tea, drank in any conſiderable quantity in a morning, eſpecially if I eat little bread with it, generally makes me fainter before dinner than if I had taken no breakfaſt at all; at the ſame time it quickens my pulſe, and often affects me with a kind of giddineſs. Theſe bad effects of tea are moſt remarkable when my ſtomach is out of order.

(g.) Exerciſe. Exerciſe is of ſuch uſe for ſtrengthening the nervous ſyſtem, that without its aſſiſtance the moſt powerful medicines will prove often ineffectual. Of all kinds, riding on horſeback has been juſtly eſteemed the beſt: It has been particularly extolled by *Sydenham* in hypochondriac and hyſteric diſorders. It greatly promotes digeſtion, ſanguification, the diſtribution and ſecretion of all the fluids; and ſtrengthens the whole body, as well as the ſtomach and bowels. Riding is preferable to walking, as it ſhakes the body more, and fatigues it leſs. But it is proper to obſerve, that any great exerciſe, eſpecially riding on horſeback, after a full meal, will diſorder the ſtomach, and retard digeſtion inſtead of promoting it.

The ingenious *Dr. Gilchriſt*, of Dumfries, has recommended ſailing as a kind of exerciſe well adapted to the cure of nervous complaints ariſing from a weak ſtate of the blood and alimentary canal, and has given ſome inſtances of its good effects.* But as we find it very difficult to prevail with any patient in this place to undertake a long ſea-voyage, I can ſay little on this head from my own experience. However, I have not only been well

* See his Treatiſe on the uſe of Sea-Voyages in Medicine.

informed that a Gentleman, who had been long ſubject to epileptic fits at land, was never ſeized with them when at ſea, but a young Gentleman, lately my patient, who had a very delicate nervous ſyſtem, and whoſe ſtomach and inteſtines were ſo uncommonly ſenſible, that a ſingle ſtool, procured even by the *elixir ſacrum*, made him faintiſh; and vomiting or purging was almoſt ſure to bring on fainting fits with ſlight convulſions: this perſon, I ſay, had his conſtitution ſo changed while he was at ſea, that, although, during a voyage of four or five weeks, he vomited much every day, and purged frequently; yet he had neither any faintings, nor was ſenſible of any particular weakneſs in his ſtomach or bowels. After this voyage, he had no return of thoſe fits to which for ſome time before he had been liable, till at the diſtance of eight months, when he applied a bliſter to the under part of his breaſt; the pain of which, when the plaſter was taken off, occaſioned faintings with ſlight convulſions.

Friction of the legs, arms, trunk of the body and *abdomen*, with a fleſh-bruſh, with flannel, or a coarſe linen cloth, is a kind of exerciſe that ſtrengthens, promotes the circulation, and is particularly beneficial when the bowels are weak.

Lying too long in bed will weaken and relax; while early riſing, like gentle exerciſe, or cool air, will brace and invigorate the body.

(b.) Amuſement. The mind ought to be diverted, and kept as eaſy and chearful as poſſible; ſince nothing hurts more the nervous ſyſtem, and particularly the concoctive powers, than fear, grief, or anxiety.

2. But as the remedies (*a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*,) before mentioned, however proper for mending a delicate ſtate of the nerves in general, or of thoſe of the alimentary canal in particular, muſt often be uſed a conſiderable time before they can produce any great effects, it becomes frequently neceſſary to have recourſe to medicines of another nature, in order to palliate thoſe uneaſy ſymptoms with which nervous and hyſterical people are often affected.

The principal remedies of this kind are the following, viz. *(a.)* Such

(a.) Such as weaken, during the time of their operation, the ſentient power of the nerves, and conſequently leſſen thoſe pains, irregular motions or ſpaſms which ariſe from any unuſual irritation. The chief of theſe is opium, which, when applied in ſufficient quantity to the nerves of any ſenſible part, not only leſſens their power of feeling, but, by ſympathy, alſo that of the whole ſyſtem. By this quality, it often gives ſudden relief in many violent diſorders of the nervous and hyſteric kind. It is of great uſe in fixed ſpaſms, as well as in alternate convulſions of the muſcles, and in pains not attended with inflammation; in a weakneſs, laſſitude and yawning, occaſioned by too great a flux of the menſes, in flatulent colics, and ſometimes in the true ſpaſmodic aſthma, where there is no obſtruction in the lungs nor phlegm oppreſſing them. When given, at bedtime, to the quantity of a grain or a grain and a half, along with a little *aſa fœtida*, I have frequently ſeen it leſſen that reſtleſſneſs, and thoſe hot fluſhings and ſick fits, which many hypochondriacal people are liable to; but after being uſed for ſome time, it loſes this effect in a great meaſure, unleſs its doſe be increaſed from time to time. It is to be obſerved, that if the patient be in any degree plethoric, bleeding, or other evacuations, ought to precede the liberal exhibition of opium; for this will make its good effects more certain and conſpicuous, and will prevent, in a great meaſure, any bad conſequences that it might otherwiſe have.

Although opium is often proper for quieting many nervous and hyſteric ſymptoms, from whatever cauſe they may ariſe, yet it is peculiarly uſeful when thoſe ſymptoms are principally owing to an extraordinary delicacy of the nervous ſyſtem.

But however uſeful opium may be in many caſes, yet we often meet with patients who receive more hurt than benefit from it. Some are affected with an uncommon faintneſs and languor about the præcordia, or with ſtartings; others with a ſickneſs and vomiting, or a violent pain with cramps in the ſtomach, or an itching over the whole body, eſpecially

eſpecially about the eyes and noſe. In ſome few it occaſions a raving and madneſs.

Although opium, in many caſes, exhilarates, inſtead of occaſioning heavineſs and ſleep, yet it ought rarely to be given to patients who are low-ſpirited; for however it may relieve them for the preſent, yet, after its effects are over, they generally become more depreſſed than before.

Opium given too largely, and too long continued, leſſens the ſenſibility and vigour of the whole nervous ſyſtem, whence not only the ſtrength of the body, but alſo the faculties of the mind, are conſiderably impaired.

But, notwithſtanding theſe bad effects of opium when too liberally uſed, I have ſeldom ſeen any miſchief from it, as a palliative, in diſorders ariſing from a too great delicacy of the nerves, where it was ordered with diſcretion, and given in ſmall quantities at firſt. Nay, in this way, thoſe who ſuffer moſt from opium may be brought at length to bear it eaſily; a remarkable inſtance of which I lately had in a middle aged Lady, whom four or five drops of laudanum, taken by the mouth, affected with a violent pain and cramp in her ſtomach; and ſixteen drops in a clyſter, though it did not occaſion theſe complaints, made her delirious for twelve hours; for this Lady, having afterwards begun with one drop of laudanum, gradually roſe to twenty-five: nay, ſhe has ſometimes taken that quantity thrice a day, without feeling any of its former bad effects. In caſes of great ſickneſs, accompanied with a pain in the ſtomach, and frequent vomiting, when the patient could not bear laudanum inwardly, I have ordered three or four tea-ſpoonfuls of it to be rubbed into the ſtomach and belly, afterwards applying to theſe parts a piece of flannel moiſtened with Hungary-water made hot. The effect was, that all the patient's complaints began to abate in leſs than an hour after the application of the laudanum, which I ordered to be repeated at the diſtance of ſix or eight hours, if it was neceſſary.

There is one inconvenience which ſeldom fails to attend the continued uſe of opium, viz. coſtiveneſs,

neſs, which is beſt remedied by taking now and then an aleotic pill, or ſome other gentle purgative. But in ſome caſes of pains in the ſtomach and bowels, with indigeſtion, much flatulence and belching, where laudanum, chiefly through its binding quality, did not anſwer ſo well, I have found very good effects from the *extractum hyoſcyami*, given from a grain and a half to three or four grains at bedtime, and repeated in a leſs quantity in the morning; for, although, as an anodyne, the powers of this extract are much inferior to thoſe of opium, yet, by its proving often laxative, it becomes preferable to it in ſeveral caſes.

(b.) Such as, by affecting the nerves in an agreeable manner, and perhaps relaxing them, leſſen the ſenſe of pain, and often put a ſtop to tremors, convulſions, ſpaſms, and an uncommon agitation of the nervous ſyſtem. Of this kind are the warm *ſemicupium*, *pediluvium*, and hot fomentations, which are frequently ſerviceable in caſes where opium would be improper; but as they all tend to relax, they are only to be urged by delicate people, as palliatives in urgent caſes.

(c.) Such as, by their peculiar ſtimulus, powerfully affect the nerves, ſo as not only to render them leſs ſenſible of the irritation ariſing from various morbid cauſes, but alſo to communicate to them ſome degree of vigour, at leaſt for a ſhort time.

Of this kind are camphire, caſtor, muſk, and the fetid gums. The firſt and moſt remarkable effects of theſe medicines are owing to their action on the nerves of the ſtomach; but in what particular manner they operate on theſe nerves we know not. They do not ſeem, at leaſt moſt of them, to poſſeſs any real ſtupifying or narcotic quality, like opium, and other medicines of that claſs.

Camphire is very volatile and penetrating; it promotes perſpiration, and frequently acts as an atiſpaſmodic; it ſometimes procures ſleep, in fevers attended with raving, where opium would prove hurtful; and I have found it of good uſe in rendering more quiet and compoſed ſome maniac and melancholic patients. Camphire,

Camphire, given in large quantities to different animals, produces ſleep, ſometimes madneſs, a vomiting, purging, a flux of urine, the hic up, epileptic convulſions, and death;* and ſeveral of theſe effects are ſo ſudden, that they muſt proceed rather from the immediate action of the camphire on the nerves of the ſtomach than from its being mixed with the blood.

Phyſicians have differed widely in their opinions concerning the nature of camphire; ſome having eſteemed it hot, and others of a refrigerating nature; but as it is not my purpoſe to enter deeply into this diſpute, I ſhall only obſerve, that, although, in ſome caſes, a glaſs of claret or port, or even a dram of brandy, will render the pulſe ſlower, and the body cooler; and, in catarrhous fevers, baſtard peripneumonies, pleuriſies, and anginas, bliſters often leſſen the quickneſs of the pulſe remarkably; nevertheleſs, wine, brandy, and bliſters, are, in their own nature, not cooling, but heating. In like manner, camphire, as its effects in the mouth, and on the ſkin and the eyes, ſhew, is naturally heating; but ſometimes it may cool, by leſſening or removing ſome diſorder in the body, which increaſed its heat and quickened the pulſe. I have known, in many caſes, a conſiderable ſenſe of heat raiſed in the ſtomach by a bolus of ſix or ſeven grains of camphire well mixed with a ſcruple of conſerve of roſes. However, although I cannot agree with thoſe who think camphire a cooling medicine, yet I do not look upon

* Commentar. Bononienſ. tom. iv. p. 199, &c.

The following caſe was ſome time ſince communicated to me by a friend.

A Gentleman, deſirous of knowing what effects a large doſe of camphire would have, ſwallowed half a dram of it diſſolved in a little oil of olives, and very ſoon after perceived an uncommon, but not diſagreeable, glow of heat in his ſtomach. After having walked abroad for half an hour, upon looking at a news-paper, he found himſelf quite incapable to underſtand what he read, his head being crowded with a great many confuſed ideas. He now began to ſtagger when he walked; and, ſome time after, a dark cloud ſeeming to come over his eyes, and feeling other ſymptoms which made him apprehend an apoplectic attack, he went to a neighbouring apothecary, with a view to get ſome blood taken away; but, upon going into the open air, all theſe ſymptoms began to abate, and, in a few hours, he found himſelf in his uſual health, without the aſſiſtance of any remedy.

upon it to be ſo heating as ſome have imagined. Perhaps camphire may excite a leſs degree of heat in the ſtomach than in the mouth, or even than when applied to the ſkin; for we know that the ſame ſtimulating ſubſtances affect the nerves of the ſtomach and of theſe parts very differently.

Caſtor. I cannot help thinking the virtues of this medicine, in nervous diſorders, are leſs than many have imagined. When given from twelve to twenty grains, it ſometimes procures reſt; not, as I imagine, by any true narcotic quality like opium, but by leſſening that uneaſy ſenſation in the ſtomach from wind which is often the cauſe of watching: and, indeed, caſtor ſeems to have the beſt effects on thoſe patients whoſe complaints are in a great meaſure flatulent. In ſome caſes I have thought laudanum had a better effect when it was joined with caſtor either in ſubſtance or in tincture. A Gentlewoman, aged upwards of forty, much troubled with flatulence and low ſpirits, was often ſeized, when ſhe lay to ſleep, with a ſenſe of faintneſs about her ſtomach, which obliged her to ſit up, and often prevented her from getting reſt moſt of the night. Twenty drops of laudanum made her drowſy, but did not remove the faintneſs: this, however, was effected by adding to it a tea-ſpoonful or two of the *tinct. caſtorei compoſita*.

Muſk is leſs heating than caſtor, and may be given in caſes where neither it nor opium are proper. Although the ſmell of muſk is offenſive to many, yet I have ſcarce ever found it diſagree with the ſtomach. It is chiefly uſeful in the *ſubſultus tendinum* in fevers, in the hiccup, cramps in the ſtomach, and other ſpaſmodic diſorders. I have tried it in the chin-cough and the true ſpaſmodic aſthma, but it was given in too ſmall doſes to determine, with certainty, as to its virtue in theſe diſeaſes. Two or three grains of muſk, well rubbed with a little ſugar, and mixed with half a table ſpoonful of mint-water, will ſometimes ſtop the vomiting occaſioned by teething in children. The good effects of muſk are frequently leſs conſpicuous from its being not genuine, or taken in too ſmall doſes. *Riverius* mentions it as having,

in his time, been given with ſucceſs to the quantity of thirteen grains in a hyſteric fit; and now it is common to order it in this, or a larger doſe, three or four times a-day.

Aſa fœtida is the ſtrongeſt of the fœtid gums, and almoſt the only one that I have been in uſe to preſcribe internally in nervous or hyſteric caſes. It has good effects in flatulent diſorders, and ſpaſms of the alimentary canal, and in aſthmatic fits that are either owing to wind in the ſtomach or increaſed by it. In caſes where ſudden relief is wanted, it ought to be given diſſolved in ſome of the ſimple waters. I have often given with advantage pills of *aſa fœtida*, *p.* iii. *aloes* and *ſal. mart. ana p.* i. to patients who, along with a coſtiveneſs, were troubled with flatulent pains working up from their bowels to their ſtomach, and producing ſickneſs and vomiting. Theſe pills were taken every night, or once in two nights, in ſuch quantity as to keep the body gently open. *Aſa fœtida*, like caſtor, ſometimes procures ſleep; it gives relief in fits of lowneſs, eſpecially when diſſolved in ſpirits, or joined with the volatile ſalts; but a too frequent repetition of ſuch warm medicines hurts the ſtomach at laſt.

When nervous or hyſteric complaints are attended with a quick pulſe and a feveriſh heat, the fœtid gums, camphire and caſtor, on account of their heating quality, ought to be given very ſparingly, or not at all. They are much better adapted to caſes where the pulſe is low and ſlow. As we do not know the particular manner in which each of them operates on the nerves, ſo we cannot tell, before trial, in what conſtitutious they will ſeverally be moſt ſucceſsful. Frequently one of them will anſwer where another has failed: nay, ſuch is the uncommon diſpoſition of the nerves of the ſtomach in ſome caſes, that a table ſpoonful of the juice of lemons, unmixed with any thing, has proved always a certain cure for a palpitation of the heart, after many of the medicines called anti-hyſteric had been tried in vain: and agreeably to this, we are told by *Riverius*, that a draught, or a clyſter

clyſter of vinegar and water, has often given immediate relief in a hyſteric fit.*

It is to be remarked, that the ſeveral medicines mentioned under this head (2. *a*, *b*, *c*,) are chiefly ſerviceable as palliatives, for leſſening or removing the preſent pain or other complaints in nervous and hyſteric caſes, but not for giving any durable ſtrength to the body or firmneſs to the nerves, upon which depends the radical cure. However, when thoſe diſorders do not proceed ſo much from a general debility of the nervous ſyſtem, as from a morbid or unnatural ſtate of the nerves of the ſtomach or ſome other part, long continued palliation may ſometimes make a cure; for while the palliative remedies leſſen the bad effects of this diſorder of the nerves, nature, either by herſelf, or with their aſſiſtance, at length expels or ſubdues the morbid cauſe. Thus obſtinate headachs, as well as ſeveral other complaints commonly reputed of the nervous kind, have been cured, after other remedies had failed, by the long-continued uſe of opium, as will appear from the following caſes, which were communicated to me by a friend.

N. N. aged twenty-eight, healthy and ſtrong, after a ſea-voyage of three months, during which he was almoſt conſtantly ſick at the ſtomach, but never vomited, was much expoſed to cold in a long journey he made by land. At this time ſomething happened which greatly vexed him, and ſoon after he began to be affected with a fixed pain in his forehead, which increaſing by degrees, at laſt ſpread over his whole head. I ſaw him firſt, about two years after the headach began, at which time he complained of a conſtant pain, attended with a weight and heavineſs, in his head: he had, beſides, ſharp flying pains in different parts of it, as if a nail had been driven into them. At certain times the headach increaſed greatly, and was attended with a quick pulſe. He frequently paſſed great quantities of pale water, eſpecially in violent fits of the headach. His ſleep was diſturbed with frightful dreams, out of which he would often awake with great oppreſſion and terror. He was generally

* Praxis Medica, Lib. xv. cap. vi.

generally low-ſpirited, ſuſpicious and peeviſh, though on ſome occaſions he was uncommonly chearful. The leaſt contradiction threw him into a fit of melancholy. He felt a tenſion about his eyes, eſpecially when his head was much pained. There was ſcarce any ſecretion of mucus from his noſe; and ſo movable was his nervous ſyſtem, that if he retained his water too long, or hurt his noſe ever ſo little, by haſtily bringing away from it ſome of the hardened mucus, he never failed to have an increaſe of his headach. He was liable to fits of ſickneſs at his ſtomach, and often threw up a clear watery humour without taſte or ſmell. He was generally coſtive, and his pulſe good, except when attacked with the violent fits of pain in his head, which nothing was ſo apt to bring on as any intenſe thought or long-continued application of mind. *Involuntaria penis erectione, cum ſeminis plerumque emiſſione, tam die quam noctu ſæpe tentatus fuit.*

For three years after I had firſt ſeen him in this condition, he continued under the care of ſome phyſicians of character in Italy, who, having preſcribed for him a variety of medicines without any advantage, gave him up as incurable. Upon this I told him one remedy ſtill remained which might be of ſervice, viz. opium; and as he readily agreed to my advice, I began with giving him half a grain every night at bed-time. I alſo diſſolved two drams of ſtrained opium in four ounces of ſpirit of wine, and ordered him to rub a little of this on thoſe parts of his head which were moſt pained. The doſe of opium at bed-time was gradually increaſed to a grain and a half, and ſometimes he took a grain twice a-day. He had not uſed the opium a month, when he became ſenſibly better, and in eight or ten months found himſelf free of all his moſt troubleſome complaints. After this he began to leſſen the doſe of the opium, and to take it only once in two nights, and ſometimes ſeldomer. Only when, from vexation, or any other cauſe, he was threatened with a fit of the headach, he immediately had recourſe to the opium in a larger quantity. He was adviſed to

uſe

uſe daily exerciſe, and to keep his mind as eaſy and chearful as poſſible. At firſt he drank a few glaſſes of wine at his meals; but, after he had taken the opium for ſome time, he found that a ſingle glaſs of wine heated him, and made his headach worſe; on which account he confined himſelf to water alone. The third year after he began to uſe the opium, he was ſo free of his complaints, that, during the ſpace of twelve months, he did not take above three doſes of it.

It may be worth while to remark, that this patient was ſo ſenſible of any change of weather, that, by a general feeling of weakneſs and inactivity, and of pains in his joints, he could have told, in the morning before he got out of bed, that the weather was moiſt and rainy, or the winds eaſterly or ſoutherly.

M. N. an unmarried woman, aged thirty, after conſiderable vexation of mind, began to be ſeized in much the ſame manner with the above patient, and had taken medicines for five years to little purpoſe. The chief ſymptoms were a conſtant and ſevere pain over her whole head, eſpecially the back-part, a ſtiffneſs in the muſcles of the neck, great pain and looſeneſs of her teeth; diſturbed ſleep, frightful dreams, low ſpirits, ſhakings and tremblings of her whole body, cold and hot fits by turns, fluſhings in her face, flatulence and ſwelling in her ſtomach, with frequent belchings, inactivity, loſs of appetite, flying pains through her body, and inability to apply with attention to any thing ſerious. In ſummer, 1759, ſhe began to take the opium in the ſame way with the former patient. In three weeks ſhe found herſelf ſomewhat eaſier, and after ſix weeks was much better in every reſpect. Her headach was moſtly gone; her teeth were free of pain, and firm; her ſleep much leſs diſturbed; and the fluſhings and ſhakings in a great meaſure removed. For about two weeks after ſhe began to take the opium, ſhe was troubled with gripes, which, however, went off after being longer uſed to this remedy. A ſolution of opium in ſpirit of wine was often applied to her head and neck, and always gave her eaſe.

II. With

II. With regard to the ſecond intention of cure, which was to correct or remove the occaſional cauſes, which, eſpecially in ſuch as are prediſpoſed, give riſe to all the nervous, hypochondriac and hyſteric ſymptoms; as theſe cauſes are various, the medicines muſt be often different: nay, what is proper in one caſe may be hurtful in another.

The occaſional cauſes were diſtinguiſhed before into the general and particular.

The general cauſes were, 1. Some morbid matter bred in the blood. 2. The diminution or ſuppreſſion of ſome habitual evacuation. 3. The want of a ſufficient quantity of blood.

The particular cauſes were, 1. Wind, 2. Tough phlegm, and, 3. Worms, in the ſtomach and bowels. 4. Aliments improper in their nature or quantity. 5. Obſtructions, frequently of the ſcirrhous kind, in the abdominal *viſcera*. 6. Sudden and violent affections of the mind.

In order, therefore, to treat diſtinctly of the ſecond intention of cure, it will be neceſſary to mention particularly the different remedies which are moſt likely to leſſen or remove theſe ſeveral cauſes.

1. Some morbid matter in the blood.

(a.) As we are often ignorant of the nature of that matter in the blood which is the cauſe of nervous diſorders, ſo we muſt be often at a loſs how to correct or expel it. When I ſuſpect it to be of that kind which produces the *arthritis vaga*, from knowing the family diſtemper of the patient, his conſtitution and manner of life, or his being much troubled with flying pains in his head, arms or limbs, I rely moſt upon a proper diet and exerciſe, with the tincture of the bark and bitters mentioned under the firſt intention of cure, in order to prevent the generation of this matter; or gradually to ſubdue and carry it off when already generated. But ſuppoſing the bark and bitters had no power to deſtroy the arthritic matter in the blood, which ſeems moſt probably to be the caſe, yet, by ſtrengthening the ſtomach and bowels, they may not only retard the generation of more, but prevent, in a great meaſure, an attack upon theſe parts;

parts; which are obſerved to ſuffer moſt when from any cauſe they have been much weakened, or otherwiſe put out of order.

The reputation which bitters have had in gouty caſes, among the antient as well as ſome of the modern Phyſicians, led me to think that a well-choſen medicine of this kind might be very uſeful in nervous, hypochondriac or hyſteric complaints, from an arthritic matter in the blood: and although, in patients in the decline of life, the tincture of the bark and bitters has often failed me, yet in thoſe who were under forty or fifty, I have found it do more ſervice than any other remedy.

When the patients are liable to fits of the true gout, I increaſe the proportion of the *rad. gentian.* and *cort. aurant.* in the tincture, adding, at the ſame time, ſome nutmeg or ginger, eſpecially if the ſtomach be cold and flatulent. In this caſe, alſo, the tincture may be taken to the quantity of two table-ſpoonfuls twice a-day.

I have known an indigeſtion and flatulence, with a pain and ſickneſs at the ſtomach from the gout, greatly relieved, after other medicines had failed, by drinking, thrice a-day, ſix ounces of a ſtrong decoction of ſeveral of the common bitters * in water. And a Gentleman of my acquaintance, who had been much troubled, for fifteen years, with a pain in his ſtomach, has been cured by chewing two drams of the roots of gentian daily. This kept his body open, and increaſed his appetite; it began to give him eaſe in a few days; and when, upon omitting it, the pain returned in a leſſer degree, it was quickly removed by having recourſe to the gentian again.

A milk diet which, ſometimes, has proved a radical cure for the gout,‡ has been commended by *Sydenham* in certain hyſteric caſes, after other medicines have failed.† I can ſay little of its effects in either caſe from my own experience.

We

* Viz. Rad. gentian. calam. aromat. cort. aurant. ſummit. abſynth. centaur. min. card. benedict. with ſem. carv.

‡ Celſus de Medicina, lib. v. cap. xxiv.

† Diſſert. Epiſt. ad D. Cole.

We meet with few patients who will confine themſelves to this diet, and, in ſeveral caſes, it is improper to adviſe it. I once had a patient, aged forty-eight, who, on account of an ulcer in his lungs, reſtricted himſelf for many months to a diet of milk and vegetables alone, and, after he got free of that diſeaſe, continued to live in this way for ſeveral years. This perſon, who was of a very full habit, and had been formerly attacked once a-year, at leaſt, with the gout, remained free from this diſtemper for ſeven or eight years, that is, till ſome years after he had returned to the uſe of fleſh meats and fermented liquors.

Lime-water is ſaid to have been drank ſucceſsfully by ſeveral gouty patients.* I have only had one who gave it a deciſive trial. This perſon was aged about fifty, and had for ſeveral years been ſubject every winter to a ſmart fit of the gout. In February or March, 1758, he began to drink daily an Engliſh quart of lime-water, living at the ſame time very temperately. Before the end of the firſt year he had a very ſlight attack of the gout; about the end of the ſecond year he had rather leſs of this diſeaſe; but after he had continued drinking the lime-water conſtantly for near three years, he was ſeized with a ſevere and long-continued fit of the gout, in both his hands and both his feet. This patient obſerved, that the lime-water, when drank warm, mended the ſtate of his ſtomach, when it was diſordered before the coming on of a fit of the gout, and he thought it had a good effect in driving this diſeaſe to the extremities. The lime-water agreed perfectly well with him, and mended his appetite.

From this caſe it may be fairly concluded, that lime-water does not radically cure the gout, or deſtroy the arthritic matter in the blood, although, by ſtrengthening the ſtomach and inteſtines, and preventing acidity in them, it may render the attacks of this diſeaſe leſs frequent, and in ſome perſons, perhaps, leſs ſevere.† When

* See Alſton's Diſſertation on Quicklime and Lime-water, Part. iii.

† It may be proper to mention, that a patient of *Dr. Clerk's*, Phyſician to the Royal Infirmary here, who uſed to have a ſevere and

When lime-water is drank for the cure of nervous complaints from an imperfect gout, it ought to be taken to the quantity of at leaſt an Engliſh quart daily. As, at firſt, it is ſometimes apt to occaſion an uneaſy heat in the ſtomach, a little ſweet milk may be added to it; but afterwards it is better to drink it alone. In the winter-ſeaſon, and when the ſtomach is more diſordered than uſual, the lime-water ought to be drank nearly blood-warm.

Soap has been propoſed by the late *Doctor John Clerk*, a Phyſician of diſtinguiſhed character in this place, as the proper ſolvent of the arthritic matter in the blood.* It has ſometimes been of uſe in old rheumatiſms, and may be properly taken along with the lime-water, as it prevents coſtiveneſs, and deſtroys acidities in the ſtomach and bowels.

As ſome perſons, ſubject to the true gout, have found great benefit from drinking, twice a-day, about a gill and a half of a ſtrong infuſion of tanſy in boiling water, it is probable the ſame medicine might be uſeful in thoſe complaints which ariſe from an imperfect gout affecting the ſtomach and other parts. But of this I can ſay nothing certain from my own experience, not having had any patient who gave the tanſy a fair trial.

Iſſues and perpetual bliſters have been often of uſe in head-achs, and in the ſciatic or chronic rheumatiſm affecting one leg; but I have not found them do much ſervice in nervous or hypochondriac complaints from an arthritic humour.

(b.) I have before obſerved, that complaints of the nervous kind ſometimes proceed from that kind of humour in the blood which is commonly, but

 improperly,

and long-continued fit of the gout once in two years, has been kept free of this diſeaſe for near three years paſt, by drinking off, at once, an Engliſh quart of lime-water, every forenoon about eleven o'clock. The lime-water taken in this way always purges him twice or thrice about three o'clock in the afternoon. But as this perſon is of a very full habit of body, it is probable that the lime-water has proved uſeful to him rather by that daily evacuation which it occaſions by ſtool, than by any virtue it poſſeſſes of deſtroying the arthritic matter in the blood.

* See *Dr. Pringle's* Obſervat. on the Diſeaſes of the Army, Part. iii. Chap. ii. Edit. 1.

improperly, called ſcorbutic; and which, when it is thrown out on the ſkin, appears in the form of tettars, ſcurfy eruptions, or the *lepra Græcorum*. In this caſe we muſt endeavour to drive the morbid humour outwards to the ſkin, by vomits, warm ſtomachics, and ſudorifics; after which the radical cure muſt be attempted by mild mercurials and the purging mineral-waters.

The method which I have always found ſucceſsful, at leaſt in ſlighter caſes, is to give twelve grains of the *pilulæ Ethiopicæ* every night at bedtime, and every other morning a dram, or a dram and a half, of polychreſt ſalt, diſſolved in an Engliſh pint of water.* The ſalt, beſides otherwiſe contributing to the cure, opens the body, and prevents the pills from raiſing a ſalivation, which they are ſometimes apt to do. Theſe medicines are to be uſed till the ſcurfy or leprous eruptions quite diſappear. When the obſtinacy of the diſeaſe requires it, I give the pills both morning and evening.

Although the true ſcurvy is a diſeaſe rarely obſerved, except in thoſe who live at ſea, or in marſhy places, yet we frequently meet with patients who have ſome degree of a ſcorbutic taint in their blood, as appears from their ſpungy gums, a laſſitude, and other complaints. I have had ſeveral patients of this conſtitution, who were deeply affected with the hypochondriac diſeaſe; their chief ſymptoms were low ſpirits or melancholy, watching, flatulence, frequent ſpitting of the ſaliva, a bad digeſtion, flying pains, a tightneſs about the *præcordia*, a dark colour, and troubled look. I have never ſucceeded in curing any of thoſe patients; but a long courſe of the tincture of bark and bitters, with elixir of vitriol, and daily exerciſe, ſeemed to agree better with them than any thing elſe. When they are coſtive, I order, once in two or three days, as much ſoluble tartar as is neceſſary to open them gently.

(c.) When nervous ſymptoms are occaſioned by ſome morbid matter remaining in the blood, in conſequence

* In place of this ſolution of the polychreſt ſalt, I have ſometimes ordered ſea-water to be drank.

conſequence of ſome former diſeaſe imperfectly cured, we muſt have recourſe to ſuch remedies as are beſt ſuited to the nature of that diſeaſe or the circumſtances of the patient.

That humour which produces the raſh or miliary eruption, when it falls on the internal parts, inſtead of being thrown out upon the ſkin, generally occaſions a great depreſſion of ſpirits, anxiety and faintneſs, pale-water, and watching, and ſometimes raving and convulſions. In this caſe I have found moſt advantage from the warm *pediluvium*, or warm fomentations applied to the feet and legs, from bliſters, wine whey, and boluſes of camphire, ſaffron, and ſalt of hartſhorn. When, in the miliary fever, the patients are much oppreſſed at the ſtomach, and complain of a difficulty of breathing, a gentle vomit of ipecacuanha, or of an infuſion of camomile, often gives relief.

The warm *pediluvium* and fomentations often procure ſleep, and give ſome immediate eaſe to the patient; they likewiſe contribute to promote the miliary eruption, by removing that tenſion or ſpaſmodic contraction of the cutaneous veſſels which frequently retards it. Where the patients are in any degree plethoric, bleeding will often not only give ſome preſent relief, but, by relaxing the vaſcular ſyſtem, will alſo contribute to the expulſion of the morbid matter by the ſkin.

2. When nervous, hypochondriac or hyſteric ſymptoms proceed from a diminution of ſome habitual evacuation, that evacuation is to be promoted by the proper remedies.

(a.) When the menſes are obſtructed, we muſt endeavour to recal them; and, till that can be done, the moſt troubleſome ſymptoms are to be palliated. There are few caſes in which we are oftener diſappointed than in bringing back the monthly evacuation after it has been long ſuppreſſed; and the medicines proper in one caſe may prove ineffectual, or even hurtful, in another.

When the want of good blood is the cauſe why the menſes do not flow, the beſt remedies are the bark, bitters and ſteel, together with a nouriſhing diet, and exerciſe. After the patient has, by theſe

means, got more and better blood, it ought to be determined to the *uterus* by frequent doſes of *tinctura ſacra*, and by making the patient ſit every evening over the ſteams of warm water.

If a plethora, or a too great abundance of blood, prevents the flux of the menſes, bleeding, eſpecially in the foot, or at the ancle, and gentle purges, will prove moſt effectual.

When the thickneſs or viſcidity of the blood hinders it from making its way through the uterine veſſels, frequent vomits, and the *pilulæ mercuriales laxantes*, or gentle purges with calomel, will anſwer beſt.

Laſtly, when the ſuppreſſion of the menſes has been owing to a ſpaſmodic contraction of the uterine veſſels, in conſequence of cold, ſome violent paſſion, or other cauſes, the chief remedies are the warm *ſemicupium* and *pediluvium*, oily draughts, and pills of aloes, *aſa fætida*, extract of black hellebore and ſaffron. A clyſter of warm water with thirty or forty drops of laudanum, may be given, in the evening, about the time the menſes ſhould return.

Obſtinate obſtructions of the monthly evacuation in women have ſometimes been cured by electrifying them, and drawing the ſparks chiefly from their thighs. But *Dr. Clerk* informs me, that he has obſerved this remedy to ſucceed beſt in thoſe whoſe pulſe was ſmall and languid.

Some young women, about the time of the return of the menſes, are apt to be ſeized with violent pains in their back and belly, with faintings, raving, and ſometimes convulſions. In ſuch caſes the warm *ſemicupium* is of great uſe; but as often this cannot be readily got, I have generally ordered, with ſucceſs, a clyſter of warm water with fifty drops of laudanum; and a flannel bag, with the emollient herbs, to be wrung out of hot water, and applied to the *abdomen*. When the patient has been coſtive, a laxative clyſter with *aſa fætida* muſt be given to procure a ſtool, before the anodyne one is injected.

In the intervals between the returns of the menſes, in order to render the patient leſs liable to the above-

above-mentioned complaints, I have adviſed, with good effect, the frequent uſe of the warm *pediluvium*, ſome doſes of the *pilulæ rufi*, and thoſe oily draughts which in this caſe were much commended by *Sir David Hamilton*;* and which I have alſo found of good uſe in pains of the bowels in thoſe whom the menſes had left.

I have ſometimes met with unmarried women who were liable to be attacked with faintings and convulſive fits after every period of the *menſes* was over, which ſeemed to be owing to this evacuation being leſs copious than uſual. In a caſe of this kind, the following remedies, uſed for two or three months, proved ſucceſsful.

R. Aloes ſocotrin.
Aſa fœtid.
Extract. hellebor. nigr.
ſal. Mart.
croc. Angl. ana drach. i.
Elix. proprietat. q. ſ. ut. f. pil. gr. iv.
Quarum capiat v. vel vi. alternis noctibus.

R. Rad. Gentian.
calam. aromat. ana unc. i.
Summit. centaur. min. drach. vi.
Flor. anthos, drach. ii.
M. f. materialia infundenda, per hor. vi. in aqu. bull. lient. lib. iv. colatur. Adde
Tinct. Cort. Peruvian. unc. x. Miſce.
Cape unc. iii. bis in die.

Along with theſe medicines the *pediluvium* was uſed every night at bed-time.

When, in the decline of life, the menſes ceaſe, various nervous or hyſteric ſymptoms appear, which are generally leſſened, and ſometimes removed, by frequent ſmall bleedings, gentle ſtomachic purges and iſſues.

(b.) If the hæmorrhoidal flux is wanting in thoſe who have been accuſtomed to it, we muſt endeavour to recal it by emollient fomentations, and aloetic medicines. When theſe or other remedies prove ineffectual, *Hoffman* has adviſed leeches to be applied near the *anus* once a month.

(c.) When old ulcers, or ſores too quickly dried up, have given occaſion to nervous diſorders, purgatives,

* De Praxeos Regulis, cap. iii.

gatives, and eſpecially iſſues, or a ſeton, will be moſt ſucceſsful in carrying off that humour which diſturbs the body.

(d.) When pimples, or other eruptions, on the face, have been ſuddenly repelled by improper applications, violent headachs, giddineſs, ſickneſs at ſtomach, palpitations, and other nervous ſymptoms, have been ſometimes the conſequence. In ſuch caſes, if the morbid humour cannot be brought back to the face, we muſt try to carry it off by perpetual blifters or iſſues in the head or neck, and by mercurial purges.

3. When nervous or hyſteric complaints are occaſioned by a want of blood, in conſequence of an immoderate flux of the hæmorrhoids, menſes, or *lochia*, the cure conſiſts in reſtraining theſe evacuations, and filling the veſſels by means of ſuch aliments as are light and nouriſhing, but not heating. In the mean time, the violence of the ſymptoms muſt be abated by anodynes and wine, or other cordial medicines. A horizontal poſture is here of conſiderable uſe.

The medicines which I have found moſt ſucceſsful in reſtraining an immoderate flux of the menſes are the *tinctura roſarum*, *terra Japonica*, alom, opium, and elixir of vitriol.

I have ſometimes given the alom mixed with *terra Japonica* as in the *pulvis ſtypticus*; but of late I have preſcribed it more frequently in the following form, as being leſs diſagreeable to the ſtomach.

R. Lact. recent. bullient. lib. i.
Alum. rup. pulverat. drach. i. ad drach. i. ſs. Miſce ut ſiat coagulum, et ſero colato. Adde
Sacchari albi unc. i.
Cape unc. iii. quater in die.

If the alom-whey occaſions a ſourneſs in the ſtomach, with a *cardialgia*, a ſcruple of crab's eyes, or prepared oyſter-ſhells, twice or thrice a-day, will be uſeful. In one caſe, the alom-whey leſſened a *profluvium menſium* after the patient had taken, for ſome time, forty drops of the *tinctura antipthiſica* thrice a-day, without any benefit. The ſame medicine alſo cured a *fluor albus* of ſeveral years ſtanding.

I have

I have not obſerved remarkable effects from the bark in ſtopping hæmorrhages. After an immoderate flux of the menſes had reſiſted that medicine taken in ſubſtance for near a fortnight, I have ſeen it yield in two or three days to ſuch a mixture as the following,

R. Aqu. menth. unc. vi.
cinnamom. ſ. v. unc. ii.
Confect. Japon. drach. vi.
Syr. limon. unc. ii. Miſce.
Cape cochl. ii. 4ta vel 6ta quaque hora.

To remedy the coſtiveneſs which this mixture generally occaſions, it becomes neceſſary, once in two or three days, to order either ſome rhubarb or a laxative clyſter.

The bark, which is more remarkable for its ſtrengthening than aſtringent quality, ſeems to be leſs adapted for ſtopping hæmorrhages than for reſtoring ſtrength to thoſe who have been reduced by them. However, it is often very proper, not only to give the bark after the flux of blood is leſſened, but alſo, at the ſame time, with ſome of the ſtronger aſtringents.

When a *profluvium menſium*, or a flooding after abortion, is attended with, or preceded by, an acute pain, not inflammatory, in the lower part of the back or belly, and returns with greater violence, as often as the pain returns or increaſes, opium will prove a more effectual remedy than any of the aſtringents, as happened in the following caſe.

A Lady, aged between thirty and forty, having gone abroad too ſoon after an abortion in the fourth month of her pregnancy, was ſeized with a violent pain in her back and the lower part of her belly, which returned once in eighteen or twenty hours, and was always attended with an exceſſive flooding, which abated when the pain left her. Having been called, after ſhe had uſed ſeveral aſtringent and ſtrengthening medicines with very little advantage, I ordered a clyſter of ſix ounces of an infuſion of dryed red roſes in boiling water with fifty drops of laudanum, to be given every night at bed-time, and once in two days a laxative

clyſter in the morning, if it ſhould be neceſſary. After the firſt anodyne clyſter, ſhe had little either of the pain or flooding; and after the third, was quite cured of both theſe complaints.

Ludovicus Septalius,* and, after him, *Sir David Hamilton*,† has commended a ſtrong decoction of bitter orange-ſkins as a moſt effectual remedy in a *profluvium menſium*; and I have been informed by an able Phyſician, that he has preſcribed it once and again with ſucceſs in the following manner:

R. Cort. aurant. Sevil. recent. integr. vii.
Coque ex aqu. fontan. lib. iii. ad lib. ii.
Colaturæ adde ſacchar. alb. unc. i.
Elix. vitriol gut. lx.
Cape cochl. vi. tertia quaque hora.

I have known the *fluor albus* cured, in a great meaſure, by a courſe of ſea-bathing, after many powerful medicines had been tried in vain. The ſame remedy in the intervals of a *profluvium menſium* has contributed much to leſſen that flux; and a Lady, aged between forty and fifty, a patient of mine, who was ſo much diſtreſſed with the bleeding piles, that ſhe rarely went to ſtool without loſing a great deal of blood, found more benefit from ſea-bathing than any thing elſe. It not only leſſened the diſcharge of blood from the hæmorrhoidal veſſels, but ſoon gave her a better appetite, more ſtrength, and a freſher colour.

And thus much may ſerve for the cure of the general occaſional cauſes of nervous, hypochondriac, and hyſteric diſorders. I come next to mention the method for leſſening or removing their particular cauſes, viz.

1. Wind in the ſtomach and bowels. As this proceeds either from a debility or ſpaſmodic affection of the alimentary canal, or from improper aliments, the remedies for performing the radical cure may be found under the firſt intention of cure, under No. 4, where the treatment of nervous complaints ariſing from errors in diet is laid down. The medicines proper for giving immediate relief for the uneaſy ſenſations occaſioned by flatulence, will

* See Animadverſ. Med. Lib. vii. art. 144.
† De Praxeos Regulis, cap. iii.

will be mentioned afterwards, when I come to treat of the cure of ſome of the principal ſymptoms of the nervous or hyſteric kind.

2. Tough phlegm bred in the ſtomach and inteſtines. The cure of this phlegm is often tedious and difficult, and in many caſes can by no means be obtained: for, although, by repeated vomits, we may clear the ſtomach of the preſent load, yet, unleſs that organ is ſufficiently ſtrengthened, and its ſecretory veſſels reſtored to a ſound ſtate, more phlegm will be continually produced. Wherefore, beſides frequent vomits, we muſt have recourſe to the bark, bitters, chalybeates, animal food and exerciſe, eſpecially riding or ſailing.* Repeated doſes of the *tinctura rhabarbari amara* or *elixir ſacrum*, are not only uſeful for ſtrengthening the ſtomach and bowels, but for carrying down and evacuating part of the phlegm that diſorders them. I have ſometimes thought that the *emplaſtrum ſtomachium*, applied to the epigaſtric region, was of uſe.

Thoſe who are apt to breed much phlegm in their ſtomach, generally find it neceſſary to take a vomit once in ten days or a fortnight, and ſometimes oftener. When a vomit of *ipecacuanha* is taken, either an infuſion of horſe-radiſh ſhould be drank, or a little brandy or powder of muſtard ſhould be added to each draught of the warm water; for theſe, by their warm ſtimulus, tend to invigorate the ſtomach, at the ſame time that the phlegm oppreſſing it is evacuated.

As lime-water diſſolves *ichtyocolla*, and other glutinous ſubſtances, I thought it might be worth while to try what effect it would have on the tough phlegm bred in the ſtomach. With this view, I poured three gills of lime-water on a gill of that phlegm newly vomited up, and mixed them well together. At firſt, the phlegm ſeemed to be rendered ſomewhat thicker by the lime-water; but, after ſtanding five or ſix hours, it was quite diſſolved. After this, one of my patients, at my deſire, mixed one part of very tough phlegm,

* Si vero pituita ſtomachus impletur, utilis navigatio. *Celſus de Medicina*, lib. iv. cap. v.

brought up from his ſtomach by a vomit in the evening, with two parts of lime-water; and, upon examining this mixture next morning, he found the phlegm had wholly loſt its tenacity. This Gentleman, at the ſame time, mixed ſome of the phlegm with common water; but, after ſtanding twenty-four hours, it retained its tenacity in a great meaſure, although it was rendered thinner by the mixture of the water.

When lime-water is uſed with a view to the cure of phlegm in the ſtomach, it ſhould be drank to the quantity of near an Engliſh pint every morning upon an empty ſtomach, and nothing ſhould be taken for two hours after. An hour and a half before dinner, and as long before ſupper, half a pint ſhould be alſo drank.

Further, as often as an emetic is uſed, the patient, ſome time after its operation is over, ſhould firſt of all take a draught of lime-water, which, in this caſe, will act more ſtrongly in diſſolving any phlegm that may remain in the ſtomach, as well as in bracing its relaxed pores and veſſels.

When, together with a tough phlegm, there is a conſiderable degree of acidity in the ſtomach, I have known good effects from ten grains of the *ſal abſynthii*, or ſalt of tartar, given twice a-day. When the ſtomach is quite free of acidity, the elixir of vitriol may be of uſe to ſtrengthen its veſſels, although it has no effect in diſſolving the phlegm.

3. Worms in the ſtomach and inteſtines. In this caſe, while we palliate the moſt troubleſome ſymptoms, we muſt endeavour to deſtroy the worms by ſuch anthelmintic medicines as may ſeem beſt adapted to the particular ſtate of the patient. I ſhall only add on this head, that, in ſome caſes, I have ſeen good effects from an infuſion of the root of the Indian-pink;* but this remedy is certainly much leſs efficacious here than in South Carolina, and ſeems to loſe a great deal of its virtue by being long kept.

I have ordered, with good ſucceſs, to ſome grown perſons, ſix drams or an ounce of Spaniſh ſoap daily.

* Eſſays Phyſical and Literary, Vol. i.

daily. It deſtroys the aſcarides as well as the round and flat worms. Lime-water has been much commended as an anthelmintic, but it will ſcarcely be of any uſe, except when the worms are lodged in the ſtomach, or high up in the inteſtines; for, if they remain in the *ileum*, or the inferior part of the *jejunum*, the lime-water will be moſtly all abſorbed before it can reach them.

4. Aliments noxious from their quality or quantity. When nervous, hypochondriac or hyſteric diſorders are owing to this cauſe, or increaſed by it, a proper regulation of diet is the principal remedy.

(a.) If, by a long habit of eating too little, the concoctive powers are much weakened, the patient muſt, by ſlow degrees, increaſe the quantity of his aliment. If, on the other hand, his complaints have been occaſioned by exceſs in eating and drinking, he muſt gradually leſſen the quantity, till he has reduced himſelf within the bounds of ſtrict temperance; that is, he muſt never eat ſo much at dinner as to make himſelf, ſoon after, unfit to go about any buſineſs, or apply himſelf to any ſtudy; and he muſt make light ſuppers, or none at all, if he does not find his dinner digeſted.

I have known ſome people much afflicted with the gout while they lived too fully, who, being afterwards reduced, by neceſſity, to a ſpare diet, got quite free of that diſtemper. And, indeed, when nervous ailments have been owing to high living, or an arthritic matter in the blood, abſtinence, or rather moderation, in eating or drinking, is of the greateſt conſequence in the cure.

(b.) With regard to the quality of the food, the patients ought to abſtain from all heavy and fat meats, from whatever they find hard of digeſtion, and from all flatulent aliments.

If the ſtomach and bowels have been hurt by a flatulent diet, greens, roots, fruits, and whatever is apt to breed much wind, ought to be avoided; and the patient ſhould live chiefly on bread, rice and fleſh-meats, with a few glaſſes of wine of a good body and age, and not apt to turn ſour.

If heavy meats, rich ſauces, and the too free uſe of wine, or other ſtrong liquors, have hurt the ſtomach and bowels, the patient ought gradually to reduce himſelf to a ſmall quantity of wine, and eat only the lighter animal ſubſtances plainly dreſſed, and ſuch vegetables as are leaſt flatulent. In this caſe, a diet of milk and vegetables alone may ſometimes be of great ſervice, which, however, muſt not be gone into all at once, but very gradually. And it is further to be obſerved, that while ſome, who had been accuſtomed to animal food and wine, have found great benefit by abſtaining from them, without loſing much ſtrength, or any ſpirits, there have been others, of a different conſtitution, who could not bear the want of ſuch a diet, and, when wholly confined to milk and vegetables, were not only troubled with faintneſs and lowneſs of ſpirits, but with great flatulence and other diſorders of the *primæ viæ:* from which it may appear, how far ſome have erred in recommending, without ſufficient reſtriction, a diet of this kind in the greateſt part of nervous diſorders.

It may be obſerved, that many people, who have weak or windy ſtomachs, eſpecially ſuch as are liable to the gout, find not only vegetables, but milk, to agree beſt with them, when they take, at the ſame time, ſome pepper or other ſpicery. And I have known ſome perſons ſubject to violent attacks of the gout in their ſtomach, who have been much the better for ſwallowing, every morning, twelve or ſixteen corns of white pepper, with the water-gruel which they took for breakfaſt.

That abſtinence from wine and fleſh meats, and a diet wholly of milk and vegetables, does not prevent nervous ailments, we have a ſtrong proof in the poorer ſort of the country people of North Britain, who, though they live on milk, whey, barley, peaſe, and oat-meal, with coleworts, potatoes, and other vegetables, without almoſt any animal food or fermented liquors, are nevertheleſs remarkably ſubject to pains in their ſtomach and bowels, flatulence, and other complaints of the hypochondriac or hyſteric kind connected with it.

Nay,

Nay, however much a milk and vegetable diet may be of uſe in ſome caſes, to leſſen or remove ſuch diſorders as have been the conſequence of high living, yet, in general, it is certain, that a diet of this kind is more apt to produce flatulence in the firſt paſſages, and all the troubleſome ſymptoms depending upon it, than a diet conſiſting partly of vegetable and partly of animal food. Nay, even milk itſelf, which holds a kind of middle place between vegetable and animal ſubſtances, has been obſerved by *Hippocrates* to be hurtful to thoſe who are much ſubject to wind in their bowels.*

Becauſe a mixture of fleſh meats with vegetable ſubſtances and water, kept in a heat equal to that of the human body, has been obſerved to ferment ſooner, and much more briſkly, than thoſe vegetables and water alone, ſome have concluded that vegetable and animal aliments together will produce more flatulence in the *primæ viæ* than vegetables alone: but it ought to be conſidered, that the digeſtion of the aliments is very different from that change which happens to them in a chymical veſſel; and that, as the production of flatulence, in the ſtomach and bowels, is chiefly owing to a weakneſs of theſe parts, a diſordered ſtate of their nerves, or ſpaſmodic contractions in them, a certain proportion of animal food, by invigorating the alimentary canal, gratefully affecting its nerves, and rendering it leſs liable to irregular motions and ſpaſms, may occaſion leſs flatulence in time of digeſtion than would happen from vegetables alone.

When nervous complaints are owing to an arthritic matter, a diet of milk and vegetables, if the ſtomach can bear it, may, by deſtroying, or rather not furniſhing freſh ſupplies of, that matter, effect a cure. But where the ſtomach, from its weakneſs, or the peculiar diſpoſition of its nerves, cannot bear the greateſt part of vegetable aliments, ſuch a diet would be extremely improper; whilſt the lighter animal food, in ſuch quantity as can be eaſily digeſted, will not only nouriſh and ſtrengthen the body more, but will act as an anodyne in preventing

* Aphor. Sect. 5. No. 64.

venting or allaying many complaints of the ſtomach and bowels.

Upon the whole, no conſtant rule can be given as to the kinds of food; for while a diet chiefly of fleſh meats anſwers well with ſome, others live beſt on milk and vegetables, either alone or with a ſmall proportion of animal food. In like manner, with regard to liquor, ſome cannot do without wine, while water alone, or water with a little brandy or rum, agrees beſt with others. Every valetudinary perſon ought, therefore, to keep by thoſe kinds of meat and drink, which he finds, by experience, to be moſt agreeable and lighteſt to his ſtomach. But whatever aliments may be uſed, moderation ſhould be conſtantly obſerved, as people are generally leſs hurt by the quality than by the uantity of what they eat and drink.

(c.) When the ſtomach and inteſtines have been much hurt by high living, or weakened by flatulent food, beſides a proper diet, the bark, bitters, chalybeates, and exerciſe, will be often neceſſary for giving new ſtrength to the alimentary canal. Gentle vomits and ſtomachic purges may alſo be of uſe to cleanſe the firſt paſſages, and promote the natural ſecretions there.

5. Indolent obſtructions, chiefly of the ſcirrhous kind, in ſome of the abdominal *viſcera*.

Obſtructions of the indolent kind have their ſeat either in the ſecretory tubes of the glands, or in other veſſels ſmaller than thoſe which carry red blood in the glandular follicles, or in the ſpaces of the *tela celluloſa*, in which there is depoſited, by the exhaling arteries, a fluid which ſoon becomes too thick to be taken up by the abſorbent veins, and is daily increaſed by the addition of new matter of the ſame kind. In ſome caſes the veſſels of the obſtructed part are ſo changed from their original ſtate, as to ſeparate, from the blood, fluids which, by ſtagnating in the follicles, or cellular ſpaces, acquire a cartilaginous nature.

It is generally difficult to diſcover when nervous or hypochondriac complaints are owing to ſcirrhous or other indolent ſwellings in the coats of the ſtomach and inteſtines, or in the other abdominal *viſcera*,

viſcera, unleſs when the tumours can be felt, which is often not the caſe. But when I meet (eſpecially in women after the menſes have left them) with complaints of want of appetite, indigeſtion, vomiting, flatulence, and pains in the belly which have continued long, without any conſiderable intervals of eaſe, and, inſtead of yielding to medicines, become worſe, I ſuſpect ſome fixed obſtruction in the ſtomach, inteſtines, or neighbouring parts, eſpecially if the patient has a quick pulſe, without any conſiderable heat or thirſt.

When hypochondriac or hyſteric ailments are owing to indolent obſtructions, we muſt endeavour to reſolve them by degrees, and, in the mean time, palliate the moſt troubleſome ſymptoms occaſioned by them.

(a.) There are few remedies of greater ſervice in obſtructions of the indolent and cold kind than gentle friction. It not only promotes the circulation through the ſmall veſſels, but tends to attenuate and increaſe the abſorption of the matter ſtagnating in the follicles, or extravaſated in the ſpaces of the cellular membrane of the obſtructed part. I have had inſtances of incyſted tumors cured by long-continued friction alone. One was on the upper eye-lid, about the ſize of a common cherry, and of the ſteatomatous kind. Another was ſituated in the *membrana adipoſa* on the left ſide of the *abdomen*; it was bigger than one's fiſt, pretty ſoft, and felt like the ſteatomas or atheromas. It was treated with nothing but the friction of the part twice a-day with *oleum camphoratum*. For the firſt four months it did not ſeem to yield, but ſoon after it began to leſſen, and went off very faſt. The ſmall tumour on the eye-lid was rubbed only with the ſaliva.

(b.) Warm fomentations are of great uſe; they not only relax the veſſels, and attenuate the obſtructing matter, but, by their warmth, promote the circulation of the fluids through the obſtructed part. They will often either reſolve indolent ſwellings, or bring them to a ſuppuration, when internal medicines, without their aſſiſtance, would do little. They ought to be applied every morning and

and evening for near two hours; but ſhould not be ſo hot as to be in hazard of inflaming the ſkin, or making it too tender. I generally uſe flannel-cloths wrung out of hot water alone; and ſometimes, in place of this, a hot decoction of worm-wood and camomile flowers, or of the tops of hemlock, adding to it a little vinegar.

It is obvious, that when obſtructions are deep ſeated in the *abdomen*, neither frictions nor fomentations will have ſuch remarkable effects as when they lie in the *tunica celluloſa* immediately below the ſkin.

(c.) Gentle vomits and purges,* frequently repeated, are particularly uſeful in beginning indolent obſtructions of the abdominal *viſcera*. But when an obſtruction in the ſtomach is ſo far confirmed as to be irreſolvable, vomits, eſpecially of the ſtronger kind, may prove hurtful, by irritating the infarcted part, or even burſting ſome of its veſſels. And here it may be remarked, that many of thoſe hot and acrid medicines, commonly preſcribed in nervous diſorders, muſt be likewiſe improper in this caſe, ſince, by their ſtimulating quality, they will be more apt to inflame and exaſperate than to leſſen or reſolve any ſcirrhous obſtruction.

(d.) With regard to thoſe internal medicines commonly called deobſtruent, they can have little or no effect when the obſtructing matter is accumulated in the ſpaces of the *tela celluloſa*, and are, therefore, chiefly uſeful in thoſe obſtructions whoſe ſeat is in the follicles of the glands, or in the ſmall veſſels themſelves.

The internal deobſtruent medicines which I have uſed with moſt advantage, are the *tartarus ſolubilis*, *ſal polychreſtus*, mercury and ſoap.

I give the ſoluble tartar from drach. i. ſs. to drach. iii. or half an ounce, and the polychreſt ſalt from ſcrup. ii. to drach. i. ſs. diſſolved in an Engliſh pint of water, which is to be drank, at three or

* I look upon the good effects of ſea-water in glandular ſwellings to be chiefly owing to its purging quality. When it does not prove laxative, but makes the patient thirſty and hot, no good is to be expected from it.

or four draughts, every morning for two months or longer.

I commonly preſcribe mercury as a deobſtruent, either in the form of the *pilulæ mercuriales laxantes*, or of the ſolution of the corroſive ſublimate. To prevent theſe medicines from running too much to the mouth, I give the pills only once in two or three days; and when the ſolution is uſed, I order a gentle purgative once in four or five days.

In glandular ſwellings of the neck, of the ſtrumous rather than the true ſcirrhous kind, I have ſeen nothing ſucceed ſo well as a courſe of the bark, in ſubſtance or decoction, for ſeveral months; giving at the ſame time, every fourth or fifth night, ſuch a doſe of calomel and rhubarb, or of the *pilulæ mercuriales laxantes*, as may purge the patient twice or thrice next morning. Nor have I found theſe medicines leſs efficacious, when, together with indolent ſwellings and a ſcrofulous habit, there was a conſiderable degree of fever; as in the following caſe.

A Child, aged ſeven, of a lax and ſcrofulous habit, in March, began to be effected with hard ſwellings on her left wriſt and one of her legs, and with a ſoft edematous ſwelling of her feet and hands; at the ſame time, her tongue was foul, her pulſe quick, and her ſkin hotter than natural. In June following, when I was firſt called, all theſe ſymptoms were increaſed, ſhe was much emaciated, and her pulſe beat above 130 times in a minute. As ſhe had uſed many other remedies without advantage, after a vomit and a gentle purge, I preſcribed a decoction of the bark, with ſome ſpirit of vitriol, to be taken, four times a day, in the quantity of two or three table-ſpoonfuls; and once in five or ſix days a doſe of rhubarb with calomel. In leſs than four weeks after ſhe began this courſe, her pulſe became ſlower, her ſkin cooler, and her appetite better; and at the end of two months ſhe was almoſt quite free of all her complaints.

When glandular ſwellings lie immediately under the ſkin, the mercurial ointment rubbed into the part, or a ſtrong mercurial plaſter applied to it, has ſometimes made a cure. A Gentleman, aged twenty-one,

twenty-one, had one of the conglobate glands on the left ſide of his neck ſwelled from cold. This ſwelling, which was without pain, increaſed gradually, ſo that at the end of three months it had acquired the ſize of a hen's egg, cut longitudinally through the middle. After he had uſed, for ſix weeks, mercurial purges, fomentations, and the common diſcutient plaſters, to no purpoſe, the *emplaſtrum mercuriale cum triplice mercurio* was applied to the part. In two or three days after he began to ſalivate, and for a week continued to ſpit at the rate of an Engliſh pint a-day. After this the ſpitting decreaſed gradually, and left the tumour reduced to one-third of the ſize it had before. The warm weather of ſummer, which ſoon followed, carried off what the mercurial plaſter had left unreſolved.

Among the deobſtruent medicines Spaniſh ſoap deſerves a principal place. Obſtinate glandular ſwellings have ſometimes yielded to it after mercury had been tried in vain, as will appear from one of the following caſes. It ſhould be given daily, from half an ounce to an ounce or more, if the patient's ſtomach can bear ſo much.

1. *A. M.* upwards of twenty years of age, applied to me in April, 1752, for a ſwelling in the epigaſtric region, a little below the *cartilago enſiformis*. This tumour was near as large as one's fiſt, and felt hard, but without pain. It was evidently under the muſcles and *peritonæum*; and as it ſhifted its place upon the patient's turning from one ſide to the other, I conjectured its ſeat to be in the *omentum*, eſpecially as it was attended with no diſorder in the ſtomach or bowels.

I adviſed him to let warm water fall from a conſiderable height upon the ſwelling; to cover it all day with a piece of flannel; to uſe the *pilulæ ſcilliticæ*, and drink with them, at leaſt, an Engliſh quart of cow-whey daily. Some time after he got pills of *gum. ammon. galban.* and *aloes*, but without any benefit; for the tumour became larger; and when he ſat to write, which his buſineſs often obliged him to do, he ſuffered much uneaſineſs from that poſture. On this account I ſent him to the country

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in the end of July, and adviſed him to ſwallow, every day, from half an ounce to a whole ounce of Spaniſh ſoap, and continue the whey. Towards the end of October he returned to town with the tumour ſenſibly diminiſhed; and by going on with the ſoap till about the beginning of January, it was ſcarcely to be felt. He then left off all medicine, and has been ever ſince in good health, without any ſenſible ſwelling or hardneſs about the part firſt affected.

2. A Gentleman, aged thirty-three, after having been ſubject for ſome years to rheumatic pains, obſerved, in March, 1752, an indolent glandular ſwelling, neither ſoft, nor yet of the hardeſt kind, on the right ſide of his neck, immediately above the clavicle. In the Autumn following, having expoſed himſelf to cold and wet, on a journey, this ſwelling became ſoon after conſiderably larger. He then loſt ſome blood, which was very ſizy; and in November he uſed ſome warm diſcutient fomentations and the mercurial laxative pills. Theſe laſt, which he took once in two days for about three weeks, made him ſpit gently, but did not diminiſh the tumour. About a fortnight after he had diſcontinued the pills, he began to take three drachms of ſoap daily, and ſoon doubled that quantity. In three weeks, the ſwelling being ſenſibly diminiſhed, he was encouraged to continue this medicine; but, about the middle of January, having catched cold, he was ſeized with a diarrhœa, and obliged to omit the ſoap for above a fortnight. In February, ſoon after the diarrhœa left him, he began to be troubled with a violent itching over his whole ſkin, eſpecially when in bed, and this ſymptom increaſing towards the end of this month, he was adviſed once more to diſcontinue the ſoap. At this time the tumour was reduced at leaſt one half ſince the middle of December.

On account of the increaſe of this itching, and other complaints, he never returned to the ſoap; but, after trying a variety of other medicines, and the air of different climates, in vain, he died in Auguſt, 1754. Since

Since people affected with the ſtone often take ſoap to a greater quantity than this patient did, without any complaint of itching, I think this ſymptom cannot be juſtly aſcribed to that medicine; eſpecially as the patient had nothing of it for the firſt five weeks he uſed the ſoap, and as it came on after a diarrhœa, occaſioned by cold. Neither can I think the ſwelling in his neck was critical, and that the itching and other bad ſymptoms were owing to the matter in it being diſſolved by the ſoap, and carried into the blood; becauſe, in March, 1752, when this tumour began, the patient had no particular complaints; and in November, when it was become ſo large as to be broader, though not ſo thick as one's fiſt, his health was bad, and his blood ſizy.

Although I have preſcribed ſoap in ſeveral other caſes without the ſame ſucceſs, yet, as many glandular ſwellings are altogether incurable, ſoap, if it ſhould be found to anſwer in two caſes out of ten, ought to be eſteemed a valuable medicine.

If it ſhall be objected to the virtues of ſoap, as a reſolvent, that ſcirrhous tumors, when cut out of the body, are not diſſolved by being immerſed in a ſolution of it in water, I anſwer, that ſoap, in diſſolving urinary concretions, acts like other chymical *menſtrua*; but in reſolving obſtructed glands, it muſt be aſſiſted by the motion communicated to the fluids by the heart and arteries, which it may probably ſtimulate into ſtronger contractions, and thus, as well as by its reſolving quality, contribute to the cure. But further, I do not imagine that ſoap will ever diſſolve a true ſchirrus either in the body or out of it; I only expect that it will ſometimes remove glandular obſtructions that are leſs confirmed, and of a ſofter kind.

Quickſilver, and its preparations, although among the moſt powerful deobſtruents, if they fail of reſolving hard ſwellings, are apt to irritate and inflame them. This effect has been generally aſcribed to the weight of the mercurial medicines, but without ſufficient reaſon; for when ten grains of calomel have raiſed and kept up a ſalivation, in ſome perſons, for two or three weeks together;

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and when a ſlight ſpitting has been occaſioned by a grain and a half of corroſive ſublimate, diſſolved in ſpirits, and taken in four days; it is plain that the addition of weight to the maſs of blood, in theſe caſes, muſt have been ſo ſmall, that no ſenſible change in the circulation could have been produced by it.

Soap has not only this advantage over mercury, that it may be uſed in moſt caſes without irritating and inflaming, and conſequently without any hazard of changing a ſcirrhous ſwelling into a carcinomatous one, but it does not melt down the fluids, and reduce the ſtrength, like mercurials.

Soap ſeems to act chiefly by its detergent quality, and, perhaps, in ſome caſes, as a true diſſolvent. Every one knows the property of a ſolution of ſoap for cleaning the ſkin: and if a patient ſwallows an ounce of ſoap daily, his blood will in time become ſo ſaponaceous, that, whilſt it circulates through the half obſtructed veſſels of a ſwelled gland, it may inſenſibly clear away and carry along with it that viſcid matter which, by adhering to the inſide of theſe veſſels, in a great meaſure filled up their cavity.

Of late, the extract of the *cicuta* has been much extolled as a deobſtruent;* but although I have tried it, as well as the powder of hemlock, in ſeveral hard ſwellings, ſome of which were external, and others ſituated within the abdomen, I have only ſeen it do ſervice in two caſes, one of which was a large ſcirrhous ſwelling in the left breaſt, and the other a hardened gland in the neck. The latter was removed by the extract of the cicuta in eight months; and the former, by the continued uſe either of this medicine, or of the powder of hemlock, has not only been kept from increaſing for theſe four years paſt, but is now reduced to one third of the bulk it once had.

(e.) In attempting the cure of obſtinate obſtructions in the *viſcera*, beſides ſome of the remedies above-mentioned, it will be proper to order a diet conſiſting of the leaſt flatulent vegetables, weak broths, and the lighter meats. Ripe fruits, if they

* See *Dr. Storck's* Three Treatiſes on the Virtues of the Cicuta.

they do not offend the ſtomach and bowels by their flatulence, may be uſeful on account of their ſaponaceous or reſolving quality; as alſo goat or cow-whey, eſpecially in the beginning of Summer, when it is moſt impregnated with the virtue of the graſs and other herbs. The patient's drink ought to be rather tepid than cold; and the beſt is either water alone, or mixed with a little Rheniſh, or ſome other light white-wine.

(f.) Exerciſe, eſpecially riding, is exceeding uſeful, not only to prevent, but to remove, beginning obſtructions. And here it may be proper to obſerve, that as thoſe who lead a ſedentary life, eſpecially the ſtudious, (who, in reading and writing, ſit ſo much with their body bent forward,) are moſt ſubject to hypochondriac diſorders and obſtructions, it would be of great conſequence for ſuch to allot ſome part of the day for exerciſe; or, if that cannot be done, at leaſt, to read or write moſtly ſtanding; in which poſture the abdominal *viſcera* are much leſs compreſſed than in the other.

(g.) In conſiderable obſtructions of the *viſcera*, if the patient be of a full habit, the cure ought to begin with bleeding, which, by emptying the veſſels, may not only tend to leſſen the obſtruction, but aſſiſt the action of the deobſtruent medicines.

(h.) Whilſt, by the uſe of ſome of the above remedies, we aim at a radical cure, we muſt not neglect to palliate the ſymptoms which ſo often attend theſe obſtructions. This is to be done chiefly by opiates, and by the leſs heating carminatives and nervous medicines. But of this more hereafter.

6. Violent affections of the mind. When nervous or hyſteric diſorders ariſe from this cauſe, the cure conſiſts,

(a.) In avoiding all diſagreeable and ſhocking ſights, and every occaſion that may be apt to excite violent paſſions or commotions of the nervous ſyſtem.

(b.) In ſtrengthening the nerves, ſo that the mind may be leſs apt to be ſtrongly affected either by impreſſions from external objects, or by ſuch ideas as ariſe purely from reflexion, the beſt medi-

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cines for this purpoſe are the bark, bitters, ſteel, the cold bath, and exerciſe with proper aliment; concerning all which ſee the firſt intention of cure.

(c.) Nervous diſorders, occaſioned by ſtrong impreſſions on the mind, are often prevented, leſſened, or cured, by exciting other ſenſations or paſſions of a ſuperior force. Of this we had a remarkable inſtance in the cure performed by *Boerhaave* on the boys and girls in the poor's-houſe at Haerlem. Epileptic fits have been cured by whipping.‡ Convulſions from the toothach are removed by bliſters. Vomiting has been ſtopt by putting the hands ſuddenly in cold water; and a common hiccup is inſtantly cured by whatever excites ſurprize, or ſtrongly engages the attention.

(d.) Nervous or hyſteric affections from a concealed or diſappointed paſſion, are better cured by the fruition of the object;* or, if this cannot be obtained, by proper diet, amuſements, and by opiates, eſpecially at bed-time, for compoſing the mind, and procuring ſleep, than by the whole claſs of nervous medicines.

Having thus far treated of the cure of the ſeveral cauſes of nervous, hypochondriac and hyſteric diſorders, I ſhall conclude theſe obſervations with mentioning particularly the remedies moſt proper for removing or palliating ſome of their moſt troubleſome ſymptoms. CHAP.

‡ Kaau Boerhaave, impet. faciens Hippocrat. dict. § 406.

In the Hiſtoire de l'Academie Royale des Sciences 1752, there is an account of a girl who was cured of epileptic fits ariſing from melancholy, by firing a gun at her bedſide, juſt as ſhe was coming out of one of the paroxyſms.

* A remarkable inſtance of this we have in a young man, who, from diſappointment in marriage, was ſuddenly ſeized with a catalepſis, ſo that he remained for a whole day in his chair, in the ſame poſture, without the leaſt motion, or ſeeming attention to any thing about him: nay, his whole body became as ſtiff as if he had been frozen. However, no ſooner was he told, with a loud voice, that he was to have his beloved object, than, waking as out of a deep ſleep, he ſprung from his ſeat, and recovered at once. See Tulpii Obſervationes Medicæ, Lib 1. Obſerv. 22.

CHAP. VIII.

OF THE CURE OF SOME OF THE MOST REMARKABLE NERVOUS, HYPOCHONDRIAC, OR HYSTERIC SYMPTOMS.

I. CONVULSIVE motions or fixed ſpaſms of the muſcles. Theſe are either general, affecting almoſt the whole body, or confined to one or a few muſcles or organs. As they often ariſe from very different cauſes, their radical or prophylactic cure muſt conſiſt in the removal or prevention of thoſe cauſes.* But as the immediate cauſe is, in every caſe, the ſame, viz. ſomething that irritates the brain or nerves, or affects them with a diſagreeable ſenſation, their palliative or temporary cure will be beſt effected by,

(1.) Such medicines as by their ſtupifying or narcotic quality leſſen the ſenſibility of the brain and nervous ſyſtem.

In continued ſpaſms, as well as alternate convulſive contractions of the ſtomach and inteſtines, nothing gives ſo ſudden or ſo ſenſible relief as opiates, which are often not leſs efficacious when the other muſcles are ſpaſmodically affected. In that ſpecies of the *tetanus* called *opiſthotonus*, as well as that which is confined to the lower jaw, opium is the principal remedy;† and as the hydrophobia is only a violent convulſion of the gullet and ſtomach, &c. ariſing from the diſagreeable ſenſation excited by any liquids touching the fauces, or by the effort the patient makes to ſwallow them, opium, in large doſes, eſpecially if given by way of a clyſter, and repeated at proper intervals, would probably be found, at leaſt, the beſt palliative.‡ Convulſive

* In ſo far as they may proceed from ſome peccant matter in the blood, from phlegm, acrid humours, worms or wind in the ſtomach and inteſtines, from a great loſs of blood, an obſtruction of the menſes, or affections of the mind, their radical cure is to be found in the preceding Chapter.

† See Medical Enquires and Obſervations, Vol. i.

‡ Although this reaſoning ſeems to be much confirmed by the cure of *Dr. Nugent's* patient, (See his Eſſay on the Hydrophobia,) yet, in

Convulſive fits of the ſlighter kind, which returned daily at a certain time, have been prevented by giving opium an hour or more before that time. But in an epileptic patient, who was always ſeized about two o'clock in the morning, the fits were neither prevented, nor ſenſibly leſſened, by forty or fifty drops of laudanum, which I ordered him to take, for ſeveral nights, about two hours before the return of the fit.

It is to be obſerved, that, in curing or palliating violent ſpaſms or convulſive motions, opiates muſt be given in larger doſes than uſual, and repeated more frequently; for here, as in caſes of acute pain, the patients bear theſe medicines much better than in health.

In ſome caſes, eſpecially where the veſſels are full, bleeding, and other evacuations, ought to precede the free uſe of opium.

(2.) Such medicines as, though not endued with a narcotic quality, are found, by experience, to be uſeful in ſpaſms and alternate convulſions of the muſcles; and ſeem to produce their good effects, by that ſtimulus which they communicate to the nerves, eſpecially of the ſtomach and inteſtines. Of this kind are camphire, caſtor, muſk, *aſa fætida*, the *ſpiritus æthereus*, ſpirit of hartſhorn, &c.

A dram of brandy, by ſtimulating the nerves of the ſtomach, will almoſt inſtantly leſſen a tremor of the hands, and in ſome caſes make the pulſe ſlower: And do not other ſtimulating medicines,

in this caſe, as muſk and other remedies were uſed as well as opiates, it may be doubted whether the former had not ſome conſiderable ſhare in the cure. It were to be wiſhed, therefore, that ſuch as ſhall have opportunities, would make a fair trial of opium alone in the hydrophobia.

About the 20th of Auguſt, 1761, a farmer's ſervant near Norham, in Northumberland, three weeks after having been bit by a mad dog, became delirious, had violent ſpaſms, a dread of water, and other ſymptoms common in ſuch caſes. He was treated by *Mr. Dawſon*, Surgeon in Coldſtream, according to *Dr. Nugent's* method, and recovered ſo quickly, as to be able to be employed in reaping the corn before the middle of September.

He was blooded, got every three hours muſk and cinnabar with honey in a bolus, and a pill of opium. A plaſter of galbanum with half an ounce of opium was applied to the throat and neck.

in ſome ſuch way, remove a palpitation of the heart, and other convulſive motions, as well as fixed ſpaſms of the muſcles? Theſe effects may happen equally, whether thoſe medicines excite in the nerves an agreeable or an unpleaſant or painful ſenſation. Thus a glaſs of warm wine with cinnamon and nutmeg, and a mixture with *aqua pulegii* or *rutæ*, tincture of caſtor and *aſa fœtida*, will often have ſimilar effects in flatulent and ſpaſmodic affections of the alimentary canal; and we ſhall preſently ſee that bliſters, and other painful applications, are ſometimes uſeful in removing ſpaſms and convulſive motions.

(3.) Such remedies as relax, and at the ſame time affect with an agreeable ſenſation, the muſcular fibres and nerves, rendering them thereby leſs liable to ſuffer from irritation, viz. the warm bath, *ſemicupium*, and *pediluvium*, emollient clyſters, and warm fomentations applied to the feet and legs, or other parts of the body. To this claſs alſo we may, perhaps, refer venæſection, which, by emptying the veſſels, produces a general relaxation; but whatever be in this, we know, from certain experience, that it has often very ſudden and remarkable effects in leſſening or removing ſpaſms and convulſive motions.

Olaus Borichius mentions a young woman liable to a periodic hiccup, which returned regularly about the ſame time once a-year, who, after other remedies had proved ineffectual, was always cured by bleeding largely at the arm. It was obſervable, that this hiccup was not leſſened by the menſes flowing plentifully during the time the patient was affected with it.*

The warm bath affects the nerves with an agreeable ſenſation, removes ſpaſms in the ſmall veſſels, promotes an equable circulation, gently expands the fluids, and conſequently fills the whole veſſels of the body. But in whatever manner the warm bath and fomentations may act, their power in giving often immediate relief from violent pain, and preventing or allaying ſpaſms and convulſive motions, has been ſufficiently aſcertained by experience.

* Acta Hafnienſia, 1671, and 1672. § lxxiii.

rience. However, as the uſe of the warm *pediluvium* and fomentations applied to the feet and legs in fevers attended with a delirium, tremors and convulſions,* may not be ſo generally known, I ſhall give ſome inſtances of their good effects.

(*a.*) Mrs. ———, aged twenty-three, on Saturday, the third day after being delivered of her firſt child, was ſeized with a coldneſs and ſhuddering, ſucceeded by a hot fit and ſweating. Next day ſhe was better; but, after a reſtleſs night between Sunday and Monday, her ſkin felt hot and dry, and her pulſe was quicker. Her urine, which before had been of a natural colour, was now limpid, and in too great quantity. On Tueſday her pulſe was much quicker than ever, viz. at 136 ſtrokes in a minute, but not full. She became apprehenſive of dying, and, after ſome fits of uneaſy breathing, fell into a kind of hyſteric fainting, which did not affect the pulſe, although her breathing was ſcarce perceptible. During this fit, which laſted about an hour and a quarter, ſhe ſighed and moaned frequently. About midnight ſhe was very reſtleſs, her arms and head were convulſed, and ſhe became quite delirious. This day a raſh, which had come out on Monday, had in a great meaſure diſappeared. All this time the lochia continued, though in a ſmaller quantity than uſual. Hitherto diluents, diaphoretics, clyſters, ſmall doſes of camphire, laudanum, bliſters to the legs, and ſinapiſms to the ſoles, had had no effect. On Wedneſday the delirium increaſed: at noon two leeches were applied to each temple, and ſoon after, becoming pretty diſtinct, ſhe ſaid ſhe found herſelf much eaſier: but, about eight in the evening, ſhe grew more delirious than ever, crying out in a diſtracted manner, and was ſo ſtrongly convulſed, that with difficulty ſhe could be kept in her bed by two ſtrong perſons employed for that purpoſe. At this time I ordered large pieces of

 flannel,

* The ſucceſs which fomenting the legs had in a caſe of this kind, was communicated to me about ſeven years ſince by my learned and ingenious friend *Dr. John Pringle*, phyſician to her Majeſty. The Doctor mixed one eighth part of vinegar with the water; whereas I have always uſed hot water alone.

flannel, wrung out of hot water, to be wrapped round her feet and legs. This application, which was renewed once in fifteen or twenty minutes, and continued near three hours, had a moſt happy effect; for her delirium and ſtruggling to get up ſoon began to abate: ſhe fell aſleep at eleven, and did not awake till two in the morning, when ſhe was quite calm and ſenſible. After this ſhe ſlept near three hours more, and was pretty eaſy and clear in her head all Thurſday, till the evening, when the delirium returned in a leſs degree. But this ſymptom being ſoon removed by freſh fomentations, ſhe paſſed a good night, and gradually recovered, without any return of the raving, fainting, or convulſions.

(b.) *R. B.* a boy, aged eleven, was ſeized with a headach and fever. Monday he complained of a ſharp pain in his right ſide, on which account near eight ounces of blood were taken from him. On Tueſday his head was eaſier, but the pain in the ſide continued; his pulſe beat 120 times in a minute. This evening a bliſter was applied to the right ſide. Next morning the pain was much abated, but a ſlight delirium began, and increaſed towards the evening, when his pulſe was about 130, though no-ways full. Leeches were applied to the temples, and poultices to the feet. On Thurſday morning the delirium and fever continuing, his head was ſhaved, and afterwards fomented with cloths wrung out of hot water. This made him ſomewhat drowſy and calmer for a ſhort time; but about mid-day his pulſe became quicker, ſharper, and ſmaller, and the delirium increaſed. At three in the afternoon he was quite inſenſible, had a *ſubſultus tendinum* with catchings, and his pulſe, which was ſmall, beat near 150 times in a minute. In this ſtate I ordered his feet and legs to be immediately fomented, as in the preceding caſe: the effect was, that he ſoon fell aſleep, and waked at four ſomewhat calmer, and with a little ſweat on his ſkin. The fomentations were renewed: he had another ſleep, and about ſix in the evening he was much leſs delirious, and his pulſe did not exceed 124. At eight the legs were fomented

mented again a conſiderable time. He had ſeveral good ſleeps during the night, and on Friday morning was quite diſtinct, with a pulſe at 96. From this time he recovered daily, without any return of the fever or delirium.

(c.) A middle-aged man, who was ſeized with a continued fever, in a few days became delirious, had a quick and very ſmall pulſe, a parched tongue, fluſhings in his face, and twitchings; and he paſſed his urine inſenſibly. He was treated with the common remedies, and had a bliſter applied between his ſhoulders, but with little advantage. My advice being aſked about the 8th or 9th day of the diſeaſe, I ordered his legs and feet to be fomented with flannel wrung out of hot water. This in a little time put him aſleep; and next day his pulſe was fuller and leſs quick, the delirium was abated, his tongue was moiſter, and a gentle ſweat came on. After this the fever decreaſed gradually, and the patient recovered.

Having found ſuch benefit from the warm fomentations in fevers attended with a delirium, tremors and ſpaſms, I thought it might be worth while to make trial alſo of the warm *pediluvium* in ſuch caſes; and I ſoon found this to have the ſame, but more powerful, effects than the fomentations: for in ſome caſes, when theſe laſt had failed to leſſen the toſſing, raving and convulſions, the *pediluvium* ſucceeded, not only in the time the patient uſed it, but its effects continued a good while after; and when they ceaſed, it was renewed again with the ſame advantage as before. In ſome caſes I have ordered the feet and legs to be put in warm water four or five times in twenty-four hours, and to continue in it from half an hour to near an hour at a time, unleſs the patients became faintiſh.

(a.) A Lady, aged about twenty, on the fourth day after being delivered of her firſt child, began to be feveriſh, and ſlept none. After this ſhe became very delirious, talked conſtantly, had ſometimes tremors, and was ſo reſtleſs, that for two days ſhe had not lain one minute in the ſame poſture, and was with difficulty kept in bed by two or three nurſes. On the tenth day after her deli-

very, when I firſt ſaw her, the ſymptoms now mentioned were all increaſed, only ſhe ſpoke none, and ſeemed to underſtand nothing that was ſaid to her. Her pulſe, which was but of a moderate ſtrength, beat above 150 times in a minute. Nay, once, when ſhe was more agitated than uſual, it roſe to 180 ſtrokes in that time, and became withal very ſmall. As ſhe had been blooded and bliſtered, and uſed ſeveral other remedies without advantage, I ordered her feet and legs to be put immediately into the warm *pediluvium*, which was done by making her ſit up on the bedſide. At firſt it required two people to keep her feet in the water; but in leſs than a quarter of an hour ſhe grew calmer, and made little motion either with her legs or any other part of her body. After uſing the *pediluvium* for half an hour, ſhe was put to bed; but ſoon began to grow as reſtleſs as formerly; upon which account warm fomentations were applied to her legs and feet, and renewed from time to time for near two hours, but without any benefit. I therefore thought it beſt to renew the *pediluvium*, which was uſed at this time for a full hour: it ſoon made her ſit quiet; and after ſhe was put to bed, although ſhe did not fall aſleep, yet ſhe lay ſeveral hours without toſſing as uſual, and her pulſe was reduced to one hundred and thirty-ſix. As often as ſhe began to be any ways reſtleſs, the *pediluvium* was renewed. After uſing it the fourth time, ſhe got ſeveral ſhort ſleeps, was leſs delirious, and her pulſe only made one hundred and twenty ſtrokes in a minute. From this time (viz. the eleventh day after her delivery) the *pediluvium*, which was never repeated above twice in twenty-four hours, procured her longer ſleeps, and leſſened all her bad ſymptoms; ſo that in two days more ſhe was quite free of the delirium, and her pulſe did not exceed ninety in a minute.

(b.) A Gentleman, aged forty, after having had a continued fever ſeven or eight days, began to rave, and the delirium increaſed ſo much, that, about the eleventh day, he could not be kept in bed; nor would he allow either fomentations, bliſters,

blisters, or sinapisms, to be applied to his legs or feet. In this condition I advised to take him out of bed as often as he insisted upon rising, and, while he sat up, to keep his feet and legs in warm water. Between seven and half an hour past eleven in the evening he was seven times out of bed, and as often used the *pediluvium* for about a quarter of an hour, or longer, at a time. Before midnight the hurry of his spirits began to abate, he talked less, and seemed drowsy. In the first part of the night he had some short sleeps, and towards the morning he slept three hours at once. His pulse was now reduced from one hundred and twenty to one hundred strokes in a minute; and from this time the delirium decreased gradually for several days, and he recovered.

(c.) Having been called to A. A. aged thirty, in a continued fever, with inflamed eyes, and so violent a delirium that he could not be kept in bed, I ordered him to be taken up, and to have his feet and legs put in warm water for twenty minutes. This was done thrice in the space of thirteen hours; and it always lessened his raving, made him quieter, and procured a sleep after he went to bed. Next day he became a good deal comatous, and his eyes were rather more inflamed; but the day after he grew more sensible, his eyes looked better, and his pulse had fallen from about one hundred and seventy (which was its quickness when at the worst) to one hundred and twenty-eight strokes in a minute. After this he recovered gradually.

(d.) Another patient, aged twenty-five, in a continued fever, with a pulse above one hundred and forty, inflamed eyes, and a violent delirium, so that two strong men had been employed to keep him in bed, recovered, after being taken up thrice, and having his feet and legs kept in warm water for above twenty minutes each time. The warm water always lessened the delirium, and, after he returned to bed, made him fall asleep.

Instead of adding more cases, I shall only observe, that I have saved more patients who appeared to be in great danger, in the delirious state of a fever,

by the fomentations, and eſpecially by the warm *pediluvium*, than by any other remedy: and even in thoſe caſes where theſe applications were inſufficient to compleat the cure, they almoſt always gave ſome preſent relief, by making the patients ſomewhat quieter, and diſpoſing them to ſleep.

The fomentations and warm bath to the feet are particularly uſeful in fevers, where the brain and nervous ſyſtem are much irritated. In caſes where the eyes are inflamed, they will anſwer better if the patient has been bled at the temples with leeches before their application. When the ſick cannot bear the *pediluvium* in an erect poſture, I order their legs to be put over the ſide of the bed, ſo as they may be immerſed in the warm water; the heat of which ſhould not be leſs than one hundred degrees of *Farenheit's* ſcale.

I ſhall only add on this ſubject, that I have found the warm *ſemicupium* or *pediluvium* the beſt remedy for thoſe convulſions which ſometimes precede the eruption of the ſmall pox; and for that general tremor of the whole body which often happens towards the end of that diſeaſe when the puſtles are of a very bad kind. But to return.

(4.) In convulſive motions or ſpaſms, ſuch remedies are often uſeful as, by painfully affecting the nerves of ſome part of the body that is ſound, in a great meaſure leſſen or deſtroy the ſenſe of that irritation which was the cauſe of thoſe ſymptoms.* Of this kind are bliſters, acrid cataplaſms, dry cupping, friction, and the cold bath.

About ſeventeen years ſince, a woman, aged twenty, was ſeized with an alternate motion of the abdominal muſcles. In the night, when in bed, ſhe was pretty free of this ailment; but through the day thoſe muſcles were almoſt conſtantly in motion, and it was not in her power to reſtrain them in the ſmalleſt degree. After ſhe had tried many medicines without any benefit, I ordered a circular bliſter, of about eight inches diameter, to be applied to the abdomen. This put a ſtop to the convulſive motions for ſeveral days; and although they returned afterwards, they were much weaker

* Hippocrat. Aphor. Lib. ii. No. 46.

weaker and leſs frequent; and in a ſhort time they ceaſed entirely, without the aſſiſtance of any medicine, except a few doſes of camphire.

In caſes where epileptic convulſions took their riſe from an uneaſy ſenſation in ſome part of the arm or leg, I have found bliſters applied to theſe parts the beſt remedy. It may be proper, however, to obſerve, that, in people whoſe nerves are uncommonly delicate and ſenſible, it is often better to attempt the cure of convulſive motions or ſpaſms by opiates, muſk, camphire, and the warm bath or *pediluvium*, than by bliſters, which ſometimes do harm by the violent pain which they occaſion.

I have found dry cupping not only uſeful in convulſive contractions of the muſcles,* but alſo in removing recent rheumatic pains from cold, where there was no fever: nay, in older pains of this kind, I have ſeen patients relieved, at leaſt for ſome time, by this remedy. I order the cupping-glaſs to be applied to the pained part, and all round it, and let it ſtick each time three or four minutes, or till it falls off. The ſuction is often ſo ſtrong as to occaſion ſmall effuſions of blood below the ſcarf-ſkin. The good effects of dry cupping do not proceed ſolely from the pain it occaſions, which is not very conſiderable, but chiefly from the change it makes in the circulation of the blood through the ſubcutaneous parts: for, while the cupping-glaſs remains fixed, the blood, which uſed to be ſent to the parts below, is, in a great meaſure, derived into the veſſels of the *membrana adipoſa* and ſkin; and, even for ſome time after, the motion of the fluids through theſe parts continues to be greater than uſual, on account of that irritation, and ſlight degree of inflammation, which is generally occaſioned by cupping.

* A man, aged about fifty, who had for many years been conſtantly afflicted with an alternate motion of the muſcles of his head and neck, found more benefit from dry cupping along the back part of the neck and ſhoulders than from any other remedy. It is true, indeed, the good effects of this application laſted only for a few days; but, had the diſorder been leſs fixed, it is probable that repeated cupping might have made a perfect cure.

The cold bath is often uſeful in curing thoſe convulſions which go by the name of *St. Vitus's dance:* And cold water thrown on a perſon labouring under the hydrophobia, has enabled him for ſome time to drink pretty freely.* Was not this effect owing to the ſtrong impreſſion made on the nervous ſyſtem by the cold water, which, in ſome meaſure, deſtroyed or leſſened the unnatural ſenſibility of the nerves of the fauces and gullet? For the inability to ſwallow liquids in the hydrophobia is not owing to a palſy of the throat, as ſome authors of great character have thought, but ſolely to the diſagreeable ſenſation excited in the fauces and gullet by the touch of water and other fluids, which raiſe as great ſpaſms and convulſive contractions in thoſe parts and the ſtomach, as they do in the muſcles of reſpiration, when, by an accident in ſwallowing, they get into the *trachea*.

(5.) Fear, ſurprize, attention, or other ſtrong affections of the mind, will frequently put a ſtop to convulſive motions and ſpaſms, and ſometimes ſucceed after other remedies have failed, as in the following caſe.

A girl, aged eight, in the beginning of September, 1759, was ſeized with an alternate motion of the *maſſeter* and temporal muſcles, for which no cauſe could be aſſigned. This motion exactly imitated the pulſation of the heart. Only thoſe muſcles were contracted and relaxed above one hundred and forty times in a minute, while the heart did not make above ninety ſtrokes. Their contractions were all of equal ſtrength, and the intervals between them were alſo equal. When the patient preſſed the teeth of the lower jaw ſtrongly againſt thoſe of the upper one, by a voluntary contraction of the *maſſeter* and temporal muſcles, their convulſive motions were much leſs remarkable; and when ſhe pulled down the lower jaw as much as ſhe could, and, by the continued action of its muſcles, kept it in this ſituation, the *maſſeter* and temporal muſcles were no ways convulſed. Before I ſaw this patient ſhe had been bliſtered upon the courſe

* See Mead on Poiſons, Edit. v. pag. 182. and Van Swieten. Comment. in Aphor. Boerhaave, tom. iii. p. 576.

courſe of the affected muſcles, which leſſened their convulſive motions while the bliſtered parts continued to run, but no longer. I ordered plaſters of the *emplaſtrum anti-hyſtericum* with ſome opium to be applied where the bliſters had formerly been. Theſe were kept on no longer than two days, during which time the convulſions were weaker and leſs frequent, not being repeated above fifty or ſixty times in a minute: however, in a day or two after the removal of theſe plaſters, the convulſive contractions became as ſtrong and as frequent as ever. Brimſtone, in powder, was rubbed on the temples and cheeks without any viſible effect. Suſpecting that this convulſive diſorder might, perhaps, proceed from worms, I preſcribed a bolus of rhubarb with calomel, which the girl obſtinately refuſing to take, her father went to fetch a horſe-whip to beat her. The fear of this affected her ſo ſtrongly, that, without the bolus, the convulſions of the *maſſeter* and temporal muſcles inſtantly ceaſed, and have never returned ſince, except once on occaſion of a fright, when they continued near an hour, and then went off without any remedy.

Celſus, in the *ſpaſmus cynicus*, recommends pouring on the patient's head warm ſea-water and ſulphur:* And a roll of brimſtone, held in the hand, is frequently uſed, now-a-days, as a cure for cramps or fixed ſpaſms of the muſcles; and I have known it ſucceed in ſeveral caſes. The ſnapping of the brimſtone, which often happens, has been, by ſome, aſcribed to the electrical fire being diſcharged in great quantity out of the body, but without any reaſon. The truth is, that a roll of pure brimſtone, held in the hand when warm, will frequently break, whether the perſon be affected with the cramp or not; and the ſame thing happens to brimſtone when placed before the fire in a heat equal to, or a little greater than, that of the human body. I am, therefore, of opinion, that brimſtone cures ſpaſms not by any medical virtue, but that its effects are to be aſcribed to the patient's

* De Medicina, Lib. iv. cap. 2.

attention* and faith, or rather to the ſurprize occaſioned by the roll ſnapping in his hand: and, as a confirmation of this, I have known ſome affected with the cramp, who, having been informed that the breaking of the brimſtone was owing to the heat of the hand, miſſed of a cure.

(6.) Convulſive motions or ſpaſms are often prevented or cured by compreſſion, which braces and renders firmer ſuch parts of the body as are moſt ſubject to them. Thus cramps in the legs are prevented by tight bandages; and when convulſions ariſe from a flatulent diſtenſion of the inteſtines, or from ſpaſms beginning in them, they may be often leſſened or cured by making a pretty ſtrong compreſſion upon the *abdomen* by means of a broad belt. The *Baron Van Swieten* mentions the caſe of a young lady, whoſe legs, thighs, and belly, were kept tight with rollers for ſeveral months, in order to prevent convulſions, which, from an uncommon delicacy of her nerves, ſhe was frequently ſubject to.† Epileptic fits, which take their riſe from a peculiar ſenſation in ſome part of the legs or arms, may be kept off by making a tight ligature about theſe members as ſoon as that ſenſation begins, or at leaſt before it has reached the ſuperior parts of the body.

To the remedies already mentioned may be added the bark, which has ſometimes cured periodic convulſions after other medicines had failed.‡

I ſhall only obſerve further, that when ſpaſms, or convulſive motions, ariſe from ſharp humours in the ſtomach and inteſtines, nothing will procure any

* I have been often cured of a ſlight hiccup by looking ſtedfaſtly, for two or three minutes, on the impreſſion upon a ſhilling, or any other coin: And I know a Lady who, though very liable to hyſteric fits, is never affected with them, or even ſlighter complaints, when any of her children happen to be dangerouſly ill.

† Comment. in Aphor. Boerhaave, tom. i.

‡ See Philoſoph. Tranſact. No. 174.

any laſting relief till theſe are either corrected † or expelled.‡ II. Hyſteric

† A young man, under twenty, in a continued fever, was affected with a ſtrong delirium, and convulſions of his face, throat, and almoſt all the parts of his body, particularly his arms and legs. At the ſame time he complained of a great thirſt and heat within him. After having been in this way for two or three days, he had a ſweet orange given him, which he eat greedily, and calling always for more, conſumed near two dozen of them in two days. After he began to eat the oranges, the convulſions abated, and went quite off in three days.

‡ For the following caſe, in which violent convulſive fits were removed by repeated vomits, I am obliged to *Dr John Gardiner*, Phyſician in this place.

A young woman of ſeventeen years of age, of a delicate frame, after having been a good deal fatigued, was ſeized, on the 20th of July, with convulſions of almoſt every part of her body, which continued about five minutes; after which ſhe fainted away, and the convulſions ceaſed; but, upon her recovery, the convulſive motions of her arms, and the muſcles of reſpiration, returned. Theſe convulſions having continued, except in time of ſleep, to the 22d, when I was called, I ordered a bolus of ten grains of muſk to be taken every three or four hours, with two table ſpoonfuls of a muſk julep. On the 22d, 23d, and 24th, ſhe was, ſeveral times, free from the convulſions for half an hour, or ſometimes an hour: but, upon the leaſt noiſe in the room, or any thing that occaſioned ſurprize, they returned. The drawing the curtain of her bed, or the lifting of the latch of the door, uſed to have this effect. Nay, although ſhe ſaw her ſiſters going to open or ſhut the door, or to handle the tea-cups, and therefore expected to hear ſome little noiſe, yet ſo powerful was the impreſſion made by it on her nerves, that by no effort could ſhe prevent the convulſions from coming on.

In order to leſſen this uncommon ſenſibility of the nervous ſyſtem, camphire was added to the muſk bolus, and ſhe got twelve drops of laudanum in a diſh of valerian tea five or ſix times in twenty-four hours. After this ſhe was oftener free from the convulſions; but when they they returned they were more ſevere. On the 27th, although her menſes came at the uſual time, her ſymptoms did not abate. After this flux ceaſed, ſhe had a bliſter applied between her ſhoulders, uſed a ſolution of *aſa fœtida*, and increaſed the laudanum to a hundred drops a-day.

On the 31ſt of July ſhe began to be ſeized with faintings for about five minutes at a time; and ſoon after this the convulſions became univerſal, and attacked her from twelve to eighteen times a-day in regular paroxyſms, which laſted two or three minutes. In the night ſhe was almoſt always free of them. I now preſcribed for her an ounce of the bark, half an ounce of valerian, and a dram of caſtor, to be made with ſyrup of white poppies into an electuary, of which ſhe ſwallowed the bulk of a nutmeg three or four times a-day, at the ſame time continuing the laudanum and boluſes of muſk. After the 3d of Auguſt ſhe was ſeized with ſevere aſthmatic fits, which, together with her faintings and convulſions, would often make thirty paroxyſms in a day. Some days after this, upon the convulſions leaving

II. Hyſteric faintings with convulſions.

If the pulſe be full, or the patient any ways plethoric, ſome blood ſhould be taken away; after which we may endeavour to rouſe her by the ſmoak of *aſa fœtida* or burnt feathers, or by *oleum ſuccini* and ſpirit of hartſhorn dropt on cotton, and put into the noſtrils. Theſe medicines, by the ſtrong and ſudden impreſſion they make on the very ſenſible nerves of the noſe, not only tend to excite the ſeveral organs into action, but to leſſen or deſtroy the diſagreeable ſenſation in that part of the body which brought on the fit. With the ſame view, hot bricks may be applied to the ſoles of the feet; and the legs, arms, and belly, may be ſtrongly rubbed. But there is no remedy which I have found ſo effectual in removing hyſteric faintings with convulſions as the warm *pediluvium*; for, after many other things had been tried to no purpoſe, I have ſeen the patients reſtored to their ſenſes, almoſt inſtantly, by putting their feet and legs in water

leaving her, ſhe was ſeized with continued ſpaſms in her arms, legs, and thighs; after which ſhe ſometimes complained of a ſmall degree of pain and confuſion in her head.

Her pulſe, during all theſe complaints, ſeldom exceeded eighty ſtrokes in a minute; nor were there any appearances of her ſtomach being diſordered. However, on the 9th of Auguſt, I preſcribed a vomit of *ipecacuanha*, which made her throw up a great deal of dark greeniſh and very bitter bile. About an hour after this ſhe was attacked with one of the convulſive fits, but had no more of them that day. On the 10th of Auguſt ſhe had twelve, and the 11th fourteen of theſe fits. Upon the 12th, in the morning, ſhe got another vomit, which was alſo repeated on the 13th. Each time ſhe threw up a great deal of bile, and had no fit either of theſe two days. On the 14th ſhe took a decoction of tamarinds with ſenna, which purged her five or ſix times, and in the evening ſhe was attacked ſix times with the convulſions and fainting fits. On the 15th their number was near double that; but on the 16th, when the vomit was repeated, ſhe eſcaped them altogether. Having been informed that a pea-iſſue, which had been long kept open in one of her arms, had dried up near twelve months before ſhe fell ill, an iſſue, ſufficient to receive two or three peas, was made in each arm. Every other day, for a week, ſhe took a vomit of *pulv. ipecacuanhæ gr. v.* and *tart. emet. gr. i.* and at night ſometimes a ſmall doſe of *elixir ſacrum*; by which means, before the beginning of September, ſhe got quite free of the fainting fits and convulſions.

It was obſervable that, during her illneſs, in the intervals of the fits, ſhe was often very cheerful, and ſometimes jocoſe; but after ſhe recovered ſhe became grave, thoughtful, and ſomewhat moroſe, which was her natural diſpoſition.

water a little more than blood-warm: and it was remarkable, that, upon diſcontinuing the *pediluvium* too ſoon, the fainting and catchings often returned in a leſs degree, and the pulſe became ſmaller and irregular. In a few caſes, where the patients were plethoric, and the convulſions very ſtrong, the *pediluvium* has failed.

Warm water, thus uſed, is not only the ſpeedieſt, but the ſafeſt, cure for hyſteric faintings; while ſtrong volatile ſpirits, held to the noſe, are apt to throw ſome very delicate women into more violent convulſions.

In caſe of coſtiveneſs, a laxative clyſter with *aſa fœtida* will be proper; and, as ſoon as the patient can ſwallow, two table-ſpoonfuls of a ſolution of *aſa fœtida*, or ſome cordial julep, may be given.

After the fit is over, the radical cure muſt vary according to the different cauſes from which it may proceed. However, ſuch medicines will commonly be found moſt efficacious as ſtrengthen the alimentary canal and the whole nervous ſyſtem. An anti-hyſteric plaſter, applied to the *abdomen*, has been in ſome caſes uſeful; as alſo gentle vomits and ſtomachic purges.

III. A violent pain with cramps in the ſtomach. The method which I have found moſt ſucceſsful in this caſe is to make the patient, if there be any inclination to vomit, take ſome draughts of warm water to clean his ſtomach. After this, I order a clyſter of ſix ounces of water and from forty to eighty drops of laudanum. This is much ſurer than laudanum given by the mouth, which is often vomited up; and, in ſome caſes, increaſes the pain and ſpaſms in the ſtomach.

If the pain and cramps return with great violence, after the effects of the anodyne clyſter are over, I order another to be given, with an equal or larger quantity of laudanum; and, once in four hours, two table-ſpoonfuls of ſuch a julep as the following.

R Moſch. ſcrup. ii.
optime teratur cum
Sacchar. alb. drach. ii.

Dein

Dein adde
Mucilag. gum. Arab. unc. ſs.
Aqu. cinnamom. ſ. v.
menth. piper. ana unc. ii.
aromat. drach. vi.
M. ſ. a.

If the patient has been coſtive, a laxative clyſter muſt be given before the anodyne ones.

The anodyne balſam rubbed into the ſtomach, and the warm *ſemicupium*, are often uſeful. After the pain and cramps have been removed, the *emplaſtrum anti-hyſtericum*, applied to the epigaſtric region, has ſometimes contributed to prevent their return.

In all very violent or laſting pains of the ſtomach, ſome blood ought to be taken away, unleſs the weakneſs of the patient makes it improper; for this evacuation will always leſſen the danger of an inflammation, and can ſeldom do any conſiderable harm.

When the pain or ſpaſms in the ſtomach proceed from a ſuppreſſion of the menſes, venæſection is of great uſe. If they are owing to the true gout, beſides laudanum and muſk, ſpiceries, and ſome of the ſtronger cordial waters, or a large dram of brandy or rum, will be neceſſary, together with bliſters to the ancles.

IV. An indigeſtion and vomiting, with pains in the ſtomach.

1. When theſe complaints proceed from noxious humours in the ſtomach, the beſt remedies are vomits and gentle ſtomachic purges; together with elixir of vitriol, or the teſtaceous powders, according to the different nature of thoſe humours.

2. When from ſcirrhous obſtructions in the alimentary canal, we can do little more than to palliate by means of grateful ſtomachic medicines and opiates. However, in caſes of this kind, a ſmall glaſs of Spa or Pyrmont water, frequently repeated, has ſometimes ſtaid on the ſtomach when every thing elſe has been thrown up.

When there is a ſcirrhous obſtruction in the coats of the ſtomach near the pylorus, this paſſage is often ſo much ſtraitened, that only the thinner part

of

of the aliment can get into the *duodenum*; while the more ſolid part, after remaining ſeveral hours in the ſtomach, and occaſioning heart-burning and ſickneſs, is at laſt diſcharged by vomiting. Patients in this ſituation always find themſelves eaſieſt when they uſe only the thinner kinds of aliments, ſuch as light broths, milk, panada, ſago, ſalep, and the like.

3. When a ſickneſs and pain in the ſtomach, with vomiting ſoon after eating, are owing to a too great delicacy or an unnatural ſenſibility of the nerves of the ſtomach, either in conſequence of an irregularity of the *menſtrua*, or of ſome acrid humour in the blood falling on thoſe nerves, while we palliate with agreeable cordials and aromatics, we muſt endeavour to ſtrengthen the ſtomach by the bark, bitters, chalybeates, and exerciſe. But, in caſes of this kind, I have found nothing produce ſuch immediate good effects, as laudanum given an hour or more before dinner or ſupper.

(a.) An unmarried Gentlewoman, aged forty-four, irregular as to the menſes, was ſeized with a pain in her ſtomach, and ſoon after every meal became ſick, and vomited what ſhe had eat. After having been in this way for eight or ten days, ſhe took a vomit of *ipecacuanha*, ſeveral doſes of the *elixir ſacrum*, and *tinctura rhabarbari amara*. She alſo uſed warm claret with cinnamon and nutmeg, and a julep of pepper-mint water with the *ſpirit. volat. oleoſ.* but without any advantage. As ſhe ſlept ill, I adviſed her to take twenty drops of laudanum at bed-time, which made her reſt better in the night, but did not leſſen the vomiting the following day. Next night I deſired her to take the laudanum, not at bed-time, but an hour before ſupper. The firſt doſe in this way prevented her vomiting after ſupper, and next day after breakfaſt; but ſhe threw up her dinner as uſual. However, by increaſing the laudanum, before ſupper, to twenty-five drops, in three or four days ſhe got free of the pain and ſickneſs at her ſtomach, as well as of the vomiting after meals.

(b.) A married Lady, aged about thirty, after having been for ſome time irregular as to the monthly

monthly evacuation, upon eating freely of almoſt any kind of meat, but eſpecially ſuch as lay heavy on her ſtomach, was apt to be affected with ſickneſs, faintings, and ſlight convulſive motions, attended with a ſmall irregular and quick pulſe, and a coldneſs of her whole body. After ſhe had uſed vomits, the bark, bitters, ſacred elixir, and various grateful ſtomachic medicines to little purpoſe, I adviſed her to take ſome laudanum every day, an hour or two before dinner. Having been formerly much accuſtomed to this medicine, ſhe began with thirty-five drops, and ſoon increaſed them to fifty or ſixty. The laudanum, inſtead of making her drowſy, gave her better ſpirits, and enabled her to eat at dinner as uſual, without being affected with ſickneſs or faintings after it. She continued the uſe of the laudanum in this way pretty conſtantly for five or ſix weeks. Some days, when ſhe had neglected the laudanum before dinner, if ſhe took it as ſoon as ſhe began to be uneaſy after eating, it ſoon leſſened the ſickneſs at her ſtomach, and prevented the faintings and convulſive motions.

(c.) Another married Lady, aged about thirty, who had been often troubled with a pain, a ſourneſs and wind in her ſtomach, and, when theſe left her, with aſthmatic fits, complained of a lump in her throat, flatulence, and ſuch a weakneſs of her ſtomach and indigeſtion, that every kind of food occaſioned pain, ſickneſs, and vomiting, except bread and wine, or a very little boiled or roaſted chicken. After trying the bark, vomits, ſacred elixir, and exerciſe, with ſcarce any benefit, I deſired her to take ſome laudanum an hour before dinner. Although ſhe did not exceed ſixteen drops, yet ſhe always eat her dinner better, and digeſted it with the ſame eaſe as when ſhe was in health; nor did ſhe find any inconvenience from the laudanum, except that it made her thirſty in the afternoon.

4. In ſome caſes I have known a pain in the ſtomach with vomiting after eating, cured by ſoap taken daily to the quantity of two drachms; in other caſes, half a pint of tepid lime-water, drank thrice a-day, has anſwered better than the ſoap.

When

When a heat and ſoreneſs in the ſtomach ariſe from an acid, the teſtaceous powders ought to be taken freely. They have alſo cured, at leaſt for the time, ſome who, upon drinking a glaſs of wine, have felt, in their ſtomach, a burning heat inſtantly ſpreading through almoſt their whole body.

Several have found great relief from a pain in the ſtomach, both before and after eating, by taking a large draught of warm water with a little wine or brandy in it.

In the ſecond volume of the *Medical Enquiries and Obſervations* we have an account of a violent pain in the region of the right kidney in one patient, and of a pain in the ſtomach in another, immediately relieved by a draught of equal parts of fountain-water boiling, and Pyrmont or Bath water. But I imagine the relief procured in theſe caſes was rather owing to the warmth of the liquor than any virtue in the Pyrmont or Bath water; for a patient of mine near eighty, who, after having been long ſubject to bloody urine, came at laſt to have an ulcer in his bladder, found his pains always much leſſened, and ſometimes almoſt quite removed, by drinking largely of Arabic emulſion, tea, milk and water, or weak broth, a good deal more than blood-warm. As the good effect of theſe warm liquors was always immediate, it muſt have been owing ſolely to their action on the nerves of the ſtomach. We know that warm water, applied externally, often eaſes internal pains; it is no wonder, then, that warm liquors, received into the ſtomach, a part much more ſenſible than the ſkin, and whoſe nerves have a remarkable ſympathy with almoſt every part of the body, ſhould have equal or more powerful effects in relieving pains even in ſuch parts as are not immediately connected with it.

V. A Colic of the hyſteric or flatulent kind. If the patient be coſtive, as is almoſt always the caſe, the body muſt be opened by laxative clyſters, to which a drachm or two of *aſa fœtida* may be added. If there are violent vomitings, after ſeveral draughts of toaſt and water, a mixture ought to be given of ſalt of wormwood, lemon-juice, and pepper-

pepper-mint water.* However, theſe draughts are often ineffectual, and in ſome few patients the vomiting is increaſed by the laudanum. In ſuch caſes I have always ſucceeded by ordering a clyſter of ſix ounces of water, with fifty, ſixty, or even eighty, drops of laudanum; and when no thorough paſſage could be procured, I gave, by favour of this opiate, ſome pills of aloes with calomel; which paſſing into the inteſtines before the vomiting returned, generally procured a plentiful evacuation by ſtool, which, either wholly, or in a great meaſure, removed the diſeaſe.

If the purging pills fail to open the body, and the pain and vomiting return, another anodyne clyſter muſt be given, and ſoon after it a larger doſe of the pills; and a little before the time theſe pills may be expected to work, the patient ſhould go into the warm bath. In patients of a full habit, eſpecially if the pain be very great, ſome blood ought to be taken away.

To prevent the frequent return of hyſteric colics, an anti-hyſteric plaſter applied to the *abdomen*, a doſe of the ſacred tincture or elixir once a-week, and exerciſe, eſpecially riding, will be found uſeful. A milk diet has ſometimes cured thoſe who have been much afflicted with thoſe colics; and the

* The draughts of ſalt of wormwood and juice of lemons are obſerved, in a great meaſure, to loſe their power of ſtopping a vomiting when they are not ſwallowed in the act of effervescence: and is not their ſuperior anti-emetic power, in this ſtate, owing to their making a much ſtronger impreſſion upon the nerves of the ſtomach, while they continue to emit their fixed air, and when all their parts are in violent motion, than after ſaturation, when they can act only by their ſaline quality? For while the nerves of the ſtomach are affected with this briſk and unuſual ſtimulus, that diſagreeable ſenſation which produced the vomiting muſt be leſſened or deſtroyed. And is not the effect which thoſe draughts ſometimes have in preventing the attack of intermittent fevers, to be aſcribed ſolely to their action on the very ſenſible nerves of the ſtomach, and not to any ſudden change which they may be ſuppoſed to produce in the nature of the humors contained in the *primæ viæ?* Further, are not many of thoſe mineral-waters which contain a good deal of fixed air, and ſparkle in the glaſs, much more grateful, as well as invigorating, to the ſtomach when drank at the well, than after they have ſtood for ſome time in an open veſſel; becauſe, in this laſt caſe, they have, together with their fixed air, loſt their power of gratefully ſtimulating the nerves of the ſtomach.

the ſulphureous water of Moffat, drank for two or three months in the Summer, has, in ſome caſes, made their returns much leſs frequent.

VI. Flatulence in the ſtomach and bowels. The medicines moſt proper in complaints of this kind, are either ſuch as procure ſpeedy relief by expelling the wind, or thoſe which, by ſtrengthening the alimentary canal, leſſen its generation. Among the former I have found none more efficacious than the *ſpiritus æthereus* and *laudanum*. I commonly give the laudanum in a mixture with pepper-mint water and tincture of caſtor, or *ſpiritus nitri dulcis*. In ſome caſes, in place of this, I preſcribe opium in pills with *aſa fœtida*. And here it may be worth while to obſerve, that the good effects of opiates are equally conſpicuous, whether the flatulence be contained in the ſtomach or inteſtines; whereas thoſe warm medicines, commonly called carminative, do not often give immediate relief, except when the wind is in the ſtomach.

With regard to the *ſpiritus æthereus*, I have frequently ſeen very good effects from it in flatulent complaints; of which I ſhall content myſelf with giving one inſtance. A Lady, aged between forty and fifty, about the time the menſes were leaving her, found her belly increaſe ſo much in bulk, that for ſometime ſhe ſuſpected herſelf to be with child. In the morning ſhe was often ſo much ſwelled about the ſtomach as not to be able to bear her ſtays, or breathe freely. She uſed a variety of medicines, but nothing gave ſuch immediate relief as a tea-ſpoonful of the *ſpiritus æthereus*, mixed with two table-ſpoonfuls of water. This always made her bring up a good deal of wind, and leſſened the ſtraitneſs and ſwelling about her ſtomach.

In gouty caſes, the *ſpiritus æthereus*, a dram of French brandy, or of the *aqua aromatica*, and ginger, either in ſubſtance, or infuſed in boiling water, are among the beſt medicines to expel wind.

When the caſe of flatulent patients is ſuch as to make it improper to give them warm medicines inwardly, a plaſter made of equal parts of the *emplaſtrum anti-hyſtericum* and *ſtomachicum* may be applied

applied to the ſtomach or belly with advantage; or four or five tea-ſpoonfuls of the following liniment may be rubbed into them at bed-time.

R. Balſ. anodyn. Batean. unc. i.
Ol. mac. per expreſſ. unc. ſs.
menth. drach. ii. Miſce.

The remedies moſt proper for ſtrengthening the ſtomach and bowels, and conſequently for leſſening the production of flatulence, are the bark, bitters, chalybeates, and exerciſe. In flatulent caſes I add to the tincture of the bark and bitters, which I have ſo often recommended, ſome nutmeg or ginger. And when I preſcribe the filings of iron, I join them with the *pulvis diaromatôn*. When windy complaints are attended with coſtiveneſs, nothing anſwers better than four or five of the following pills every other night at bed-time:

R. Aſ. fœtid. drach. ii.
Aloes ſocotrin.
Sal. Mart.
Rad. zinziber. ana drach. i.
Elix. proprietat. q. ſ. ut. f. pil. gr. iv.

On the other hand, when the body is too open, twelve or fifteen grains of rhubarb, with half a drachm or two ſcruples of the *confectio Japonica*, given every other evening, will have very good effects.

In thoſe flatulent complaints which come on about the time the menſes ceaſe, repeated ſmall bleedings often give more relief than any other remedy.

With regard to diet, I ſhall only obſerve, that tea, and all flatulent aliments, are to be avoided; and that for drink, water with a little brandy or rum, is not only preferable to malt liquor, but in moſt cafes alſo to wine.

VII. A nervous or ſpaſmodic aſthma.

(1.) In the true ſpaſmodic aſthma, where there is no fixed obſtruction in the lungs, nor any load of phlegm oppreſſing them, the fits are beſt relieved by bleeding and opium. If the patient be of a full habit, we may bleed largely; if otherwiſe,

wiſe, we muſt either take away little blood, or omit this evacuation altogether.

The opium may be given either in the form of the *elixir paregoricum*, or in ſuch a draught as the following.

R. Aqu. menth. unc. i. ſs.
Laud. liquid.
Sp. volat. oleoſ. ana. gutt. xxv.
Syr. commun. drach. ii. Miſce.

Sir Richard Blackmore tells of a phyſician, much affected in the winter-time with a dry aſthma, who every morning took thirty drops of laudanum, without which he found himſelf unable to go abroad about his buſineſs.

Nor are opiates leſs ſucceſsful when a true ſpaſmodic aſthma ariſes from ſympathy with the ſtomach, than when the nerves of the lungs are themſelves primarily affected.*

That ſenſe of faintneſs about the ſtomach with a frequent ſighing and a difficulty of breathing, with which women after child-bearing are ſometimes affected, when the miliary eruption does not come properly out, are often leſſened or removed by a doſe of the *elixir paregoricum*, or a bolus of *caſtor*, *ſal. corn. cerv.* and *opium*.

In the true ſpaſmodic aſthma, eſpecially when it is owing to wind in the ſtomach and bowels, or increaſed by this, a ſolution of *aſa fœtida*, the tincture of caſtor and ſpirit of hartſhorn, are often uſeful, although their anti-ſpaſmodic virtue is much leſs than that of opium.

(2.) When an aſthma of the ſpaſmodic kind is occaſioned by, or attended with, ſome fixed obſtruction

* A Gentleman, aged twenty-five, after having taken mercury for ſeveral weeks on account of a venereal diſorder, became peeviſh becauſe of his confinement, and would eat no meat for upwards of twenty-four hours, but drank largely of whey and water-gruel. In the afternoon he began to be affected with a difficulty of breathing, unattended with any cough or ſpitting. The tincture of caſtor, ſpirit of hartſhorn, and other medicines, which were preſcribed, gave very little relief; and the aſthmatic fit becoming much worſe about midnight, a draught with twenty drops of laudanum was ordered. This ſoon leſſened the difficulty of breathing ſo much, that he fell aſleep, and next morning awaked in a great meaſure free of this complaint, which, after eating ſome broiled chicken for dinner, left him entirely.

ſtruction in the lungs, or a conſiderable accumulation of humours in them, we muſt uſe a method of cure ſomewhat different from the above. For although bleeding is equally uſeful, and often more neceſſary here than in the true ſpaſmodic aſthma, yet opiates are not to be given, to leſſen the fits, till after the lungs have been ſufficiently cleared by evacuations and attenuating medicines. A large bliſter between the ſhoulders is of excellent uſe to promote expectoration, and relieve the lungs. Vomits are likewiſe proper, but cannot be ſafely given till after the aſthmatic fit begins to abate. In ſome patients, a purge of manna and Glauber ſalt, or of ſoluble tartar, almoſt always leſſens or carries off the fit: while in others, who have weaker bowels, whatever purges briſkly, whether it be food or medicine, is apt to bring on, or at leaſt to increaſe, the fit.

For preſent relief I commonly give ſpirit of hartſhorn, or compounded tincture of caſtor, diluted with a ſufficient quantity of water. With the ſame view, alſo, a table-ſpoonful of a ſolution of equal parts of *gum ammoniac* and *aſa fœtida* in penny-royal water, may be taken five or ſix times in twenty-four hours.

A draught of water, with one eighth part of vinegar, and ſweetened with honey or ſugar, often gives conſiderable relief in aſthmatic fits; although ſuch is the difference of conſtitutions, that I have met with ſome perſons whoſe breathing was always made worſe by acids of every kind.

Thoſe aſthmatic patients whoſe ſtomach and bowels are weak, and much troubled with flatulence, do better with the lighter fleſh-meats and a little wine, than with a milk and vegetable diet; and the ſolution of *gum ammoniac*, with *acetum ſcilliticum*, or the *pilulæ ſcilliticæ*, do not commonly agree ſo well with them as the *aſa fœtida* and volatile alcaline ſalts.

When elderly perſons have been ſeized with an aſthmatic paroxyſm from the gout attacking the lungs, I have found moſt benefit from bliſters applied between the ſhoulders and to the legs, and

from

from boluſes of *gum ammoniac*, *ſal. vol. ammon.* and camphire, given twice or thrice a-day.

(3.) To prevent the return of the fits in the true ſpaſmodic aſthma, we muſt endeavour to ſtrengthen the lungs and whole nervous ſyſtem by means of the bark, chalybeates, elixir of vitriol, a proper diet, country air, and riding.

A flannel waiſtcoat next the ſkin, or a large piece of flannel wore on the breaſt, has contributed to prevent the frequent return of aſthmatic fits.

The patients ſhould, above all things, avoid eating or drinking ſo much at once as to burden their ſtomach.

In the mixed aſthma the bark muſt be uſed with more caution, eſpecially if the lungs be conſiderably obſtructed, or loaded with phlegm; and the cure muſt be chiefly attempted by iſſues in the back and arms, or a ſeton in the ſide; and by other medicines that tend to remove the obſtruction in the pulmonary veſſels, or leſſen the flux of humours to them. Of this kind are the *pilulæ ſcilliticæ*, taken in ſuch quantity as keep the body always open; pills of garlic and ſoap; the juice of forty or fifty *millipedæ* in two or three table-ſpoonfuls of French white-wine, Rheniſh or cyder, taken twice a-day; and crude mercury, or quick-ſilver pills, which have ſometimes cured aſthmatic ailments after other remedies had failed.

As not only different patients are relieved by different remedies, but the ſame patients, from a change in their conſtitution, or in the nature of the diſorder, often require a conſiderable change in their medicines and diet, it may not be amiſs to add the following caſe of one who has been long ſubject to ſevere aſthmatic fits.

A Gentleman, aged about forty, of a ſpare make, lively, healthy, and uſing a great deal of exerciſe, one day, after too great an exertion of his ſtrength, began to feel a pain in his breaſt about the *ſternum*. Two years after this he was at times affected with a difficulty of breathing, which continued to increaſe for ſeveral years, and was generally attended with a great flux of humors

upon his lungs, and a conſiderable expectoration of a thick phlegm. In violent fits he found the moſt immediate relief from bleeding and bliſtering; and he uſed, with advantage, vomits of *ipecacuanha* with the *oxymel ſcilliticum*, and the *pilulæ ſcilliticæ*, or a ſolution of gum ammoniac with *acetum ſcilliticum*. He abſtained for ſeveral years from wine, malt-liquor, and all fleſh-meats, except chicken; and often made his dinner of bread and butter-milk only. He frequently found his breathing made eaſier by drinking water with a little vinegar ſeveral times through the day.

After he had ſuffered much by many violent attacks of this diſorder, he began to complain of wind in his ſtomach; and, upon vomiting, diſcharged a good deal of tough phlegm. His body became likewiſe too open; and whatever food or medicine increaſed this diſpoſition was hurtful to him. The ſquill-pills, and the *lac ammoniacum* with the *acetum ſcilliticum*, did not now agree near ſo well with him, or do him ſo much ſervice, as the compound tincture of caſtor, or a ſolution of *aſa fœtida* with a little *ſal. vol. ammon.* in penny-royal or mint-water: and a bit of broiled meat, with two or three glaſſes of claret after his meals, agreed better with him than vegetable food, or watery liquors alone; but he found it beſt to eat little at a time, and often. Now, alſo, he found great benefit from the bark, not only in the intervals, but alſo in the decline of the fits. He took it in decoction, with four ounces of the tincture added to each pound, to the quantity of two table-ſpoonfuls four times a-day; and, ſo far from finding it increaſe his wheezing or difficulty of breathing, he thought it often leſſened them, and prevented or broke the force of ſmaller paroxyſms.

Soon after he became ſubject to fits of looſeneſs, he began to ſpit leſs than he had done for ſeveral years before; and now I obſerved that bliſters, which run longer with him than moſt people, did him leſs ſervice than formerly, when he had a greater expectoration and no tendency to a looſeneſs. During the violence of the worſt fits he ſometimes almoſt loſes his ſight, nor is he then

able

able to cough till they begin to abate. At firſt he brings up a little tough phlegm with great difficulty; but as the conſtriction in the lungs leſſens, he expectorates more freely.

For ſome years he had more frequent returns of his diſeaſe in Summer and Autumn than in Winter. Sudden changes of weather, cold or fatigue, bring on the aſthma, which he can ſometimes foretel by the paleneſs of his urine. Flatulent aliments, and whatever purges him much, will now, in his beſt health, occaſion a ſlight fit. Although he has been often free from any violent attack for two or three months, yet he ſeldom breathes in the night ſo freely as one in perfect health. His pulſe is often ſmall, his extremities cold, and face livid, during a ſevere fit. After bleeding, his pulſe becomes fuller and quicker; but does not return to its natural ſlowneſs till his breathing is free. The fits are generally over in two or three days; ſometimes they laſt eight or ten; and, after yielding in part, return a ſecond time with more violence. He is commonly worſt in the evening or in the night; and has ſometimes exacerbations evening and morning. The paroxyſms of late are almoſt always attended with complaints of flatulence in his ſtomach, and he finds relief as often as he brings up wind. The remedies which in this ſtate have been of moſt ſervice to his ſtomach, are the bark, a ſolution of *aſa fœtida*, the *emplaſtrum anti-hyſtericum* applied to the epigaſtric region, and the diet of fleſh-meats with claret. A bit of mutton-chop has often given him relief in leſſer fits of bad breathing. Obſerving that, even in the intervals of the fits, he often breathed with difficulty about three or four in the afternoon, he eat a little mutton-chop, beef-ſteak, or broiled chicken, between eight and nine in the morning, and dined between one and two on panada with a little claret, or ſomething equally light. By this means he found the wheezing and difficulty of breathing in the afternoon always much leſſened, and ſometimes prevented altogether. He often drank near two-thirds of a bottle of claret daily, but ſeldom took above a quarter of a pint of it at once. By this

diet, and the conſtant uſe of the bark, for above two months, firſt in tincture and decoction, and afterwards in ſubſtance, he not only breathed more eaſily at all times, but was kept much longer free of the aſthmatic fits than uſual, not having had an attack of this kind, worth mentioning, from the beginning of November till the April or May following; notwithſtanding his having been affected ſeveral times, during the Winter months, with a cough and a conſiderable expectoration of thick phlegm.

VIII. A palpitation of the heart.

(1) When, from a weak or diſordered ſtate of the ſtomach, the heart, by ſympathy, is rendered ſo irritable, as, from very ſlight cauſes, to be liable to ſtrong palpitations, the moſt proper remedies are, the tincture of the bark and bitters, and moderate exerciſe. If there be any noxious humors lodging in the ſtomach, vomits will be proper; and, if the patient be any ways coſtive, a table-ſpoonful of the ſacred elixir may be given once in two or three nights.

For preſent relief, ſpirit of hartſhorn, the *tinctura caſtorei compoſita*, *ſpiritus æthereus*, and opiates, generally anſwer beſt.

(2.) When palpitations proceed from the gouty matter affecting the heart, we ought to truſt chiefly to warm ſtomachic laxatives, to camphire, the volatile ſalts, the warm *pediluvium*, bliſters applied to the legs, or ſinapiſms to the ſoles of the feet; and to bleeding, if the patient be of a full habit.

(3) When palpitations ariſe from the ſuppreſſion of ſome habitual evacuation, if this cannot be reſtored, the redundant humours are to be carried off by ſmall bleedings, gentle purges, diaphoretics or iſſues.

(4) Laſtly, when palpitations are owing to *polypi* in the heart itſelf, or in the great blood-veſſels opening into it, to accretions of the *pericardium* to the heart, oſſified valves, or ſuch like cauſes, the diſeaſe may be looked upon as incurable; ſince hitherto we know of no medicines which can remove theſe cauſes. However, ſome relief may be procured by frequent ſmall bleedings, gentle purges,

ges, and a cooling attenuating light diet; at the ſame time avoiding all viſcid, incraſſating, and heating aliment, and every kind of exerciſe that too much quickens the motion of the blood.

IX. An immoderate diſcharge of pale urine.

As I have before obſerved,* that the proximate cauſe of that great diſcharge of pale-water, to which hyſteric people are frequently liable, is an increaſed motion of the ſecretory veſſels of the kidneys, ſo there is no medicine that will generally leſſen it ſo ſoon, or ſo remarkably, as opium;† but as opium does not ſtrengthen the kidneys, nor remove the ſeveral remote cauſes of this increaſed ſecretion, other remedies are required to prevent its frequent returns.

Thoſe which have ſucceeded beſt with me are, the bark, either in ſubſtance or decoction, with ſome cinnamon added to it; ſmall doſes of the *tinctura rhabarbari amara cum vino* once in three or four nights, moderate exerciſe on horſeback or in a chaiſe, and a diet conſiſting chiefly of rice, ſago, ſalep, and the lighter fleſh-meats roaſted, together with a few glaſſes of claret or red port after meals.

In caſes where the flux of pale urine is attended with hectical heats, I add to the above remedies the *tinctura roſarum*, or elixir of vitriol.

When the increaſed ſecretion is in a great meaſure owing to a particular debility of the kidneys, a flannel-ſhirt will ſometimes leſſen the quantity of the urine, by increaſing the perſpiration.

A tight belt about the loins, or a ſtrengthening plaſter applied to them, has been attended with remarkable effects, as will appear by the following caſes.

(1) A Gentleman, near forty, troubled with wind in his ſtomach, and with gouty pains in his feet, in Auguſt, 1753, was attacked with fits of

* See Chapter VI. No. VIII.

† Although in ſome flatulent or ſpaſmodic caſes, opium often proves one of the beſt diuretics, yet it has a contrary effect when, on account of an uncommon irritation of the nervous ſyſtem, the urine is ſecreted in too great quantity. I know an elderly Lady who is frequently hot and uneaſy in the night, and paſſes a great deal of pale-water, whom a doſe of laudanum at bed-time always relieves in a great meaſure of this flux, although it ſeldom procures her good reſt.

ſickneſs at his ſtomach, attended with a quickneſs of pulſe, for which he lay in bed, and ſweated for ſeveral days. After this he began to make great quantities of pale water, inſomuch that in the night he commonly uſed to paſs near an Engliſh pint every two hours. After getting up, the quantity began to leſſen, and continued to diminiſh as the day advanced. Notwithſtanding the uſe of the bark, conſerve of roſes, alom, and ſeveral other medicines, for near a fortnight, this flux of urine increaſed, and for the laſt two days it had been made almoſt as plentifully in the day as in the night. From a ſuſpicion that this profuſe ſecretion might ariſe either from a laxity or weakneſs of the renal veſſels, or from their being affected with an uncommon alternate motion, about two in the afternoon a broad poſting belt was put about the belly and loins as tight as the patient could bear it: and, although, all that morning, and the day before, he had made every two hours, at leaſt, three gills of urine, almoſt as clear as rock-water, yet, after the belt was on, he voided none for above four hours, and then not quite half a pint. About ten at night he paſſed much the ſame quantity; but not being able to ſuffer the belt in bed, it was removed, and the flux of urine returned in the night-time, though not to that degree it had done for ſeveral nights before. From this time, by keeping to the belt, riding out in a chaiſe, and returning to the uſe of light fleſh meats, which, on account of a quickneſs in his pulſe and great thirſt, he had almoſt wholly abſtained from, the flux of urine daily leſſened, and the patient recovered.

(2.) A Gentleman, upwards of thirty, after having been in a ſlow fever, attended with rheumatic pains, for ten or twelve days, began (November 20, 1745,) to make a great deal of pale water, and chiefly in the night-time. This diſorder, notwithſtanding the uſe of the bark, *tinctura roſarum*, and other remedies, continued, without any ſenſible abatement, till the 24th of December, when a large plaſter of the *emplaſtrum defenſivum* being applied to the *os ſacrum* and loins, had ſo good an effect, that, on the night following, he made

made no water till after he had been three hours in bed; though, for ſome time before, he had ſeldom lain an hour and a half without a call. The ſecond night he was above four hours in bed before he was diſturbed, and the quantity of urine through the whole night did not exceed five gills; whereas, for ſeveral weeks before, it had commonly amounted to three Engliſh pints a-night, and ſometimes to much more. In leſs than a week, from the time he had the plaſter, the urine returned to its natural colour and quantity, and the patient ſoon recovered his ſtrength.

The ſame Gentleman, in November, 1750, after a fever and cough, was again attacked with his old diſtemper, upon which he had immediately recourſe to the *emplaſtrum defenſivum*, which, though it ſeemed ſomewhat to reſtrain the flux for the firſt night, yet had no effect afterwards. But it is to be obſerved, that, on this relapſe, neither the bark nor the other ſtrengtheners had been uſed before the plaſter.

(3.) Mr. J. P. aged above fifty, after a tedious fever in July, 1758, began to make, in the night, great quantities of pale water, which much retarded his recovery. After uſing the bark, claret, and other remedies, I adviſed him to apply to his loins the ſame ſtrengthening plaſter which I had found ſo ſerviceable to the laſt mentioned patient; by means of which the flux was in a few days ſenſibly diminiſhed, although not quite ſtopt for ſeveral weeks.

X. Periodical headachs.

(1.) When theſe ariſe from a diſordered ſtate of the ſtomach, the beſt medicines are vomits, ſtomachic laxatives, and bitters. If there is an acid in the ſtomach, the teſtaceous powders, *magneſia alba*, or lime-water, will be of great uſe.

(2.) When periodic headachs proceed from a rheumatic or gouty humour affecting the ſmall veſſels or nerves of the *pericranium*, or other parts of the head, the propereſt remedies are bliſters applied to the head or legs; iſſues in the head or neck; the warm *pediluvium*, with dry friction of the

the legs and feet, and frequent doſes of ſacred tincture.*

In a violent pain of the head from a rheumatic humour, after ſeveral other remedies had failed, I have ſeen good effects from fifteen or twenty grains of *gum. guaiac.* with ten grains of *ſal. vol. ammon.* given in a bolus at bed-time, and repeated for ſeveral nights.

The *pulvis fol. aſari*, uſed as a ſternutatory, has ſometimes cured obſtinate headachs, by making a large evacuation from the veſſels of the noſe.

(3.) When periodic or frequently returning pains of the head are owing to a peculiar weakneſs or delicacy of the nerves of that part, rendering them liable to be affected by ſlight cauſes, we muſt attempt to relieve the patients by the bark, chalybeates, moderate exerciſe, and daily waſhing of the head with cold water. Here, alſo, ſome of thoſe medicines, commonly called nervous, may be of uſe, ſuch as camphire, muſk, and valerian. The laſt of theſe has been commended as a kind of ſpecific in obſtinate hemicranias;† and I have found it ſerviceable in removing a confuſion of the head, with which an epileptic patient, of very delicate nerves, was almoſt conſtantly affected; as well as in leſſening or protracting the returns of the convulſive fits. The valerian, in this caſe, was given in the form of an electuary, and to the quantity of three drachms daily.

(4.) When headachs are regular as to their periods, vomits ſhould be given an hour and a half, or two hours, before the returns of the fits, and the bark between them.

I have known a violent *hemicrania*, which returned regularly at a certain time of the day, in a great meaſure, prevented by taking the following draught an hour before the coming on of the pain.

R. Laud.

* The following effect of an extraordinary doſe of ſacred tincture was communicated to me by a phyſician of character. A Lady, afflicted with a rheumatic pain in her head, by miſtake, drank over night, at once, near an Engliſh pint of ſacred tincture. Next day ſhe purged ſeven times, and, for three days after, ſalivated as if ſhe had taken mercury, but was entirely cured of the pain of her head.

† See Fordyce de Hemicrania.

R. Laud. liquid. gutt. xl.
Tinct. ipecacuan. gutt. xlv.
Sp. Minderer. unc. ſs.
Aqu. roſar. unc. i.
Sacch. alb. drach. ii. Miſce.

This medicine, while it leſſens the pain, ſeldom fails to raiſe a plentiful ſweat.

(5.) When headachs, whether regularly periodic or not, ariſe from a ſuppreſſion of the menſes, we muſt endeavour to reſtore this evacuation; but if that cannot be done, bleeding, eſpecially at the ancles, perpetual bliſters, or iſſues in the head or neck, and laxatives, are the beſt remedies.

(6.) When the returning pain has been attended with a ſwelling of the part, after other medicines had failed, mercurial laxative pills have ſucceeded.*

(7.) To relieve preſent pain in violent periodic headachs, the beſt remedies are the warm *pediluvium*, flannel cloths wrung out of hot water, or a hot decoction of roſemary, and applied to the ſhaved head; the *ſpiritus æthereus* applied in the hollow of one's hand to the pained part, and kept there for ſome minutes; large doſes of laudanum; and, in ſome caſes, leeches put to the temples.

Cold water will give eaſe in ſome headachs, while hot applications do moſt ſervice in others. In like manner, ſhaving the head relieves ſome patients, but is hurtful to others.

It may be proper to obſerve, that in all violent headachs, we ought to begin the cure with bleeding, either by applying leeches to the temples, or opening the artery there. If the patient be plethoric,

* A Lady, between twenty-five and thirty, of a thin habit and delicate conſtitution, was ſeveral years ſince attacked with a *hemicrania*, which returned commonly every afternoon; at which time, that part of her forehead, which was affected, was often ſenſibly ſwelled. She kept a perpetual bliſter on her head for many months, uſed ſacred elixir and tincture, *pulvis aſari* as a ſternutatory, and other remedies, without any benefit; inſomuch that after a twelvemonth her complaint was rather worſe than ever. I then adviſed her to take from twelve to ſixteen grains of the *pilulæ mercuriales laxantes* every other night. By the uſe of theſe pills, a gentle ſalivation was raiſed, and kept up for about twelve days, which intirely removed the headach; nor has ſhe had any return of it ſince.

thoric, a larger quantity of blood may be taken from the jugular vein.

Moderate exercise is generally useful in periodic headachs, from which soever of the foregoing causes they may arise, but the proper time for it is in the intervals of the fits.

XI. Low spirits.

Hypochondriac and hysteric patients are commonly affected with this complaint, in a greater or less degree. In general, exercise and the cold bath are among the best remedies. But to be more particular,

(1.) When low spirits are owing to a weak state of the nerves of the stomach and bowels, the tincture of the bark and bitters, chalybeates, aromatics, a proper diet, and riding, will do most service.

(2.) When they arise from obstructions in the hypochondriac *viscera*, or a foulness of the stomach and intestines, the most proper medicines are, aloetic purges, Harrigate waters, and soluble tartar. I commonly prescribe the soluble tartar in the following manner:

R. Tartar. solub. drach. ii. ad unc. ſs.
Solve in aqu. fontan. unc. viii.
Cui adde aqu. cinnamon. ſ. v.
Syr. violar. *aa* unc. 1. Miſce.

This solution is to be taken at two or three draughts, either every morning, or only once in two days, and to be continued for several weeks.

Doctor Muzzel has given several instances of the success of the soluble tartar in madness and melancholy. In cases of low spirits, I have found it cool the patients, dispose them to sleep, and quiet the hurry of their spirits; but it sometimes becomes hurtful by increasing flatulence, and occasioning a faintness: and, as far as I have observed, the soluble tartar is more useful in maniac or melancholic disorders, proceeding from noxious humours in the *primæ viæ*, than in those which are owing to a fault in the brain.

(3.) When low spirits proceed from a suppression of the menses or hæmorrhoids, if these evacuations cannot be restored, some others must be substituted

in

in their place: but nothing has ſuch ſudden good effects as bleeding.*

(4.) Laſtly, when low ſpirits or melancholy have been owing to long-continued grief, anxious thoughts, or other diſtreſs of the mind, nothing has done more ſervice than agreeable company, daily exerciſe, eſpecially travelling, and a variety of amuſements.

* A Gentlewoman, aged fifty, ſoon after the menſes had left her, was ſeized with a cough, and ſometimes with a ſlight hæmoptoe. This laſt ſymptom went off in a few months, but the cough laſted above three years; and upon its ceaſing, ſhe began to be much troubled with wind in her ſtomach, low ſpirits, a confuſion in her head, and a want of ſleep. In this condition ſhe continued for ſeveral months, during which theſe complaints increaſed, notwithſtanding the free uſe of warm, carminative, aromatic, chalybeate, and anti-hyſteric medicines. A bliſter applied to her head leſſened the confuſion in it, and procured her better reſt for a few nights. Believing that, as the cough was, in ſome meaſure, a conſequence of the ſuppreſſion of the menſes, ſo the wind in the ſtomach and low ſpirits were owing to the nerves of this organ being diſordered by that matter which uſed to be thrown off by the lungs, although her pulſe was neither full nor quick, I ordered ten ounces of blood to be taken from the arm; immediately after which her ſpirits were relieved, the confuſion in her head and watching were removed, and the flatulent ſymptoms were much leſſened.

This perſon afterwards, upon the return of the ſame ſymptoms, has found bleeding do her more ſervice than any other remedy.

THE END.

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