

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.

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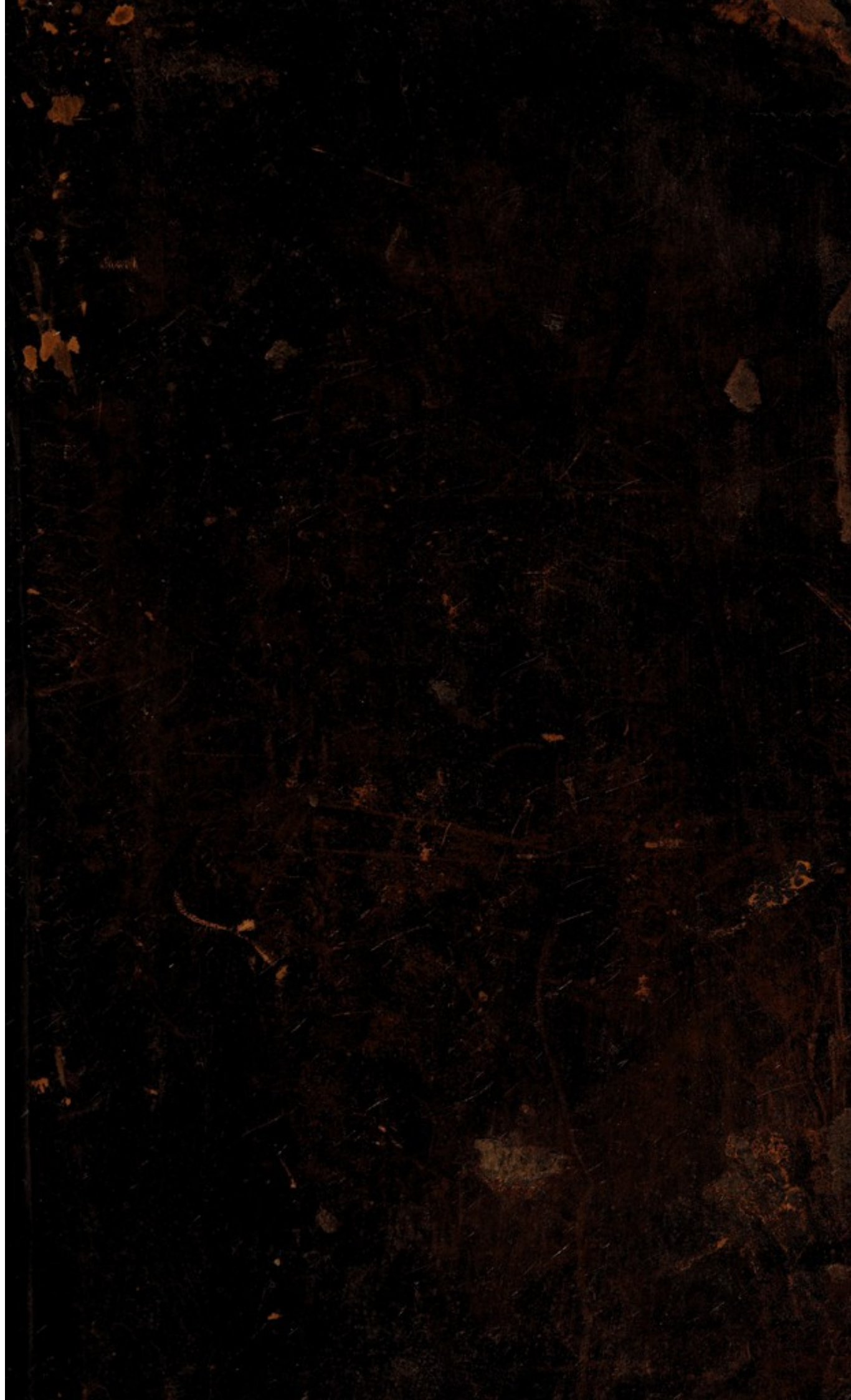
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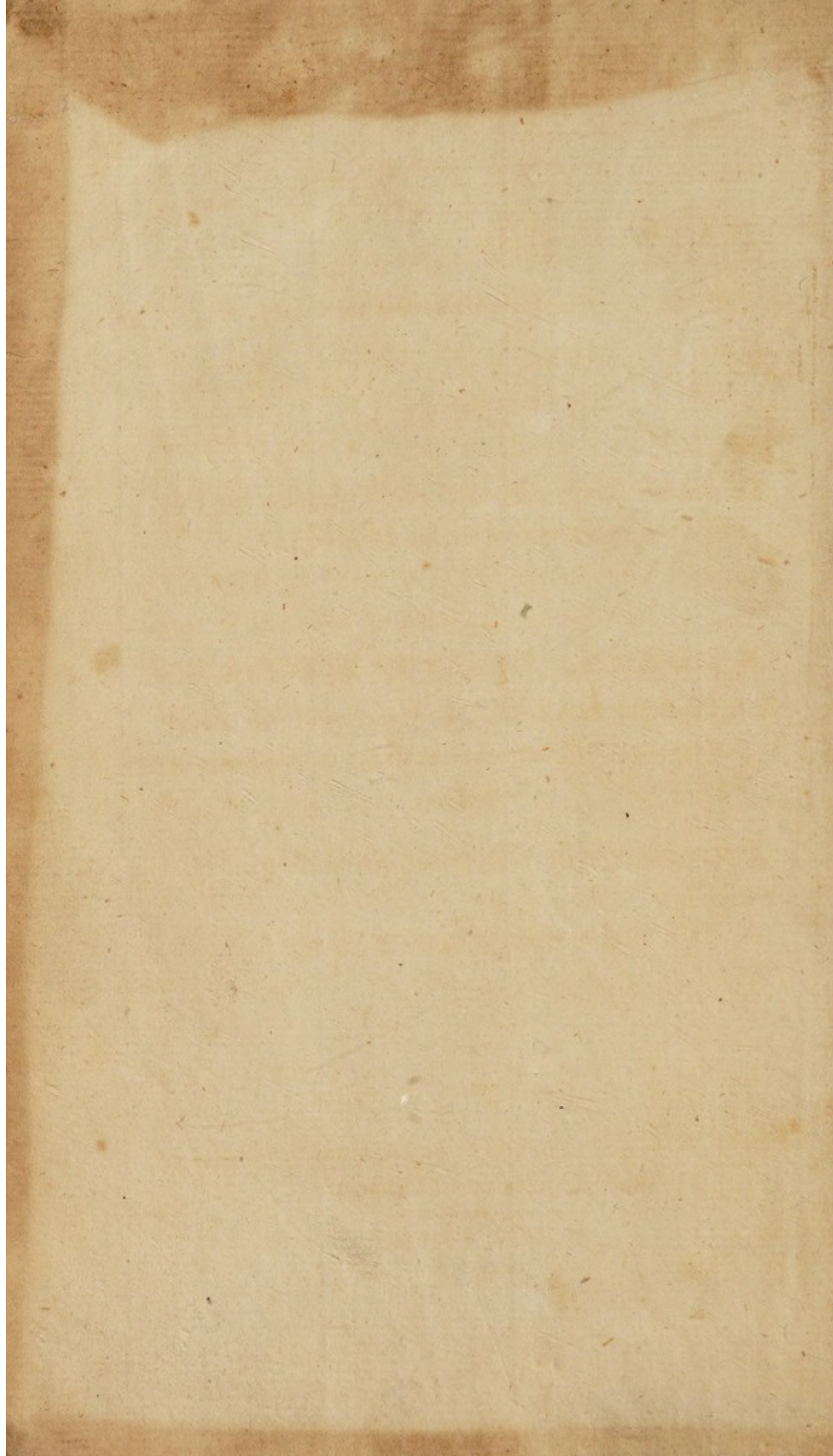


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OBSERVATIONS

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

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College of Physicians, and Professor of Medicine in
the University of Edinburgh.


Συμπάθεια πάντα Hippocrat. de aliment. § 4.

The THIRD EDITION.

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P R E F A C E.

THE disorders which are the subject of the following observations, have been treated of by authors under the names of flatulent, spasmodic, hypochondriac, 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 to 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 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

* See an Essay on the vital, &c. motions, edit. 1.

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 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

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, 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

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 *phenomena* 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 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 candor the defects which may be found in
the

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.

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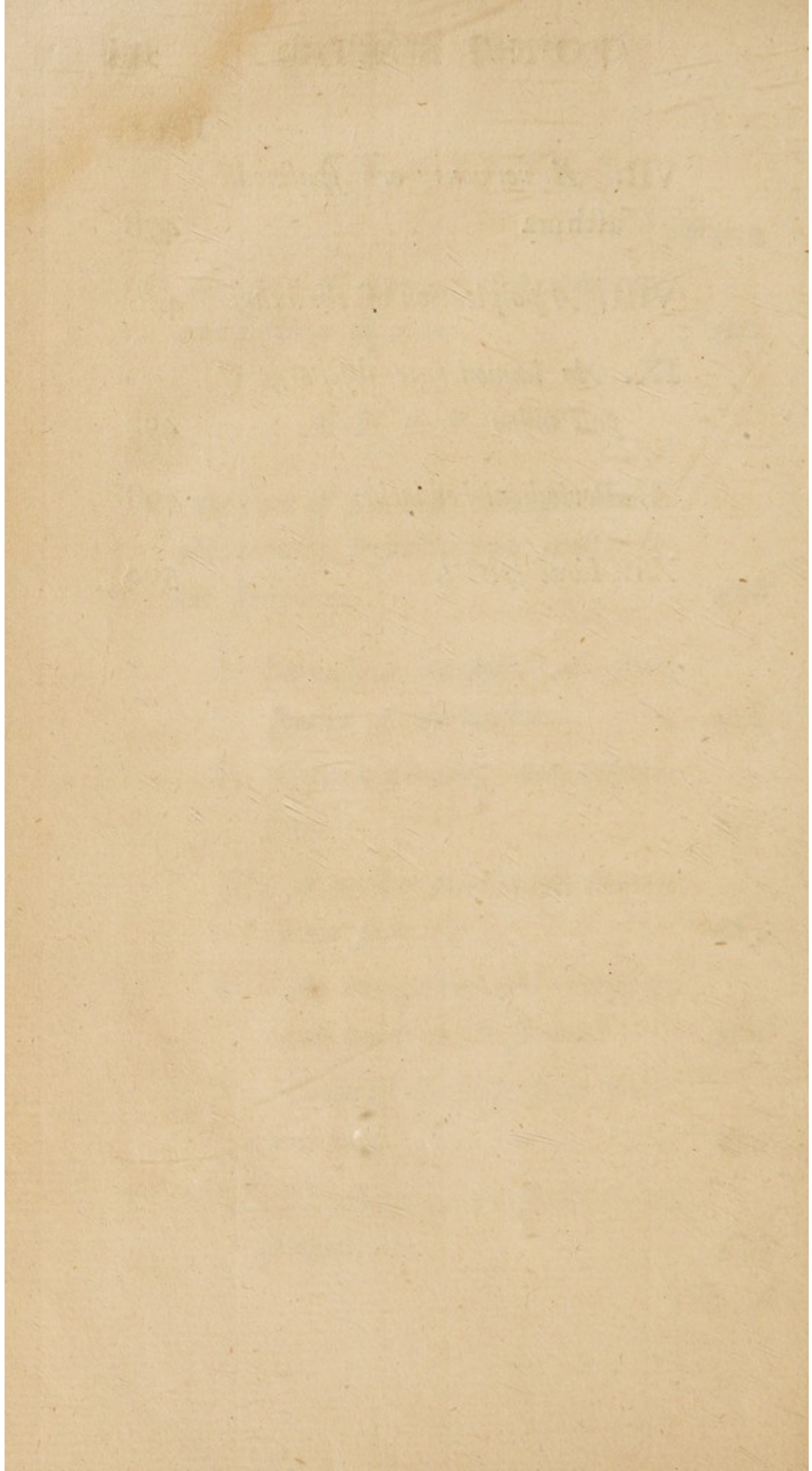
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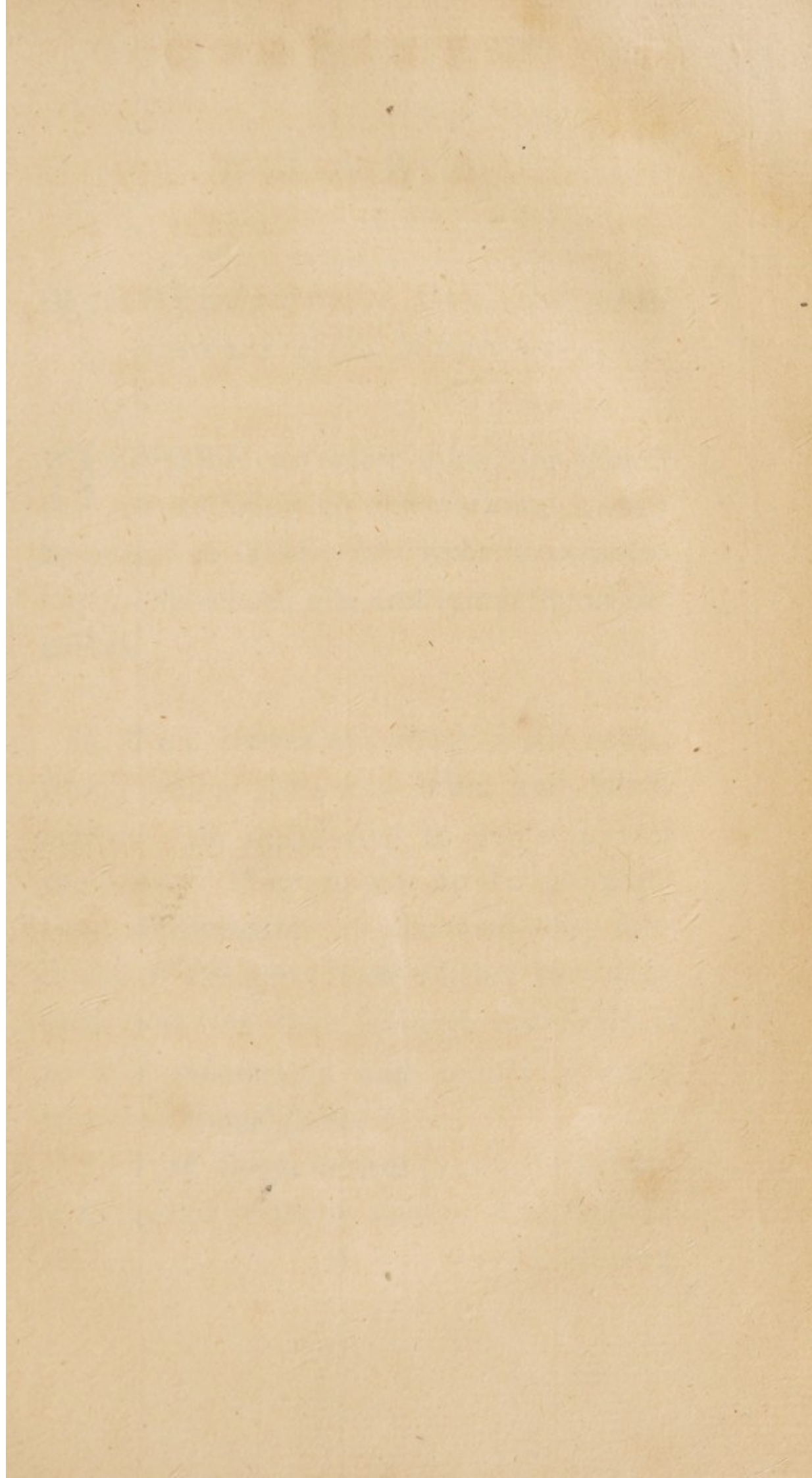
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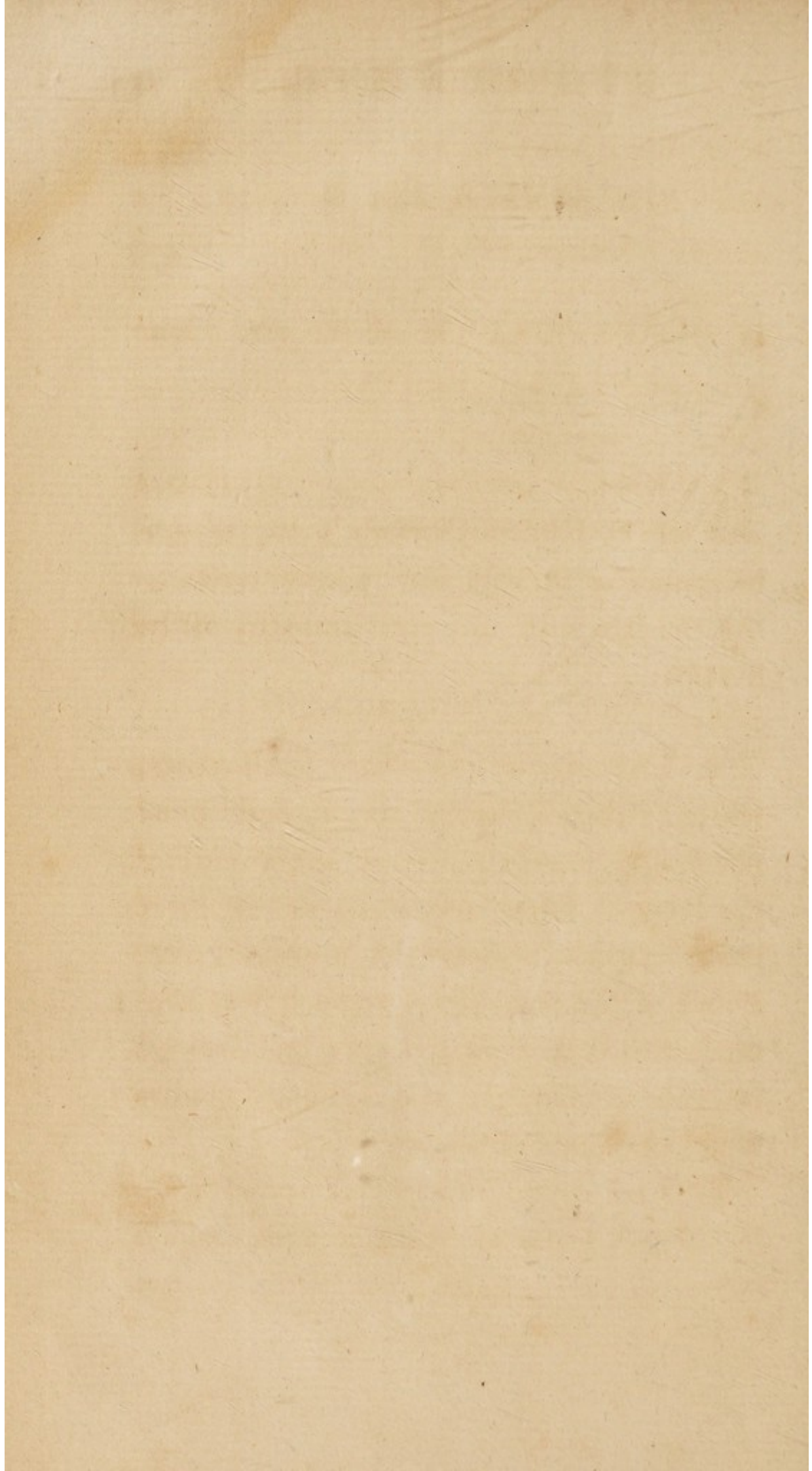
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C H A P. I.

Of the STRUCTURE, USE, *and* SYMP- PATHY *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

A

run

2 OF THE SYMPATHY

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. ALTHO' 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 smallness of the nervous tubes, and the subtilty 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 it be not the *medium* by which all their actions are performed.

5. THE

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. ALTHO' every part of the body furnished with nerves, has either more or less of feeling †; yet there are only
A 2 some

* See Edinburgh Physical essays, vol. 2. p. 304. 309. 310. &c.

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

4 OF THE SYMPATHY

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

nous matter connecting the elements of which they are composed *. That this conclusion, however, is 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

* Acta Gotting. vol. 2. p. 152. &c.

† See Edinb. Physical essays, vol. 2. p. 309. &c.; and Physiological essays, edit. 2. &c.

‡ See Essay on the vital motions of animals, edit. 2. p. 418.

|| See this argument farther pursued in Physical essays, vol. 2. p. 304. 310. &c.

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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

* 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

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

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 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 $\frac{1}{5}$, and in the second above $\frac{1}{3}$ 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

8 OF THE SYMPATHY

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 ossified 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

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 altho' 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, repercussion, confusion, or hurry of the animal spirits, in accounting for the symptoms of nervous, hypochondriac, and hysteric disorders.

of their usual power, are observed to become smaller.

BUT whoever considers the inconceivable 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 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 †.

B 9. OUR

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

† *Ibid.* p. 49. and 50.

10 OF THE SYMPATHY

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 greater 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

* Histoire de l'Acad. Royale des sciences, ann. 1717.

ful stories, or shocking sights, delicate people have been often affected with fainting 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.

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 spiri-
tuous

* Altho' 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.

tuous 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,

* Hildan. Centur. 2. observat. 34.

tioned, were it necessary, of that general sympathy which prevails throughout the whole body. But there is nothing which sets this matter in so clear 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 such is the nature of these animals, that *opium* does not kill them near so soon as it does dogs‡.

FROM

* Edinburgh Physical essays, vol. 2. p. 297.

† Ibid. p. 298.

‡ Edinburgh Physical essays, vol. 2. p. 281.—292.

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 intire †.

II. 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

† Edin. Phys. essays, vol. 2. p. 281. and 302.; and Essay on the vital motions of animals, edit. 2. p. 413.

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 connection 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 headaches. Wounds
and

* Hildan. Centur. 5. observat. 9.

and contusions of the brain generally occasion bilious vomitings. Certain impressions made on the *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

* See an Essay on the vital motions of animals, edit.

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

C fre-

* Lib. de humoribus.

† Boyle's Usefulness of experimental philos. part 2.

p. 248.

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 *menfes*, and epileptic fits, have all been occasioned by a glass-ball, not larger than a pea, sticking in the ear †.

(d) The Nose. The *effluvia* of hungry 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

* Pechlin. Observat. med. lib. 2. No. 45.

† Hildan. Centur. 1. observat. 4.

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 fore-head 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-
C 2 bone,

* Usefulness of experimental philos. part 2. p. 242.

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.

(*h*) The DIAPHRAGM. When the diaphragm is inflamed, the stomach, brain, and

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*, *cephalea*, *hemicrania*, *clavus hystericus*, palpitations, intermissions of the pulse, difficulty of breathing, sudden flushings 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 by 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

* Lommii Observat. med. lib. 2.

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 ophthalmic medicines. Another lady, with tender eyes, seldom has any considerable pain or sickness at her stomach, without her head being affected, and her eye-lids or eyes becoming, in some degree, inflamed. In little more than half an hour after swallowing fifteen or twenty grains of the *extractum cicuta*, I have been often affected with a weakness and dazling 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 drunk too much strong liquor.

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

pharynx excites vomiting. A *nausea* or disagreeable sensation in the stomach makes the pulse quicker and smaller, raises a sweat, and sometimes 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 shivering 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

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 in a state of health.

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

(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

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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 strangury 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
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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 sympathy has been ascribed to the womb than to any other part, except the brain. But, altho' these symptoms proceed from the womb much less frequently than has been imagin-

ed; 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 *menfes*, 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 of the feet, or blisters to the legs, often lessen, and sometimes remove a *delirium*. In an obstinate costiveness, cold water thrown on the feet
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and legs has sometimes opened the body, after many other remedies had failed. By tickling the soles of the feet, 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 happen 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

* Nova Act. Acad. Cæsar. natur. curios. tom. 1. p. 16.

† Hoffman. System. med. tom. 3. sect. 1. cap. 5. No. 30.

the nerves, which are the sole instruments of sensation (5). The truth of this seems to be fully evinced, by the following experiment. When the hinder toes of a frog are wounded, immediately after cutting off 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

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 affects the nervous system so strongly as to overcome the sensations that produce 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

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 powers of the brain and nerves, there would 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,
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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 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 trans-

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lation 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 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
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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 *ophthalmia* 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

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* Haller, Prim. lin. physiolog. § 555.

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 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 connection which the intercostals have with the fifth, sixth, and eighth pairs,

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and with almost all those which proceed from the spinal marrow *. Upon this principle,

* 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 headaches which do not proceed from any fault in the head to vapours ascending from the stomach or *uterus*. Succeeding 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 Bauchinus 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 connection, situation, vicinity, or similarity of the parts, or to their having the same kind of office. Dr Willis, who
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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 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

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 connection or communication of their nerves. This doctrine was afterwards further illustrated by Vieussens, and has been embraced by most of the later writers.

ved 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 inquire into the numerous connections 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
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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 surround the nerves, seem, in a natural state, to be

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
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* 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. 2.; and Physiological Essays, edit. 2.

† In these instances, the changes 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
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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 connection with each other; yet, when one of these glands is inflamed

have almost the same effects 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. 4. cap. 4. ; and Santorin. Observat. anatom. p. 63.

flamed 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 *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 connection; 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 of the feet, or the sides; nay, the dread of this will affect some people. Now, these motions cannot reasonably be deduced from the con-

nection of the intercostal 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.

(c) 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,

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 2d and 3d cervical pairs is much greater and less remote than with the nerves of the nose *?

If the *delirium* which generally attends
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* 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 connection between the phrenic nerves and the 2d and 3d 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 2d and 3d 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 connection between the phrenic and 2d and 3d cervical nerves. Some of the older physicians ascribed this symptom to the weight of
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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 *dura 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 hath 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 sympathizes with the nose, lungs, *uterus*, *rectum*, and bladder, why do not these parts suffer equally

the inflamed and swelled liver drawing downwards, and stretching the membranes that line the *thorax* (a).

(a) N. Piso de cognoscend. et curand. morb. lib. 3, cap. 25.

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 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

* When sneezing is stopt by pressing the nose with one's finger and thumb 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 ophthalmic branch of the fifth pair; for sneezing may be stopt almost as readily by pressing hard with one's fingers on the 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.

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 mollis* 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

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* Anatom. cerebri, edit. in 4to, p. 288.

† Neurograph. lib. 3. cap. 4.

‡ Id. lib. 1. cap. 12.

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, from the violent pain of the gout in the knees, ancles, or feet?

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* See below, No. 17.

These questions, I doubt, will scarce admit of a satisfactory answer, upon the principle of sympathy depending on the communication or connection 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,

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

tions and other effects in distant parts of the body? The analogy is obvious.

LASTLY, Notwithstanding the many sympathetic motions which are daily observed, by physicians, 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

* Memoires sur la nature sensible et irritable, tom. 1.

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, tho' 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

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, 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,

urethra, occasions any alternate convulsive motions of the *musculi acceleratores urinæ*; altho' the *semen*, which stimulates the nerves of the *urethra* much more gently, produces this effect. Lastly, on this head, altho' 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 or soles of the feet 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
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many of them may depend on such a state of the brain, and other parts, as cannot be the object of our senses *.

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* 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 different parts of the body can be endowed, 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 connection 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.

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

* See No 10. above.

† See Edinburgh Physical Essays, vol. 2. p. 283—288, and p. 303.

ing 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 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

† Ibid. p. 304. and 305. ; and *Physiological Essays*, edit. 2. p. 305.

propagated from the part irritated to the head; we may safely conclude, that these sympathetic motions proceed from the brain, and not from any connection 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

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* Dr 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 the *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?

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 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

* *Vid.* Edinburgh Physical Essays, vol. 2. p. 303.

† 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. 2. p. 307—323.

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*.

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* It has been shewn, from a variety of facts, as well as from analogy, (Physiological Essays, edit. 2. p. 35. &c.)

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 in

that the very small vessels, to which the direct force of the heart does not seem to reach, are endowed with a power of 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 (*a*).

(*a*) Adenograph. curios. p. 16.

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

ries 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

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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

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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.

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* Willis, Vieussens, &c.

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, 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,

* It may be proper here to take notice, that although M. de Haller had embraced the doctrine of the nervous *lacquei*, 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. 1. p. 238. and 239.

sels, 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 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

* Vieussens Neurograph. lib. 3. cap. 4.

† Duvernoy in Act. Pretropol. tom. 2. p. 379. 383. 384.

‡ See an Essay on the vital motions, § vi.; and the celebrated Albinus's Annotationes academicae, lib. 2. cap. 18.

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

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 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,

opinion, be referred to any connection 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 from 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

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

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* See this point further illustrated in an Essay on the vital and other involuntary motions of animals, edit. 2. p. 315—321. and 340—343.

† Parts may suffer from vicinity, altho' 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 to them. Further, any considerable obstruction, though attended with little or no inflammation, may, in some cases, occasion sympathetic affections in the neighbouring parts,

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this kind is, perhaps, the consent between the neck of the bladder and extremity of the *rectum*; whence a violent *tenesmus* and stranguy 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

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.

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 *psöas* 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,

tery, 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 not the complaints of the stomach and bowels, from a suppression of the *menfes*, 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

thy between the nerves of that part and the feet. And the effect of sinapisms applied to the soles of the feet, 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 connection 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 a morbid state.

OF this kind are the purging from smelling to a cathartic medicine; that
pungent

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, 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 fore, 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,
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* See Hales's Statical Essays, vol. 2. p. 60.

and many others, whose cause appears equally obscure, proceed from that general sympathy which prevails thro' 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 ankle, some weeks after, not only complained of a pain and stiffness in these parts, but also felt, tho' in a much less degree, a tension and soreness over her whole body. On the other hand, a girl of nine years of age, 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

long as the foot was kept in that position.

IN the former case, it will readily be allowed, that the stiffness and foreness 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 connection or communication between their nerves, since the nerves of many other parts have an equal or greater connection 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
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neral sympathy which prevails through the whole nervous system, they were affected with a disagreeable sensation, as often as the ligaments and tendons of the ankle 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 who had so delicate a stomach, that, when this organ was more than usually indisposed, she 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 became quite sound.

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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 connection, 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 the cause of many uncommon and anomalous sympathies, it would be no more than what happens

pens to us every day, in our inquiries into the more abstruse operations of nature. In every part, even of the inanimate world, we find inexplicable 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 *.”

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C H A P.

* Wisdom, cap. ix. vers. 16.

C H A P. 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
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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 in the medullary substance of which its sides consist, or from the viscosity 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
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found 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 subtilty 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 fluid 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

reduced to some change in that sensibility or moving power which the nerves communicate to the different part 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.

I. (a) WHEN the feeling of the nerves is too acute, disagreeable or painful sensations, and violent 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

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;

stinently ; 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 *œsophagus* 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.

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(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
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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 *.

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BUT

* See above, chap. 1. No. 2.

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 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

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, altho' 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 labouring under a *paronychia* or *nephritis*;

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 preceeding 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 as a *stimulus* on the nerves, are not reckoned nervous. To conclude, even a *gutta serena*, from a tumour 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

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 variations 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,

Nous

* Sydenham, oper. epist. ad D. Cole.

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 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

* *Monita et præcept. med. cap. 17.*

times a severe pain with cramps in that *viscus*; 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 rumbling 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 flushings 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
N sensation,

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.

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

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 flushings 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 ringing 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 ; some-

times 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.

I. 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
five

five 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

fault in those *viscera* which lie under the cartilages of the ribs.

THE learned Hoffman, dissenting from most of the latter writers, affirms that the hypochondriac and hysteric are different diseases, whether we regard their symptoms, causes, or termination*: but 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

* *System. med.* tom. 3. p. 4. cap. 5. §. 5. et 6.

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 from 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

hour under scirrhus 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 sound.

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 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 a-kin, 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 : Et-muller, 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
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* Exercitationes de passione hyster. et affection. hypochondr.

† Oper. p. 1820.

an ataxy or confusion of the spirits * : Mandeville, to a disordered chyfication, 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 all great nervous disorders proceed from some glandular obstruction in the stomach, bowels, liver, spleen, mesentery, or other organs of the lower belly ††.

BUT

* Epist. ad D. Cole.

† A Treatise of the hypochondriac and hysteric passions, dialogues 1. and 2.

‡ Junckeri Conspect. medicinæ, p. 186.

§ Aphorism. de cognoscend. morb. § 1098.

** System. Med. tom. 3. part 3. cap. 5.

†† English malady, part 2. chap. 7.

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, that they may frequently arise from some less visible fault in the body.

WE shall therefore proceed to inquire 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; secondly, of those which, meeting with the former, actually produce them. The first have been called the predisposing causes; the second the occasional causes.

C H A P. III.

Of the Predisposing CAUSES of NERVOUS,
HYPOCHONDRIAC, *and* HYSTERIC
DISORDERS.

THESE may be reduced to two,
viz.

I. A too great delicacy and sensibility
of the whole nervous system.

II. AN uncommon weakness, or a de-
praved or unnatural feeling, in some of the
organs of the body.

I. A too great delicacy and sensibility
of the whole nervous system may be ei-
ther natural, that is, an original defect in
the constitution, or produced by such dis-
eases, or irregularity in living, as weaken
the whole body, especially the nerves.

Long

Long or repeated fevers, profuse hæmorrhages, great fatigue, excessive or long continued grief, 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 endowed 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

cease till the offending cause is removed. In like manner, warm blood, which does not affect the heart or vascular system with any disagreeable sensation, occasions, in the stomach, faintness, severe 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
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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 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 somewhat 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,

ments, from causes affecting either the body or mind, too flight 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 systems were so delicate and moveable, 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, used to fall into fits of swooning, which were scarce to be distinguished from death *:

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And

* Boyle's Usefulness of exp. philosophy, part 2. p. 248.

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 †.

SOME

† The following case, communicated to me by Mr James Spence surgeon in Dunkeld, is a remarkable instance of the many violent and uncommon symptoms which may arise from a small cause, in persons of a very delicate nervous system.

An unmarried woman of 23 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,

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, colic-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

P 2

quiets

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 from the pain, inclination to vomit, and other symptoms. Next day her skin being hot, and her pulse full; a sweat was again procured by a draught with *sp. minder.* and *sal. vol ammon.* and, before the evening, she was free from every complaint.

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 moveable 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, 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 those of the heart, is owing in a great measure the variety of the quickness of the pulse in healthy people. A late physician of this place told me of one of his patients whose pulse, in a healthy state, did not beat above 38 or 40 times in a minute: And I know a young woman whose natural pulse, when sitting, is rarely under 120, 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 180 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 140; by only sitting up in bed for a little while, it became so quick, that with difficulty I
could

could count it ; but, after repeated trials, found it to be nearly 220 in a minute.

Is not the quickness of the pulse, in children, chiefly owing to the greater sensibility of their hearts? 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 endowed with a greater degree of sensibility in the former than in the latter *?

SINCE, as we have observed, the nerves, in the different organs, are endowed 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

* 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.

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 also 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

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. The finer parts of *cantharides* entering the blood by the application of blisters, rarely produce vomiting or purging,
or

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 thro' 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 Emmenagogue, 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 those of any other *viscus*?

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,

bacco, 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 fellery 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

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* Kaau Boerhaave Impet. faciens, § 409.

† Ibid.

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,

* Usefulness of experimental philosoph. part 2. p. 260.

chondriac, and hyfteric diforders, as the alimentary canal, efpecially the ftomach.

AN uncommon delicacy of the nerves of the ftomach and intestines, which may be either in a great meafure natural or brought on by difeafes, improper aliment, irregular living, exceffive grief, or other caufes, is to be diftinguifhed from that acute feeling, or increafed fenfibility, which is the confequence of an inflammation, or of an aphthous ftate of thefe parts; fince in thefe laft cafes every acrid fubftance gives them pain: Whereas, in the former, many infipid and feemingly innocent aliments produce great uneafinefs in the ftomach and bowels while volatile fpirits, ftrong wine, brandy, and fpiceries, are not only inoffenfive, but often neceffary for allaying thofe diforders, which are produced in the firft paffages by fuch caufes as would fcarce give any difturbance in a found ftate.

FURTHER, this morbid or delicate ftate of the ftomach and bowels, does
not

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

* 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-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 sang. 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,

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.

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, altho' formerly he used to drink it without

fore, 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.

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

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* Usefulness of exp. philos. part 2. p. 260.

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 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 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
movable,

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 slight 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 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, has instantly occasioned 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

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

* See above chapter I. No. II.

tirely on the different constitution of the nerves of the *primæ viæ*, and 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

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 eaten 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

* 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.

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 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

* 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 meantime, the brain and nervous system in general may be found, and suffer in no other way, but by sympathy with that organ whose nerves are morbidly affected.

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

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* Philos. Transact. abridged, vol. 5. p. 366.; and Act. Acad. Moguntin. tom. 1. p. 341.

have died of that disease, the gullet and stomach have been often found free from 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 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;

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 inquire into those several occasional causes, which, meeting with the predisposing ones above mentioned, may bring on this numerous train of diseases.

C H A P. IV.

*Of the general occasional Causes of NERVOUS,
HYPOCHONDRIAC, and HYSTERIC
Disorders.*

TH E S E 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.

T H E general occasional causes may be reduced to three, *viz.*

I. S O M E morbid matter bred in the blood.

II. T H E diminution or retention of some accustomed evacuation.

III. T H E

III. THE want of a sufficient quantity of blood, or of blood of a proper density.

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

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

pain in making water. This pain no sooner left his belly, than the headach returned with greater violence than ever, so that the boy used to 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 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

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, tho' 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. Altho' 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 never sweated.

ABOUT the beginning of April, the complaints 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

when any thing ruffled him, voided great quantities of quite limpid urine. During the month of May he continued to grow better ; and, before the end of June, he had perfectly recovered.

IN February 1749, he began to complain of a constant headach, which, tho' more painful at one time than another, yet was never so violent as it had been the year before, nor did it affect his pulse or stomach : But now he frequently 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 re-

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covered

covered his health as in 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 25 and 30, 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, altho' 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,

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 from 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. Altho' her pulse was not altered, yet twelve ounces of blood were taken away, which had a thin fizy skin of a blueish colour. Some days after, the pain in her sides, stomach, *sternum*, and 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 vo-

mitted, 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 dozes of *laudanum* at bedtime, she got pretty free from 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 pain and swelling in one of her arm-pits, which daily increased, and her pulse, which had generally beat only between 60 and 70 times in a minute, now exceeded 100. She lost ten ounces of blood, which was very fizy; 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

ings abated, and left her intirely, about the 20th of May, after the tumour 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 agueish 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 the muscles; which complaints were never intirely 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
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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 pustles 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

* 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*.

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

* De causis et signis morborum, lib. 9. cap. 12.

“ † Enimvero usu medico vel parum exercitatos, hoc
 “ latere nequit; arthritide (præcipue frigida, inertî, lan-
 “ guida; maxime vero omnium ea suppressa, retusaque)
 “ ægrotantes, interdum humerî, pectoris, dorî, lumbo-
 “ rum, aliarumque in ambitu corporis partium dolore
 “ vago tanquam rheumatico; sæpe etiam capitis affecti-
 “ bus, more prorsus hysterico; alias, aliis in corpore malis
 “ quasi scorbuticis urgeri; sæpissime vero valitudine du-
 “ bia, et in tempus diuturnum incerta, et neutra esse.
 “ Qui quidem eorum status ac conditiones, sensu re-
 missiori

fully attended to by physicians, if those symptoms which arose only from an imperfect gout, had not been, for the most part, either flurred over, under the specious name of *nervous*, without any particular inquiry into their real cause, or considered merely as the effects of the hypochondriac or hysterical 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 hysterical complaints are often owing to an imperfect gout wandering through the body; but I shall only mention the two following.

I. A

“ *missiori et leniori gradu morbosae natales suos arthritico miasmati, cæco, 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 arthritidis idoneo, de istorum origine et natura malorum arthritica omnis sublata dubitatio est.*” Musgrave de arthritide anomala, cap. 19. p. 316.

1. A gentleman aged 58, 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 the 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 from 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 of the disorder about his stomach, with low spirits, and a *nausea*, especially in the morning; and complained sometimes of a difficulty of breathing,

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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 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 from 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, increased this patient's complaints. Flesh-meats, old cheese, wine, porter, and bitters with the bark, steel, and exercise, especially riding, did him most service.

2. A gentleman, aged 40, 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 surprisngly irregular and intermitting. Twelve ounces of blood were taken from him, which had a natural appearance; he swallowed some warm wine and water, *sp. corn. cerv. tinct. castor.* and a solution of *asa fætida*, but without any remarkable effect.

UPON getting up, and walking thro' the room, he found himself quite free from 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, altho' what he had drunk during this time did not amount to half that quantity. About noon, partly to abate

this immoderate discharge, and partly to lessen the too 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 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 caught 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 from the inflammation in the throat, but with a great faintness, attended with a very quick and small pulse. A glass or two
of

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 but little of 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. Since that period, as well as before it, he has been 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 thro' the

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 that 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 severe 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 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
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the *viscera* as are very sensible, or by sympathy are apt strongly to affect almost the whole body, it may produce most of those symptoms which have been commonly called nervous, hypochondriac, or hysteric *. This matter may, in general, act either by its viscidness 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

* See above, p. 97. &c.

† It is probable, that the morbid matter in the blood, producing nervous complaints, generally proves hurtful by its acrimony, and but rarely by its viscidness: 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 shivering upon the attack of a fever, is rather owing to a spasmodic contraction of the small vessels, than to an obstruction of them from viscid blood.

sioned 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 heal 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 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 completely formed, as to clear the habit of the arthritic matter, at least for any considerable

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*,
X watching,

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 an 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

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 80 in a minute. In one patient, I met with a slight, but frequently returning *gonorrhæa*, 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

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bowels,

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,

* 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 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 subtle to be seen, although active enough to destroy.

ved, 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, 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

* 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 translocation of any morbid matter. But altho' 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 im-
prudent

It may be proper to observe, that, altho' 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

prudent 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 is occasioned, which either increase or abate, or shift from place to place, according as the nerves of the first passages are variously affected.

occurred in my practice; but, that I may not be tedious, I shall only mention one.

A lady aged 60, 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 severe sickness, and sometimes a vomiting; an acute, or burning pain in her stomach, sometimes shifting from it to her bowels; flatulence, belching, palpitations, 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

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

fect 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 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 acrimo-

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ny 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 delicate 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 greater or lesser 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 intirely 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 *menfes* 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 *menfes*, 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 thro' 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 *menfes* 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 *menfes* are obstructed, the stomach generally suffers first, and, by means

* See above, chapter I. No II. (o).

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 *menfes*, 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. ALTHO' 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

suppression of the *menfes*. 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 *menfes*; 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

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*, altho' 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 *menfes*, bleeding would always prevent them, which, however, it seldom does. An instance of this I had many years since in a patient, who, tho' 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 34, 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

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 24 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 *menfes* 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

consequently the flux of blood from them, will cease *.

IN like manner, those various other complaints, consequent on the obstruction of the *menfes*, 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 *menfes* 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 *menfes* 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

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* See above, chap. 1. No. 17. Also Physiological essays, edit. 2. 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.

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 to other morbid symptoms? Hence we find, that, 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 *menfes*, *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

ness 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 17 years of age, complaining of a pain in his right side after a fall from his horse, was bled 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 24 hours; and gradually increased to such a height, that the patient was obliged to be held down in 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 good deal of blood, he was attacked with the
same

same symptoms, but in a much less violent degree.

2. A gentleman between 40 and 50 years of age has been subject, for these 13 years past, to a considerable flux of pale urine, 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; and this has generally happened to him as often as he has been obliged to be bled to any considerable quantity, or to have sweated much, and at the same time to have lived low for a few days, in order to get rid of a cold, rheumatism, or other casual disorder.

3. A gentlewoman, in whom the *menfes* 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

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.

C H A P.

C H A P. V.

Of the particular occasional Causes of NERVOUS, HYPOCHONDRIAC, and HYSTERIC Disorders.

THESE may be reduced to the six following, *viz.*

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| I. Wind | } in the stomach
and bowels. |
| II. A tough phlegm | |
| III. Worms | |
| IV. Aliments improper in their quantity or quality. | |
| V. Scirrhus or other obstructions in the <i>viscera</i> of the lower belly. | |
| VI. Violent affections of the mind. | |

I. WIND

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 connection between wind in the *primæ viæ* and pains in my legs and feet; and the uneasy sensation sometimes as it
were

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 *.

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HOWEVER,

* See above, chap. 1. 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 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,

HOWEVER, it may be proper to observe, that the effects of wind in the first passages are not only various in different persons,

peritonæum, which is much 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 *tela cellulosa*, 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.

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, the great distension of the intestines, and sometimes also of the stomach in a tympany, without those uneasy complaints that attend wind in hypochon-

driac 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 what is 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,

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 still a 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, sleepiness, sighing,

fighing, 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

* A girl aged 14, 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.

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 14 years of age, on the 12th of January 1757, was seized with a pain in his head and belly, and soon after became

came 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 connection. 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 to be taken away, a blister to be applied between his shoulders, and a clyster to be injected. On the 17th, no better: the blister had occasioned a stranguary. 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: 21st, had a natural stool, in which were two small worms of the *ascarides* kind. Upon this he was ordered *pulvis stanni*, and another

ther dose of calomel and rhubarb, which brought away a great deal of slime, but no worms. On the 25th, he was free from 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 acid 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 altho' 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 fauces 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 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 observed above, that in some the stomach becomes so very delicate, that even a sudden change of posture will be apt to occasion a *nausea* 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

glafs 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, *nausea*, 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 parts, by affecting their nerves with an uneasy sensation,

fation, 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,

* 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 authors, the cause of that distemper.

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 irremovable obstruction; in much the same manner as a sudden fright has given rise to a *scirrhus*, and afterwards to 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*.

1. A gentleman aged 60, 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 spring 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 the stomach, and frequent retchings to vomit, tho' rarely bringing up any thing but a tough phlegm, till the beginning of October, when, after severe sickness, he one morning vomited a great deal of blackish coloured stuff, and in the evening a considerable

derable quantity of clotted blood. On the 15th of this 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 which, his pulse began to sink, and he died at two o'clock.

HIS body being opened, the coats of the stomach were found thick and scirrhus 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

quently 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 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 *scirrhus* 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, there-

fore, instead of *ipécacuanha* 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 gentlewoman about 30 years of age, 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

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 *peritonæum*; but the chief cause of her complaints and death appeared to be a scirrhus 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 blood itself, either fluid or clotted, would have sometimes appeared. At no rate could this matter come from the liver, for that part was found ; 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 scirrhus,

4. A gentlewoman, who had born several children, and had been generally healthy, in the 59th year of her age, ten years after the *menfes* had left her, began to complain

plain 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, 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, altho' 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

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 *scirrhus* in the *uterus* beginning to turn cancerous.

VI. VIOLENT affections of the mind.

NOTHING produces more sudden or surprising 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

* It is said, that the great Lord Verulam was wont to faint, when he saw an eclipse of the sun: and we are told

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 and digestion, occasion thirst, a white tongue, flatulence, and other complaints *. Great fear produces 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.

told of a Lady, who, upon looking through a telescope at the comet of 1681, was struck with such terror, that she died in a few days Pechlin. Observat. med. lib. 3. observ. 23.

* “ Qui laborant animi pathemate, potissimum corripi
 “ solent morbis ventriculi, ut, inter caetera, observavi in
 “ moerentibus, qui conqueruntur primo de languore ven-
 “ triculi, mox inappetentia, oris amaritie, siti circa horas
 “ matutinas, cruditatibus, flatibus, et tensionibus hypo-
 “ chondriorum.” Baglivii opera, 4to, p. 565.

urine. By sudden terror, delicate women or children have been not only thrown into fainting and convulsions, but rendered subject, all their lifetime, 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 to a statue than to 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,

* Pechlin. lib. 3. observat. 25.

† Stalpart. Vander Wiel. cent. 1. obs. 74.

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.

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

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the

* Sepulchret. anatom. lib. 2. § 33. obs. 9.

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 eleemosynis publice aluntur in civitate Harlemenfi, 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

* Praxis Medica, cap. 14. § 2. See also Natur. curios. 1730, p. 302.

fugitur tandem ad Boerhaavium, qui, misertus infelicis pauperum fortis, 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 tracto morbo, rite perpenfis, hanc avertendo, credidit posse curam obtineri, et obtinuit. Scilicet, praeinonitis 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 inſtitionis, eidem resistunt fortioris oblatione

ideae: et certe quantum valeat hic ab ob-
 jecto animae intentae revulsio, docet epi-
 lepsia diversimode curata, ut quidem ipse
 terror eandem sustulerit, febris epidemi-
 ca, 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 con-
 tracted and relaxed; and, in some cases,
 their joints become so rigid that they can-
 not be bent. Their respiration seems to
 be difficult, and they cry terribly while the
 fit lasts, which is generally less than a quar-
 ter of an hour; although, in some rare
 cases, it has continued above an hour.
 This disorder seldom attacks married wo-
 men; but young women, and even girls of
 twelve

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

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, have been 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 seen above *, 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

* See chap. I. No. 10. and 11.

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 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

which accompanies a sense of shame, that increased flux of the *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

ting 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 above mentioned will often produce the most sudden and violent hysteric fits, or convulsive disorders, without 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 altho' 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, scirrhus, or otherwise unsound; yet, as in many other cases of the same disorders

* Philosophical transact. abridg. vol. 3. p. 8.

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, *scirrhi*, and other disorders of the *viscera*, observed in those who have died after suffering long 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.

C H A P. VI.

*Observations on some of the most remarkable
Symptoms of the NERVOUS, HYPO-
CHONDRIAC, and HYSTERIC kind.*

I. **A**N uncommon sense of cold or heat
in different parts of the body,
sometimes suddenly succeeding each other.

THE natural heat of animal bodies is
owing to the regular and uninterrupted cir-
culation of the fluids. As this degree of
heat, however, is nearly 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 inte-
stines. But as often as there is a more ra-
pid motion of the fluids through the whole
body,

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 vessels may produce a sense of cold, altho' the real heat is little, if at all diminished. 'Tis true,

* 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 above, chap. 1. No. 17.

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, altho' 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,

roxyfms, like thofe of the epilepsy, or other convulfive diforders, are owing, not fo much to any fixed obftruction in the vafcular fyftem, or general acrimony, or vifcidity of the mafs of fluids, as to an irritation or affection of the nerves of fome particular part, fuch as the ftomach or intefines; whence the whole fyftem fuffers by fympathy, and a fhivering is produced, which is fucceeded by a hot fit and fweating, that, for the time, removes the caufe of the difeafe. And as an intermittent agrees with epileptic and other convulfive diforders as to its caufe, fo its returning paroxyfms, like theirs, may be often prevented or weakened, by raifing, a fhort 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, fuddenly moving from one place to another.

THESE

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 to have a connection 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
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* 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.

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 were 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,

* Sydenhami Oper. epist. ad D. Cole.

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, 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,

I. AN irritation of the nerves of the stomach or intestines, from wind, acrid humours, or other causes, whence the whole

F f

system

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 *menfes* 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 20, of a delicate habit, having exposed herself to cold at the return of the monthly period, was, next morning at four o'clock, suddenly seized with a *stupor*, and a difficulty in speaking, and moving 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; she then laboured under a hiccup, her face was pale, her skin cold, altho' her pulse

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*, and made her breathe easier. She was blooded again, and had a purging clyster injected. 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 becom-

ming 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, altho' 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

* Patholog. lib. 5. cap. 2.

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 irregular. 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 particularly, either how the passions, or an irritation of the brain or other sensible parts, bring on alternate convulsions or fixed spasms of the muscles, would be to no purpose, till we are better acquainted with the structure of those organs, and with that cause which immediately produces their contraction; points which will, probably, for ever elude
our

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 all the 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

they either over-load their stomach, 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 fixt 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 *borborygmi*, after tying the eighth pair of nerves, which sends

fends 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* cholic. In some cases, certain parts of the alimentary canal are affected with such a fixt spasmodic

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 most-ly destroyed or reduced to a more fixt 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 from 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 a *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

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.

ALTHO' not a few of the moderns, following the opinion of the antient physicians, have supposed the hypochondriac disease to be owing to an atrabiliary 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, or 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,

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quantity, it is soon vomited either in its fluid state, or coagulated; yet, when it issues slowly from the smaller vessels, it loses its red colour by lying long, and when thrown up, resembles the grounds of coffee. This kind of black vomiting is generally owing to one or more of the following causes, *viz.*

1. VIOLENT pain or cramps in the stomach; the first of which may greatly increase the motion of 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 tumours in the stomach beginning to ulcerate, or a rupture of some of the small vessels leading to them*.

3. A

* Further, scirrhus tumours in the stomach, by obstructing, in a great measure, the course of the blood through

3. A supression of the *menfes* or hæmorrhoids, whence the blood that used to be evacuated by the *uterus* or *rectum* is turned upon the stomach, and partly discharged by some of its exhaling arteries.

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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 19, began, in the fourth month of her first pregnancy, to make bloody urine, which continued till within fifteen days of the time of her delivery. 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 became

I have known some hyſteric patients affected with ſevere pains and ſpaſms in
their

became again with child, 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 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 plaſter, and a diet conſiſting chiefly of mucilaginous ſubſtances, gellies, and the lighter fleſh-meats, with a little claret.

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 quantity, 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

and hysteric disease *. It has been ascribed 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

* Epist. ad D. Cole.

† System med. tom. 4. part 3. cap. 6. § 16.

‡ English Malady, part 2. chap. 9.

I. SUDDEN or violent affections of the mind. Thus people of a delicate frame and very moveable 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 ge-

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neral

neral 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 motions, 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 does 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,

* Epist. ad D. Cole.

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 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, does 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 arose 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

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 hectic or colliquative, as coming in the place of 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 dilata-
tion,

tion, 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

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 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
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* See above, chap. 1. No. 9.

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 are 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

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 of its natural heat, and be affected with

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* 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.

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

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 good 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, takes a sudden turn, without any apparent cause. The patient, who had little inclination to eat, has an uncommon craving and quick digestion, even of solid food, which used to lie remarkably heavy on his stomach:

his pulse becomes quicker than natural, and his skin warm; his veins, which were contracted, appear swelled with blood; from being low spirited, he becomes more chearful, and daily grows stronger 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

* See a case of this kind, in a young lad of 14 years of age, described under No. 13. of this chapter.

cited 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-tendinous 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.

- I. ANY acrid or noxious matter in the blood, whether of the arthritic, rheumatic,

tic, 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 pain 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, 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 cholics 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.

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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 fixt 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 mixt kind. And here it may be proper

* See an instance of this in Dr Barry's treatise on the three digestions and discharges of the human body, p. 294.

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 years, to complain of a pain at the lower part of the *sternum*. This pain, which returned after no certain intervals, became gradually more severe during the space of near two years; after which, in place of it, the 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

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 aerial ves-

fels? 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 foretel them a day or two before they come on.

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 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, and with this difference only, that it was rather more severe when she sat up than when she lay in bed. Altho' 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, altho' 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 90 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,

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 *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 bed.

WHEN she stood on her feet, her pulse became very small and irregular, and beat at the rate of 200 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, across 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

horizontal posture, she did not cough at all.

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

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 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

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 120 times in a minute; and, when standing in it, between 130 and 140 times. When she stepped out of the water, and stood on the floor, the cough instantly returned, and her pulse rose to 200 in a minute.

10. WHEN the heat of the water was reduced (by pouring some cold water slowly into it) from above 100 degrees of Fahrenheit's scale, to about 70, the cough returned with its usual violence; and altho' she sat in a chair, her pulse rose from about 120 to near 190, and became small and irregular. After this, upon gradually adding boiling water, so as to raise the heat of the bath to 88 or 90 degrees, the cough stopt, and her pulse became fuller, much slower and more regular.

11. WHEN

11. WHEN she coughed the most violently, if the soles of her feet were only made to touch the warm water, she grew immediately easy, and continued so altho' 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 114 degrees, one of them was taken out of it, and that instant the cough returned with its usual violence; notwithstanding that foot and ankle 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 one of her legs was taken out of the water (warmed to about 96 degrees) and wrapt in a dry or wet piece of flannel whose heat was at least 114 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 110 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; altho' 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

17. WHEN one of her feet was taken out of the bath, altho' 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 stream 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 she lay with her legs hanging over the bed-side, (No 1.), she began to cough as soon as the soles of her feet 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 90 to above 180 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

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 became so small and quick, that I could not exactly count it; but I was sure it did not bear less than 18 or 20 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. ON the 5th April, by 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 20 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,

cough, either upon a change of posture, or putting her hands into cold water. And her pulse, which used to be about 90 when she lay in bed, was now at 96 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. above.

(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, altho' 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

increasing from the third of February to the 1st of April: No. 9. 10. 23. and 24.

(c) THAT when the head and shoulders are as low, or lower than the body, the cough is 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 tumour 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 94 in a minute to 118 in five seconds: but when her hands were either strongly bent inwards, or extended outwards, or when
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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 tumour 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, an uneasy sensation was felt in the lungs, which occasioned an incessant cough. Altho' 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 passes with more difficulty thro' 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. N^o 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

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or

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. N° 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 are 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. N° 6. 7. 19. and 20.

(h) It

(b) 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. N^o 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 *asa fetida*, 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 *asa fætida*, 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

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 her with as great violence as ever. Being now fully convinced, that this ailment was not owing to any fixt 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,

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

• Fear or surprise 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 surprise, a sudden contraction about my heart, while the veins in my hands and fingers feel as if they were distended with blood.

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 humours, 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.

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,

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

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

blood passing with difficulty into the veins, the arteries must feel tense and hard *.

THIS pulse often occurs in pleurifies, 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

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lungs

* I have known some people, whose pulse, in a natural state, was harder than that of most others in the greatest inflammatory diseases. It is 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. 2. p. 66.

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, 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 hysterical 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

modic 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, 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

* See Physiological Essays, edit. 2. p. 185. &c. and p. 252. &c.; and Edinburgh Physical Essays, vol. 2. art. 20. p. 310. &c. where it is proved, from undoubted experiments and observations, that the irritability of the muscles of animals depends on their sensibility.

(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 child-bearing, 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

(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 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

* “ Venæ ——— plerumque satis sano corpore, si
 “ stomachus infirmus est, subeunt et quiescunt.” Celsus
 de medicina, lib. 3. cap. 6.

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 hysterical 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 38, 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

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 had a clyster administered with *asa fetida*, she had two stools, and passed a great deal of wind. Her pulse, which, when she was taken ill, beat 60 times in a minute, about seven in the morning began to grow quicker, and, before two in the afternoon, rose to 130, but became feebler and smaller in proportion to its quickness. At this time, as scarce any thing would stay on her stomach, a broth-clyster was injected, with 40 drops of *laudanum* in it: After which she lay quiet for two hours, and her pulse came down to 120. 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 100 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 30 and 40 years of age, 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 the rate of 70 strokes in a minute, and of a natural softness. I ordered her, at bed-time, 25 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 did not beat above 56 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

its natural fulness and quickness; the coldness went off, and her skin grew rather warmer than usual.

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 *stimuli* 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

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

(3.) A gentleman betwixt 30 and 40 years of age, 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*, striking into his back, which soon became so intolerable, that, after having vomited up several doses of *laudanum*, and had clysters injected to no purpose, he was obliged to have recourse to the *semicupium* for relief. His pulse, which, in a natural state, beat about 64 times in a minute, was, by
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the violence of the pain, reduced to 44 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 cholic pains, his pulse commonly beat only fifty times in a minute; but as soon as, by the use of laxatives, and aromatic

aromatic bitters, he had got free of this complaint, it returned to its natural quickness, which was about 80 strokes in that time.

(5.) ANOTHER lad of 14 years of age, of a thin and delicate habit, and of quick and lively feelings, whose pulse in health used to beat between 70 and 80 times 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 lost flesh daily, yet he had no night-sweats, no extraordinary discharge of urine, and was costive. His tongue was clean, his skin cooler than natural, and when in bed, his pulse beat only 43 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 39. 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

that he grew faint unless he eat almost every two hours; he had two or three stools a-day; his pulse beat from 96 to 110; 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

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 lustre, and look as if the person had watched long, or drunk 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

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 with a fixt spasm. This seems to be confirmed by observing, that women liable to these periodic headachs 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 headachs 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. Hysterie 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*, altho' 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

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

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 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 smock or mist was 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.

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* See Lommii Observat. med. lib. 2.

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*,

I. 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, tho' not painful sensation, attended with a faintness, languor, and depression of mind. But at other times, when this arthritic

thritic 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, tho' not painful, nevertheless is attended with great dejection of mind.

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 some time ago occurred in my practice.

(a) A gentlewoman upwards of 30 years of age, 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 from 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 from her ordinary nervous symptoms. She had no sharp

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pain

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 5th 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 from the gout, began to have constant complaints of his stomach and bowels, and at last was seized, all at once, with a *delirium*, which, by the application of sinapisms to the soles of his feet, 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, 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,

months, till at last, being more fixt 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 the nervous diseases change the state of the brain or *common sensorium*, and occasion 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

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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
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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 the breast*. But not to enter into a particular examination of those 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 †?

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* See Dr Bond's Essay on the *incubus*, chap. 2.

† 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.

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 flighter 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, 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 flighter *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,

breast, as if the circulation in my lungs had been a good 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 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 *œsophagus* or *pylorus* as in an erect posture, when these passages are higher

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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 they are when we are awake †; nor do we,
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* When I have been liable to be attacked with a sensation of faintness at my stomach, I have found it always worse 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 from any confusion in his ideas; but no sooner did he shut his eyes, although not asleep, 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 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 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. 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, do ever occasion the symptoms of the hypochondriac disease, unless the nerves of that organ be indisposed; so neither a horizontal posture, sleep, nor heavy suppers, do ever 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 *menfes* 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

who abound in blood, are often troubled with this disorder.

It has been observed above *, 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, since hypochondriac and hysteric

* See p. 102.

stercic 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 dropfy.

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 shown above, that the great predisposing cause of nervous, hypochondriac, and hysterical disorders, is a particular weakness and delicacy, or uncommon sensibility of the stomach and bowels; whence, from slight causes, they are 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,

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

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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 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.

C H A P.

C H A P. VII.

Of the CURE of NERVOUS, HYPOCHONDRIAC, and HYSTERIC DISORDERS.

ALTHO' 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

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that can happen, is, that the morbid matter may throw itself off, by regular fits, in the extremities. When they arise from too great or too small a flux of the *menfes*, 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 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

lar 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 foetid medicines, which have been called nervous, or antihysteric, 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 power of 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. hypochondriaci) non licet præfinire tempus mensis
 “ unius, aut anni, sicut in aliis contingat;
 “ sed oportet in toto vitæ suæ tempore curationi operam dare; interdum curationi,
 “ interdum præservationi, attendendo *.”

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* Confil. 230.

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, and hysteric symptoms mentioned in the preceeding part of this work *.

I. THE great predisposing cause of nervous disorders is, as I have shown, 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

* See above, p. 98. &c.

ever 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.

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

(a) BITTERS. Of these, I most commonly

monly 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 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
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* 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.

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 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
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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.

R. Cort. Peruvian. Pulv. unc. 4.

Rad. Gentian.

Cort. Aurant. ana unc. i. fs. Miscē.

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 successively, 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 40, of a thin habit and delicate nerves, had been complaining for some years of a general weakness and feebleness through her whole body, especially

WHEN acids do not disagree, 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

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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 30 and 40, 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 for 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.

Were it necessary, I could add many other cases in which the same remedy has been remarkably useful.

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, thirst, and a white tongue.

ALTHO' 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 catarrhus cough, without feeling any bad effects

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 chincough, 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. The astringent quality of this metal was not unknown to Dioscorides, who recommends,
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* See Medical inquiries and observations, vol. 1.

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 230 grains of the filings of iron, divided into three doses. It is obvious, however, 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,

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* Differt. epistol. ad D. Cole.

a disorder in the first passages; in which case Sydenham has advised a few drops of *laudanum* to be taken with them at bedtime; 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 will 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 above mentioned; but commonly I advise the chalybeates only at those times when the patients intermit the bitters.

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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 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 36 hours, swallow a pound of bread and milk, with which he had mixed an ounce and a 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
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into it a tincture of galls ; although this same chyle, after $\frac{1}{4}$ 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, that they may 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

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often

* See Philosophical Transact. for 1750, vol. 50. part 2. p. 595.

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 their use now and then for a week 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

* 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,

(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

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other

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. 1. and *Philosoph. Transact.* vol. 50. part 1.

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 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

terwards 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 good 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

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, to which it would otherwise be subject, 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

can digest with ease. Every time the stomach is over-loaded, 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 more slowly 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

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

* De medicina, lib. 1. cap. 8.

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 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 drunk 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

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pulse,

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.

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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 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 altho' du-

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* See his treatise on the use of sea voyages in medicine.

ring 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 plaister 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) AMUSE-

(*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,*) above 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 as weaken, during the time of their operation, the sentient power of
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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 fixt 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 *menfes*, 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 bed-time, to the quantity of a grain, or a grain and a half, along with a little *asa fetida*, I have frequently seen it lessen that restlessness, and those hot flushings and sick fits which many hypochondriacal people are liable to;
but

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 some other evacuation 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.

ALTHO' *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

with a sickness and vomiting, or a violent pain with cramps in the stomach, or an itching over the whole body, especially about the eyes and nose. In some few, it occasions a raving and madness.

ALTHO' *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

titles 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, tho' it did not occasion those 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 on the belly and region of the stomach, afterwards applying to these parts a piece of flannel moistened with Hungary water made hot. The effect was,

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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, which is best remedied by taking, now and then, an aloetic 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 thro' 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 bed-time, and repeated in a less quantity in the morning: For altho', 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

(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 used 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 antispasmodic; 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, given in large quantities to different animals, produces sleep, sometimes madness, a vomiting, purging, a flux of urine, the hiccup, epileptic convulsions, and death *: and several of these effects are

* Commentar. Bononiens. tom. 4. 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

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, others of a refrigerating nature. But as it is not my purpose to enter deeply into this dispute, I shall only observe, that altho', 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 catarrhus fevers, bastard peripneumonies, pleurifies,

ceived 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.

pleurifies, 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, altho' I cannot agree with those who think camphire a cooling medicine, yet I do not look 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.

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

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. Altho' 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 *subfultus tendinum* in fevers, in the hiccup, cramps in the stomach, and other spasmodic disorders. I have tried it in the chincough 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 an hysteric fit; and
now

now it is common to order it in this, or a larger dose, three or four times a-day.

ASA FOETIDA is the strongest of the fetid gums, and almost the only one that I have been in use to prescribe internally in nervous or hysterical 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 constiveness, 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 fetid 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 constitutions 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 never failed to relieve a palpitation of the heart, after many of the medicines called antihysteric 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 ease in an hysterical 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 hysterical 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 headaches, as well as several other complaints commonly reputed of the nervous kind, have been cured, after other

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remedies

* Praxis medica, lib. 15. cap. 6.

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 28, 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 fixt 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

lent fits of the headach. His sleep was disturbed with frightful dreams, from which he used suddenly to awake in terror, and with a sense of great oppression. He was 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 moveable 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

plication of mind. “Involuntaria penis
 “erectione, cum feminis plerumque emis-
 “sione, 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 before he became sensibly better, and in eight or ten months found himself free from all his most troublesome complaints.

plaints. 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 exercise daily, 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 from 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

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 30, 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 all over 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.

spect. Her headach was mostly gone, her teeth were free from 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 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.

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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,

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| 1. WIND | } in the stomach
and bowels. |
| 2. TOUGH phlegm | |
| 3. WORMS | |
| 4. ALIMENTS improper in their nature or quantity. | |
| 5. OBSTRUCTIONS, frequently of the scirrhus kind, in the abdominal <i>viscera</i> . | |
| 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.

I. SOME

I. 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; 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,

lence, 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

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

† Celsus de medicina, lib. 5. cap. 24.

‡ Differt. Epist. ad D. Cole.

either case from my own experience. We meet with few patients who will confine themselves to this diet, and, in several cases, it is improper to advise it. About eighteen years ago, I had a patient aged 48, 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 from 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 drunk 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

* See Alston's Dissertation on quicklime and lime-water, part 3.

bruary 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 drunk 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

venting acidity in them, it may render the attacks of this disease less frequent, and in some persons perhaps less severe *.

WHEN lime-water is drunk 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

* 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 long-continued fit of the gout once in two years, has been kept free from 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.

disordered than usual, the lime-water ought to be drunk 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.

B b b

ISSUES

* See Dr Pringle's Observat. on the diseases of the army, part 3. chap. 2. edit. 1.

ISSUES and perpetual blisters have been often of use in headachs, 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 observed above, that complaints of the nervous kind sometimes proceed from that kind of humour in the blood, which is commonly, but improperly, called scorbutic; and which, when it is thrown out on the skin, appears in the form of tetters, 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 *pilula Æthiopica* every night at bed-time, and every other morning

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.

ALTHO' 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 spongy 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, flatu-

B b b 2 lence,

* In place of this solution of the polychrest salt, I have sometimes ordered sea-water to be drunk.

lence, 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 the 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 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

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

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.

(d) WHEN the *menfes* 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 *menfes* 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 *menfes*, bleeding, especially in the foot or at the ankle, and gentle purges, will prove most effectual.

WHEN the thickness or visciduity 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 *menfes* 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

drops of *laudanum*, may be given, in the evening, about the time the *menfes* 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 *menfes*, 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*
fetida

fætida must be given to procure a stool, before the anodyne one is injected.

IN the intervals between the returns of the *menfes*, in order to render the patient less liable to the above-mentioned complaints, I have advised, with good effect, the frequent use of the warm *pediluvium*, some doses of the *pilulæ rufæ*, 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 *menfes* 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 *menfes* 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.

C c c

R,

* De praxeos regulis, cap. 3.

R. Aloes socrotin.

As. foetid.

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. bul-
lient. lib. iv. colatur adde

Tinct. Cort. Peruvian. unc. x. Misce.

Cape unc. iii. bis in die.

ALONG with these medicines the *pedilu-
vium* was used every night at bed-time.

WHEN, in the decline of life, the *menfes* cease, various nervous or hysteric symp-
toms 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,

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, 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 headaches, giddiness, sickness at the 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 blisters 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, *menfes*, 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 *menfes*, are the *tinctura rosarum*, *terra Japonica*, alum, *opium*, and elixir of vitriol.

I have sometimes given the alum 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. fs. Misce
ut fiat coagulum; et fero colato adde

Sacchari albi unc. i.

Dose unc. iii. quater in die.

IF the alum-whey occasions a sourness in the stomach with a *cardialgia*, a scruple of crabs eyes or prepared oyster-shells twice or thrice a-day will be useful. In one case, the alum-whey lessened a *profluvium mensium* after the patient had taken, for some time, forty drops of the *tinctura antiphtisica* thrice a-day, without any benefit. The same medicine also cured a *fluor albus* of several years standing.

I have not observed remarkable effects from the bark, in stopping hæmorrhages. After an immoderate flux of the *menfes* 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. f. v. unc. ii.

Confect. Japon. drach. vi.

Syr. limon. unc. ii. Misce.

Dose 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.

MRS D——, aged between 30 and 40,
having

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 dried 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,

* See *Animadvers. med. lib. 7. art. 144.*

† *De Praxeos regulis, cap. 3.*

skins, as a most effectual remedy in a *profluviū 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. gutt. 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 *profluviū mensium*, has contributed much to lessen that flux; and a lady aged between 40 and 50, 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 from any thing else. It not only lessened the discharge of blood from the hæmorrhoidal vessels,

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.*

I. 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 above *, and below under N^o 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 be mentioned afterwards, when I come to treat of the cure of some

D d d of

* See above, page 326, &c.

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 *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

* Si vero pituita stomachus impletur, utilis navigatio.

Celsus de medicina, lib. 4. cap. 5.

sometimes thought that the *emplastrum stomachicum* 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 drunk, 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 *ichtbyocolla*, 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, 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 24 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 drunk 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 drunk.

FURTHER, as often as an emetic is used, the patient, some time after its operation

is

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 from 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

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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. 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 *ilium* 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 hysterical disorders are owing to this cause, or
increased

* *Essays physical and literary*, vol. 1.

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 from that distemper: And indeed, when ner-

vous

vous 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

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,

bowels, flatulence, and other complaints of the hypochondriac or hysteric kind connected with it.

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 consequences 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

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* Aphor. sect. 5. No. 64.

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 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 lightest and most agreeable

agreeable 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 quantity 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 scirrhus kind, in some of the abdominal *viscera*.

OBSTRUCTIONS of the indolent kind have their seat either in the secretory
tubes

* See the first intention of cure, p. 325, &c. above
(a) (b) (c) &c.

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 scirrhus or other indolent swellings in the coats of the stomach and intestines, or in the other abdominal *viscera*, unless when the tumours can be felt, which is seldom the case. But when I meet (especially in women after the *menfes* have left them) with complaints of want of appetite, indigestion, vomiting, flatulence,

lence, 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 fixt 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

assistance, would do little. They ought to be applied every morning 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 wormwood 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

* 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.

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 scirrhus 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

F f f 2

tartarus

* See above, p. 201.

tartarus solubilis, *sal polychrestus*, mercury, and soap.

I give the soluble tartar from drach. i. fs. to drach. iii. or half an ounce, and the polychrest salt from scrup. ii. to drach. i. fs. dissolved in an English pint of water, which is to be drunk at three or four draughts every morning for two months or longer.

I commonly prescribe mercury as a deobstruent, either in the form of the *pilule 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 scirrhus 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

such a dose of calomel and rhubarb, or of the *pilule 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 7 years, of a lax and scrofulous habit, in March began to be affected with hard swellings on her left wrist and one of her legs, and with a soft œdematous 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-

ble-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 from all her complaints.

WHEN glandular swellings lie immediately under the skin, the mercurial ointment rubbed into the part, or a strong mercurial plaister applied to it, has sometimes made a cure. A gentleman, aged 21, 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 plaisters 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 plaister 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 20 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

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 took pills of *gum ammom. 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 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

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 33, 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 fizy; 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 caught 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 people affected with the stone often take soap to a greater quantity than this patient did, without any complaint of itching,

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, tho' not so thick as one's fist, his health was bad and his blood sily.

ALTHO' 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 scirrhus tumours,

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 *scirrhus* 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, altho' 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,

salivation, in some persons, for two or three weeks together, 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 scirrhus 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

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 cavities.

OF late, the extract of the *cicuta* has been much extolled as a deobstruent * ; but altho' 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 scirrhus 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

* See Dr Storck's three treatises on the virtues of the *cicuta*.

(e) In attempting the cure of 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 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 virtues 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

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 reflection; the best medicines 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 o-

H h h ther

* Page 335, &c. above.

ther 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,

* See above, p. 211.

† 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 a disappointment in marriage, was suddenly seized with a *catalepsis*, so that he remained for a whole

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 hysterical disorders, I shall conclude these observations with mentioning particularly the remedies most proper for removing or palliating some of their most troublesome symptoms.

H h h 2 CHAP.

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.

C H A P. VIII.

Of the Cure of some of the most remarkable
NERVOUS, HYPOCHONDRIAC, and
HYSTERIC Symptoms.

I. **C**ONVULSIVE motions, or fixt
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

* 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 *menfes*, or affections of the mind, their radical cure is to be found in the preceding chapter.

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 liquid

* See above, p. 349, &c.

† See Medical inquiries and observations, vol. 1.

liquid 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 fits of the slighter kind, which returned daily at a certain time, have

* Altho' this reasoning seems to be much confirmed by the cure of Dr Nugent's patient, (See his Essay on the *hydrophobia*); yet, 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, took every three hours musk and cinabar with honey in a bolus, and a pill of *opium*. A plaister of *galbanum* with half an ounce of *opium* was applied to the throat and neck.

have been prevented by giving *opium* an hour or more before that time. But in an epileptic patient, who was seized every day about two 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

ternate 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 fetida*, 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 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 fetida*, will often have similar effects in flatulent and spasmodic affections of the alimentary canal;

* See above, p. 355.

canal; and we shall see below, 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

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once

* See above, p. 353.

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 *menfes* 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. 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

* Acta Hafniensia, 1671, and 1672, § 73.

† The success which fomenting the legs had in a case of this kind, was communicated to me about seven years since

generally known, I shall give some instances of their good effects.

(a) MRS ——— aged 23, on Saturday, the third day after being delivered of her child, was seized with a coldness and shivering, 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

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fit,

since by my learned and ingenious friend Dr John Pringle physician to her Majesty. The Doctor mixed $\frac{1}{4}$ part of vinegar with the water; whereas I have always used hot water alone.

fit, which lasted about an hour and a quarter, she sighed and moaned frequently. About mid-night, 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 tolerably sensible, 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 wrung out of hot water to be wrapped round

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
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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 afternoon he was quite insensible, had a *subfultus 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 fell soon asleep and waked at four o'clock, somewhat calmer, and with a little sweat on his skin. The fomentations were renewed; he slept
again,

again, and about six in the evening he was much less delirious, and his pulse did not exceed 124. At eight o'clock, the legs were fomented again, for a considerable time. He had several good naps during the night, and, Friday morning, was perfectly sensible, 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

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 24 hours, and to continue in it from half an hour to near a hour at a time, unless the patients became faintish.

(a) A lady, aged about 20, on the fourth day after being delivered of her first child, began to be feverish, and could not sleep. 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 10th day after her delivery, when I first saw her, the symptoms now mentioned were all increased; she was now quite silent, 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 bed-side. 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, altho' she did not fall asleep, yet she lay several hours without tossing as usual, and her pulse was reduced to 136. As often as she began to be any ways restless, the *pediluvium* was renewed. After using it the fourth time, she got several short naps, was less delirious, and her pulse only made 120 strokes in a minute; from this time (*viz.* the eleventh day after her delivery) the *pediluvium*, which was never repeated above twice in 24 hours, procured her

her better and less interrupted rest, and lessened all her bad symptoms; so that in two days more she was quite free from the *delirium*, and her pulse did not exceed 90 in a minute.

(b) A gentleman aged 40, after having had a continued fever seven or eight days, began to rave, and the *delirium* increased so much, that about the 11th day, he could not be kept in bed; nor would allow either fomentations, 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

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slept

slept a little, and towards the morning, he slept three hours at once. His pulse was now reduced from 120 to 100 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 30, 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 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 170, (which was its quickness when at the worst), to 128 strokes in a minute. After this, he recovered gradually.

(d) ANOTHER

(d) ANOTHER patient, aged 25, in a continued fever, with a pulse above 140, 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 to 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

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 100 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 pustules 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

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 20, was seized with an alternate motion of the abdominal muscles. In the night, when in bed, she was pretty free from 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 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

* Hippocrat. Aphor. lib. 2. No. 46.

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,

* A man aged, about 50, 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 fixt, it is probable, that repeated cupping might have made a perfect cure.

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 good 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.

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, surprise, attention, or other strong affections of the mind, will frequently

* See Mead on poisons, edit. 5. pag. 182. and Van Swieten. Comment. in Aphor. Boerhaave, tom. 3. p. 576.

quently 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 140 times in a minute, while the heart did not make above 90 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 of the affected muscles, which lessened their convulsive motions, while the blistered parts continued to run, but no longer. I ordered plaisters of the *emplastrum antihystericum* 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 50 or 60 times in a minute; however, in a day or two after the removal of these plaisters, 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.

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 the 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 fixt 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

* De medicina, lib. 4. cap. 2.

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 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
of

* 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 hysterick fits, is never affected with them, or even slighter complaints, when any of her children happen to be dangerously ill.

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

* Comment. in Aphor. Boerhaave, tom. 1.

times 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 lasting relief till these are either corrected † or expelled ‡.

II. Hy-

* See Philosoph. transact. No. 174.

† A young man under 20 years of age, 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 internal heat and thirst. 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 17 years of age, of a delicate constitution, 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 mi-

utes;

II. HYSTERIC faintings with convulsions.

IF the pulse be full, or the patient any ways plethoric, some blood should be ta-

M m m

ken

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 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 took 12 drops of *laudanum* in a dish of valerian tea five or six times in 24 hours. After this, the intervals between the convulsions became longer; but when they

ken away ; after which, we may endeavour to rouse her by the smoak of *asa fetida* or burnt feathers, or by *oleum succini* and

they returned, they were more severe. Although her *menfes* came on the 27th at the usual time, her symptoms did not abate. After this flux ceased, she had a blister applied between her shoulders, she used a solution of *asa fetida*, and had the *laudanum* increased 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 from them. I then prescribed for her an ounce of the bark, half an ounce of valerian, and a drachm of castor, to be made with syrup of white poppies into an electuary, of which she took the size of a nutmeg three or four times a-day ; at the same time, the *laudanum* and boluses of musk were continued. After the 3d of August, she was attacked with severe asthmatic fits, which, together with her faintings and convulsions, often made the number of paroxysms amount to thirty in a day : Some days after this, upon the convulsions 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

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

M m m 2 fit.

Her pulse during all these complaints, seldom exceeded 80 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 *ipécacuanha*, 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 on the 11th, fourteen of these fits. Upon the 12th, in the morning, she took another vomit, which was also repeated on the 13th. Each time she threw up a good deal of bile, and had no fit on 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 almost double to that of the preceeding day; but on the 16th, when the vomit was repeated, she

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 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

she escaped them altogether. 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 from the fainting fits and convulsions.

It was observable, that, during her illness, in the intervals of the fits, she was often very chearful, and sometimes jocose; but after she recovered, she became grave, thoughtful, and somewhat morose, which was her natural disposition.

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 fætida* will be proper; and, as soon as the patient can swallow, two table-spoonfuls of a solution of *asa fætida*, 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 antihysteric plaister applied to the *abdomen* has been, in some cases, useful; as also gentle vomits and stomachic purges.

III. A

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 50 to 80 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 adde

Mucilag. gum. Arab. unc. fs.

Aqu. cinnamom. f. v.

menth. piper. ana unc. ii.

aromat. drach. vi.

M. f. 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 antihystericum* 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,

mation, and can seldom do any considerable harm.

WHEN the pain or spasms in the stomach proceed from a suppression of the *menfes*, 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 scirrhus obstructions in the alimentary canal, we can do little more than to palliate by means of grateful stomachic medicines, and opiates. However,

ever, in cafes of this kind, a fmall glafs of *Spa* or *Pyrmont* water, frequently repeated, has fometimes ftaid on the ftomach, when every thing elfe has been thrown up.

WHEN there is a fcirrhouf obftruction in the coats of the ftomach near the *pylorus*, this paffage is often fo much ftraitened, that only the thinner part of the aliment can get into the *duodenum*; while the more folid part, after remaining feveral hours in the ftomach, and occafioning heart-burning and ficknefs, is at laft difcharged by vomiting. Patients in this fituation always find themfelves eafieft, when they ufe only the thinner kinds of aliments, fuch as light broths, milk, panada, fago, falep, and the like.

3. WHEN a ficknefs and pain in the ftomach, with vomiting foon after eating, are owing to a too great delicacy, or an unnatural fenfibility of the nerves of the ftomach, either in confequence of an irregularity of the *menftrua*, or of fome acrid hu-

mour 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 44, irregular as to the *menfes*, 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

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 30, after having been, for some time, irregular as to the 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,

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, drunk thrice a-day, has answered better than the soap.

WHEN a heat and foreness in the stomach

mach 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 persons 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 2d volume of the Medical Inquiries 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 *Pymont* 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 *Pymont* or *Bath* water; for a patient of mine near eighty years of age, who, after having
been

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

always the case, the body must be opened by laxative clysters, to which a drachm or two of *asa fætida* 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-mint water *, together with
laudanum:

* 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 fixt 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 it 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 humours contained in the *primæ viæ*? Further, are not many of those mineral-waters which contain a good deal of fixt air and sparkle in the
glass,

laudanum. 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;

O o o and

glass, much more grateful, as well as invigorating to the stomach when drunk 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 fixt air, lost their power of gratefully stimulating the nerves of the stomach?

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 hysterical colics, an antihysterical 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 sulphureous water of Moffat, drunk 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

* I have often found great benefit in flatulent complaints of the stomach and bowels, from frequent rubbing of the legs with a flesh brush.

cure 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 of peppermint water and tincture of *castor*, or *spiritus nitri dulcis*. In some cases, in place of this, I prescribe *opium* in pills with *asa fætida*. 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 40 and 50, about the time the *menfes* were leaving her, found her belly increase so much in bulk, that, for

some time, 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 plaister made of equal parts of the *emplastrum antihystericum* and *stomachicum* may be applied to the stomach or belly with advantage; or four or five tea-spoonfuls of the following liniment

ment may be well rubbed on these parts at bed-time.

R. Balf. anodyn. Batean. unc. i.
Ol. mac. par express. unc. fs.
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 diaromaton*. 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. Af. foetid. 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 *menfes* 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 cases 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, we must either
take

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. fs.
 Laud. liquid.
 Sp. volat. oleof. 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

* A gentleman, aged 25, after having taken mercury for several weeks, on account of a venereal disorder, became

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 fætida*, the tincture of *castor*, and spirit of hartshorn, are often useful, altho'

came 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 from this complaint, which, after eating some broiled chicken for dinner, left him intirely.

tho' their antispasmodic virtue is much less than that of *opium*.

(2.) WHEN an *asthma* of the spasmodic kind is occasioned by, or attended with some fixed obstructions in the lungs, or a considerable accumulation of humours in them, we must use a method of cure somewhat different from the above. For altho' 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 fætida* in pennyroyal water, may be taken five or six times in twenty-four hours.

A draught of water, with $\frac{1}{8}$ part of vinegar, and sweetened with honey or sugar, often gives considerable relief in asthmatic fits; altho' 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 *pilula scillitica*, do not commonly

monly agree so well with them as the *assa fetida* and volatile alkaline 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 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 *pilule scilliticæ*, taken in such quantity as to keep the body always open; pills of garlic and soap; the juice of forty or fifty *millepedæ* in two or three table-spoonfuls of French white wine, Rhenish, or cyder, taken twice a-day; and crude mercury, or quicksilver 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

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 humours 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 *pilule 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

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 fætida* 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,

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 then I observed that blisters, which run longer with him than with 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 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

which he can sometimes foretell by the paleness of his urine. Flatulent aliments, and whatever purges him much, will now, in his best health, occasion a slight fit. Altho' 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 in the 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

his stomach are the bark, a solution of *asa fetida*, the *emplastrum antihystericum* 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-stake, 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

Q q q

much

much longer free from 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.

(I.) 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 humours 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

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, and a cooling attenuating light diet; at the same time, avoiding all viscid, incrassating, and heating aliments, and every kind of exercise that too much quickens the motion of the blood.

IX. AN immoderate discharge of pale urine.

As I have observed above *, 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

* See chapter 6. No. 8.

† Altho' in some stultent or spasmodic cases, *opium* often proves one of the best diuretics, yet it has a contrary effect,

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 amari cum vino*, once in three or or four nights; moderate exercise on horse-back, 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 hectic heats, I add to
the

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, altho' it seldom procures her good rest.

the above remedies the *tinctura rosarum*, or elixir of vitriol.

WHEN the increased secretion is, in a great measure, owing 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 plaister applied to them, has been attended with remarkable effects, as will appear by the following cases.

(1.) A gentleman near to 40 years of age, troubled with wind in his stomach, and with gouty pains in his feet, in August 1753, was attacked with fits of 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

nued to diminish as the day advanced. Notwithstanding the use of the bark, conserve of roses, alum, and several other medicines, for near a fortnight, this flux of urine increased, and, for the two last 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 altho' 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, tho'

not

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 30 years of age, 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 plaister of the *emplastrum defensivum* being applied to the *os sacrum* and loins, had so good an effect, that, on the night following, he made no water till after he had been

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 applied the plaister, 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

R r r

other

other strengtheners had been used before the plaister.

(3.) MR J. P. aged above 50, 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 plaister 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 headaches.

(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

(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 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.

R r r 2

THE

* 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.

THE *pulvis fol. asari*, used as a sternutatory, has sometimes cured obstinate headaches, 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.

* See Fordyce de hemicrania.

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 good measure prevented by taking the following draught, an hour before the coming on of the pain.

R. Laud. liquid. gutt. xl.
 Tinct. ipecacuan. gutt. xlv.
 Sp. Minderer. unc. fs.
 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
 sion

sion of the *menfes*, 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

* A lady, between 25 and 30 years of age, 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; inso-much, that after a twelvemonth, her complaint was rather worse than ever. She was then advised to take from twelve to sixteen grains of the *pilulae mercuriales laxantes* every other night. By the use of these pills, a gentle salivation was raised, and kept up for about twelve days, which entirely removed the headach; nor has she had any return of it since.

Another person, between 40 and 50 years of age,
having

(7.) To relieve present pain in violent periodic headaches, 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 headaches, 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 headaches, 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
larger

having a constant headach with a swelling about the *occiput*, was cured by the same remedy, but without raising any salivation.

larger quantity of blood may be taken from the jugular vein.

MODERATE exercise is generally useful in periodic headaches, from which soever of the foregoing causes they may arise; but the proper time for it is in the intervals of of the fits.

XI. Low spirits.

HYPPOCHONDRIAC 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

* See above, p. 342. &c.

of the stomach and intestines, the most proper medicines are, aloetic purges, Harrowgate waters, and soluble tartar. I commonly prescribe the soluble tartar in the following manner,

R. Tart. solub. drach. ii. ad unc. fs.

Solve in aqu. fontan. unc. viii.

Cui adde aqu. cinnamom. f. v.

Syr. violar. ana unc. i. 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 published, some years since, 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

S f s

noxious

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 *menfes* or hæmorrhoids; if these evacuations cannot be restored, some others must be substituted in their place; but nothing has such sudden good effects as bleeding*.

(4.) LASTLY,

* A gentlewoman, aged fifty, soon after the *menfes* 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 antihysterical 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 *menfes*, so the wind in the stomach and low spirits were owing to the nerves of this organ being disordered by that matter which

(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.

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.

T H E E N D.

CHAPTER I
OF THE DISCOVERY OF AMERICA
AND THE FIRST SETTLEMENTS
IN THE NORTH AMERICAN CONTINENT

THE DISCOVERY OF AMERICA
BY CHRISTOPHER COLUMBUS
IN THE YEAR 1492

THE FIRST SETTLEMENTS
IN THE NORTH AMERICAN CONTINENT
BY THE SPANISH AND ENGLISH

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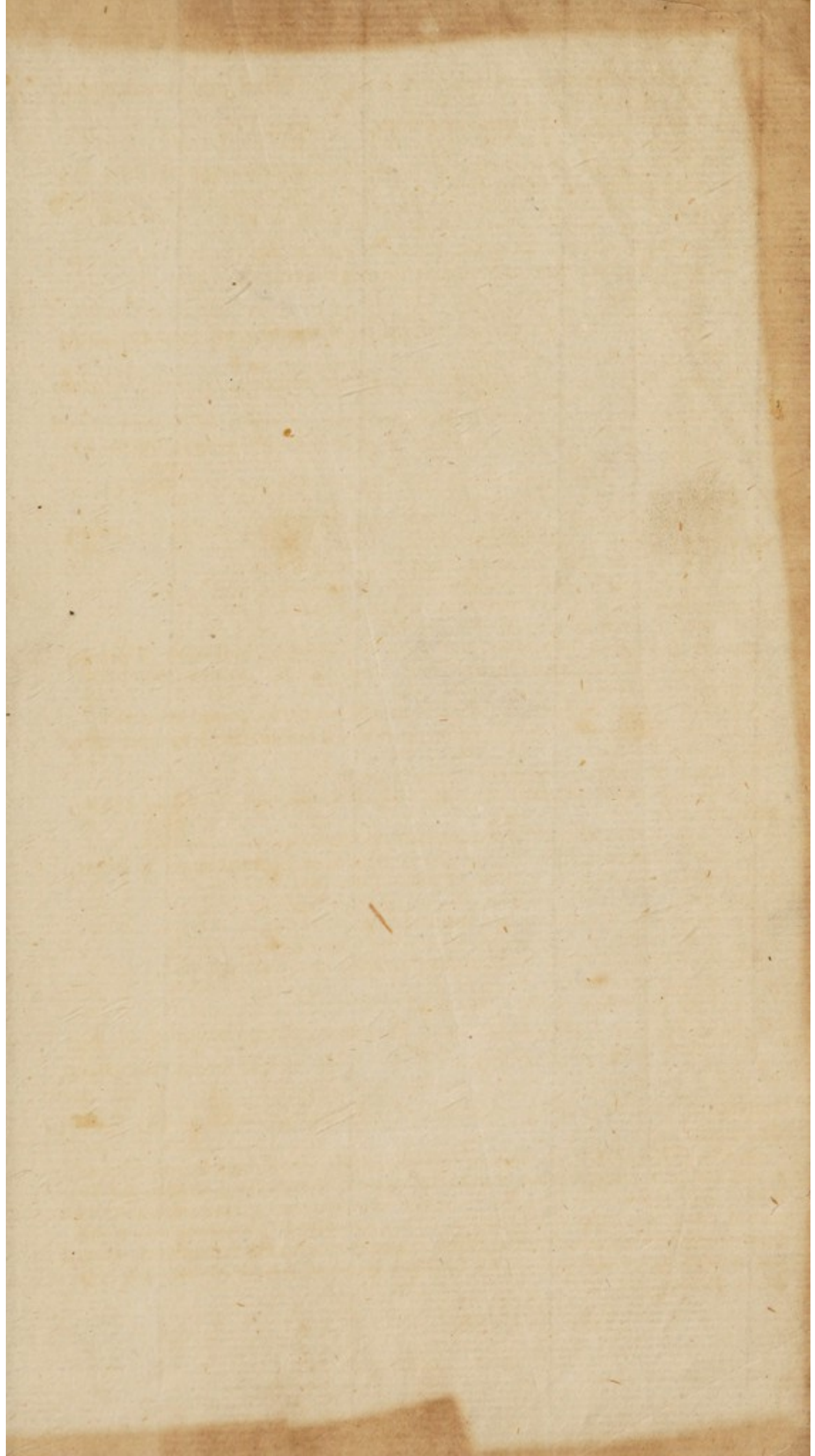
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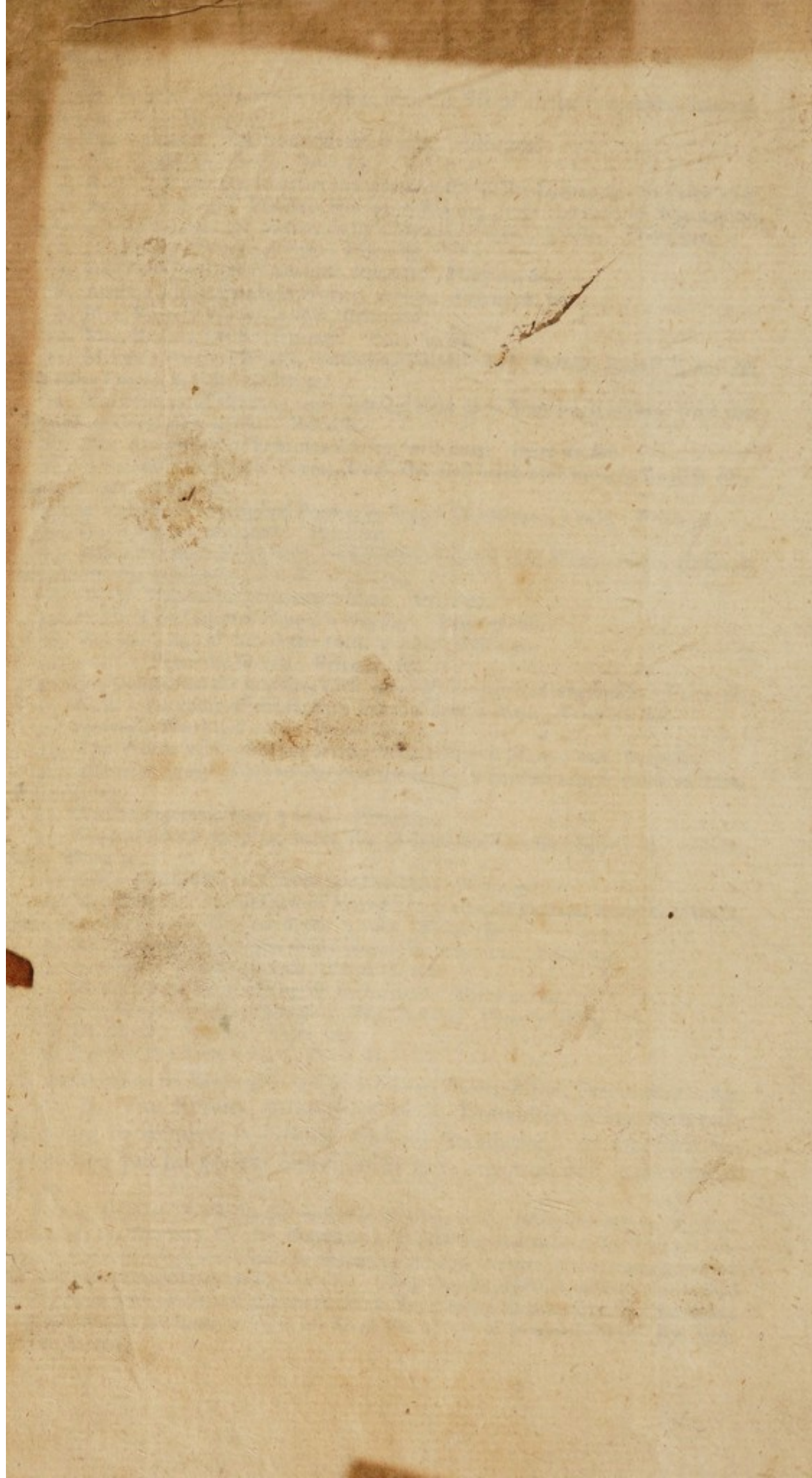
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