

Medical precepts and cautions / By Richard Mead. Translated from the Latin, under the author's inspection, by Thomas Stack.

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Dr. Robertson.

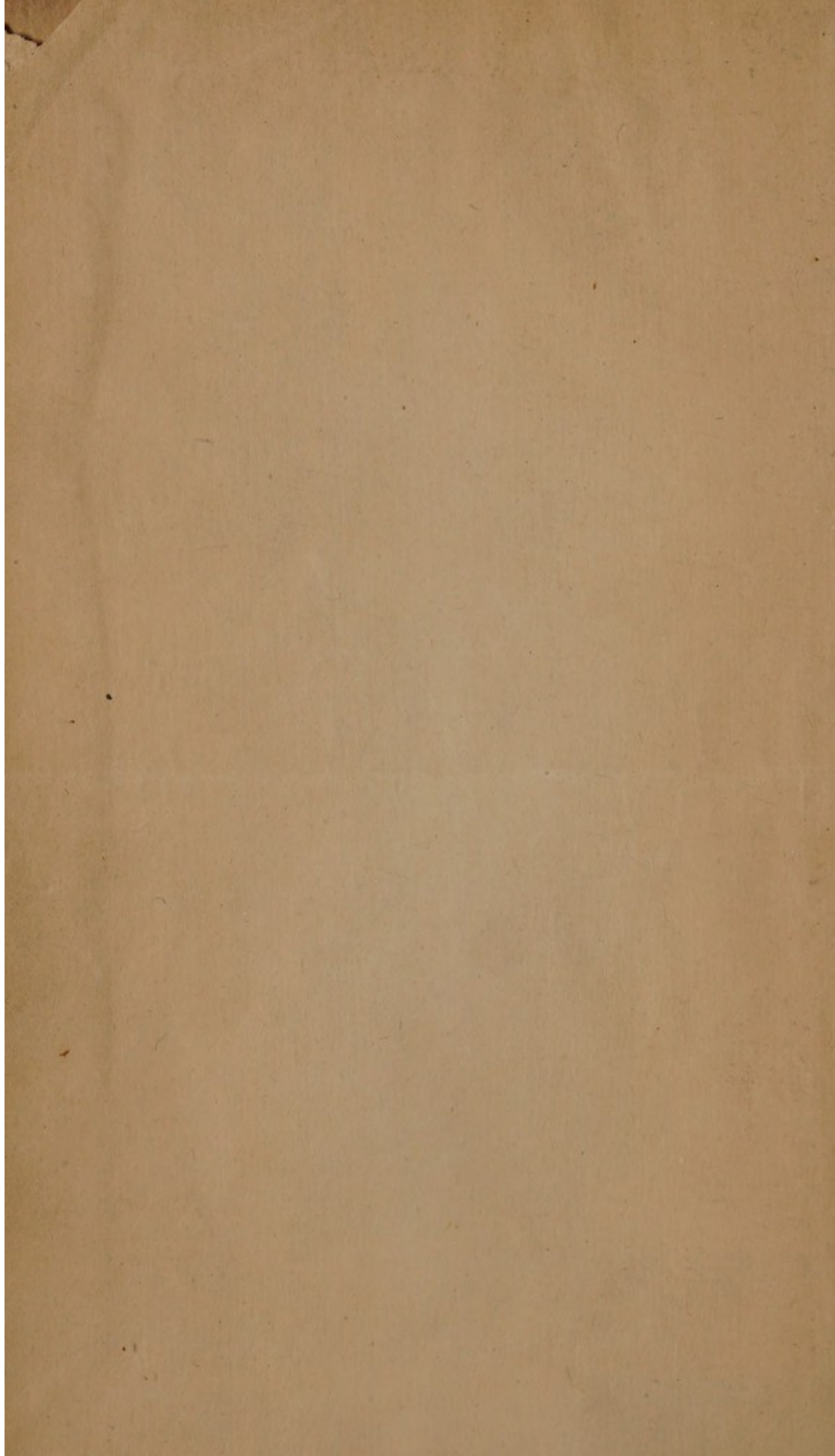
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Primitive Ogden 2
Meads Tract — 2



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M E D I C A L
P R E C E P T S
A N D
C A U T I O N S.

B Y
RICHARD MEAD, M. D.
Physician to King GEORGE II. &c.

Translated from the L A T I N.

Ἀσκεῖν περὶ τὰ νοσήματα δύο· ἀφελᾶν, ἢ μὴ βλάπτειν.
Hippocr. Epidem. 1.

T H E T H I R D E D I T I O N.

E D I N B U R G H:
Printed by A. DONALDSON and J. REID.
For ALEX. DONALDSON.

MDCCLXIII.



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M E D I C A L
P R E C E P T S
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C A U T I O N S.

P R E F A C E.

I Have persuaded myself, that I should perform a work, neither entirely void of use, nor foreign to the duties of my profession, if I made the public partakers of the principal helps against most diseases, which I had either learned by long experience, or deduced from rational principles. But my purpose is to lay down precepts of the art, and methods of cure, rather than definitions and descriptions of diseases; and to propose medicines confirmed by practice, not mere conjectures. And as it is not my intention to write a complete system of medicine, I shall not strictly confine myself to the usual order observed in medical treatises; for at my leisure-hours I have perused my loose papers, and from them have extracted such things as

I thought might prove useful hereafter ; at the same time calling in my memory to my assistance for whatsoever I had observed to be serviceable, or prejudicial, in each particular distemper. For such was the rise of medicine, by the recovery of some patients, and the loss of others, gradually distinguishing pernicious from salutary things *. Wherefore I shall not inquire into the very constitution (if the expression may be allowed) of the medical art ; nor enter into the dispute, how far it is either rational or empirical : on which topics I refer my readers to Celsus, who has stated the arguments of physicians for their respective sects with great candour, and sums up the whole by delivering his own opinion with equal judgment and perspicuity †. Nor is this little work, which has been often interrupted by, and partly composed amidst the hurry of business, thrown out as a bait to catch fame. For it has long since been observed by the great parent of medicine, that our art has acquired more blame than honour ‡. And indeed it is the general temper of mankind, to be excessively profuse of their reproofs, of their commendations extremely parsimonious. But this complaint made in behalf of medicine, will probably appear slight, if compared with the following, which he makes in another place : That the physician has dreadful objects before his eyes, very disagreeable subjects in his hands, and takes great

* Sic medicinam ortam, subinde aliorum salute, aliorum interitu, perniciofa discernentem a salutaribus. Celsus in præfat.

† Ibidem.

‡ "Εγωγε δοκέω πλεονα μνηψμοιρίαν, ἢ τιμὴν κεκληρωσθαι τὴν τέχνην. Hippocrates in epist. ad Democritum.

uneasiness to himself, from the calamities of others *. Now, what can be more humane, or more worthy even of a Christian, than to declare, that he feels the calamities of others as sensibly, as if they were his own.

However, the very nature of my design compelled me to take notice of the errors of other physicians; but I have been very careful, throughout the work, to do it with the same equity, with which I would desire to have my own faults corrected. Our art is frequently obliged to rely on conjectures; nor is it to be expected that any one person will constantly hit the mark. And therefore I have not been ashamed to acknowledge, and put my readers in mind of some errors, which I have committed either through ignorance, or want of due attention. For, as Celsus says, a plain confession of a real error is commendable, and more especially in that performance which is published for the benefit of posterity †. The reader will easily perceive, that I have endeavoured not only to express the sense of Celsus, but to employ his very words and phrases, or close imitations of them at least, whenever the subject would allow it; and I heartily wish I could have done it more frequently. For what author could I chuse to follow rather than him, who selected the best things out of the writings of the Greek physicians and surgeons, and rendered the whole into most pure and elegant Latin?

To conclude, the reader is desired to take notice,

* *Ὁ μὲν γὰρ ἑαυτὸς ὀρέει τὰ δεινὰ, διγγάνει τε ἀηδέων, καὶ ἐπ' ἀλλοτρίοις συμφορῇσιν ἰδίας καρπᾶται λύπας.* Lib. de flatibus.
 † Lib. viii. cap. 4.

that by the compositions of medicines, which I make use of in this treatise, I mean those of the late edition of the London Dispensatory *, unless otherwise signified.

* Pharmacopœia collegii regalis medicorum Londinensis. Lond. 1746. 4^o. And the translator of this work has taken the English names of the above-mentioned compositions from Dr Pemberton's translation of the said pharmacopœia. Lond. 1746. 8^o.

MEDICAL PRECEPTS and CAUTIONS.

INTRODUCTION.

Of the human body.

BEfore I begin to treat of the diseases of the human body, it may not be improper to give the reader a succinct idea of its nature in a state of health.

Wherefore, in order to form a just notion of the body of man, it ought to be considered as a hydraulic machine contrived with the most exquisite art, in which there are numberless tubes properly adjusted and disposed for the conveyance of fluids of different kinds. Of these the principal is the blood, from which are derived the several humours subservient to the various uses and purposes of life ; and in particular that subtle and remarkably elastic fluid, generated in the brain, and known by the name of animal spirits, the instrument of sense and motion : which functions it never could be capable of executing, were it not contained in proper organs. For this purpose the almighty Creator has formed two sorts of fibres, the fleshy and the nervous, as receptacles for this active principle ; and each sort of these is partly interwoven in the membranes of the body, and partly collected into bundles or cords, and attached to the limbs, for performing their motions with the assistance of the bones.

But this wonderful machine, incapable of putting itself into motion, was still in want of a first mover : wherefore the mind is placed over it, as a ruler and moderator, and is the efficient cause of all sense
and

and motion. For whether this principle resides in the head, as in its citadel; or whether it has no fixed place, but is dispersed all over the body, according to the opinion of Xenocrates, a disciple of Plato *; it commands within us, and directs the whole. Now, our motions, as well as our senses, are twofold, internal and external: the internal have not only the vital parts, as the heart, lungs, stomach, and intestines, subject to them, but likewise all the nervous membranes.

Medical writers generally make a wide difference between the motions of the vitals, and those of the rest of the parts; imagining that the former, after they are once begun in the first formation of the individual, necessarily continue even against our will; but that the latter are performed at the discretion of the mind, as circumstances require. But this is a false notion, into which they are deceived by observing, that these natural actions continue without any sensible intermission, even when we are little or not at all conscious of them, through the whole course of life: whereas, if the thing be narrowly looked into, it will manifestly appear, that the reason why these vital motions seem not to be governed by the mind, is, because being incessantly accustomed to them, we perform them so quick, and without attention, that we cannot easily check and hinder them from performing their respective offices. Something of this kind we experience, when, looking at the sun, or any body that strikes the eye too forcibly, we wink whether we will or not: and yet nobody doubts, but that those motions are effected by

* See Lactantius de opificio Dei, cap. 16.

the direction of the mind. I could bring several other examples to confirm and illustrate this sentiment; but to avoid being tedious, I chuse to refer the reader to a dissertation of Dr. Porterfield, who has handled this subject with great perspicuity *, as I have said in another place †.

But this power of the mind is most remarkably perceptible in those fevers, which are called pestilential. For in these one may observe, that the mind hurries to the assistance of the labouring frame, fights against the enemy, and, with the aid of the animal spirits, excites new motions in the body, (though we may be insensible of it), in order to expel the poison, which is blended with the humours, through every outlet. And hence very great physicians have defined a disease to be a struggle of nature in defence of the health of the individual.

In this manner it is, that care is taken of the whole machine, when in danger. But it is likewise necessary sometimes to have a regard to some particular part; nor does the mind fail of executing its office in this case. Thus, if a topical disorder has happened anywhere; to prevent the part from being overloaded and pained, nature has provided a passage for the blood and humours by the adjacent vessels. This is effected by that admirable disposition of the body, whereby the blood-vessels are interwoven and spread throughout every part; so that the blood may pass, not only from vein to vein, but also from the small arteries into others. And this mechanism is peculiarly apparent, where obstructions are most to be feared;

* See medical essays, published at Edinburgh, vol. 3. essay 12. and vol. 4. essay 14. † Disc. on the small-pox, vol. 2. pag. 112. Edinb. edit. 1763.

as in the head, abdomen, and the long winding ducts of the organs of generation.

Now, such a construction of our frame is the more necessary, because, even when a disease is not in the case, the very actions and customs of the body sometimes require the humours to be conveyed with greater freedom through some passages than through others. Hence the same blood-vessels become wider or narrower in different persons, according as their manner of living hath occasioned these vessels to be more or less dilated by the perpetual motions of the fluids. Thus in persons addicted to drinking, the arteries in the head, in people given to venery, those in the genitals, are bigger than in the sober and continent.

And this additional remark may not be improper here, that it is almost impossible, but that the very make of the animal parts, though extremely convenient for the purposes of life, must be attended with some inconveniencies in particular cases; as in the fabric of the universe, thunder, storms, inundations, plagues, and other such calamities necessarily happen sometimes in some places. But as the divine Creator of the microcosm has given us natural means of guarding against these evils; so he has afforded proper assistance against those which affect our microcosm.

Geometricians have been long intent on contriving a machine, that may be endued with perpetual motion; but have constantly lost their labour. For in handy-works of this kind some portion of the moving power is lost every instant, by reason of the friction of the parts, whereby it requires to be perpetually renewed. Wherefore it is God alone who can
complete

complete such a machine ; and was pleased that our body should be a fabric of that sort, by disposing all its powers in such a manner, that they should form a kind of circle, in which, at the same time that they perform their respective functions, they should constantly and mutually repair each other.

Hence it manifestly appears, that the animal machine is made, not by parts, but all together ; seeing it is impossible, that a circle of motions, some of which depend on others, can be completed, without all their instruments being in their proper places. For example, how can the heart contract, to push the blood forward, without the assistance of the animal spirits ; or the spirits be secreted without the brain ? And so of all the other principal parts. Wherefore the animalcula, which by the help of microscopes we discover swimming in the semen masculinum, are really little men ; which being received into the womb, are there cherished as in a nest, and grow in due time to a proper size for exclusion. Therefore Hippocrates said very justly, In the body there is no beginning, but all the parts are equally the beginning and end *.

To what has been hitherto said let me add, that every animal machine is of such a nature, that there is a sort of infinity in its constituent parts ; by which expression I mean that their fibres are so extremely small, that we cannot discover the ultimate stamina, even by the assistance of the best microscopes. Had it been otherwise, aliment would not be conveyed to every individual part of the body, nor could the necessary functions of life be performed.

* Εμοὶ δοκέει ἀρχὴ μὲν οὖν ἑδεμῖα εἶναι τῷ σώματι, ἀλλὰ πάντα ὁμοίως ἀρχὴ καὶ πάντα τελευτή. De locis in homine, initio.

Wherefore, upon the whole, health consists in regular motions of the fluids, together with a proper state of the solids ; and diseases are their aberrations : which as they are numberless, and one often produces another, it is next to a miracle, that the animal body should be able to hold out to extreme old age. And hence indeed plainly appears the extensiveness of the art of medicine, and how much superior it is to all other arts.

Now, this machine, the only one that is endued with perpetual motion, was formed by the almighty geometrician to last a longer or shorter space of time, according to the different geniuses of living creatures. For a body, such as ours, cannot possibly retain life for ever ; which is not difficult to account for. Because the membranous fibres of the blood-vessels, which were made elastic, in order to drive their included juices forward, become gradually harder, and at length rigid ; whence they are rendered incapable of executing their offices, and the secretions of the several parts are diminished by degrees. And that the useless juices are not sufficiently carried off by perspiration in old age, (a business very material to the continuance of life), manifestly appears from dissections of the bodies of very old people ; the insides of their arteries being sometimes found ossified here and there, whereby they had almost entirely lost their springiness ; and the orifices of the natural ducts are often observed to be quite cartilaginous.

In confirmation of this truth I shall give two remarkable examples ; the first of which is taken from our own history. Thomas Parr, a poor labouring man, was born in a healthful part of Shropshire, where

where he vigorously continued his daily labour to the age of an hundred and thirty years : but afterwards having lost his sight, he was at length brought to London ; and having resided here for some time, in the year 1635 he died, at the age of one hundred and fifty-two years and nine months. His body was opened by the immortal Harvey, who found all the parts in a sound state, except the brain, which was extremely firm and solid to the touch *. Thus were the vessels in that part grown hard by age.

The other example is recorded in our Philosophical Transactions. It is an account of a worker in the mines in Swisserland, who died in 1723, aged one hundred and nine years and three months, sent to the royal society by Dr John James Scheuchzer of Zurich ; who upon dissection found the exterior membrane of the spleen beset with white spots, at first sight resembling variolous pustules ; but they were of a cartilaginous hardness, and raised somewhat above the surface of the rest of the membrane : the articulations of the ribs with the sternum were quite ossified ; the tendon, by which the arteries are inserted into the heart, was either bony, or cartilaginous at least ; the semilunar valves, especially of the aorta, were plainly cartilaginous ; and the dura mater was about three times its usual thickness, and like leather †.

But it is time to pass to the defects of this machine, which disturb and destroy its motions.

* See the dissection of Thomas Parr, at the end of Dr Betts's book de ortu et natura sanguinis.

† Phil. Trans. N^o 376.

C H A P. I.

O F F E V E R S.

S E C T I O N I.

Of fevers in general.

ALL fevers, of what kind soever, are attended with a preternatural heat of the blood and humours; and this impairs the bodily strength, and the vital actions. Wherefore nature raises all her powers, and engages the disease, as a mortal enemy: and if she gets the better, she drives out the cause of the disorder by such outlets as she is able. This action is by physicians called the crisis of the disease. Now, what I would have here understood by the word nature, as also some things relating to the different sorts of fevers, I have explained in another place *, and at the same time shewn, in what sense physicians, and particularly Sydenham said, that a disease is nothing else, but a struggle of nature, endeavouring by all means to exterminate the morbid matter, for the recovery of the patient †. Wherefore I will premise some few thoughts on the crises or solutions of fevers.

S E C T I O N II.

Of the crises of fevers.

WHereas there is no fever cured without some considerable evacuation, raised either by nature

* See discourse on the small-pox, chap. 2.

* Observat. medicæ circa morborum acutorum historiam, at the beginning.

or by art ; the physician ought carefully to observe, which way nature seems to intend the expulsion of the morbid matter, and assist her by all possible means. Now, this expulsion is very frequently made through several outlets of the body at a time, and an evacuation by one outlet more or less checks that by another : thus a looseness checks sweat, and *vice versa*. Wherefore it is the physician's business to discern, what evacuation is most likely to be of service, and so to promote this, as to give the least interruption possible to any other : for any one evacuation is no tequally suitable to all persons, both on account of the difference of constitutions, and of diseases ; although evacuations through every emunctory are sometimes necessary, as we find by experience in malignant fevers.

But of all solutions of the disease the most desirable is by sweat, next to that by stool and urine ; the worst is by a hæmorrhage, whether it proceed from the nose, or from any other part : because it indicates, that the blood is so far vitiated, that no proper separation of the humour can be made.

Lastly, some fevers terminate in abscesses formed in the glands, which, if they happen in the decline of the disease, and suppurate kindly, are salutary. Wherefore the suppuration is to be forwarded by cataplasms or plasters, and sometimes by cupping on the tumour, and then, if the abscess does not break spontaneously, it ought to be opened either with the knife or a caustic.

At this time this rule of practice is generally right, not to exhaust the patient's strength by evacuations of any kind. And yet in some cases there is a necessity

sity for drawing a little blood ; as when the humours are in great commotion, and the heat excessive : for this remedy prudently administered makes the tumour ripen kindly, because nature has always a great abhorrence of a turbulent state.

SECTION III.

Of continual fevers.

THere is no disease, to which the useful precept, *Principiis obsta*, is more applicable than to fevers ; because in the beginning it is generally easy to do good ; but when the distemper has gained ground, the cure is often attended with difficulty. For the opportunity is fleeting * ; and a medicine, which early administered might have prevented the impending danger, frequently fails, when the bodily strength is exhausted by the violence of the disease. However, a patient, who applies late for assistance, is not to be abandoned to his fate ; since it is certain, that those diseases which in old times were ascribed to the divine wrath †, are frequently cured by natural means, even when they appear most desperate. Wherefore the physician ought to lay it down as an absolute rule, never to be wanting to his duty.

And first, as blood-letting is a most excellent remedy in the beginning of all fevers ; if it has happened to be neglected for some days, let us consider, whether it is still proper to be ordered.

In case of intolerable pain in any part of the body,

* Ο καίριος ὥρῃς. Hippocr. aphor. I. sect. I.

† See Celsus in his preface.

of difficulty of breathing, or a delirium, blood is to be taken away, according to the patient's strength; with the lancet, if he is able to bear it; if too weak, by cupping; but if excessively so, by leeches. And if this may be done, when the disease is got to the height; it ought for stronger reasons to take place in the beginning. And let me observe by the by, that leeches are often of vast service in a delirium. I have also sometimes found by experience, that pieces of lamb's lungs, applied warm to the head, have carried off the frenzy, by the exudation of the noxious or superfluous humour.

But in order to a clearer comprehension of what I have to offer on this distemper, I will enumerate and briefly explain its principal kinds; leaving the reader at liberty to consult the medical writers, especially Celsus and his imitator Lommius, who have treated this subject professedly, concerning the management of the sick, his diet, &c.

S E C T I O N IV.

Of fevers attended with eruptions.

FEvers attended with eruptions require particular attention. As for the small-pox, measles, and plague, I have already published my thoughts on them in separate treatises. Of the rest the chief is

The military fever.

THERE is no fever, that puts on more various appearances than this. Pustules, rough to the touch,
break

break out, sooner or later, all over the body ; sometimes red, sometimes whitish, and again both sorts intermixed ; at one time smaller, at another larger and more elevated, and of a bad smell. Sobbing and anxiety about the heart are very frequent symptoms, which are often followed by a delirium and convulsions. The disease runs into a considerable length : and if it happens to end too soon, without a sufficiently perfect crisis, it often brings on a bad habit of body. The red pimples are not so dangerous as the whitish ; and the more lively their colour, they are the safer. Hence it appears that this fever is more owing to a defect in the humours, and the animal spirits in particular, than to any bad quality of the air ; and that it requires different methods of cure according to its different circumstances.

But of what kind soever the pustules are, blood is to be drawn in the beginning, if the patient has strength to bear it ; unless he be actually in a sweat, in which case blood-letting is either to be omitted, or at least to be put off for a day or two, or some other convenient time. Now, red pustules bear bleeding much better than the whitish : and though in both sorts blisters are serviceable, yet they are more necessary in the latter ; and they are to be applied to the neck, head, and all the limbs, at proper distances of time. After all, I would advise the physician always to bear in mind, that the more sparingly blood has been drawn, the more happily the disease generally terminates : for when the strength has been exhausted by evacuations toward the latter end, the eruption sinks in, and the patient dies.

Nature's endeavours to expel the morbid matter
through

through the skin, are to be assisted by moderately cordial medicines. Of this tribe the most proper are the bezoardic powder, the compound powder of contrayerva, and the cordial confection; adding nitre, in case of an inflammation: and this salt may be very advantageously joined to cordial medicines in almost all malignant fevers, at least in the beginning. Toward the decline, warm bathing is sometimes serviceable, in order to bring forth the remains of the pustules.

But if, either at the height, or on the decline of the fever, the only appearance of an eruption is a vast number of pellucid vesicles, so small as hardly to be seen; it is not safe to persist too long in the use of internal medicines of this tribe; unless the length of the distemper has so far weakened the patient, as to render even more powerful cordials necessary. For such little roughnesses of the skin are not able to bring on a good crisis, but, on the contrary, generally denote a difficult and tedious illness: wherefore, without discontinuing the blisters, the cause of the disease is to be carried off by other ways, especially through the intestinal canal by gentle purges of rhubarb, or manna and Glauber's salt.

It is to be observed, that this disease is not always terminated by any one sort of crisis. It has sometimes one sort, sometimes another: and in some cases several sorts together; as I have already said frequently happens in other malignant fevers. Thus at the same time that there are other discharges of the morbid matter, a thrush sometimes breaks out, and spreads all over the mouth and throat. This commonly begins with a hiccup: and if it be whitish and

C

very

very moist, and occasion a plentiful spitting, it is so far from portending any great danger, that it is a sign of the distemper ending happily : but if it be of the black kind, and dry, and the spittle tough and little in quantity, it is of fatal omen, as it indicates the mouth and throat choked up with slimy phlegm. In these cases it is proper to use gargles made of barley-water and syrup of mulberries, or some such other syrup, or the pectoral decoction : for repellents of all kinds are to be carefully avoided.

It may possibly seem strange to some, that Sydenham prescribed the bark in this fever, and the aphthæ attending it, and says, he always found it to answer his expectations *. But this was not a rash practice in that sagacious physician : for this fever often intermits, when the aphthæ do not appear ; but it more frequently ends upon their going off. In both cases this excellent antidote is of very great service. And in justice to the memory of that great man, who had accustomed himself, after the example of Hippocrates, to observe the return of epidemical diseases, and found that they varied in the same seasons of the year according to the diversity of the weather ; I must observe, that he was the first among us who described this fever ; which, he says, took its rise here in the month of February 1684, after the long severe frost of the preceding winter. Hence it is probable, that it arose from the acrimony of the humours induced by the constriction of the fibres of the skin from cold, and the consequent diminution of perspiration.

* See his *Schedula monitoria*.

SECTION V.

The petechial fever.

THE petechiæ, from which this fever has its name, are broad, red spots, like the bites of fleas, not rising above the surface of the skin. When they are livid or black, they are of very dangerous prognostic : because they are really so many little gangrenes ; and therefore the more numerous they are, the more their consequence is to be dreaded.

The common practice of giving hot medicines in the beginning of this distemper, in order to raise sweats, is quite wrong. It is much the safer way, to check the gangrenous disposition of the humours by the bezoardic powder, or rather the compound powder of contrayerva, with nitre, as is above mentioned ; or to assist nature with the cordial confection dissolved in simple alexeterial water : and also to acidulate the patient's drink with dulcified spirit of nitre ; to repair his strength with Rhenish wine ; and in fine, a very proper drink will be barley-water with juice of lemons. And all these liquors are to be drank plentifully. It will likewise be of use sometimes, to administer some doses of the calx of antimony and bezoardic powder mixed, in order to provoke sweat : but the calx should not be too much washed. Yet it is necessary to admonish, that it is not an uncommon case, especially towards the latter end of the disease, that the patient's weak low state requires warmer cordials ; such as Virginia snake-root, contrayerva-root, the root of wild valerian, saffron, and the like. And infusions of these in water will be far more convenient than their powders ; especially if

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they

they be mixed with a small quantity of distilled vinegar.

S E C T I O N VI.

The erysipelas.

Great attention is to be given to that fever which is accompanied with an erysipelas. For in this, besides the pain, thirst and restlessness, which the patient suffers; the pustules on various parts of the body sometimes run into gangrenes.

Wherefore the first thing to be done is, to draw blood pretty plentifully; and then to purge once and again with gentle cathartics, as infusion of senna with manna. For such only are proper in fevers. And indeed there is no acute fever, that bears repeated purging better than this, especially when the inflammatory tumour has seized the head: for the humour spreads very fast, and soon gains the neighbouring parts.

But it is dangerous to apply hot fomentations, in order to discuss the morbid matter; and much more so, to repel it with cooling ointments or liniments. But if the skin in any part be gangrened, that part is to be fomented with a decoction of bitter herbs mixed with camphorated spirit of wine; and afterward a cataplasm of oatmeal boiled in strong beer is to be laid on warm, and to be renewed as oft as is found necessary.

And to give this caution once for all; not only in acute diseases, but in several chronical, which are attended with pustules that suppurate, it is safer and better, unless the skin is the sole seat of the ailment, to encourage the eruption by gentle means, or at least

to suffer it to come forth for some time, (that is, as far as the patient can bear the uneasiness), than either to repel, or purge off the humour by other outlets. For there is in every kind of vitious humour somewhat peculiar to itself: and as they generally come forth by way of crisis; how much soever they may be diminished, yet they are rarely evacuated out of the body, with relief to the sick, by any other passages than those pointed out by nature.

As to internal medicines, those which I have recommended in eruptive fevers, are the most proper in this.

I close this essay on malignant fevers with a few remarks on three other celebrated medicines, viz. camphire, spiritus Mindereri, and musk. And it is worth remarking that they are all powerful sudorifics.

Camphire is vastly extolled by many. And indeed, not to mention other authors, that experienced physician Riverius has given a case or two, in which it was of signal service *. However, it is worthy of observation, that it was not then exhibited alone, but joined with cooling medicines, (agreeable to the caution I gave, when hot medicines are given in petechial fevers): for camphire is very hot. Wherefore the most convenient way of giving it is this:

Take of camphire one drachm; grind it with a little rectified spirit of wine; then mix it thoroughly with half an ounce of double-refined sugar: and afterward pour on it gradually one pint of hot vinegar.

For thus that medicine, which is otherwise apt to

* See Observat. medic. centur. ii. obs. 18.

create nausea, is rendered more agreeable to the stomach, and better adapted to the disease.

Upon the same principles Mindererus's spirit * is likewise of excellent use in all putrid fevers.

In fine, I have more than once experienced the good effects of musk, especially when convulsions come on : and thus I order it :

Take of musk, the cordial confection, and cinna-
bar of antimony, each ten grains ; mix, and
with a little syrup make a bolus, to be repeated
at proper intervals.

S E C T I O N VII.

Of particular fevers.

THose fevers which are accompanied with an inflammation of any particular parts, require a treatment suitable to those parts. I instance in

A Pleurisy.

IN which, after drawing as much blood as is necessary, draughts with fresh-drawn linseed-oil are of great service for easing the cough ; nitre for allaying the heat ; for dissolving the fizy blood, obstructing the small canals, wild goat's blood, and volatile salts ; and lastly, a blister laid on the part affected, in order to draw forth the peccant humour. The advantage of this external remedy I first learned from Sir Theodore Mayerne's practice † ; and I have for many years past used it with good success. In

* Of the Edinburgh dispensatory. † De morbis
internis syntagma primum, cap. v. de pleuritide.

fine, toward the decline of the disease, when the inflammation is abated, it will be proper to purge the patient gently.

But I must not omit to take notice, that a purulent abscess or empyema, from an inflammation of the exterior membrane of the lungs, and its adhesion to the pleura, is sometimes formed in this disease; and more frequently still in a peripneumony. In this case, if the tumour points outward, a caustic should be applied to it, to let out the matter: and the ulcer is to be kept open during life. For I have seen instances, where, upon healing it up, and consequently stopping the drain, the patient died in a little time.

SECTION VIII.

Of intermitting fevers.

THat an intermitting fever is not carried off by the Peruvian bark with a proper degree of certainty, without premising a vomit or a purge, or both, is not unknown to physicians; but to join some mild cathartic to this remedy, will perhaps appear new in practice. For it is commonly thought among us, that this medicine has little or no effect, unless the patient be costive, while he takes it. But long experience has taught me, that it is quite necessary to add a small quantity of rhubarb to this febrifuge; so as to procure two stools at least every day. Nor have I ever observed, that this procedure has lessened its virtue, but rather rendered it more efficacious. For although strong irritating cathartics raise such disturbances in the blood and humours, as make the proper medicines ineffectual: yet moderate purging is

is attended with this good effect, that the stomach better digests whatever is taken in, whether medicines or food ; whereby their finest and most wholesome parts pass into the mass of blood.

The occasion of my contriving this method of giving the bark was this. Near twenty years ago inter-mittent fevers, of a worse sort than ordinary, were very rife, and frequently terminated in a bad habit of body, and even in a dropsy ; which consequences when I had maturely considered, I thought, that this method might probably guard against them ; nor was I deceived in my opinion. And the success with which it was attended, encouraged me to pursue it, whenever this disease attacked bodies loaded with gross humours. But I was well aware of the danger of purging too much. Wherefore my custom is, after having given a drachm or two of rhubarb in this manner, to omit the purgative, and continue the use of the febrifuge alone. And besides the advantages already recited, I made this observation, that when the disease is carried off by this method, there is always less danger of a relapse.

Now, with regard to this noble medicine, I have this one admonition to give, that it is not proper in any other fevers but those of the intermittent kind. For in continuals, it is so far from being of service, that it does much mischief ; and it is pernicious also in those hectic, which are accompanied with ulcers of any of the internal parts ; though they often have periodical returns, and much resemble quotidian or tertian intermittents. Whence it may not perhaps appear an improbable conjecture, that this medicine operates on the bile alone ; for that the bile has a considerable

considerable share in causing intermitting fevers, I have not the least doubt.

However, it sometimes happens, that this febrifuge fails in true intermittents; which failure is generally owing to a bad habit of body. Wherefore the physician should use his best endeavours to discover in what part the fault lies; and it will be commonly found to be in the viscera and glands of the abdomen. Upon this account it will be necessary to prescribe some purges, and sometimes vomits; and in the intermediate days deobstruents and stomachics, the best of which are aromatic bitters and preparations of steel. And for the same reason it is, that quartans are of more difficult cure than any other intermittents: for in these the blood and humours are inert and excessively viscid; so that there are two diseases to be conquered together, the bad habit of body, and the fever: which is generally done effectually, by joining Virginia snake-root and steel with the bark. However, it may not be improper to take notice, that in some cases where the bark did not answer, I have taken off intermitting fevers with a powder composed of chamomile-flowers, myrrh, salt of wormwood, and a little alum.

But there is more danger attending that sort of intermitting fever, by the Greeks named *μικτερταῖος*, that is, semitertian. This fever returns every third day; and of forty-eight hours the fit commonly takes up about thirty-six, more or less; nor does the fever go off entirely, but only remits between the paroxysms. — Hence Galen was right in saying, that it was com-

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pounded

pounded of a continual quotidian and an intermitting tertian *.

Thus a particular regard is due to this disease, which seems to be caused by an inflammation of some internal parts, accompanied with obstructions from bilious humours and too viscid lymph. Wherefore blood is to be drawn once or oftener, according to the patient's strength: and gentle purgatives, such as the diuretic salt, manna with Glauber's salt, and the like, are to be ordered and repeated at proper distances of time. Nor ought we to be hasty in giving the bark, for fear it should increase the inflammation by adding to the obstruction of the viscera, and bring on a hectic. It will be much safer, first, to order the saline draughts, with juice of lemons, salt of wormwood, and simple cinnamon-water, to be taken frequently.

SECTION IX.

Of epidemic fevers.

EPidemic fevers are caused by some fault in our ambient air; and that is chiefly owing to the excess of heat, cold, drought, or moisture, or to the unreasonable vicissitudes of these qualities.

In Greece and Asia, where the seasons are generally uniform, and the winds pretty regular from certain but different quarters in the different months of the year, it was easy for men of sagacity to observe the changes of the weather, with their good and bad effects. And on a long use of this method of observation was built the art of prognostic in diseases;

* De different. febr. lib. ii. cap. 7.

wherein Hippocrates the father of physic first excelled.

But in our climates, such is the inconstancy of the weather, and so many are the causes that raise different and even contrary winds on a sudden, that it seems impossible to erect any solid superstructure on that foundation. And accordingly Sydenham, who, in imitation of Hippocrates, attempted to describe the fevers of each respective year, and to account for their differences from the difference of the weather and seasons, found at length, “ that he had made no
“ progress in discovering the causes of epidemical diseases by observing the manifest qualities of the air :
“ as having remarked that in different years, which
“ agreed perfectly well in the visible temperature of
“ the air, the reigning diseases were very different,
“ and so on the contrary : and likewise that there are
“ various constitutions of years, which depend not on
“ heat, cold, drought, or moisture, but on some
“ occult and inexplicable alteration in the very bowels
“ of the earth *.”

Now, this matter, in my opinion at least, stands thus : that the manifest qualities of the air have a considerable share in producing epidemic diseases, is a point that admits of no doubt ; but there are other conjunct causes, which alter the force of those qualities, either by increasing or diminishing them. These chiefly spring from the earth, as Lucretius wisely said,

—— *ubi putrorem humida nata est,
Intempestivis pluviisque et solibus icla †.*

* Obs. med. cap. ii. de morbis epidemicis. † Lib. vi. ver. 1099.

When she's grown putrid by the rains, and sweats
Such noxious vapours, press'd by scorching heats *.

Now, as this terrestrial putridity is chiefly occasioned by rotted vegetables, and sometimes also by the dead bodies of animals, and by minerals; so the waters, especially of lakes and morasses, which have their plants and animals, in the same manner frequently exhale pestilential vapours, which infect the circumambient air. In this class may be ranged, though rarely happening in our climes, inundations, earthquakes, eruptions from mountains, and all other remarkable and uncommon phaenomena of nature, which are capable of filling the air we breathe, with particles offensive to animal life. For these affect our bodies, and prepare them for the easy reception of diseases.

S E C T I O N X.

Of slow or hectic fevers.

SLOW fevers, commonly called hectic, are owing to so many different causes, that they may well seem not to be the same, but different diseases. Of all this tribe the most pernicious are those which arise from an ulcer in any principal part of the body, the lungs especially, by the purulent matter mixing with the blood, and disturbing its natural motion.

Now, it is to be observed, that the persons most liable to these exulcerations of the lungs, are such as had been afflicted with scrophulous disorders in their infancy or youth. To which purpose I remember the experienced Dr Radcliffe was wont to say, that pul-

* Creech's Lucretius, b. vi. ver. 1057.

monary consumptions in this and the colder countries are generally scrophulous. And indeed, in the dissection of bodies, dead of consumptions, we very often find the lungs beset with tubercles or indurated glands, which had suppurated and thrown off purulent matter.

Medical writers have accurately described the various stages of this disease, as they succeed each other; but they have not taken sufficient notice, that some of its first causes have their periods or returns. And yet it is of great consequence to observe and prevent these periodical returns, as much as possible. Thus we see several persons at certain or stated times seized with a spitting of blood, or a defluxion of thin ferocities on the lungs, and sometimes with bilious vomitings. In all these cases the bark is of service, if joined with pectorals, and given before the expected return of the disorder: which rule holds equally good in other hæmorrhages. But, when the lungs are actually ulcerated, this same medicine is very prejudicial; as shall be taken notice of anon.

In ulcers of the lungs physicians particularly recommend a milk course, as having the double advantage of being food and physic. But this practice is liable to some caution; because some people have a natural aversion to milk. Moreover, in headachs, acute fevers, and excessive thirst occasioned by them; and likewise in flatulencies, in bilious loosenesses, and very bloody stools, milk ought always to be deemed a poison *. Now we generally give the preference to asses milk, though less nutritive; because it is more cooling and detergent. But when it cannot be conveniently had, whey, made of cows milk, or even

* Hippocr. aphor. sect. v. 64.

of goats milk, may be substituted in its room, especially if the goats have been fed on fragrant herbs : but cows milk itself, although diluted, as usual, with barley-water, is very frequently inconvenient. And the whey may be rendered more suitable to the disease by infusing stomachic and carminative herbs in it. But it happens unluckily sometimes, that when milk is extremely necessary for the body, such is the laxity of the intestines, that they cannot bear it. In this case, the milk may be medicated in this manner : Take of red roses dried, of balauſtins, pomegranate rind and cinnamon, each one drachm ; boil them in a pint of cow's milk. When the decoction begins to boil, pour a little cold water into it, to make it subſide : repeat this proceſs ſeveral times, till you have uſed a pint of water, and till the milk and water together are reduced to a pint. Then ſtrain off the liquor, ſweeten it with ſugar, divide it into convenient draughts, ſo that the patient may take the whole quantity every day. This diet will answer the double intention, of affording nourishment, and reſtraining the looſeneſs ; without putting the leaſt obſtacle to the uſe of other food or medicines.

Now, it is of the utmoſt conſequence to attempt the cure of this dreadful diſeaſe early ; and as it ariſes from inflammation, it requires not only one, but ſeveral bleedings. If the blood be thick and black or ſiſy, it is called bad blood, and is thought to indicate further bleeding ; but if it be red and florid, it is eſteemed good, and the lancet is no more uſed. But this notion is apt to lead into miſtakes : for it is not uncommon to ſee blood drawn, when in the higheſt efferveſcence, extremely florid, and at the ſame time
thick

thick and fizy : in which case, bleeding ought to be repeated till its redness and fizziness are diminished ; which may be done without danger. It will possibly be thought a rash practice to draw blood, even when the patient is much wasted in his flesh, and very weak. But it is better to try a doubtful remedy than none : and a temporary lessening of the strength is of service, when attended with a removal of part of the cause, which would weaken the body more and more every day. Wherefore, if the lungs be ulcerated, and the fever run high, it will be proper to take away as much blood as the patient can bear, at proper intervals, so as to allow the body time to recruit. I have seen cases, judged almost desperate, where this method of practice succeeded well : but if it happen otherwise, the physician is not to be branded with the death of the patient, whose viscera were so corrupted, that it was impossible to save him.

Before I quit this article, I must observe, that fumigations with balsamics, such as frankincense, storax, amber, and benzoin, in order to correct and sweeten the acrid and salt humours, is of vast service in some cases : which is to be done by throwing the ingredients on red coals, and receiving the fumes through a proper tube directly into the windpipe and lungs *. I am very sensible, that this method of administering balsamics is almost entirely neglected, as useless. But whosoever considers the length of the way which they must make by the blood-vessels, before they reach the lungs, and what a small part of them comes to the place of their destination, will easily see, that

* See Christophori Benedicti tabidorum theatrum, sub finem. Lond. 1656.

this is the best way of communicating their virtue, if they have any.

For the same reason, I have known the smoke of ballam of Tolu, sucked into the lungs through a proper tube, as we smoke tobacco, to be of signal benefit, especially in spitting of blood.

To these little suppurations it may not be improper to subjoin a larger abscess, which is sometimes formed in the same part, and is named a *vomica*. This disease, though bad in itself, and often terminates in a consumption; yet is not attended with so much danger, as those lesser exulcerations. For I have seen cases, wherein the patients, in a fit of coughing, threw up a pint or two of purulent matter of such an excessive stench, that people could not bear the room, mixed with blood; and yet they were perfectly cured by a milk-diet and balsamics, with anodynes properly interspersed.

Thus far of the phthisis, or pulmonary consumption.

But there are two other species of consumption which waste a person different ways. In one, the body is not nourished; and as some particles are always naturally flying off, and nothing coming to supply their place, an excessive wasting of flesh ensues, which is called an atrophy. This is very frequently owing to a defect in the nervous fluid; and is either accompanied with a cachexy, which is the other species, or gradually brings it on. In both species, the food is corrupted by reason of the bad habit of body, and the parts are not recruited: and therefore a well-regulated course of living, and steel-medicines to strengthen

strengthen the stomach, with laxatives at proper distances, are particularly indicated.

Lastly, in all decays exercise and frictions, according to the patient's strength, ought to be constantly used : change of air is generally of service, and sometimes a long sea-voyage. Patients labouring under disorders of the lungs, in this country, are very justly sent to Lisbon or Naples. But riding on horseback, if practicable ; if not, in a coach, or a litter at least ; or some other manner of moving the body, is always proper.

C H A P. II.

Of the diseases of the head.

S E C T I O N I.

The Apoplexy.

Most diseases of the head have a great affinity with each other, and commonly proceed from repletion. Of these the principal is the apoplexy, which is sometimes owing to an over-viscid blood, circulating too slowly, and almost stagnating in the arteries of the head : and this viscid blood, being perpetually urged forward by the force of the heart, bursts its vessels ; and lodging on the brain, and compressing the nerves subservient to the motions of the body, obstructs their ducts, and prevents the influx of their native juice. But it is more frequently caused, without any considerable rupture of the vessels, by a watery and red humour transuding from the

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blood,

blood, or by the juice, oozing out of the circumjacent glands, which loads the membranes of the brain, fills its ventricles, and stops the course of the animal spirits. The former of these may be called the sanguineous apoplexy, the latter the pituitose. To that Hippocrates gives the epithet of strong, and pronounces it incurable; and to this he gives that of light or weak, and yet says it is difficult to be cured *. A great number of histories of both sorts may be read in Wepfer †: and Bellini has most rationally accounted for all the symptoms in this and the like distempers ‡.

I shall not dwell on external causes, such as blows, falls, and fractures of the skull occasioned by them; because they indicate no peculiar treatment, but what depends on surgery.

The sanguineous kind requires plentiful and frequent bleeding, both from the arm and jugular veins; but purging is more requisite in the pituitose. Opening the occipital veins, proposed by Morgagni ||, is likewise of considerable benefit, as I have experienced in several very dangerous cases. For as these veins have a communication within the brain with both the lateral sinusses; by opening these veins, part of the blood, which they would have conveyed into the sinusses, is taken off; and the quantity of blood in the sinusses being thus somewhat diminished, its motion through them is more easily performed. And therefore cupping in the nape and sides of the neck,

* Aphor. sect. ii. 42. † Observ. anatom. ex cadaveribus eorum quos sustulit apoplexia, Amstel. 1731.

‡ De morbis capitis. || Adversar. anat. vi. animad. 83.

with pretty deep scarifications, to give a free passage to the blood, is always useful.

Upon the same account also it is, that drawing blood from the temporal arteries, which some authors recommend, is of service, if it can be of any. As to the safety of this operation, Galen indeed asserts, that he saw an artery, even in the arm, opened without any great inconvenience *. But yet the quantity of blood, taken away by opening the temporal artery, is so inconsiderable, that much benefit cannot be expected from that practice. Wherefore it would be better to follow the advice which Aretæus gives in an inveterate headach, of opening the two arteries behind the ears †; because they will discharge more blood, that would have run into the head, than the temporal arteries can.

Blisters are likewise to be laid on the head and all the limbs; and cathartics are necessary, taken both by the mouth, and by way of clyster: but they must be acrid and powerfully stimulating; because the nervous fibres are become very torpid.

The lethargy and carus are lighter species of the apoplexy.

S E C T I O N II.

The Palsy.

THE apoplexy, when it is not mortal, very frequently terminates in a palsy, which is the crisis of the disease: and this palsy generally seizes but one

* Method. medendi, lib. v. cap. 7. † De morb. diuturn. curat. lib. i. cap. 2.

side of the body. And what the above-cited Morgagni observes after Valsalva, that on dissection of the bodies of apoplectics, who had been seized with a hemiplegia, he always found the cause of the disease in the opposite side of the brain *, I have formerly found true, more than once, in St Thomas's hospital.

There is now no longer any room for blood-letting, or drastic purges ; it will be sufficient to give warm and moderate cathartics now and then, such as the *tinctura sacra*. And as the disease is now become chronical, instead of blisters, it will be requisite to make issues in proper places, especially in the nape of the neck, and above the *scapulæ*, either with the actual cautery, or with caustic medicines. Hippocrates advises to apply the actual cautery in eight places at least, and specifies them †.

The cure is to be chiefly prosecuted with aromatic strengtheners and steel. And besides, it is of service to stimulate the skin of the paralytic part : which is extremely well effected by the green ointment, mixed with a seventh or eighth part of the strong spirit of vitriol : and when the part begins to be rubefied, this liniment is to be removed, and the part anointed with ointment of elder. Cold bathing is very beneficial in persons not too far advanced in years ; but hot bathing is prejudicial to all paralytics. And I have known some cases of paralytics, sent to Bath by a mistaken notion of their physicians, who, upon coming out of the bath, were seized with a return of the apoplexy, which carried them off.

* *Adversar. anat. vi. animadv. 84.* † *De morbis, lib. ii. sect. 12.*

Wherefore I take this occasion to publish some remarks which I have made on these waters. Their chief virtue seems to me to consist in a certain mineral heat, whereby they warm and cherish the stomach and intestines ; and therefore they are chiefly serviceable to those who have ruined their appetite and digestive faculty by drinking wine, or other spirituous liquors : which is well known to be the cause of a number of evils. But they are very prejudicial to all whose inward parts, as the brain, lungs, liver, or kidneys, are too hot. And for the same reason, though they may be agreeable to, and mend the stomach ; yet if the use of them be continued too long, they more frequently hurt this organ ; that very warmth, which was beneficial at first, by immoderate perseverance becoming prejudicial, by over-relaxing the fibres. A circumstance, which I have several times observed more particularly in patients, whose diseases were owing to a fault in the nervous fluid.

This disease never is acute, is often tedious, and in old people almost incurable ; and the patient for the most part drags a miserable life. For the vigour of his mind together with his memory are lost, or vastly impaired ; he totters and shakes, and is become a dismal sight ; as if no longer a man, but an animal half dead.

St Vitus's Dance.

THIS odd disease, both in symptoms and name, is of the paralytic kind, and is cured by frequent cold
bathing

bathing and chalybeate medicines, as I have already said upon another occasion *.

SECTION III.

The epilepsy and vertigo.

Concerning the periodical returns and method of cure of both these diseases, I refer the reader to what was said before †, in which I treated of them pretty amply.

However, to what has been there said, I think proper to add two admonitions. The first is, that the vertigo is very often more a disease of the stomach, than of the head; or at least, that both these parts are affected together, from a quantity of bilious and viscid humours lodging in the guts. When that is the case, no medicines will be effectual, without premising a vomit of ipecacoanha wine, or some other proper emetic. And afterward, Mynsicht's elixir of vitriol, taken in spring-water an hour or two before and after dinner, will mend the appetite and digestion.

The other is, that the Peruvian bark, joined to some medicine appropriated to the disease, has frequently been of great service, especially if it be given thus:

Take of Peruvian bark one ounce; of wild valerian root powdered two drachms; of syrup of orange-peel a sufficient quantity; make an electuary.

Of this let the patient take a drachm, after the pro-

* Influence of the sun and moon, vol. 1. p. 210.

† Influence of the sun and moon, p. 185. &c. 207. &c.
per

per evacuations, morning and evening for three months together; and then repeat it three or four days before the new and full moon.

The Tetanus.

THIS uncommon disease is a violent preternatural convulsion of the muscles of the whole body: and therefore is to be treated with the same medicines as the epilepsy.

C H A P. III.

Of M A D N E S S.

There is no disease more to be dreaded than madness. For what greater unhappiness can befall a man, than to be deprived of his reason and understanding; to attack his fellow-creatures with fury like a wild beast; to be tied down, and even beat, to prevent his doing mischief to himself or others: or, on the contrary, to be sad and dejected; to be daily terrified with vain imaginations; to fancy hobgoblins haunting him; and after a life spent in continual anxiety, to be persuaded that his death will be the commencement of eternal punishment? And to all these may be added this unhappy circumstance, that the disorder is very difficult to be cured. Now, in order to the clearer comprehension of what I have to say from experience on this disease, I will premise a few hints concerning its nature.

A very frequent cause of this evil is an excessive intention of the mind, and the thoughts long fixed

on any one object, even though it be of the pleasing kind. For such intention of mind, such fixed thought, is capable of perverting the rational faculties; as we sometimes observe in studious persons; but when it is blended with some of the passions, as hope, fear, anger, &c. the disorder is heightened; and the madness is accompanied either with melancholy or fury, according to the nature of the cause, and chiefly according to the natural propensity of mind in the patient to this or that passion. Now, nothing disorders the mind so much as love and religion, I mean false and vain religion, or superstition. Love is attended with hope, fear, jealousy, and sometimes with wrath, and hatred arising from the latter. Superstition fills and distracts the mind with vain terrors, and notions of divine vengeance. Hence it happens, that the madness of persons in love is more generally of the maniacal, and that of superstitious people of the melancholic kind.

But these two disorders sometimes take each other's place, and undergo various degrees of combination.

In fine, madness rises to the greatest height, when the mind is racked with contrary passions at the same time; as wrath and fear, joy and grief: which, by drawing it different ways, at length quite overpower it.

We all know the constitution of our fabric to be such, that whatever images present themselves to the mind, whether of things that may be beneficial or prejudicial to us, they necessarily excite certain affections or passions in the soul, which are instantly followed by suitable motions in the body. Thus joy, grief, hope, fear, desire, anger, even against our will,

will, act upon, and cause alterations in the body, by raising commotions in the blood and humours. And it matters not, whether the ideas be true and real, or false and imaginary, provided the mind has been long intent upon them : nay we often find by experience, that the soul is more powerfully wrought on by imaginary than real evils. Thus the vain dread of impending poverty is so much more intolerable than the real affliction itself, as to drive timorous people to lay violent hands on themselves. So far is the life of man exposed to miseries on every side !

Now, the instrument of all these motions, both of the mind and body, is that extremely subtile fluid of the nerves, commonly called animal spirits. Concerning the nature of which we have formerly * offered our conjectures, and have shewn, that this active fluid is very susceptible of various alterations ; a remarkable instance whereof we have in the very disease of which we are now treating.

Medical writers distinguish two kinds of madness, and describe them both as a constant disorder of the mind without any considerable fever ; but with this difference, that the one is attended with audaciousness and fury, the other with sadness and fear : and that they call *mania*, this *melancholy*. But these generally differ in degree only. For melancholy very frequently changes, sooner or later, into maniacal madness ; and, when the fury is abated, the sadness generally returns heavier than before : hence all maniacal people are fearful and cowardly ; which is an observation of great use in practice. Now, that the animal spirits acquire various preternatural properties,

* See introduction to the essays on poisons.

as I have already said, in all madness, is easily demonstrated. But a surprising circumstance in this distemper is, that it not only often preserves the patient from other diseases; but when it seizes him actually labouring under them, it lays such strong claim to the whole man, that it sometimes dispossesses the body of them. And this happens, not only in slight ailments, but also in great and dangerous illnesses; so that we may say with the poet,

Aliquisque malo fuit usus in illo.

Some benefit resulted from that evil.

I remember to have seen two remarkable instances of the truth of this observation. One was the case of a young lady, about twenty years of age, of a lively cheerful temper, but weakly constitution; who from a bad habit of body fell into a dropsy of the abdomen, with great wasting of flesh. After trying all methods of cure to no purpose, when she was past all hopes of recovery, she was on a sudden seized with madness (from what cause I know not), attended with great anxiety and vain terrors of mind: for she imagined that she was to be apprehended, tried, condemned, and executed for high treason. In the meantime she gathered strength, and the swelling of her belly subsided visibly: so that, in a short time, I judged her able to bear more powerful medicines adapted to her two diseases. Accordingly she was put into a course of emetics, cathartics, diuretics, and stomachics; which had so good an effect, that in some months she recovered perfect health of mind and body.

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The other, somewhat different from the foregoing, was also the case of a beautiful young lady, who was, in the twenty-eighth year of her age, seized with a violent cough, and spitting of blood. For which she was blooded plentifully in the arm, every other day, five or six times. This diminished the violence of the symptoms, but did not entirely remove them: and in two months a hectic came on, attended with thirst, heat, and night-sweats; together with great wasting of flesh, and frequent spitting of tough slime, from the lungs and throat, interspersed here and there with small portions of yellow purulent matter. Now she was running into a true pulmonary consumption, and death seemed to be at the door. Whereupon the patient began to be anxious for the salvation of her soul. She was immediately visited by her spiritual guides; who, instead of quieting her conscience, and raising her hopes, strongly inculcated, that the way to heaven was rugged and difficult, and not to be passed without fasting, prayer, and anguish of mind; as if the happiness of the life to come was not to be purchased but by the unhappiness and miseries of this life. But observe the event. The miserable young lady, overpowered by sacred terrors, was soon seized with religious madness. Night and day she saw the appearance of devils, sulphureous flames, and other horrid images of everlasting tortures of the damned. But from this time the symptoms of the original disease began to abate: the febrile heat decreased, the spitting stopped, the sweats grew less; and her whole habit was so much changed for the better, that the bodily strength seemed to become more adequate to performing the functions of life, in proportion as the

mind grew less capable of governing the body. But in a few days she grew quite melancholic. Wherefore the disease was treated by evacuations, proportioned to her strength, and other proper medicines; which seemingly had so good an effect, that there appeared some hopes of a perfect cure. But alas! toward the end of the third month, the hectic and ulceration of the lungs returning, this charming virgin died consumptive, who seemed worthy of a better fate.

This disease then entirely consists in the strength of imagination. For pleasing or terrifying images are represented to the mind; and these, in the ordinary course of nature, are necessarily followed by suitable, and as it were coherent motions of the body. Hence even brutes sometimes run mad, that is, are deprived of their reason: for (whatever some hair-brained philosophers say to the contrary) they have a share of reason proportionate to their respective natures.

Daily experience convinces us of the vast power of this faculty. For what is more wonderful, than that a man should persuade himself that he is changed into a dog, or a wolf; that he is actually dead, and conversing with the dead, while he is full of life and strength; that he wears a head of glass or clay; and a hundred other such extravagant fancies, of which mad folks are sometimes possessed. And yet what often happens to pregnant women, seems still more astonishing, nay almost incredible. For it is well known, that when they are seized with violent longings, it is not uncommon to see the child marked with the fruits, or other things, for which they longed; and these marks sometimes last as long as life. However surprising these things may be, they yet fall short

short of the following fact related by Mallebranche, which comes nearly up to a prodigy *. “ About
“ seven or eight years ago (says he) there was in the
“ hospital of incurables (at Paris) a young man, an
“ idiot from his birth, whose body was broken in
“ the same places in which criminals are broken. He
“ lived near twenty years in that condition: many
“ persons saw him, and the late queen-mother making a visit to that hospital, had the curiosity not
“ only to see, but even to touch the arms and legs of
“ this youth, in the places where they were broken.”
The cause of this unhappy accident was soon found to be, that the mother, while big with this child, was present at the execution of a malefactor, who was broke alive on a cross with an iron bar. That she was excessively terrified, it is easy to believe; but how the force of her imagination could produce such an effect on the foetus, is a matter of great difficulty. Mallebranche attempts to account for it, in his usual manner, by ingenious conjectures, saying, that the imaginary faculty is a certain inward sensation, which is entirely performed by the assistance of the animal spirits: that the foetus ought to be deemed a part of the mother’s body, so that, whatever any part of the mother suffers, is by some occult communication transmitted to the same part in the foetus. Wherefore, when the pregnant woman was shocked at that dreadful sight, possibly she suffered pain, and even some degree of laceration of the fibres, in the same limbs, which she saw broken in the malefactor: but as her bones were firm and solid, they were capable of resisting the shock; whereas those of the foetus,

* Recherche de la verité, tome i. liv. ii. chap. 7.

being scarcely knit, were easily broken, so as never to unite again. But whether this reasoning be just, or not, the fact is a manifest proof, that the imagination has a wonderful degree of power to affect the body.

Another remarkable circumstance is, that immoderate joy, too long continued, as effectually disorders the mind as anxiety and grief. And the reason seems to be, that the pleasing images which are constantly present to the mind, suffer it not to attend to other things: and as it is struck and interrupted a thousand ways by objects, which necessarily occur every day; hence conflicts arise, which give a wrong turn to, and at length destroy, the thinking faculty. To which may be added the notions of solicitude and fear, lest some unforeseen stroke of adverse fortune should overturn this happy state. I have formerly heard Dr Hale, physician to Bethlehem-hospital, and of great experience in these matters, say more than once, that in the year 1720, ever memorable for the iniquitous South-sea scheme, he had more patients committed to his care, whose heads were turned by the immense riches which fortune had suddenly thrown in their way, than of those who had been completely ruined by that abominable bubble. Such is the force of insatiable avarice in destroying the rational faculties!

But it is still more to be wondered at, that mad-folks, especially of the melancholic tribe, sometimes take it strongly into their heads, to do things which give the greatest pain and uneasiness to the body: than which nothing is more contrary to human nature. For, though perishing with hunger, they obstinately refuse, and even abhor food, as if it were poison

and retain their urine for whole days together, though ready to burst. In cases of this kind, the mind seems in some measure to be called away from the senses, while it is impossible but that the pain must be felt: but the unhappy person obstinately refuses to give attention to what is transacted within his body. And it is not improbable that he is possessed with some vain notions, which make him patiently bear the pain he suffers: for example, that, if he does not, he will have more severe tortures inflicted on him; that the present pain was sent down from heaven on him in punishment for his sins, or is the effect of the devil's inevitable power, or of witchcraft, and many other such empty notions. For there is nothing, how incredibly silly soever, and contrary to good sense, but may affect a depraved imagination.

But to come at length to the cure, the physician's first care ought to be to consider, what evacuations the patient is able to bear; because evacuations of almost all kinds are generally necessary, if his strength will allow them: if not, he is to be strengthened by proper diet and medicines, till such time as he can safely bear evacuants. For, when the humours have been too much drained, it is not uncommon to see maniacal madness succeeded by an incurable dejection of mind and melancholy; under which the miserable patient drags a tedious life in perpetual anxieties and sadness: and madmen for the most part live very long. Now, the proper evacuations in this disease are chiefly blood-letting, vomits, and purging by stool and urine; wherefore I shall offer a few remarks on each of these heads.

Blood is most commodiously drawn either from the
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arm or the jugulars ; and sometimes also by cupping with scarifications in the occiput ; particularly in case of a headach, or of such a degree of weakness as forbids the farther use of the lancet.

Vomiting is best excited with ipecacoanha wine in the more weakly ; but in the more robust with the tincture of white hellebore, or antimonial wine.

The properest cathartics are black hellebore, or infusion of senna with tincture of jalap, or aloes ; in fine, if the suppression of the monthly evacuations in women, or of the hæmorrhoids in men, requires discharges in blood by these natural ways. And these evacuations, both by vomit and stool, are to be often repeated, in alternate order. Nor does it seem improper to add, that this disease demands powerful medicines ; because in it the nerves are not easily stimulated.

But evacuation by the urinary organs is of greater moment than is commonly thought, especially when madness is accompanied with a fever. For it is of little benefit to melancholics, who for the most part make too much urine. And the most apposite diuretics in this case are the lixivial salts of vegetables, and the diuretic salt so called : any of which, or both sorts, may be given by turns, in pretty large doses.

Blistering plasters applied to the head will possibly be thought to deserve a place among the remedies of this disease ; but I have often found them to do more harm than good by their over-great irritation. It will be better, in imitation of the ancients, to shave the head ; and then to rub it often with vinegar, in which rose-flowers or ground-ivy leaves have been infused : and also to make a drain, by passing a seton

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in the nape of the neck ; which is to be rubbed with a proper digestive ointment, and moved a little every day, in order to give free issue to the purulent matter. However, when the disease is of long standing, blisters are sometimes serviceable.

While the noxious humours are expelled by these means, the disease is likewise to be attacked by those medicines which effect a change in the body. The diet ought to be slender, chiefly gruel made of oatmeal or barley, and meats of easy digestion. For the body must be nourished, that the patient may have strength enough to bear the necessary evacuations.

Authors, both ancient and modern, recommend a great number of medicines ; some of which are suitable to maniacal, others to melancholic patients : but both sorts agree in the property of correcting the bile ; which is acrid at first, then becomes viscid, and black as pitch. Moreover, the very blood in this disorder is thick, fizy, and black : whence, upon dissection the brain appears dry, and almost friable, and the vessels distended with black, sluggish blood. Now, it will be of use to observe, that most of the medicines proper to be given in this disease, are in some degree endued with the property of opening and scouring the glands, and increasing perspiration. Of this kind are the strong-smelling gums, especially asa foetida, myrrh, Russian castor, and camphire : which last is asserted, by some authors of experience, to have likewise an anodyne quality, and to procure sleep with greater certainty and safety even than opium. And in melancholic cases, chalybeates are also very proper. In fine, a frequent use of the cold bath is very serviceable, especially in maniacal cases. For nothing, as Celsus

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says,

says, is of such benefit to the head, as cold water *.

It now remains to lay down some rules for the management of mad-folks, than which nothing conduces more to their cure: and different methods are to be employed with the maniacal and melancholic. The unruliness of those is to be curbed; and the despondency of these to be dissipated, by giving them hopes, and raising their spirits. And yet with regard to those who are outrageous, it is not necessary to employ stripes or other rough treatment, to bring them into order; binding alone being sufficient for that purpose: because, as I have already said, they are all cowards; and when they are once sensible of being thoroughly conquered, they easily submit for the future, and dare not offer violence to themselves or others.

It is a more difficult matter to manage those whose madness is accompanied with excessive sadness or joy; to whose different humours the physician ought to accommodate himself. Wherefore the ill-timed fits of laughter of some are to be stopped by chiding and threatening; and the gloomy thoughts of others are to be dissipated: to which concerts of music, and such diversions as they formerly took delight in, are very conducive. And how music affects and relieves both the body and the mind, I have formerly published my thoughts *.

But it ought to be a standing rule, to inculcate notions directly contrary to those with which they were long possessed, in order to inure the mind by

* Lib. i. cap. 6. † Mechanical account of poisons, essay iii. See also what Aretæus says on this head de curat. acutor. lib. i.

degrees to a new way of thinking. For as in the case of a body broken with sickness or fatigues, rest and intermission of labour are proper to be ordered; so it is requisite, by all practicable means, to draw off the mind from those vain fancies which it has imbibed, And this we shall compass, if we turn it upon objects which excite different motions in it. Thus in imaginary fears of long duration, it is sometimes beneficial to affright the patient with real dangers. But these real terrors must in their own nature be quite unlike their false or imaginary ones, in order to cause a different agitation in the mind. For the mind cannot be absolutely at rest, though it may be free from care and anxiety: and a change of ideas may be deemed a recreation and relaxation from studies: just as the muscles of the limbs, when tired with any one sort of labour, are refreshed by putting them on different actions.

Bodily exercise is never to be neglected. Walking, riding, playing at ball, bowls, and other such sports; swimming, and travelling by land and sea, are of great use: for by these the constitution of body is strengthened, and the mind resumes its rational faculties by the constant exchange of objects.

To what has been hitherto said, I shall subjoin one animadversion more: That anodynes to procure sleep are very seldom proper in this disease. But yet in some cases, as in great terrors of mind, or when the patient, through solicitude and sadness, is much fatigued with constant watching, it may not be amiss to make trial of them; but we are not to persist long in their use: for it often happens, even when they procure sleep, that when the patient a-

wakes, his head is filled with more terrifying ideas than before.

I close this chapter with observing, that there is no disease, in which the danger of a relapse is greater : wherefore every thing that has been hitherto proposed for the cure, whether relating to medicines, diet, or manner of living, ought to be repeated for a considerable time at due intervals, even after the patient has recovered.

C H A P. IV.

Of the QUINSY.

MEDICAL authors have carefully treated of several sorts of quinsies ; but there are three sorts the most acute and fatal of all, the nature of which they have not explained with sufficient accuracy. Of these the first may be called the watery quinsy, the second a gangrene of the tonsils, and the third a strangulation of the fauces.

In the first sort the glands of the mouth, palate, and neighbouring parts are distended and swoln. In the second, an inflammation without a perfect suppuration seizes the tonsils ; which swell and grow hard ; a gangrene soon ensues, which, if not very speedily relieved, is fatal. In the third, all the nerves are convulsed, and the patient drops down dead suddenly. Of this third sort I have seen one instance, in which though a large quantity of blood was drawn twice in six hours time, yet that evacuation was of no avail. Upon dissection there was not even the least appearance of swelling or inflammation in the glands

glands or muscles of the mouth and throat ; but the blood-vessels were turgid every where with a thick blood. This disease, however rare, is described by Hippocrates. “ Of quinsies,” says he, “ those are “ the worst, and soonest fatal, which shew nothing “ remarkable either in the fauces or neck ; and yet “ bring on very much pain and difficulty of breath- “ ing *.” These sorts are all very dangerous, and require some difference in the treatment.

I remember, that the watery quinsy reigned some years ago like an epidemic fever in Wales, especially in places near the sea, and carried off a great number of people in two or three days from their seizure. Whereupon, being consulted by a physician residing there, I wrote him this advice ; to bleed plentifully as soon as possible, and empty the first passages by a clyster, or, if practicable, by a gentle purge ; and then to apply blisters under the chin, and on the sides of the neck : and if this course did not succeed, to scarify the palate pretty deeply about the uvula and sublingual veins, in order to give vent to the matter of the disease. In the mean time, to carry off the fever, I recommended a powder made up of equal parts of the compound powder of contrayerva, and very pure nitre. And this method saved very many lives.

In the gangrene of the tonsils, after bleeding and clysters, the only remedy is, to make three or four pretty deep incisions in these glands, which are to be dressed with honey of roses, mixed with a small quantity of Egyptian honey : and at the same time, the mouth and throat are to be gargled with a decoction

* Prognostic.

C H A P. V.

Of the diseases of the breast.

Of the Asthma.

Difficulty of breathing arises from many and very different causes. For whatsoever occasions the ambient air to enter the lungs with less freedom than usual, brings on this disease. Now, for performing respiration, first the thorax must be dilated; which is effected by the actions of the diaphragm, and intercostal and abdominal muscles. Next, the air must be received into the aspera arteria; and therefore, whensoever this duct or its ramifications are obstructed, either by a tumour, or by viscid humours, a difficulty of breathing must ensue. Then, the air itself comes in for a partial cause; for if it be much heavier or lighter than usual, it does not distend the vesicles of the lungs with sufficient force. Likewise the tenderness of the very lungs sometimes occasions this distemper. For I have known some persons, who breathed well enough in the thick air of the town; but upon going into the country, the clear air, which is beneficial to most asthmatic patients, threw them into a very great difficulty of breath. In fine, the difficult passage of the blood through the lungs may be reckoned among the impediments of respiration. Now it is manifest, that this may happen several ways; that is, through some defect in the heart, or in the blood itself. When the heart is weak, it does not sufficiently drive the blood forward; and if the blood chance to be too thick, it is not so easily moved; and in some
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measure stagnating in its vessels, disturbs and retards the office of the air. We could enumerate several other causes of this disease, but these are principal ones; and they are more or less fatal, according to their greater or lesser combinations.

As this distemper is owing to different causes, so it requires different methods of cure. However, in every species of it, blood-letting is useful, unless there be some particular contra-indication. But that alone will not suffice; vomits too, and those often repeated, are very proper, if the lungs or stomach be loaded with tough phlegm. The body must be kept open, but by no means with violent cathartics: for the most part pills, made up of equal parts of Rufus's pills and gum-ammoniac, and given every night, will answer that end. The patient is to be forbid the use of all flatulent food and drink; and to be ordered to use exercise till he is almost tired, and frictions, of the lower parts especially, both by himself and others, till he is pretty near sweating.

In the fits, the breath is to be eased as much as possible. In the case of viscid and tough humours, this is effected by a mixture of oxymel of squills and simple cinnamon-water; or garlic either raw or preserved. But if the fault lie in the nervous juice, all the strong-smelling gums are proper, especially the milk of gum-ammoniac. But it ought to be remembered, that anodynes, which are poisons in the preceding case, are very serviceable in this, if joined with volatile salts or spirits: but of all this tribe, I know no better medicine than the paretoric elixir.

Now, as some constitutions, through some defect of the solids or fluids, are apt to relapse into this dis-

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ease upon every occasion ; it is proper to give directions how to prevent it. Wherefore regard is to be had here, both to the constitution of the patient, and the nature of the disease. If he be of a hot constitution, coolers and acids, of the milder sort, are indicated ; the best of which are vinegar and the oxy-mels : but if it be cold, some warm medicines are serviceable ; such as the roots of elecampane and zedoary, sagapenum, myrrh, and the like. In both cases it is proper to give a vomit now and then ; and to keep the body open with gentle cathartics, as Glauber's salt. Water with a little wine is the most convenient drink.

But whereas every kind of this disease is attended with more or less of effervescence in the blood, the best way to obviate this symptom is to give the bark, especially about the usual time of the return of the paroxysm. And I have known some instances, where it has done vast service, mixed with cinnabar of antimony.

Lastly, I must not omit, that issues above the shoulder-blades are good in all asthmatic cases ; and it is very probable, that their benefit in this and some other distempers lies, not only in giving vent to the humours, but likewise in lessening the over-great tension of the nerves.

Yet all these things are to be managed with caution. From the too frequent use of blood-letting a dropsy is to be apprehended. Drinking too much water is hurtful to old folks. Violent exercise causes shortness of breath ; and so does the over-free use of acids by constringing the nervous fibres. So necessary is moderation even in medicine !

But for this, and other diseases of the breast, I refer the reader to Bellini, *De morbis capitis, pectoris, &c.*

C H A P. VI.

Of the diseases of the heart.

AS the heart, the primary instrument of all animal motions, and in some measure the fountain of life, is a muscle, or rather a collection of several muscles, it is liable to the same indispositions with the other muscles of the body.

But the disorder with which it is most frequently seized, is a palpitation, whereby its motion is interrupted, for some little space of time. This proceeds from very different causes. For sometimes its fibres becoming paralytic do not drive the blood with sufficient force. At other times a polypus, formed in its ventricles or auricles, obstructs its action. Again, when the blood is too thick, and too much in quantity, it is with difficulty thrown into the blood-vessels. Likewise the motion of this muscle may be impeded by an over-great quantity of water in the pericardium; though this indeed be a rare case. Stony concretions also put it out of order. And it sometimes happens, especially in aged persons, that the tendons in the orifices of the ducts have acquired the hardness of bone; whereby their elasticity is destroyed, and too great a resistance is made against the propulsive motion. Nor is it to be omitted, that the want of a proper quantity of blood may occasion this disease. For when this is the case, the animal spirits

spirits are secreted too sparingly in the brain : whence the contraction of the heart is hindered, and there is an intermission in the pulse.

But it is to be observed, that this disease is generally a convulsion ; and as in this state, the heart is not able to throw out a due quantity of blood at one contraction, it repeats its effort : a remarkable instance of what I said in the introduction, that even those motions which are called involuntary, are governed and altered by our mind.

And let me add, by way of prognostic, that this disorder, when it rises to a high degree, and frequently returns, generally ends in a syncope, or fatal weakness, which authors believe to be another disease of the heart.

Now the method of cure is to be varied according to the nature of each of these various cases. But this may hold good in general, that unless the patient be very weak, blood may be drawn ; whereby the heart may be eased of part of the load of blood, which it is too feeble to throw into the arteries. And indeed, I have often observed, that not only the palpitation of the heart, but even a syncope, arises from fulness : and thus this sudden fainting frequently succeeds the suppression of any customary discharge of blood, for example, from the nose or hæmorrhoidal vessels : whence it follows, that blood-letting must be very serviceable for preventing this evil ; but it will hardly bear any other evacuations. The paralytic weakness of the fibres requires the medicines directed in the chapter of the palsy. Thick blood, which engenders a polypus, is corrected by attenuating medicines, as volatile salts and foetid gums. And blisters are very

proper to stimulate and rouse the patient, especially in case of fainting attended with sleepiness.

C H A P. VII.

Of the diseases of the stomach and intestines.

ON the diseases of the stomach and intestines I have some things to propose, relating not only to what is to be done, but likewise to what is to be avoided. And first, although it be sometimes extremely necessary to evacuate by vomit the viscid phlegm which loads the stomach; yet by too frequent vomits to invert that natural motion, by which the aliments are carried downward, is giving great disturbance and impediment to the concoction of food.

Infusions of the bitter herbs whet the appetite, and often help digestion: but there is reason to fear, that a long use of them may over-heat the muscular fibres. Upon which account, it is frequently more convenient to brace them with some acids, especially Mynsicht's elixir of vitriol; under this caution however, that they are not to be given, while the phlegm in the stomach is tough. For a very common disorder of the stomach is relaxation; and that certainly requires the bracing of its fibres.

S E C T I O N I.

Of a Looseness.

A Looseness is easily stopped. I speak of that sort which is without a fever: for when it comes
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on a fever, we are to consider, whether it may not prove a crisis of the disease. But when the case is a looseness alone, it will be generally sufficient, after a vomit or two with ipecacoanha wine, to purge with some doses of rhubarb ; and then to strengthen the intestines with aromatics and chalk, or French bole.

The bloody flux.

BUT the case is attended with greater difficulty, when the looseness is accompanied with a bloody flux, or severe gripes. For then the intestines are commonly ulcerated, and discharge blood ; which comes away sometimes with liquid excrements, sometimes with slime, accompanied with fleshy particles. The patient is teased with frequent irritations to stool, and a pain in the anus ; he discharges but little at a time, and his pain is increased by every stool : and as this disease arises from an inflammation, there is always some degree of fever with it.

Wherefore, to come to the cure, the first thing to be done is to draw blood. Then a vomit is to be given, for which ipecacoanha wine is very proper, and to be repeated two or three times more, every third or fourth day.

During this course, and afterward, medicines proper for stopping the flux and healing the ulcerated membranes, are to be administered. And of this sort, I know none better than the following bolus, composed of the cordial confection and French bole, each one scruple, Thebaic extract one grain ; given three times a-day.

And it will be of service to inject clysters, either
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of fat broth with the addition of Venice treacle or electuary of scordium : or of the white decoction and starch ; or, in place of this last, of the chalk julep, with two or three grains of the Thebaic extract, when occasion requires it.

Lastly, I recommend as an useful remark, that this course is sometimes rendered ineffectual by a bad habit of body. In such cases, to the foregoing method it will be proper to add medicines, which correct the humours ; and indeed some doses of rhubarb, with a small proportion of dulcified mercury sublimate, commonly called calomel, will prove very conducive to that end.

Besides these diseases, a vomica, or internal sup-
puration, is sometimes formed in the stomach. This indeed seldom happens, but yet I have observed it more than once ; when the patient vomited up a mixture of blood and purulent matter in large quantities. The case is terrifying indeed, but yet, generally speaking, it is not attended with any great danger ; and it is cured by medicines which heal the ulcered membranes, especially by Locatelli's balsam.

SECTION II.

Of the Iliac Passion.

THis disease, by the Greeks named εἰλεν, and by Celsus * the disease of the smaller gut, is very acute. It is a violent inflammation of the intestine, which, unless speedy relief be given, soon terminates in a gangrene, and death.

Wherefore blood must be plentifully drawn with

* Lib. iv. cap. 13.

great expedition, not once only, but twice, and generally thrice. Then the belly is to be moved. But this is very difficult to be done, because acrid cathartics cause too great an irritation, and are thrown up by vomit. Therefore it is to be attempted by stimulating clysters and gentle cathartics; which are most likely to give mutual assistance to each other's operation. Anodynes too are necessary, but mixed with the purging medicines. Thus a very proper medicine will be a scruple of the cathartic extract, with one grain of the Thebaic extract, and some hours after, two spoonfuls of infusion of senna, with the addition of a fourth part of the tincture of senna, to be taken either every hour, or every two hours, until the patient has had a sufficient number of stools.

If this course prove ineffectual, it will be right to order quicksilver to be swallowed down; which has a twofold use in this case: to wit, by its ponderosity, that of restoring the natural motion of the intestines, which is inverted; and by its slipperiness, that of softening and driving downward the excrements which stop the passage. Upon these accounts it is to be given in large quantities, to a pound weight at least; and generally requires to be repeated. Nor ought the physician to use any long delay in trying this experiment, for fear of an actual mortification of the inflamed parts; whereby the coats of the intestine would be destroyed, and the quicksilver run into the cavity of the abdomen.

In fine, fomentations are of some service, particularly warm flannels soaked in spirit of wine; or, what Sydenham prescribes, a live puppy held constantly on the
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the bare belly *. But an immersion up to the breast in the warm bath is far more beneficial. And if the pain is not yet discuffed, it will be proper to apply cupping-glasses, with flight scarifications, about the navel.

The same method of cure is to be observed in that severe disease by the French called *colica pictonum*, and by our people in the American islands, where it is very rife, the dry belly-ach. For it is a pain, attended with a fever and inflammation, and a most troublesome costiveness.

S E C T I O N III.

Of Worms.

THE belly is frequently the seat of worms ; and they are of three sorts, the round smooth sort, the ascarides, and the flat or jointed worms : children are chiefly troubled with the first and second ; and adults with the third and worst sort. These have been all treated of by many medical writers. But the learned Daniel Le Clerc has given the most accurate description of the flat worm, illustrated with figures †. And as he has refuted the erroneous opinions of some physicians concerning this creature, which seems to be an animal of a singular nature ; I have borrowed from him the following remarks. First, it manifestly appears, that this is not a single worm, but a chain of many lesser worms, of that kind which are called *cucurbitinae*, linked together

* See his works, Lond. 1705, p. 41. † *Historia naturalis & medica latorum lumbricorum.* Genevæ, 1715.

in a continued series. Secondly, these latter are sometimes found, of a finger's breadth, lying single and separate in the intestines, and are so discharged by the anus. Lastly, the whole worm formed of the concatenation of these has but one head, which is pretty sharp-pointed, somewhat resembling a beak; which it fixes into the coats of the intestines, and sticking there very fast, sucks the chyle for its nourishment.

To these observations of Le Clerc I add some few from my own practice; for I have seen, and cured this disease more than once. And indeed, it is a truth equally strange and disagreeable, that though the medicines have destroyed and brought away several of the small worms, which are the component parts of the great one; yet others daily breed in the body, and join themselves to the rest, in order to repair the breach, until the head is expelled; and then at length the whole animal is discharged with it by the anus, and is frequently several feet long. But it is not at all surprising, that the sharp beak above mentioned should cause pain; and that the person who entertains this devouring guest, and is under a necessity of supplying its daily food, should waste in his flesh, and even run into a decay.

Wherefore these pernicious broods of worms are to be destroyed by all possible means; and this is easily done with regard to the smooth round sort, and the ascarides. Quicksilver in every form is destructive of them; and therefore it will be very proper to order a purge of rhubarb, with a small proportion of dulcified mercury-sublimate, which is to be repeated at due intervals; and in the intermediate days to give

æthiops-mineral morning and evening. Moreover, it will be of service to drink spring-water, in which quicksilver has been boiled; and even sea-water alone. In fine, oil injected by the anus does good.

But the flat worm requires a peculiar treatment; and after many years experience, I recommend the following medicine as very efficacious in this case.

Take filings of tin, and red coral, of each an equal quantity; pound them together into a very fine powder; of which one drachm, made into a bolus with conserve of the tops of sea-wormwood, is to be taken twice a-day.

In fine, the same medicines which have destroyed and cleared the bowels of these intestine enemies, are to be repeated from time to time, to prevent their return.

There is another worm, which deserves to be taken notice of in this place, as being very different from those above described, both with regard to its seat, which is not in the intestines, but in the limbs, and to the oddness of its nature. I mean that which the Arabians have named *vena medinensis*, the Greeks *δρακόντιον*, and the Latins *dracunculus*. Avicen is the first author who described this worm; and to his description he has subjoined the cure*. His Arabic text was rendered into Latin by Georgius Hieronymus Velschius, and illustrated with an ample comment full of various erudition†. I shall give in few words the substance of what occurs in Avicen. He says, that this disease makes its first appearance by a pimple, which rises on some of the limbs of the body, and in course of time swells into a blister: then it breaks

* Lib. iv. canon. sect. iii. tract. ii. cap. 21. & 22.

† Published at Augsbourg, 1674. 4to.

and there issues somewhat of a blackish red colour, which continues to come forth incessantly : sometimes it has a vermicular motion under the skin, as if it were a real worm. Galen calls this evil an ulcer, which has a nerve brought into it from some neighbouring part *.

But, in truth, this disease, frequent in Æthiopia, Africa, and India, is a real worm. And in particular, it is an aquatic insect, with a sharp head and slender body, which works itself into some of the limbs, the legs especially, of persons, while they are bathing or otherwise remaining in water. It is then very small ; but by feeding on the membranes of the muscles, it grows larger in all dimensions ; till at length it gnaws the skin, and raises a swelling and inflammation, which suppurates ; and then the creature puts forth its head, and is often found to be two or three feet long, and sometimes longer.

The cure proposed by Avicen consists both of internal medicines, and of external helps. For he advises the patient to take a drachm of aloes three days successively. But if the worm withstands this medicine, and has actually begun to come forth ; something should be provided, to which it may be fastened, and on which it is to be rolled gently and gradually, that it may all come out without breaking. The best thing for this purpose is a stick of lead, on which it is to be rolled ; and it ought to be of a proper weight for pulling : then let it be drawn out gently for fear of breaking, &c. I have formerly seen in St Thomas's hospital one instance of this case in a sailor lately returned from Africa.

* Definit. medic.

C H A P. VIII.

Of the D R O P S Y.

THere are three species of dropfy mentioned by physicians both ancient and modern ; the leucophlegmatia or anasarca, the tympany, and the ascites. An excess of ferofities is common to them all ; which being collected form a swelling ; either all over the body, as in the leucophlegmatia ; or in the belly, which is sometimes so bloated, that a sound is frequently heard proceeding from the wind inclosed, as in the tympany ; in which case there is also generally found some share of water, made perhaps by the condensation of the confined vapour : at other times the belly is so filled, that the fluctuation of the water may be easily perceived, either upon moving the body, or patting the part with the hand, as in the ascites.

The seat of the leucophlegmatia is in that membrane, which modern anatomists call the adipose, or rather the reticular or cellular membrane, and which lies between all the membranes of the body and the muscles.

The tympany is of more sorts than one. Sometimes the confined vapour bloats up the abdomen, which gives a hollow sound upon being struck. And that vapour is an exhalation from some mortified viscus ; and therefore when let out, it is always extremely foetid. This is a rare case, and yet I have seen one remarkable instance of it in St Thomas's hospital. It was in an old man, whose belly swelled to that degree

gree of tightness, that it sounded like a drum upon being struck ; nor could a passage be procured downward either for excrement or wind, though the most powerful cathartics had been given. Upon opening the abdomen after death, there flew out with noise such an excessively stinking vapour, that the surgeon cried out, he was poisoned. We soon found the source of this stench to be the colon, which was inflamed and mortified, and adhered to the stomach mortified likewise. But yet it sometimes happens without any putrefaction, that an elastic air engendered in the abdomen, and not finding any vent, pushes forward, and bloats up the integuments by its expansive force. And this is not pent up in the cavity of the belly, but in the very intestines ; which it stretches to such a pitch, as to destroy their contractile power ; and then their capacity is sometimes widened to an almost immense degree *.

The ascites, or third species of dropsy, is formed three different ways. For sometimes the water is extravasated between the tendons of the transversal muscles of the abdomen, and the peritonæum, and by separating them, forms a tumour † ; at other times the serosities getting in between the two laminæ of the peritonæum (for this membrane is double) forces them asunder, and forms to itself a large receptacle ; but most commonly the water is collected, and stagnates in the wide cavity of the abdomen itself. And upon dissection I have sometimes observed this water

* See *memoires de l'academie royale des sciences*, for the year 1713, pag. 235. and *Philosophical Transactions*, N^o 414. † See *Cheselden's anatomy*, book iii. chap. 4.

to be very clear, with many little transparent strings, composed of slender vesicles that seemed linked together, floating in it; which were the coats of the bursted lymphatic vessels, whose valves separated them into different pieces, and formed hydatids.

But there is no species of dropsey worse than that of the ovaries in women. For these organs first grow scirrhus, then they are inflamed, and at length gangrened; they likewise swell to a vast size, being gradually stretched by the juices issuing out of their bursted lymphatics, which are very numerous. Hence this disease is very seldom cured.

These are the chief ways of forming collections of water in the belly, and I have seen instances of them all more than once: but the following case, which fell under my notice, while I was physician to the hospital, is very uncommon. A widow of forty-two years of age, who never had a child, complained of pains in her back, and difficulty of making water, for about twelve months; after which time she perceived her belly to swell, and there soon appeared manifest signs of an ascites: wherefore she was tapped three different times; but the waters soon collected again after each tapping, and she died in a fortnight or three weeks after the last puncture. Upon opening the body, there issued first from a cavity, formed by the separation of the tendons of the transversal muscles from the peritonæum, a great quantity of water, in which floated many large entire hydatids. And afterwards, upon cutting the peritonæum, seven or eight pints of a thickish and viscid humour were taken out, mixed with many corrupted glands. We wondered that none of the intestines appeared, which we sought

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in vain, until, cutting through a membrane, as thick as leather, we at length found the stomach with all the intestines and omentum collected into a narrow compass, and, as it were, lying hid there. The membrane immediately inclosing them was the inner lamina of the peritonæum; whose outer part being, as I have already observed, almost as thick as leather, did so far impose on us at first sight, that we took it for the whole peritonæum. Thus the three species of ascites above mentioned visibly occurred together in this body, a curious, apposite, and useful case.

Besides all these collections of water, other parts of the body are also liable to the same distemper, as for example, the brain and testicles. But water is no where attended with greater danger than when collected in the breast: and this species of dropsy most commonly happens to those who have long laboured under a difficulty of breathing, that sort especially which arises from polypi in the blood-vessels; while the serosities of the blood transude through the membrane of the lungs. I have seen several cases of this kind, where there was from a pint to a quart of water collected, sometimes in one side of the breast only, sometimes in both, and sometimes also in the very mediastinum. Now, as this water increases daily in quantity, by hindering the play of the lungs, it at length stops respiration, and the patient dies suddenly. In fine, in persons who had been long subject to a palpitation of the heart, and shortness of breath, the pericardium itself has been found after death vastly distended with water.

But it is time to come to the cure of these dropsies. In the leucophlegmatia, an incision ought to be made

made in the inside of the leg, two fingers breadth above the ankle, as far in as the cellular membrane, and no farther ; in order to serve as a drain for the water, which should run for some days. And during this time, let the leg be fomented with a decoction of emollient and warm herbs, with an addition of camphorated spirit of wine ; which method I have often found to be of great service, not only in this species of dropfy, but even in the ascites itself : nay, in some cases it has proved an absolute cure, by draining off an almost incredible quantity of water for many days together. But care must be taken, not only in this particular incision, but in all others that are made in any part of the body for drawing off the waters, not to over-exhaust the patient's strength ; which is as much affected by this evacuation, as if the same quantity of blood were drawn. Wherefore the patient is to be supported by all possible means, lest what was intended for his cure may hasten his death ; whereof I have seen two instances, one of which, indeed, happened by my own fault, in not estimating the patient's strength with sufficient caution, and the other by the rashness of a surgeon. And yet it is astonishing, how great a quantity of water, drawn off in this manner, hydropics sometimes bear to lose, with ease and benefit : as will appear by this singular case.

A gentlewoman, related to me, of near fifty years of age, and of a good strong habit of body, was seized with an anasarcal and ascitical dropfy at the same time ; whereby her belly swelled to such an excessive degree, that when she lay in bed she was quite oppressed by the weight. When her case was judged almost desperate, I gave it as my opinion, that the
only

only hopes, or rather chance remaining for her life, consisted in letting out the water by incisions made in the small of the leg. To this she obstinately refused to submit, saying that she was now gone a great way on her journey out of this miserable life, and did not chuse to go back. But at length she was prevailed on by the importunities of her friends; and a small incision was made in each leg, in the manner above described; through which issued a gallon of water at least every day for ten days together. In the mean time, regard was had to her stomach and strength. Warm fomentations were applied to the part; and she took twice a-day a draught of infusion of bitter herbs in water, such as leaves of Roman wormwood, lesser centaury, gentian-root, and lesser cardamom-seeds, with an addition of chalybeate wine. And every night she drank the following draught, which I have frequently ordered in hydropic cases, and found it very efficacious in promoting urine.

Take of oxymel of squills one drachm and half;
simple cinnamon-water, an ounce; compound
spirit of lavender, syrup of orange-peel, each
one drachm; mix.

She mended daily, and in time perfectly recovered her former state of health. But she was purged with proper cathartics, as soon as her strength would bear them. And indeed this disease requires pretty powerful cathartics, and a frequent repetition of them; the chief of which are elaterium, calomel, and jalap. Wherefore these were given at proper intervals: and the other medicines above mentioned were continued daily for a long time; especially, the diuretic draught, which she never omitted for a whole year. After this

course she continued in good health for five years : at the end of which she was seized with an acute disease that carried her off. Upon the whole, I make no doubt, but that that deluge of waters flowed partly from the cellular membrane, partly from the sack, formed by the tendons of the abdominal muscles and the peritonæum, or by the distension of the two laminæ of the peritonæum.

Order brings me now to the tympany. And first, that species, which, as I said above, proceeds from a mortification of any of the bowels, is absolutely incurable : but that which is occasioned by air, engendered and pent up in the very intestines, is to be treated with moderate cathartics frequently administered, and carminatives, to expel the wind, interposed ; together with diet of very easy digestion. Likewise, bodily exercise ought not to be neglected ; and it will be of use to throw up large clysters of warm water ; and also, what Celsus advises, to make ulcers in several parts of the belly with a red-hot iron, and keep them running a good while *. But if this operation should appear cruel, it will be proper to lay blisters on the abdomen, and repeat them now and then.

The ascites is always a dreadful disease, whether its seat be on the outside of the peritonæum, or within it, or in fine, in the cavity of the belly. Now, it is extremely material in this case, to consider, what evacuations the patient is capable of bearing. For, when he is weak, violent purging is very prejudicial ; and the more the serosities are drained out of the intestines, the greater quantity of them flows into the

* Lib. iii. cap. 21.

belly. As soon as the physician observes this to happen, he ought to desist, and to try to carry off the redundant water by the urinary passages. But all diuretics, even such as are accounted the most powerful, are of uncertain effect in these cases; for those which answer in one patient, fail in another; wherefore various sorts are to be tried. Yet, generally speaking, those into which squills enter, are the most efficacious. Of these the chief are, either the draught with oxymel above described, or the fresh root itself, given in a small quantity, as in the following bolus:

Take of the fresh root of squills five or six grains;
of compound-powder of arum half a scruple;
ginger-root five grains. Pound them together,
and with syrup of orange-peel make a bolus, to
be taken every morning.

Or, in fine, vinegar of squills, which will be less disagreeable to the stomach, and better adapted to the intention, if it be given in this manner.

Take of lemon-juice, six drachms; of salt of wormwood half a drachm: mix, and add of simple cinnamon-water, an ounce and half; syrup of orange-peel one drachm; spirituous water of pepper-mint, half an ounce; vinegar of squills, a drachm, or a drachm and half; make a draught, to be taken twice a-day.

An infusion of broom-ashes is also beneficially ordered by physicians upon account of its diuretic quality; and if it be mixed with a little wine, it will often make a good common drink for the patient.

Upon this occasion, I cannot omit recording a very remarkable case of a lady of quality of my acquaintance. This lady, when about fifty years of

age, had a hard swelling in one side of the abdomen, which, without doubt, was one of the ovaries grown to a very large size; and its lymphatics bursting spued out their contents, and gradually formed an ascites. Purgatives and diuretics of all sorts were tried in vain. She was tapped three times, and soon filled up again. It happened at length, that a poor country-woman came to see her, who, observing her in great pain from the tension of her belly, easily persuaded her to take, every day, night and morning, a spoonful of whole mustard-seed, and drink on it half a pint of a decoction of green broom-tops. After three days taking this bitter potion in this manner, she found herself vastly relieved; and her thirst, which was very troublesome, was entirely appeased. This medicine sometimes gave her stools for two or three days successively, and she made five or six pints of water at least every day. She continued this course for twelve months, and was cured without any return of the disease. Wherefore Hippocrates wisely advises physicians, to inquire even of the lower class of people, if they know any thing useful for the cure of diseases*.

It will perhaps seem an uncommon, and even dangerous practice, to order narcotics in this disease: but yet they are sometimes so useful, that they may be placed among diuretics. For in case of great pain, they often promote a discharge of urine; which effect they produce, in my opinion, purely by relaxing the fibres of the renal ducts, which are always constricted by pain: as will appear by the following remarkable case.

* Μὴ ἀκνέειν παρὰ ἰδιωτέων ἰστορεῖν, ἢν τι δοκέει συμφέρον. Lib. præcept.

A certain robust, sober, temperate man, of about forty years of age, was afflicted with an ascites and tympany together. The disease was owing to a violent blow, which he had received about six weeks before, in the right hypochondrium. The swelling of his belly daily increased, with very severe pain, great thirst, and thick, high-coloured urine rendered in small quantities. The most powerful diuretics, as Venice soap, lixivial salts, balsam of Gilead, nitre, and the like, were prescribed by another physician of great experience and myself; but all in vain: and strong cathartics made the disease grow worse. He was ordered to be tapped, but his friends would not consent. Wherefore, as his pain was now become intolerable, and there were no hopes of his life, I thought of anodynes, in order to procure him some ease, at least, in his last moments. And accordingly I ordered him the following night-draught.

Take of pepper-mint water, one ounce; simple cinnamon-water, half an ounce; spirituous cinnamon-water, two drachms; Thebaic tincture, forty drops; ley of tartar, half a drachm; syrup of marsh-mallows, one drachm; mix.

This procured him most unexpected ease, and some sleep, to which he had been long a stranger; and he made that night, at different times, a quart of water at least. This sudden change surprisingly raised his spirits. And as the patient found, that, while his ease from pain lasted, he had considerable discharges both by urine and stool; but that he filled up again, when the effect of the anodyne was over; the same draught was ordered to be repeated every

very eight hours, and in a little time, it was thought sufficient to give it but twice a-day. But, whereas his appetite was diminished by the constant use of this medicine, he took, once or twice a-day, some spoonfuls of a chalybeate bitter infusion; without neglecting the paregoric draught, whenever the pain returned. And this course was attended with such success, that, to complete the cure, he was ordered pills, composed of storax pills one part; Peruvian bark two parts, made up with Chio-turpentine, to be taken twice a-day; whereby he perfectly recovered.

Dr Willis * has given a case, quite similar to this, to which I refer the reader; as also to what the learned Spon has published on the same subject †. For the dropfy, to the cure of which by twenty bleedings he was an eye-witness, as well as that above described, may justly be suspected to be owing to the preternatural heat and inflammation of the abdominal viscera.

Having hitherto treated of things proper to be taken in this disease, it may not be amiss to say a word or two on a very different method of cure, which is, by abstaining from all kinds of drink for a long time; for even this method has had its abettors among the faculty. But certainly, it is very difficult to be strictly pursued, as the patient is generally subject to excessive thirst; which if he be debarred from quenching, he suffers such uneasiness, that possibly he may not think life worth purchasing at so dear a rate. Nevertheless, I have known two persons labouring under a very severe ascitical dropfy, who had re-

* See pharmaceut. rational. part. i. sect. vii. cap. 1.

† Aphor. nov. sect. v. aphor. 81.

olution and patience enough strictly to practise this self-denying method, and were both perfectly cured. And their way of assuaging their thirst was, by washing their mouth and throat with the juice of four apples, or lemons, and now and then swallowing a very small quantity of it.

But if the belly cannot be drained of its load of water, either by incisions made in the legs, as proposed in the anasarca, or by any of the other helps above mentioned; there will be a necessity of taking a shorter course of relieving the patient, I mean, by tapping. For this operation sometimes preserves, but seldom kills; and always considerably eases the pain occasioned by the tension of the abdomen: besides which, it has this great use, that it affords time and opportunity for administering proper medicines.

I know, that physicians are often averse to this operation, grounded chiefly on the following reason. It is in vain, say they, to let out the water, since the injured internal parts furnish a new supply of it: moreover, if it be let out by parts at different times, the belly soon fills up again; but if it be drawn off all at once, the patient dies immediately. Now, most certain it is, that when the bowels are mortified, the case is past all hopes; that letting out the water by parts is of no service, and drawing it all off at once was commonly pernicious. Wherefore, in the year 1705, I began to investigate the cause of so great an evil, in order to guard against it; and, if am not mistaken, it is as follows. By the long distension of the abdomen from the inclosed water, the diaphragm is thrust up too high; the muscles of the belly are stretched, the blood flows with greater freedom through

through the upper blood-vessels, than through the lower; and in fine, the water by its pressure occasions some new disposition of the adjacent parts; whence upon letting out all the water at once, the diaphragm immediately moves lower down, as in its natural state it usually does; the blood rushes with unusual impetuosity into the lower or descending vessels, and by the removal of the pressure, the fibres suddenly lose the extension which they had acquired, and the heat which the inclosed water had given them: hence arises a swooning; which returning often, and with increased violence, throws the patient into cold sweats, and soon carries him off. Now, the best way of preventing this fatal consequence seemed to be, to press the belly hard with both hands, from the upper part downward, while the water was issuing, and after it was all come away, to swathe the belly tight with a bandage.

I resolved to make the first trial of this method in the hospital; and soon found a hydropic woman, who was a proper subject for my purpose. Wherefore she was tapped, and as soon as the water began to issue from the puncture, I carefully laid my hands above the navel, one on each side, and pressed the belly downward; and made the surgeon do the same thing below that part. But this I observed, that, if I took off my hands but for a single moment, the patient immediately fainted away. When all the water was drawn off, a piece of flannel, dipped in spirit of wine, was laid on the abdomen, and then a bandage was rolled tight all over it. To our great joy, the experiment succeeded according to our wishes. The patient made water plentifully, her appetite returned, she

she soon gained strength, and was perfectly cured without a relapse. Of such consequence it is to have investigated the true causes of things.

From that time, not only our own, but also foreign physicians have followed this method; and sometimes, indeed, as it frequently happens in new experiments, with too much boldness. For, in cases of diseased livers, abscesses of the stomach, and bad habits of body, there is little or no reason to hope, that it will be attended with success. Wherefore, some precautions are always necessary to be used before attempting it; the most material of which are laid down by those ingenious surgeons, Mr Cheselden * and Mr Sharp †.

After all, I must confess, that with what prudence soever the physician discharges his duty, the dropsy often returns. But, that notwithstanding, a high value ought to be set on this discovery, by means whereof I have known many lives not only prolonged for several years, but made tolerably easy, and sometimes comfortable. Of which truth I could produce many examples, but shall content myself with the following one.

A widow lady, whose opulent estate served to render her virtues more conspicuous, fell into an ascites, in the fifty-first year of her age. For this she was tapped; but as she soon filled up again, the operation was repeated once a-month for the first year; and at each tapping, one with another, there were drawn off forty-four pints of water. The next year she was likewise tapped every month, and the whole

* Anatomy of the human body, book iii. chap. 10.

† A treatise on the operations of surgery, chap. 13.

quantity, being equally divided, made twelve pints each week. The third year the quantity of water began to diminish, so that there were but twenty-four pints for every month. And in the fourth and fifth years, and seven months of the sixth, in which time she underwent thirty tapplings, each tapping amounted only to sixteen pints. After the last time, she began to grow weak and waste away; and she was seized with almost a constant difficulty of breathing, as we observe in a dropsy of the breast, attended with frequent faintings; whereas before, through the whole course of the disease, in the intervals of tapping, she was cheerful in conversation, used exercise, and even diverted herself with dancing. But now life began to sit heavy upon her, and she died at length, a very easy death. Now, it is very surprising, that a human body, in that space of time, could furnish such a vast quantity of water, to wit, one thousand nine hundred and twenty pints; and it is my opinion, that this water was first collected in the ovaries. In fine, this good lady, for the information of posterity, ordered by her will, that the following English inscription should be engraved on her monument.

*Here lies Dame MARY PAGE,
Relict of Sir GREGORY PAGE, Baronet.
She departed this life March iv. MDCCXXVIII.
In the LVI year of her age.
In LXVII months she was tapped LXVI times,
Had taken away CCXL gallons of water,
Without ever repining at her case,
Or ever fearing the operation.*

And

And this monument is now to be seen in Bunhill-Fields.

Equally remarkable, but happier in the event, is the case contained in the following account. A maiden gentlewoman of seventeen years of age, observed, that her belly swelled gradually, and that she made but little urine. She took various medicines, but still grew worse for a whole year; when her abdomen was as much distended as if she had been far gone with child. At this juncture she married, in hopes that a husband would prove her best physician. But it happened quite otherwise; the dropsy went on increasing for three years, when it came to that height, that there was reason to fear her belly would burst. Her pain becoming now intolerable, she desired me to order her to be tapped by a surgeon of the hospital, who was said to have good success in that operation, in order to give her some ease at least. Whereupon, as I did not care to be thought to kill a patient, whom I could not cure, I told her, that it could not be done in so emaciated a body without extreme danger. However, the miserable patient still continuing to urge me with earnest entreaties, not to abandon her to constant tortures and a lingering death, I granted her request; and at one tapping, managed in the manner above described, there were drawn off sixty pints of clear water, quite free from any offensive smell. From that time she gathered strength daily, the disease never returned, and at the end of ten months she was delivered of a lusty boy, and has since had several children.

In fine, a strong argument for the necessity of this operation is, that it is much safer, under proper re-

strictions, to let out the water, than to wait till it bursts the belly, and comes forth. For this case sometimes happens, and is always attended with the utmost danger. However, I have seen one instance of a recovery from it, in a woman, to whom I was called. Her belly was so vastly stretched with water, that I pronounced the case incurable; because she seemed not to have strength enough to bear the proper evacuations: but I was mistaken. For, in a few days, hearing that she was still alive, I made her another visit, and was much surpris'd on seeing two vessels full of water, one containing twelve pints nearly, and the other six. The first quantity came away in one day through a crack in the abdomen near the navel; and the second issued the next day from another crack, which happened near the same place; thus nature wisely divided her remedy, and allowed it two days to operate. As I now found the patient excessively weak and faint, I ordered her nothing inwardly but cordials; but gave directions to foment the abdomen with spirit of wine; and withal made my prognostic that she would soon die. But *mulieri, ne mortuæ quidem, vix credendum est*; I was mistaken a second time; for I saw her some months afterwards, quite recovered; nor did she ever relapse as far as I could learn; and the cracks and burstings of her belly united, without any other application but that above mentioned.

I close this long chapter with the history of a case, whereby it will appear, that nature sometimes employs a very different method from that above described, to ease herself of her load. I attended a certain merchant for an ascitical dropsy, with another physician

of great experience ; and after trying the usual remedies to no purpose, we resolved upon the paracentesis, as the ultimate resource. Accordingly the operation was performed, and about twenty pints of thin clear water were drawn off. In a few weeks his belly filled again. Whereupon, we agreed to meet the surgeon the next morning, in order to draw off the water by a second tapping. As soon as we came to the patient, he looked at us, and smiled ; saying, that he had no occasion for any sort of assistance ; and stripping off the cloaths, he shewed his abdomen, which was soft and relaxed. At this we were vastly surpris'd, and having asked him if he had had any kind of evacuation in the night, he assured us that he had had none, either by stool, urine, or sweat, more than usual. Wherefore all the water must have been absorbed by the glands and capillaries of the peritonæum and adjacent membranes. But afterwards this patient very imprudently committed himself to the care of a certain quack, who, to prevent a return of the disease, gave him very strong cathartics, which so exhausted him that he soon died consumptive. Yet, upon dissection, there was little or no water found in the abdomen.

Anatomists have long since discovered, that water is absorbed from the belly into the circumjacent parts. For if a pint of warm water be injected, through a small wound, into the abdomen of a live dog, and his abdomen be laid open a few hours afterwards, not a single drop of the water will be found therein. Thus, as Hippocrates has justly observed, every part of the body, both outward and inward, is perspirable *. But I refer the reader to the perusal of what

* *Ἐκπνοὸν καὶ εἰσπνοὸν ἔστιν ὅλον τὸ σῶμα.* Epidem. vi.

the learned Dr Abraham Kaav has published on this subject, who demonstrates, that the humours are admitted into, and transude through all the membranes of the body, both in health and sickness *.

C H A P. IX.

Of the diseases of the liver.

THE liver is liable to very many diseases ; because the affections of this organ are for the most part owing to the bile, which may be vitiated several ways. But the most common of all is the jaundice ; and as what authors have written on this distemper has not given me thorough satisfaction, I think proper to inquire with some care into its nature.

S E C T I O N I.

The Jaundice.

THE bile is a kind of natural sapo, that is, a mixture of oil, water, and salt, both volatile and fixed, separated from the blood in the liver for various uses of the animal body. And as the blood itself may be vitiated many ways, it is no wonder, that this humour is sometimes rendered unfit for its offices. Now, it is often faulty by its lentor or viscosity, and sometimes also by its excessive thinness. In the first case, the secretory glands of the bile are

* *In a book, intitled, Perspiratio dicta Hippocratis per universum corpus anatomicè illustrata. Leyden 1738.*

obstructed, and the small quantity of it that is secreted stagnates in the hepatic ducts; whence the liver grows hard, and under its tunicle are formed whitish concretions, resembling hard soap. But this disease arises, not only from the viscidness of the bile, whereby it stops in its passage, but also from its want of due consistence. For here the volatile salt, which is one of the compounding principles of the bile, over-abounds; whence the bile becomes too thin, hot, and irritating to the intestines. In the former case, the body is too costive, and the fæces are hard, and of a clay colour; in the latter a diarrhœa, attended with a fever and thin yellow stools, constantly teases the patient. Persons who spend their lives in a sedentary manner, without proper exercise, are most liable to the former; because the oily part of the bile grows too thick and viscid for want of a due proportion of salt: and those who render their faculties useless, by too high feeding and drinking spirituous liquors, are generally most exposed to the latter.

But there is another species of jaundice, owing to a very different cause from those above described, and that is, to nervous spasms; when the subtile, elastic fluid of the nerves, by becoming too acrid and irritating, constricts the bile-ducts to a degree of hindering its passage through the liver; and consequently, it must remain in the blood, and thence be thrown on the different parts of the body. That something of this same kind follows upon violent colic pains, and the bite of the viper, we have shewn in another place *

I must also observe, that there sometimes happens

* Mechanical account of poisons, essay 1.

another sort of constriction, occasioned by the schirrosity of the abdominal glands ; in which case, though the liver and gall-bladder be loaded with bile, yet no part of it can pass into the intestines ; of which I formerly saw a remarkable instance in the hospital. It was in a working man of forty-two years of age, who, five months after recovering from an acute fever, was seized with an inflammation in the right hypochondrium ; of which when he was relieved, he fell into an obstinate jaundice, with costiveness and clayey stools, and died in a short time. Upon opening the abdomen, we found four pounds of pure blood, in appearance at least, floating in it. We wondered whence this blood proceeded, but soon observed some little membranes, which seemed to be the pieces of a bursted sack ; and the omentum was mortified in this place. The pancreas was not only schirrous, but also cancerous ; for, upon cutting into it, there flew out into the surgeon's face some drops of serosity of so acrid and corrosive a nature, that they burnt the skin like oil of vitriol. The spleen was schirrous likewise. The gall-bladder was very large, and full of bile ; not yellow, but of a dark green, and too viscid. There was no schirrosity in the liver ; but in what part soever it was cut, the same sort of bile issued. In fine, we observed, that every part of the body, membranes, fat, glands, nay, the very substance of the ribs, was of a yellow hue, except the muscular fibres alone, which were not in the least tinged. Upon pressing the gall-bladder with the fingers, we could not force one drop of bile into the intestines ; for at the union of the hepatic duct with the cystic, the passage was so vastly straitened, that

that it would not admit a style. And my reason for relating this case is, to make appear, from how many different causes, and some of these fatal, this disease may arise.

A disease attended with such a variety of circumstances, requires different methods of cure. In case of costiveness with ash-coloured or whitish stools, saponaceous medicines both alone, and joined with rhubarb, are necessary. When the belly is too loose, the looseness is rather to be moderated than stopped; which is best done by rhubarb with the admixture of an anodyne. But purgatives are never more proper in this disease, than in those cases which we have said to be owing to a constriction of the biliary ducts by nervous spasms. But in every kind of jaundice, attended with actual inflammation, blood is to be drawn; and, generally speaking, a vomit is to be given.

This inflammation frequently suppurates, and turns to a vomica; from which if pure white matter issues, it is a promising sign; because the evil lies in the tunicle or outward membrane. But if the whole substance of the liver is consumed by it, the patient labours under a slow fever and great anxiety for a good while, and then dies. This cruel disease is very frequent in the East Indies, as I have been assured by travellers; and is sometimes cured by applying a caustic to the part, and letting out the humour. But the ulcer must be kept open a considerable time, as in the case of issues. This disease is taken notice of by the learned Bontius, who gives a method of cure not much unlike that above described *. And Celsus

* See Hist. nat. et medic. Ind. Orient. lib. ii. cap. 8.

observes, that the same method was formerly practised by some physicians *.

Lastly, for correcting the bile itself, nothing is more useful than the following draught.

Take of lemon-juice, six drachms ; of salt of wormwood, half a drachm ; of simple cinnamon-water, one ounce ; of double-refined sugar, one scruple ; mix.

And it will be of service likewise in case of a looseness, if its irritating quality be duly checked by opiates. Upon the same principle Mynsicht's elixir of vitriol, taken in Bath or Spa water, is a very good medicine.

SECTION II.

The Diabetes.

THE diabetes is an excessive discharge of urine, of the taste, smell, and colour of honey ; and that it is not a disease of the kidneys, as has been generally thought, but of the liver, I think I have proved elsewhere beyond contradiction †. I shall here avoid a repetition of what I then said on that head ; and shall only add one medicine more, viz. aluminated whey, which is made thus :

Take four pints of milk, boil it a little, and turn it with three drachms of alum.

If four ounces of this be taken three times a-day at least, it will contribute much towards stopping that flux.

* Lib. iv. cap. 8. † Mechanical account of poisons essay 1.

Now, if it be asked, whence can so great a quantity of water be supplied, as is discharged in this distemper? my answer is, that we find by easy experiments, that certain bodies sometimes attract, and imbibe the watery particles floating in the air; whereby they are more or less increased in bulk and weight. Thus the salt of tartar, exposed to moist air, increases so prodigiously, that a single pound of it duly calcined swells to ten pounds weight. Therefore why may we not say, that some of the vapours of the ambient air enter into the human body, when properly disposed to receive them; and these, being added to the serosities, which are to be conveyed to the kidneys, and there secreted, increase their quantity? Upon which account, as cold and moist air is very improper for persons in this distemper; so they ought, if practicable, to go into a warm and dry climate.

In fine, in order to account for the infrequency of this disease among the ancients, which was such, that Galen says he saw it but twice only*; I am of opinion, that this proceeded from their manner of living, so very different from ours. For I have said, that this disease most frequently happens to those, who, without due exercise, indulge themselves in drinking vinous liquors; and then quench their thirst arising from these, by too great a quantity of such as are cooling. Whereas, the ancients, though perhaps too much addicted to wine, were yet more prudent in this particular; for, after a debauch, they returned to temperance by degrees, cooling their bodies gradually, and quenching their thirst with warm drinks, or such at least as were not actually cold.

* De locis affectis, lib. vi.

C H A P. X.

Of the diseases of the kidneys and bladder.

BEfore I proceed to the cure of the diseases of the kidneys and bladder, it will be proper to premise a few things concerning these diseases, the nature of which does not seem to have been explained by medical writers with sufficient perspicuity; though the knowledge of this point is very material for the cure.

I well remember, and have mentioned it upon another occasion *, that the dissection of a boy about five years old, who died of severe nephritic pains, at which I assisted many years since, afforded me an opportunity of observing the various degrees by which the human calculus had acquired the hardness of stone. For the kidneys and ureters were quite stuffed with a calculous matter; and it was very instructive, to see the different degrees of concretion in the several parts of it, from a clear limpid water to a milky liquor, which shot into slender branchy crystals; and these coalescing became a hard friable substance.

Helmont, well versed in chemical experiments, says †, (and I think not without reason), that the matter of the calculus is a certain tartar formed in the kidneys by a preternatural coagulation. For this opinion seems to be confirmed by the analysis of the stone made by fire, and compared with that of tartar from Rhenish wine. This experiment was made by

* Influence of the sun and moon, vol. 1. p. 195.

† See supplementorum paradoxum numero criticum.

the ingenious Dr Stephen Hales *, who found in tartar of Rhenish wine, that the third part of the whole mass is an elastic air; and that above half the calculus consisted of the same sort of air; which proportion of air he could never find in any other bodies.

Therefore, may we not conjecture with probability, that the proximate cause of this disease is tartarous salts conveyed out of the blood into the small ducts of the kidneys? For it is the nature of these salts to contain and imprison a considerable quantity of that subtile matter, which the illustrious Newton has shewn, besides its other properties, to be the cause of the cohesion of bodies †. Thus the calculus is a substance composed of earth, and a very large share of air, concreted in the renal ducts; and either remains therein, or drops down into the urinary bladder. Upon the whole, I have been the more particular on this head, in order to shew the several ways of treating this distemper.

And first, to prevent those salts from shooting into crystals, lixivial salts seem to be extremely proper. Next, to keep the crystals from coalescing into a calculous substance, oily medicines are very efficacious. And this rule ought always to take place with regard to diet as well as medicines.

But when calculous concretions are actually formed in the kidneys, and are to be brought away by the ureters, the case requires very prudent management. It is a very common error in practice to give strong,

* Statical essays, vol. i. p. 184. and 193.

† See the life of Mr Boyle, prefixed to his works, page 70.

forcing diuretics, with an imaginary view of driving out the gravel with the urine: whereas, this intention is answered with greater safety, in most cases, by relaxing and lubricating medicines; especially if, in case of violent pain, bleeding be premised, and anodynes interspersed. For a stone is never forced out, while the patient is in great torture; though, when the pain ceases, it sometimes comes away unexpectedly, and almost of its own accord, with the urine. And the reason of this is, that pain constricts the fibres of the parts, which resume their natural state, and perform their functions properly, when the troublesome sensation is over. Wherefore, three or four grains of opium, dissolved in five or six ounces of the common decoction, may be given by way of clyster, which will greatly relieve the pain, and sometimes procure greater advantages. However, there are conjectures, after the pain is abated, when powerful diuretics may be administered; but with this precaution, that as soon as they have had their effect, they are no longer to be continued.

All this time the body should be constantly kept open; wherefore, in case of costiveness, it will be expedient to give a turpentine clyster, and sometimes to purge gently with infusion of senna and manna; but strong cathartics are to be avoided.

Of the lubricating medicines above mentioned the chief are, oil of sweet almonds, syrup of marsh-mallows, emulsions made with almonds, and the like; to which may be added, the use of the warm bath: but among the powerful diuretics, turpentine and soap are the best.

Such is the course to be pursued in the paroxysm of
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the disease. But out of it, the patient should use bodily exercise, especially riding every day, but so as not to fatigue: his food should be mild, and of easy digestion; and his drink either small wine and water, or new soft ale, which will be rendered better and wholesomer, if ground-ivy leaves be infused in it, while it is working. Mead is likewise a proper drink; for honey is an excellent diuretic. A spoonful also of honey in a glass or two of the infusion of marsh-mallows roots is an admirable cleanser of the kidneys, if used for a constancy. The wines ought to be the softest and smoothest that can be had, and the lightest; clearest river or running water is preferable to all other. For, as Pliny says, “those springs are particularly condemned, the waters of which line the vessels in which they are boiled with thick crusts *.”

But particular care should be taken, not to put the patient into a course of powerful diuretics, with a view of preventing the gravel from concreting in the kidneys: because, whatever great things may be said of this sort of medicines by ignorant pretenders, they certainly injure the parts by their heat and acrimony. Nor can I avoid observing, though I am extremely sorry for the occasion, that some gentlemen of the faculty a few years since acted a part much beneath their character, first, in suffering themselves to be imposed on, and then, in encouraging the legislature to purchase an old woman's medicine at an exorbitant price; by vouching, that it was capable of breaking the stone in the bladder, and bringing away the fragments with the urine. This medicine is a composition

* Nat. hist. lib. xxxi. cap. 3.

of soap and lime made of different shells, which every body knows to be highly caustic. And while the scheme was carrying on, some stones cut out of the bladders of patients, who had used the medicine, were very industriously handed about, as a testimony of its lithontriptic quality; because these stones had inequalities, and holes here and there in their surface, which were asserted to be erosions made by the medicine. But those gentlemen ought to have known, that stones are sometimes naturally formed in the bladder with such inequalities and pits on their surface, as may be mistaken for real erosions: several examples of which have fallen under my own observation. So great is nature's variety in forming calculous concretions. But, upon this subject, I refer the reader to a very useful book, published some years since by a skilful anatomist and physician; in which both the mischiefs done by this medicine, and the artifices employed to bring it into vogue, are set in a clear light *.

Now, whereas such vast encomiums were bestowed on this new medicine, as it was then called; it is no way strange, that our legislature should desire to purchase the manner of making it at almost any price, in order to publish it for the benefit of the commonwealth. And indeed, the purchase redounds as much to their honour, as it does to the discredit of their advisers; who ought to have known, that things endowed with such a corrosive quality, as to be able to dissolve the stone, could not lodge in the bladder without injuring that organ. Upon the whole, that

* Parsons's description of the human urinary bladder, &c.

composition, under due management, may be of some service in expelling gravel by the urinary passages; but it will never be able to break calculi of the hardness of stone: and besides, its long continued use must be attended with great danger, for the reasons above given. And as for its substitute, the soap-leys, though it be a medicine of a more commodious form for taking; yet it will not prove much safer in its consequences, for the same reasons.

Nevertheless, as nothing ought to be disguised, no truth concealed, in a matter of such moment; I think proper to take notice of what the learned Dr Robert Whytt of Edinburgh found by experiments relating to the present inquiry *. For that gentleman, after seriously considering the inconveniencies, and sometimes the mischiefs also, of this celebrated specific, resolved to omit the soap, and try what virtues lime-water might have in dissolving the calculus. His first experiments were made on several fragments of calculi with lime-water from common quick-lime; and afterwards resolving to try the power of animal-lime, he repeated them with lime-water, made with oyster-shells and cockle-shells well calcined, by pouring seven or eight pints of water on one pound of the fresh-calcined shells. The experiments succeeded with both sorts; but he soon found, that the oyster and cockle shell lime-water possessed a much greater power of dissolving the calculus than that of stone-lime. Then he proposes the method of drinking the shell-lime-water, the quantity of which may amount gradually to four pints every day for adults, and for

* Medical essays, Edinburgh, vol. v. essay 69.

children less in proportion; and he concludes with instances of the happy effects of this method.

His whole dissertation is very well worth the perusal. And I have given this short account of his method with the greater pleasure, because an eminent physician here in London, lately assured me, that he cured a certain merchant, who was grievously afflicted with the stone, by this very method: whereby he discharged by urine a great number of small pieces, some like the coats, others like small nuclei of stones. But it is never to be expected, as I have said above, that stones, which have acquired a degree of hardness little inferior to flint, can be broken or dissolved by any medicine whatsoever.

Therefore I heartily congratulate my fellow-citizens upon the skill and dexterity of our surgeons, who have invented a new way of cutting for the stone with greater safety and dispatch *. For now, not only children and youths, but also persons advanced in years, may submit to this operation without great danger: and in case the stone prove too big to be extracted without tearing the neck of the bladder, it is now no longer necessary to split the stone (before the extraction); the invention of which is ascribed to Ammonius, a Greek physician, who from thence was surnamed (λιθοτόμος) the lithotomist †.

* See Cheselden's anatomy, chap. vi. of the fifth edition.

† Celsus, lib. vii. cap. 26.

C H A P. XI.

Of the diseases of the eyes.

THE diseases of the eyes have been treated of by medical writers with such care, that I think it almost unnecessary to say any thing here concerning them. Among the ancients Celsus * in particular, and among the moderns Plempius †, have most accurately enumerated and distinguished them. The former indeed was possessed of the works of the Greek physicians and surgeons, which are not come down to us, and out of which he selected several very good medicines with great judgment; and the latter has made use of all the modern discoveries, to improve the practical part. To these two authors I would add a book, composed by two eminent mathematicians; in which every thing relating to vision is explained with great perspicuity ‡. And Dr Porterfield's dissertations on this subject || are extremely worthy of a serious perusal.

Wherefore I shall content myself with making a few remarks on some very considerable diseases of the eyes, the nature of which has not been sufficiently understood by the generality of practitioners.

* Lib. vi. cap. 6. † Ophthalmographia, Lovan. 1659. ‡ A complete system of optics, by Robert Smith, LL. D. with an essay upon distinct and indistinct vision, by James Jurin, M. D. Cambridge, 1738.

|| See Medical Essays, published at Edinburgh, vol. iii. pag. 160. and vol. iv. pag. 124.

SECTION I.

Of the Gutta Serena.

WHat the Greeks named *ἀμαύρωσις*, and the Latin writers of the lower ages expressed by the barbarous word *Gutta Serena*, is a very severe disease, and of very difficult cure. It proceeds from various causes, of which the most common is an obstruction gradually formed in the arteries of the retina by a fizy blood. For the consequence of this obstruction is, that the rays of light which should depict the images of objects on the bottom of the eye, falling on these dilated blood-vessels, produce no effect; whence the sight is either diminished, or entirely lost, according to the degree of the obstruction. Again, this disease is sometimes owing to a palsy of the nerves of this same membrane; as it in some measure destroys their sensibility; whereby the impulse of the corpuscles of light on them is not sufficient to make them transmit objects to the brain. In fine, I have observed, that this species of blindness is also occasioned by a pressure on the optic nerves, either by the extravasation of a glutinous humour, or by a hard tumour formed upon the place, where they pass from their thalami into the eyes; whereby the passage of the animal spirits to the brain is totally intercepted.

So many are the accidents incident to the eye even in one disease. Let us now consider how to preserve this organ, which has so great a share in making life useful and agreeable.

And first, we ought to know how to distinguish the several species of the gutta serena above mentioned, and their good and bad symptoms.

Wherefore

Wherefore a gradual dilatation of the pupil is a sign of an obstruction in the blood-vessels by a fizy blood. For this dilatation is the work of nature, in order that the detriment which the sight suffers by many of the rays of light falling on the small arteries, instead of the nervous fibrillæ, may be compensated by taking in a greater number of these rays. Hence the palsy of the nerves, with which they are frequently struck at once, seldom or never occasions this dilatation. But the pressure on the optic nerve, either by an extravasated humour, or a tumour gradually increasing, is attended with a wider pupil for the aforesaid reason.

Upon this principle it is, that the second and third species of the gutta serena may be deemed incurable. For what medicine can be adequate to the removal of a sudden relaxation of the nerves, or of a load of extravasated humours, or a tumour formed within the scull, which are rendered inaccessible by their very situation? Wherefore it is only the first species of this blindness that is curable. Unless there may perhaps be some faint hopes of relieving that sort, which proceeds from a palsy of the retina, by antiparalytic medicines; of which the principal are aromatics, chalybeates, and the foetid gums.

But it is time to come to the cure, which, in general, consists in removing the obstruction of the vessels, and correcting the lentor of the blood. Wherefore, first of all, blood is to be drawn both from the arm and the jugular, and to be repeated according to the degree of the disease. And it will be of use to apply cupping-glasses, with deep scarifications under the occiput, in order to let out blood this way from
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the lateral sinuses of the brain. Then it will be necessary to give cathartics, especially such as purge gross humours. But as nothing is found more powerful than quicksilver for inciding and expelling gross and viscid humours, it will be very proper to join calomel to other cathartics; or rather to take it by itself, and a few hours after it, some gentle purgative.

And this method often succeeds, when the disease is beginning or recent; but if it be of some standing, it requires a more powerful treatment, that is, a plentiful salivation, raised by mercurials taken inwardly in small quantities, and at short intervals. For mercury, by its extraordinary weight and divisibility into extremely minute globules, penetrates into the inmost recesses of the body, scours the glands and vessels, and carries off the fordes by the most convenient outlets.

I made the first trial of this course on poor patients in the hospital, when I was a young practitioner, and afterwards on others, who thereby recovered their sight; for which I was complimented by the physicians, who till then had looked on the disease as incurable, especially if confirmed by time. Now, the motive which determined me to try the effect of this course, was, that I had found, by the laws of optics, that certain corpuscles, floating in the aqueous humour of the eye, could not be the cause of this disease, according to the common opinion; because they must be too near the bottom of the eye to be able to depict their image there. Wherefore there was a necessity of seeking some other cause; and whether I have found the true one, is entirely submitted to mathematicians. For my part, I cannot help thinking, that this invention is a remarkable instance of the
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great use of true mathematical knowledge towards establishing a right method of practice.

SECTION II.

Of the Cataract.

THE cataract, by the Greeks named *γλαύκωμα*, by the ancient Latins *suffusio*, and by the modern *cataracta*, is an opacity of the crystalline humour, which from transparent is generally changed to a greyish colour; whereby the passage of the rays of light to the bottom of the eye is intercepted.

Physicians in all former ages were of opinion, that this species of blindness was owing to a membrane preternaturally growing before the crystalline humour, and covering its anterior surface in the manner of a veil; and that the sight was restored by depressing this membrane with a needle. But the erroneousness of this opinion has been at length discovered and demonstrated in this century. For in the dissection of eyes, both of persons who had been afflicted with cataracts, and had never been couched; and of others on whom the operation had been performed with success; there was not the least appearance of a membrane, but the driness, hardness, and opacity of the crystalline humour or lens was found to be the cause of the disease*.

However, I must not omit taking notice, that a real membrane has been sometimes found, though the case be very rare†: an instance of which has been lately

* See Antoine Maitre--Jan, traité des maladies de l'oeil. Troyes, 1707. † See histoire & memoires de l'academie royale des sciences. Paris, 1708.

shewn me by our excellent anatomist Dr Thomas Lawrence, in an elegant preparation of a child's eye injected by him; in which there plainly appeared a membranous expansion that covered the pupil, and had its blood-vessels filled with the injection. And hence I draw this general inference, that although it be very certain, that, in most cases of this disease, it is the crystalline humour that is removed out of its place by the operation; yet it may sometimes happen, that the needle depresses a membrane which by some accident was grown hard and opaque.

Upon the whole, the hand of a skilful surgeon is the only remedy in this disorder. But the operator ought to wait for a certain degree of ripeness of the cataract, and give attention to other circumstances; in order to determine the time of performing the operation with safety, and a prospect of advantage.

S E C T I O N III.

Of the Albugo.

THE albugo, or white speck in the eye, is likewise a troublesome disease, which is more or less offensive to the sight, according to the greater or lesser portion of the transparent part of the cornea affected by it. For sometimes it fixes on the exterior surface only of this membrane, sometimes on the interior; and sometimes, in fine, it runs more or less deep into it.

It is most commonly the consequence of inflammations, by the extravasation of humours between the membranes of this tunicle; and particularly in the small-

small-pox, by the suppuration of pustules upon this part.

I have made use of two methods of cure for this disorder of the sight; the one in the outward sort, the other in the inward. In the former case, I ordered the following powder.

Take of common glass any quantity. Pound it in a mortar into a very fine powder: then add an equal quantity of white sugar-candy, and levigate the mixture on a marble with great labour, till it becomes quite impalpable.

A little of this powder, put into the eye with a quill every day, gradually absterges, and wears off the spot by its inciding quality. The other method above mentioned of removing this speck, is, to order a dexterous surgeon to pare it cautiously every day with a knife; for this tunicle is composed of several lamellæ, one over another, and has thickness enough to bear paring off some of its parts. I have seen several instances of cures by the eye-powder; but the paring off the cornea has not succeeded with me above once or twice. However, it is better to try a doubtful remedy than none.

The force of odours.

I HAVE hardly any thing of great moment to propose concerning the rest of the senses; except a few hints relating to the organ of smelling. For as daily experience convinces us of the great power of scents, both to do harm and good; I think it may be of use to give some short remarks on them.

And first, their mischievous effects in communicating

ting contagious diseases are sufficiently manifest. For it is most certain, that the subtile effluvia which issue from an infected body, being taken in with the breath, do infect a sound habit. Moreover, every body is sensible at one time or other, that from this cause proceed headaches, and sicknesses at stomach by the acquired ill quality of the spittle. But, on the other hand, nothing is more notorious than the great energy of odoriferous things in repairing our strength. And this is effected, either by the animal spirits being roused out of a state of oppression, or by being refreshed and recruited by such things as emit particles, that are friendly and agreeable to nature, applied to the nose. For effluvia of this kind are, as it were, a proper food for the animal spirits.

Now, of all the odoriferous bodies hitherto known, the most powerful are spirits and volatile salts extracted by fire from animal substances; and next to these are those animal glands distinguished by the names of castor, musk, and civet. But there may perhaps be just cause to admire, that these bodies do not equally agree with all constitutions. For many are wonderfully refreshed by musk and civet; whereas, we see others who are more or less overpowered, even to a degree of sickness and fainting, by the scents of these same perfumes; and yet are refreshed and revived by castor and asa foetida. This difference seems, in my opinion, to arise from a different habit of the nervous fluid in different persons; and nature generally points out, which of this class of bodies will be beneficial, and which hurtful to each individual. Nor have I the least doubt, but that a sense of the efficacy of these things is conveyed to the mind by the fluid of
the

the nerves. And such is the wisdom and goodness of the supreme Creator in the construction of our frame, that he has made those things pleasant to the senses, which are proper for the preservation of life, or necessary for the propagation of the species. Nevertheless, moderation is to be constantly observed in all these things, to prevent the allurements of pleasure from hurrying us into excesses, which may prove prejudicial both to the soul and body.

C H A P. XII.

Of the G O U T.

THE gout is most commonly a disease of persons, who have too much indulged themselves in high living; in which nature endeavours to throw the load of noxious matter out of the body upon the joints. Thus this disorder is rather to be deemed a crisis of the disease, than the disease itself: and, in this view, great care and prudence are required to facilitate nature's attempt in producing the effect. Wherefore, the pain is by no means to be mitigated by external remedies of any kind whatsoever. For, by attempting this, the gouty humour may be thrown back upon the vital organs in an instant, and the patient's life put into imminent danger; which seems to afford a remarkable proof, that this violent commotion in the body is owing to a very subtle and active fluid, and such is the nervous juice. But in case this fiery humour should happen to remove from the limb into the body, all possible means ought to be used, to make it return on the part. And this is

to be done by blood-letting ; the warmer cathartics which are not violent in their operation ; alexipharmics ; and above all, by epispastics laid on the limbs, with regard always had to the place affected. For nothing is more desirable, than that the evil should fix for several days on those parts of the extremities of the body, which it has first taken possession of ; because, when it once returns into the habit, it is with great difficulty driven out again : so that, perhaps, it may be justly said, that the gout is the only cure of the gout.

The seat of this disease is in the ligaments of the joints, the tendons of the muscles subservient to their motions, and the membranes surrounding the bones. And when the acrimonious humour has fallen on these parts, it irritates and frets them : hence arises an inflammation, and a painful tumour is formed by the oozing of the thinnest part of the juices out of the minutest ramifications of the arteries and nerves. For nature makes use of pain as an instrument ; and the sharper it is, the more speedily and safely she finishes her work. Sometimes, indeed, she does it slowly, as if she neglected her duty ; and in some habits of body she protracts the torture a longer time than usual, as if her intention was to divide her medicine. But when the tumour subsides, part of the extravasated humour, which could not perspire through the pores of the skin, (and there is but a small portion of it, indeed, that is exhaled this way), is absorbed into the veins and lymphatics ; while the thickest part of it sticks to the membranes : and fresh quantities of it being lodged there in every fit of the gout, it sometimes concretes into hard masses, commonly called chalk-

chalk-stones, which by degrees stuff the joints, and destroy their action.

As to the medical treatment, different methods are to be pursued in the fit, and out of it. Quiet is not only indicated, but enforced by the very incapacity to motion. In case of a fever, the diet should be the same as in acute diseases; otherwise, common food of easy digestion may be allowed. For great care must be taken of the stomach and strength. And this circumstance, which I have scarcely ever remarked in any other distemper, is here to be observed; that when the gout has seized the stomach, this organ becomes so cold and torpid, that wine seems no stronger than water; and it requires, and easily bears the hottest liquors, such as spirits drawn from wine. Wherefore, not only generous wines are to be given in pretty large quantities, but also vinous spirits, rendered more efficacious by the infusion of snake-root, ginger, or garlick. And if these should not prove powerful enough, it will be proper to order the powders of snake-root, ginger, and long-pepper, mixed with the cordial confection, to be taken by the mouth.

It has been disputed among physicians, whether or not a vein may be opened, when the pain in the joint is extremely severe. Now, to settle this point, we ought never to forget, that this pain is highly necessary for tumifying the part, and therefore ought to be borne with patience. This however notwithstanding, (seeing it is certain, that excessive heat is an obstacle to the natural secretions from the blood, which are necessary for health), if the fever run very high, and especially, if it be attended with a delirium, or difficulty of breathing, blood-letting will not only
lessen

lessen the pain, but likewise happily promote the issue of the humour *. Nay, it will be requisite to repeat the operation, when there appear signs of a comatose disposition. For I have very frequently observed physicians to be too timorous with respect to this evacuation, from a notion, that it would prevent the gouty humour from being thrown upon the joints. Upon the whole, one effect of blood-letting is generally, to make the disease abandon the place where it was lodged; and the great benefit of this removal in several cases is manifest. But as for anodynes, they are not to be allowed, excepting in vomiting and loosenesses. Nor do gouty people (to say it once for all) bear cathartics well, till the paroxysm is over; and then they may be given, to carry off the remains of the morbid humour, which raised the tumour.

Of greater difficulty and moment is the question concerning the regimen, whereby a person may entirely rid his constitution of this tormenting disorder, and keep it off for the future. Upon which, the first consideration ought to be, whether that can be done with sufficient safety and advantage to the patient. For, as to elderly people, who have been accustomed for many years to returns of the disease, if the fits come on no more, their bowels are attacked instead of their joints; and besides, they are seized with such weakness in their legs and feet, that the remainder of their life is quite miserable: and of this I have seen more than one instance in persons, who had absolutely confined themselves to a milk and vegetable diet.

Therefore, if any one be desirous of trying the ex-

* See discourse of the small-pox, chap. iii.

periment,

periment, and running the risk of its consequences, let him remember, that he ought to be young, and not to have had above two or three fits of the gout. Then let him obstinately abstain from wine and all other fermented liquors, and for drink, confine himself to water. Let his food be milk, and things made from it, and vegetables ; besides which, he may make one meal a-day on flesh of the tender sort, such as that of chickens, fowls, and rabbits, and now and then on fresh-water fish. Let him use daily exercise, but with moderation. By this course of living, I have known some live comfortably to a good old age, without the least attack of the gout. Of such consequence it is to live according to nature, that is, to practise temperance. And a trial of this course of life is in a peculiar manner adviseable for those who may expect to be punished for the irregularities of their parents, not for their own, by a hereditary gout ; in order to prevent its seeds, sown in their blood and nervous fluid, from producing disagreeable fruits in time.

I shall close the present chapter with this admonition, that although I said above with great truth, that this disorder is rather to be deemed a crisis of the disease, than the disease itself ; yet sometimes, especially in old age, it is a very severe evil ; when the strength is so decayed, and the limbs so weakened, that bodily motion is lost, and with it a considerable share of the comforts of life. However, this, like all other calamities, is alleviated by patience. And perhaps, it may be some consolation to others, as well as it was to Sydenham, in the midst of tortures, that great monarchs, potentates, generals, admirals, philosophers,

losophers, and many others like them, lived, and at length died in the same manner *.

C H A P. XIII.

Of pains in the joints.

THose pains of the joints, which are accompanied with inflammation and tumour, have an affinity with the gout. The proper method of curing them is by bleeding, blistering the parts affected, and, unless the fever runs high, by purging. If there be no fever, or but a slight one, a mixture of equal parts of gum-guaiacum and cinnabar of antimony will prove a very good medicine, both to open the body, and correct the acrimony of the humours. It should be given so as to procure two stools at least every day.

Of all these pains the most severe is that which the Greeks name *ισχιας*, (and we corruptly sciatica), because it seizes the hips; and it is attended with the greater difficulty, because it is most commonly the consequence of chronical diseases, by the morbid matter being thrown on this part. This disease, when grown inveterate, weakens the thigh and leg, and makes the patient lame: and sometimes also, the head of the thigh-bone slips out of the socket, and then the thigh soon wastes away.

In this disease, little is to be expected from cupping or blistering the part; for the acrid humour lies too deep fixed in the membrane surrounding the bone, to be drawn out by these means. More efficacious is the volatile epithem, or a plaster composed of Bur-

* Tract. de podagra, ed. 1. page 24.

gundy pitch, with about an eighth part of euphorbium, and a sufficient quantity of Venice turpentine.

But nothing gives so much relief, in an obstinate case especially, as a seton passed below the part affected, in order to give vent to the morbid humour. But, if this operation be thought to be too cruel and troublesome for the necessity of it, it will be of use to make an issue, with a caustic in the inside of the thigh above the knee; which must be kept open till the disorder is quite removed. Celsus *, following the example of Hippocrates †, advises to apply the actual cautery in three or four places upon the hip. And indeed, no remedy would be more efficacious than this, if patients could be reconciled to it; for how terrifying soever the sight of red-hot iron may appear, the pain from the application of it would be much sooner over, than that which is raised by the common caustics.

The flesh-brush ought likewise to be used several times every day, in order to facilitate the digestion and dissipation of the concreted humour; and more especially on the very hips, if practicable. But fomenting the part affected with warm water is generally prejudicial; because this brings on a relaxation of the fibres, whereby the pain is increased.

I now pass to internal remedies, the chief of which are bleeding and purging. Of cathartics, the most efficacious are dulcified mercury six times sublimed, and the electuary of scammony; either of which must be often repeated, according to the patient's strength. And in the intermediate days of purging, the proper medicines are such as are diuretic and laxative at the

* Lib. iv. cap. 22.

† Aphor. vi. 60.

same time. Of this class, I give the preference to the volatile tincture of gum-guaiacum, or the balsam of guaiacum.

C H A P. XIV.

Of the diseases of the skin.

I Shall say nothing at present of those eruptions which happen in fevers; nor of the blotches and spots which appear on the skin in scorbutic habits; because all these are treated of in their proper places*.

But of all the diseases which infest the surface of the body, the most filthy is the leprosy. This is of two kinds; the one is named the leprosy of the Greeks, the other that of the Arabians: but I have considered them both in another book, with regard to their nature and method of cure†.

The disease next to this in foulness, but of a very different origin, is the itch. This first appears in a reddish roughness of the skin; which is succeeded by pimples, that let out matter or a sharp ichor; and the exulceration is attended with itching, and spreads by contagion. It may justly be called an animated disease, as owing its origin to small animals. For there are certain insects, so very small as hardly to be seen without the assistance of a microscope, which deposit their eggs in the furrows of the cuticle, as in proper nests; where, by the warmth of the place, they are hatched in a short time; and the young ones, coming to full growth, penetrate into the very cu-

* Chap. of fevers, and the scurvy.
 † See medica
 sacra, chap. ii.

† See medica

tis with their sharp heads, and gnaw and tear the fibres. Their bitings cause an intolerable itching, which brings on a necessity of scratching, whereby the part is torn, and emits a thin humour, which concretes into hard scabs. While the little worms, constantly burrowing under the cuticle, and laying their eggs in different places, spread the disease.

Hence the reason manifestly appears, why the disease is communicated by the linen, wearing-apparel, gloves, &c. which were used by infected persons. For the eggs, which had stuck to soft substances of this kind, are rubbed into the furrows of the cuticle, and are there hatched and nourished.

Now, what is of greatest moment in this theory is, that the knowledge of the true cause of the disease naturally points out the cure. For neither cathartics, nor sweeteners of the blood, are of any service here; the whole management consists in external applications, in order to destroy these corroding worms; and this is easily effected. Wherefore, first, let the patient go into a warm bath, and then let the parts affected be anointed every day, either with the ointment of sulphur, or the ointment with the precipitate of mercury, which is less offensive to the olfactory organs; instead of which a liniment may be made of orange-flowers, or red roses, the mercurial, red corrosive and hog's lard pounded together; which is of a very pleasant smell, and of equal efficacy.

All that I have said on this subject may be found in the Philosophical Transactions *. For in the year 1687, Dr Giovanni Cosimo Bonomo, an ingenious physician, published a letter written by him in Italian

* N^o 283.

to the celebrated Redi of Florence, concerning the worms of the human body ; wherein he fully handles this subject, and gives the figures of these worms and their eggs. And when I was upon my travels in Italy ten years afterwards, having got a copy of the letter, I made an abstract of it in English, and upon my return communicated it to the royal society.

C H A P. XV.

Of scrophulous diseases.

THose hard swellings of the glands, which the Latins named *strumæ*, the Greeks *χοιράδες*, and we the *king's-evil*, are very obstinate, and often perplex the physician ; as they sometimes bring on a fever, and never maturate kindly : and whatever way they are treated in order to open and cicatrize them, they generally break out again near the old scars. Their most common seat is in the neck, and in the armpits and groin, especially in children ; but sometimes they appear on the thorax, and on the breasts of women. Moreover, the humour often falls on the lungs, and brings on a pulmonary consumption ; and indeed, that disease is generally owing to a scrophulous cause in this and other northern countries at least. And it is a dreadful circumstance of the evil, that it is transmitted from parents to their children by way of inheritance, which it does not easily give up.

As to the cure of this stubborn disease, it is to be attempted by bleeding, purging, and such medicines as are most proper for correcting the visciditv, saltness, and acrimony of the humours. Of cathartics, the best

best is dulcified mercury six times sublimed, which should be joined with rhubarb for children ; but to adults it may be given alone, with a gentle purging draught some hours after it. The next to this in virtue is jalap. And our purging waters are also useful, as they scour the glands, and open the body at the same time. In fine, a pill composed of mercury six times sublimed, and precipitated sulphur of antimony, each one grain ; of aloes, three or four grains, made up with the syrup of balsam, and taken every night, will be found serviceable not only in this disease, but in others arising from viscid humours.

The medicines, which correct this pravity of the blood and humours, are, for the most part, of the diuretic kind ; such as burnt-sponge, the diuretic salt, and vitriolated tartar ; which are the more proper, because they are somewhat laxative. To these may be added, the less compound lime-water. For my part, I have very often experienced the good effects of the following powder, taken twice a-day, with three or four glasses of the aforesaid water.

Take of burnt-sponge, one scruple ; of purified nitre, coralline, and white sugar, each ten grains ; mix.

And if the patient happen to be emaciated, equal parts of milk may be mixed with the water. Millepedes will also be of some service upon account of their diuretic quality, especially the expressed juice thus prepared.

Take live millepedes, pound them with a little powder of nutmeg ; infuse the mass in small wine ; then strain off the liquor by expression, and sweeten it with honey, or sugar.

As to the patient's diet, which ought not to be neglected, let him feed on flesh of easy digestion, and fresh-water fish, especially of the shell-kind. Let him abstain from all salt meats and high-seasoned things. Let him drink river-water, and that boiled; but well, or other stagnating water never, and least of all snow-water. For we observe, that the inhabitants of mountainous places, the Alps especially, are naturally afflicted with swellings of the glands of the throat:

*Quis tumidum guttur miratur in Alpibus * ?*

Issues are likewise beneficial to drain off the vitious humour; and a change of climate is often attended with good effects; especially, if there be reason to apprehend the humour falling on the lungs: but the patient should be sent to a moderate climate, not subject to great vicissitudes of heat and cold.

Lastly, it is to be noted, that this disease, notwithstanding its stubbornness, sometimes entirely wears off, in young folks especially, without any medicinal assistance, by alterations in the habit of the body, which time and growth occasion: and I am of opinion, that this circumstance first gave birth to the custom of the royal touch. For when crafty men observed, that the evil was of this nature, they easily imagined, that they would please their kings, in persuading them to make this experiment of their power, and to introduce it with solemn rites and prayers; whereby they might acquire reverence from their subjects, and convince them that they held their crowns by divine right. And it is not matter of wonder, if the princes took the bait,

* Juvenal. sat. xiii. ver. 162.

and sometimes believed that they were endowed with this gift from heaven ; since, according to the poet,

—— *Nihil est, quod credere de se
Non possit, cum laudatur dis equa potestas* *.

Moreover, the world is willing to be deceived ; and the experiment sometimes succeeded, though the success might probably be owing in a great measure to the force of imagination, which acts very powerfully in the cure of diseases. Hence our kings (unless when a prince of more than ordinary wisdom filled the throne) have for a long time conferred this favour on the credulous multitude with great humanity. But the French boast, that their kings had received this heavenly gift long before our monarchs.

C H A P. XVI.

Of the S C U R V Y.

THE name of *scurvy* is given by medical writers to a disease so various and different in appearance, that it does not seem to be one and the same distemper. In the northern countries it has always been common, and the nearer they are to the sea, the more severe it proves ; accordingly the Danes, Norwegians, and other inhabitants of the coasts of the Baltic are vastly afflicted with it ; nor do the Germans, Dutch, or our own countrymen escape its fury †.

It begins by foul ulcers in the mouth and legs ;

* Juvenal. sat iv. ver. 70. † See Eusebius de scorbuto, and Sennertus, lib. iii. part. v.

whence it is called *stomacace* and *sceletyrbe* by Pliny, who imputes it to the bad qualities of water, and says, that the herba Britannica (which is believed to be the hydrolapathum nigrum of Muntingius, or great water-dock) was found to be its cure *. But the disease was known long before Pliny's time : for Hippocrates describes it by the name of σπλῆν μέγας, or great spleen ; and says likewise, that it arises from drinking cold, crude, turbid waters †.

I remember to have formerly seen in St Thomas's hospital an instance of this case, in a country-fellow of the isle of Sheppey, which place is notorious for moist, thick air, and unwholesome water. When the Roman army, under the command of Claudius, landed in Britain, and the troops were stationed in the above-mentioned island and places adjacent, they there contracted this disease ; and it is not improbable that some of the natives shewed them the herb which Pliny says was of service to them, and that the Romans gave it the name of *herba Britannica* from the country. For it is well known, that that emperor embarked his army for that expedition at Boulogne, which is directly opposite to Kent ‡. Strabo relates a similar story of the Roman army, which Augustus sent into Arabia under the command of Ælius Gallus. For he says, that while they were at Albus Pagus, the soldiers were seized with disorders of the mouth and legs, called *stomacace* and *sceletyrbe*, which are endemic in that country, and are a sort of relaxa-

* Nat. hist. lib. xxv. sect. vi. † See De internis affect. sect. xxxiv. and De aëribus, locis, & aquis, sect. x.

‡ See Suetonius in the life of Claudius, chap. xvii.

tion, proceeding from the waters and vegetables *. Now, to me it is very plain, that the unwholesome sea-air, bad diet, and worse water, rendered that climate subject to those disorders ; for Ptolemy, in his geography, places Albus Pagus on the coast of the Sinus Arabicus or Red sea. But to return from this digression : The poor patient above mentioned had an irregular, intermitting fever, with a bad habit of body ; and likewise an ill-natured ulcer in each of his legs. By the use of medicines, proper in the scurvy, I mean bitters and diuretics, he seemed to grow better ; for one of the ulcers was by chirurgical applications entirely healed ; but while the other was under cure, a gangrene seized the part unexpectedly, which being scarified in order to check its progress, the patient died suddenly. Upon opening the abdomen, we were struck with amazement at the monstrous size of the spleen. For it weighed five pounds and a quarter ; whereas the liver weighed but four pounds and a quarter. But its bulk seemed to be its only defect ; for it retained its natural shape and colour, and had not the least schirrosity or other hardness ; and its inside was, as usual, of a dark livid hue, with lax fibres, and deep-coloured blood.

From the above-mentioned ulcers the breath becomes offensive, the gums are corrupted, and turn livid, and sometimes blackish ; and upon pressing them lightly with the finger they emit a dusky gore. Besides, they are so lax and flabby, that they quit their

* Στομακάκη τε καὶ σκελοδίσθη πειραζομένης τῆς τραχιάς ἐπιχωρίοις πάθει, τῶν μὲν περὶ τὸ σῶμα, τῶν δὲ περὶ τὰ σκέλη παρτέλυσιν τινὰ δηλάντων, ἐκ τε τῶν ὑδρείων, καὶ τῶν βοτάνων.
Geograph. lib. xvi. p. 781. ed. Paris. 1620.

hold of the teeth; and these are sometimes so loose, that they may be all pulled out with great ease. In the mean time, greenish and livid spots, like the remains of ecchymoses, appear on various parts of the body, as on the arms, buttocks, thighs, legs, and frequently all over the skin, so as to make it have the appearance of a jaundice. The patient is also tortured with severe gripings. And from this symptom it is, that the disease has obtained its name, being derived from the Saxon word *schorbock*, or *schorbuck*, which signifies tearings of the belly.

Besides unwholesome waters, medical writers attribute the disease partly to salted provisions and pulse; which, as they are of difficult concoction, furnish the body with gross and improper nutriment. But they seem not to have sufficiently attended to a more universal cause, I mean bad air, which taken into the lungs is very prejudicial. This is particularly manifest in long voyages, in which the sailors are most severely afflicted with this distemper. Whereof we have a remarkable and moving account, in the history of Lord Anson's voyage to the South seas; in which that great commander lost near a third part of his men by this cruel enemy; and the calamity rose to such a high pitch, that the callus of broken bones, which had been completely formed for a long time, was found dissolved, and the fracture seemed as if it had never been consolidated *. Wherefore, in these cases, there certainly must be a high degree of corruption of the bodily humours, and even a degree of putrefaction: and the blood becomes so foul a mixture, that whence soever it be drawn, it has no-

* See Anson's voyage round the world. Lond. 1748.
thing

thing of its natural red colour, but resembles a dark, muddy puddle. Now, as to the manner in which the causes above mentioned corrupt and putrefy the humours, it will be easily found by those who are well acquainted with the properties and laws of motion in the animal machine: which I need not dwell on in this place, because I have pretty amply treated of them in a tract lately published, in which I demonstrated the usefulness of Mr Sutton's machine for extracting foul air out of ships, and other close places *.

With regard to the cure, it is much easier to prevent the scurvy than to remove it; for when it has once taken root in the body, it is very difficult to drive it out by medicines. Now, its best remedy is good wholesome air, and proper diet. Wherefore, as soon as a person is taken ill, if he be at sea, he ought to alter his situation as soon as possible, and get on shore, to breathe the land-air; but if on land, he should go into the country for the benefit of purer, open air. And in both cases, what flesh he eats should be fresh and tender; but the greatest part of his food ought to be vegetables, both such as abound in a volatile salt, as scurvy-grass, cresses, brook-lime, and the like; and those which are of a cooling nature, as sorrel, endive, lettuce, purslain, and others of this kind. And it will often be beneficial to eat all these, or some of each sort promiscuously together. But the greatest service may be expected from subacid fruits, as lemons, oranges, and

* Discourse on the scurvy, annexed to Sutton's historical account of a new method for extracting the foul air out of ships, &c. See vol. 2.

pomegranates, eaten frequently, upon account of their cooling and subastringent quality.

But I recommend to the reader the perusal of the above-mentioned voyage, which is written in a clear and elegant style, and, besides various interesting incidents, which must give pleasure to all orders of men, contains many things proper for physicians to know. Nor will he perhaps repent his trouble, in turning over what I wrote on this disease in the tract, wherein I explained the usefulness of Mr Sutton's machine. There he will find a remarkable case of a Dutch sailor, on board one of the Greenland ships, who was so wasted and disabled by the scurvy, that he was put on shore in Greenland, and abandoned to his fate: and yet by feeding on scurvy-grass (or rather grazing on it; for he had lost the use of his limbs, and crawled about on his hands and knees) he was perfectly cured, and was found the ensuing season on the island, and brought home in health and vigour.

But it is time to close this chapter; which I do, by recommending Mynsicht's elixir of vitriol, taken in cold water at proper intervals, and sometimes the styptic tincture, taken in the same manner, as very good medicines for checking hæmorrhages, which are not uncommon in this disease.

C H A P. XVII.

Of the hypochondriacal disease.

THE hypochondriacal disease is an indisposition of the whole body, and not of any particular part;

part ; and yet the abdominal viscera, viz. the stomach and intestines, the liver, spleen, pancreas, and mesentery, are chiefly affected in it, according to the peculiar nature of each of them. The stomach is disordered with frequent ructus and flatulencies, the signs of crudities. The liver is swelled with thick, viscid bile, obstructing its ducts. When the spleen is affected, the function of which seems to be, to convey a very fluid blood through its arteries, partly into its own cells, and partly into the splenic vein, for the uses of the liver ; this blood grows so thick as almost to stagnate in that vein, whereby this soft organ is tumefied and distended. If the pancreas be affected, the glands, which secrete the pancreatic juice, grow schirrous in some degree, and perform their office too sparingly : hence the bile which mixes with it in the intestines, is not sufficiently diluted ; and the chyle being too thick passes with difficulty through the lacteals, and in some measure stagnates in its passage. When the omentum is disordered in this disease, the thin subtiler oil, which is collected in its cellules, in order to be conveyed to the liver, and there to be mixed with the blood brought thither from the spleen, passes in lesser quantities than usual - whereby the blood in the vena portarum is not rendered thin and fluid enough. In fine, the consequence of the mesentery being affected, is, that through the obstruction of its glands, and subsequent deficiency of the lymph, which they ought to secrete for the dilution of the chyle, this liquor becomes too thick, and less proper for nutrition. Hence, it manifestly appears, that in this disease the blood and humours grow thick and sluggish, and are rendered

unfit

unfit for their respective motions ; and the uses of life.

This disease, so various in appearance, is chiefly owing to two causes, rest of body, and agitations of mind : by the former, the humours are rendered too sluggish in their motions ; and by the latter, the blood at one time almost stagnates, and at another, is driven on with excessive vehemence ; and health must suffer in both cases.

This theory plainly points out the cure, which consists in purging off and correcting the humours. Yet the disease does not require strong cathartics ; it is much safer to trust to the milder sort, such especially as attenuate the humours, and work by stool and urine at the same time. Of this kind are the deobstruent pills, aloetics, blended with saponaceous medicines, rhubarb, Glauber's salt, and the like.

The lentor and thickness of the humours are most conveniently removed by chalybeates, bitters, and aromatics, especially in tinctures. And natural chalybeate waters are the most efficacious of all steel medicines.

In fine, all sorts of bodily exercise are necessary ; and in particular, it will be of great service to play at bowls or tennis, to toss the arms briskly to and fro with lead weights grasped in the hands ; but nothing is better than riding daily on horseback.

I finish with a short story which may seem ridiculous, but is true, and shews the whimsicalness, if I may use the expression, of this disease. A certain fellow of a college, by too much indulging a sedentary life, was so severely afflicted with this disorder, that he was at length obliged to take to his bed ;
and

and his hypochondriacism gradually rose to that pitch, that he declared himself at the point of death. In that fit, he ordered his passing knell to be rung in a church not far from his chambers; which was accordingly done; but in so bungling a manner in his opinion, (for he had been a famous ringer in his younger days), that in a violent passion he jumped out of bed, ran to the church, chid the sexton, and told him he would shew him the true way of ringing. Whereupon he grasped the rope, and fell to work with such vehemence, that he soon wrought himself into a muck sweat; then returned to bed in order to die contented. But he was disappointed, for the exercise restored him to life and health. Thus, as Hippocrates formerly observed *, contraries are the remedies of contraries.

C H A P. XVIII.

Of the affections of the mind.

THE affections of the mind, commonly called *passions*, when vehement and immoderate, may be justly ranked among diseases; because they disorder the body various ways. The fact is indisputable; but in order to account for the manner in which it is brought about, it is necessary to have a clear and distinct notion of the nature of the soul, and of the law of its union with the body; a point of knowledge, to which, in my opinion, we shall never attain in this life. For such is the condition of our existence, that though we have it in our power to exert the faculties

* Τὰ ἐναντία τῶν ἐναντίων εἰν' ἰσχυρά. De flatibus, sect. iii.

of our mind and our bodily strength with surprising promptitude ; yet we are grossly ignorant of the manner and principle of all our actions, the knowledge of which seems quite unnecessary for leading a good and happy life.

However, we can easily perceive the effects of the commotions of the mind on our corporeal frame ; nor is it any wise difficult to discern the alterations which they occasion in the blood and humours. For some of them retard, others accelerate the motion of the circulating fluid ; while others again act as checks and spurs alternately. Thus grief and fear slacken its pace ; anger, indignation, and intemperate lust, drive it on at full gallop ; and a combination of these and the like commotions produces precipitate and sudden vicissitudes of slowness and quickness. And it may not be amiss to observe, that inordinate affections, dwelling long on the mind, frequently become tedious diseases according to their respective natures. So anxiety, despair, and grief cause melancholy ; and anger ends in fury and madness. But the passions do not act with equal force on all individuals ; their effect varies according to the diversity of constitutions both of mind and body ; and even in the same individual, the disturbances which they raise, are different at different times. So thoroughly incomprehensible is the construction of our fabric.

But there is another very wonderful circumstance, which I do not find recorded by any other medical writer but Aretæus *. For it is not only true, as he observes, that the affections of the mind bring on bodily diseases ; but these diseases likewise in their turn

* De causis et signis diuturnorum morborum, lib. ii. c. i.

engender passions, and such sometimes as seem quite contrary to the nature of the disease. And this he exemplifies in a dropfy, which, though it be a most pernicious disease, yet inspires the sick with courage and patience ; not from any alacrity, or good hopes, as happens to those who are in prosperity, but from the very nature of the disease. A fact, says he, which we can only admire, without being able to discover its cause.

But all those things are performed by the intervention of the animal spirits, which make that great engine of the blood's motion, the heart, contract with lesser or greater force. Wherefore the pulse discovers those alterations even in their very beginning.

But before I come to the medical treatment of the disorders of the mind, it may not be improper to take notice, that the omnipotent Creator has given us these natural commotions for very wise ends ; which seem to be, that thereby we may be urged with a kind of impetuosity to shun evil, and embrace good. Wherefore the passions are not bad in themselves ; it is their excess that becomes vicious, when they rise to such an extravagant pitch as not to be governed by the dictates of reason.

Now, to assuage these swelling surges of the soul is the business of philosophy. But, alas ! in this point all the precepts of the very Stoics commonly prove ineffectual ; for the followers of this sect frequently speak mighty things, but live not up to their doctrine :

Naturam expellas furca licet, usque recurret.

Nature expell'd by force resumes her course.

R

However,

However, we ought to use our best endeavours; for the more difficult the conflict, the more glorious will be the victory. It will possibly be said by some, that a physician should confine himself to the cure of bodily distempers, and leave these moral points to be controverted and settled by philosophers. Now, whatever force this advice may have in other cases, this before us seems to me of such moment, that I beg to be indulged in the liberty I take, of interspersing this medical work with some few incentives to virtue, which I have learned in their schools.

First, then, we all have a natural propensity to pleasures; but these are of two very different sorts, the sensual and the mental. Sensual pleasures ingross the greatest part of mankind; while those few only, *quos æquus amavit Jupiter*, are taken with the beauties of the mental. And the reason why so many run after pleasures of the first sort seems to be; because they hardly ever allow themselves an opportunity of tasting the sweets of an upright conscience, or of feeling that joy, which arises to a good man from the moderation of his irregular desires; and being entirely devoted to the gratification of their sensual appetites, they never give the least attention to the real charms of virtue. Wherefore whosoever desires to enjoy this solid happiness, ought to inure himself by degrees to the love of virtue, and ever carefully to avoid adding fuel to the fire of his passions.

Apposite to these sentiments is that saying, which Cicero puts into the mouth of Cato, as by him received from the great Archytas of Tarentum; that nature never afflicted mankind with a more capital plague, than bodily pleasure; the eager desires of
which

which spur on to enjoyment with ungovernable rashness *. And the rest of what that great philosopher has written on this subject, must delight the mind of every wise man in the perusal. Wherefore, virtue's exclamation in Silius Italicus, is very just :

*Quippe nec ira deum tantum, nec tela, nec hostes ;
Quantum sola nocet, animis illapsa voluptas †.*

Pleasure, by gliding on the minds of men,
More mischiefs hast thou wrought than hostile arms,
Than wrath of gods.

But as the due government of the passions strengthens the mind, so temperance in diet renders the body less exposed to these turbulent motions. And this rule holds good, not only in those who are naturally of a hot constitution, but even in those who curb their appetites ; because it keeps them in a state of tranquillity.

And this is the way in general, to resist these evils, or at least to diminish their effects. But when they have taken deep root in the body, each of them requires its own proper remedies. In those commotions which check the course of the vital humours, spurs are necessary ; but curbs, when they gallop too fast. The strong-smelling gums, castor, volatile salts, and spirits extracted from animals, and things of this kind, are very convenient stimuli. Blood-letting, keeping the body open, nitre, and all other coolers restrain the impetuosity of the blood. But it is of the utmost consequence to frequent the company, and follow the advice of persons of fortitude

* De senectute, cap. xii. † Punicorum, lib. xv. ver. 94.

and wisdom ; for in every stage and state of life great is the power of example, whereby we insensibly learn to give ear to reason, and govern our passions ; which, unless brought into entire subjection, will become our tyrants.

But as for those who would have us to be entirely devoid of passions, and to suppress all the affections of the mind, as if they were so many evils ; they certainly have a wrong notion of the wisdom and goodness of the almighty Creator, who has inserted, and, as it were, interwoven them into our frame for excellent purposes ; for they are not only beneficial to individuals upon many occasions, as I have already said ; but even necessary for keeping up society and connections between mankind.

C H A P. XIX.

Of the diseases of women.

ON the diseases of women there seems to be the less necessity of saying much, because a number of authors have taken vast pains in their description and cure. Yet, to avoid the censure of neglecting that lovely sex, I will briefly touch on a few points relating to their ailments ; beginning by those which are often the consequences of a single life. Of these the most frequent is

SECTION I.

The suppression of the menstrual discharges.

THE common cause of the stoppage of the menstrual discharges is the blood's lentor ; whereby this fluid becomes incapable of forcing the sphincters of the ducts, destined by nature for this evacuation. For it is not from the bursted arteries of the uterus, which is the common opinion, that the blood issues every month, but from vessels peculiarly appropriated to this office. And this lentor, or thickness of the blood, changes the lively colour of the face into a greenish, pale, and wan complexion.

The proper medicines in this distemper are those which are capable of increasing the blood's circulation, and attenuating the viscid humours ; and such are all bitters, joined with aromatics, as also many preparations of steel. But to these ought to be premised blood-letting, and cathartics, blended with calomel. The tinctura sacra is also an excellent medicine.

But of all the most powerful emmenagogues, I have found so singular a virtue in black hellebore, that I hardly remember it ever failed answering my expectations. My way of ordering it is, a teaspoonful of tincture of black hellebore in a glass of warm water, to be taken twice a day. And I have observed this remarkable circumstance ; that whenever, either from a bad conformation of the parts, or any other cause, this medicine had not the desired effect, the blood was forced out through some other passages ;

passages ; which is a manifest proof of the great power of this medicine in spurring the blood forward.

S E C T I O N II.

The excess of the menstrual discharges.

BUT likewise the menstrual discharges frequently run to excess. In that case, the flux is to be restrained : which, after letting blood, is effected both by those medicines which condense and inspissate the blood, and by those which allay its heat. Of the first sort, the principal are such as participate of vitriol or alum ; especially the tincture of roses ; or a powder composed of alum three parts, and dragon's blood one part, melted together. But the heat of the blood, and its consequence, the flux, is more powerfully checked by the Peruvian bark, than by any other medicines whatsoever.

S E C T I O N III.

The Fluor Albus.

THE fluor albus is a discharge of a whitish, gleet matter by the natural parts of the sex. This humour issues sometimes from the vessels of the uterus, and sometimes from the glands of the vagina. In the former case, this discharge is suppressed during the time of the menstrual courses ; in the latter, it subsists with them, and continues even in the time of pregnancy.

In both species of the disease, the principal intention ought to be directed towards mending the habit of body, from some fault in which they derive their origin :

origin : but when the seat of the distemper is in the vagina, it will moreover require topical applications.

Wherefore, generally speaking, it will be proper to begin the cure by giving a vomit, especially with ipecacoanha wine. Frequent purging is indicated, chiefly with rhubarb ; which may be taken either in substance, with the addition of aromatics, and, in some cases, of a little calomel now and then ; or in the tincture of rhubarb in wine. And the laxity of the fibres requires astringents, particularly such as have steel in their composition.

As to external or topical remedies, which, I have said, are necessary, when the vagina is the seat of the disease ; we ought carefully to avoid applying all such as are powerful repellers of the peccant humour : for those only are serviceable, which deterge, and heal the little ulcers of that membrane. For my part, I have often, with great success, ordered the patient to inject a small quantity of Bates's aqua aluminosa, or of the camphorated vitriolic water, with a little Egyptian honey added to either, into the vagina through a proper syringe, at repeated times. And it will be of some service to fumigate the vagina now and then with a powder made of equal parts of frankincense, mastich, amber, and cinnabar of antimony, thrown on burning coals.

S E C T I O N IV.

The hysterical disease.

THERE is no disease so vexatious to women as that called *hysterical*. It is common to maids, wives, and widows ; and although it may not be attended

tended with great danger, yet it is frequently very terrifying : and moreover, it sometimes deprives them of their senses as effectually, as if they had been seized with an epileptic fit.

When a woman has fallen into a hysterical fit, blood-letting will be of use, if she has strength to bear it ; if not, cupping-glasses are to be applied to her groins or hips. But if she continues long in it, it will be proper to put the snuff of a candle, or some other thing of a fœtid sinell, to her nostrils, in order to rouse her. In the mean time, her thighs and legs ought to be rubbed.

When she is recovered from the fit, proper means must be used to prevent a relapse. If she be liable to obstructions, and not regular, the menstrual discharges are to be promoted. The strong-smelling gums and steel medicines are very serviceable : and it is beneficial to use exercise. But the disturbances of the mind generally require proper remedies.

In fine, Hippocrates, after prescribing castor, and many other medicines, wisely says, that a woman's best remedy is to marry, and bear children *.

S E C T I O N V .

Difficult birth.

HUMANITY prompts us to give what assistance we can, besides the manual operation, to the sex in hard labour. For although provident nature has taken such good care for the propagation of the human species, that the labour-pains are seldom attend-

* "Αριστον δὲ ἐν γαστρὶ ἔχειν· τὴν δὲ παρθένον πείθειν ζυγαίειν ἀνδρὶ. De morbis mulierum, lib. ii. sect. 19.

ed with much danger ; yet it sometimes happens, that the birth is very difficult and tedious. And this difficulty proceeds from many different causes, with which those who are truly skilful in the obstetrical art are not unacquainted, and therefore they manage accordingly. But there is one case, in which they are often at a loss what to do ; and that is, when the lying-in woman is long teased with false pains, resembling those of the colic. When this happens, it is proper to give a grain or two of opium ; whereby those pains, which rather hinder than promote the delivery, are appeased ; and then nature thus relieved does her work effectually. It is likewise of some moment in this case to know, that the opiate relaxes and opens the uterine parts, as it does all others that are in a state of constriction or tension.

C H A P. XX.

Of VENEREAL DISEASES.

THE venereal infection, that bitter scourge of unlawful embraces, would have proved the reproach of physicians, had not quicksilver been happily found to be its antidote.

The nature, history, and progress of the disease have been so amply and elegantly described by the learned Astruc *, that nothing more can be required on that head. But as to the manner in which this ponderous fluid operates in the body, I think I have clearly explained it in another place †, with some ne-

* De morbis venereis, Paris, 1740.

† Essays on

poisons, essay iv.

cessary cautions annexed. Wherefore the only thing now remaining is, to make a few remarks on a disorder or two, which are the consequences, either of the disease itself, or of a bad cure.

And first, that discharge of a mucous humour, commonly called a *gleet*, which sometimes succeeds a virulent gonorrhœa, is very troublesome and obstinate. It proceeds both from the vesiculæ seminales and the prostate gland, by the erosion of the orifices of their ducts from the acrimony of the morbid humour; and is most commonly the result of an ill-judged method of curing the gonorrhœa with violent cathartics, which destroy the natural tone of the fibres.

Nothing is more common among practitioners in this case, than to administer balsamics, with a view of strengthening the parts; but generally without success. It has been my practice for many years past to order the following tincture; and as I found it very efficacious, I have recommended it to a number of physicians and surgeons.

Take of rhubarb three drachms; of gum guaiacum, a drachm and a half; of shell-lake, a drachm; of cantharides bruised, two drachms; of cochineal, half a drachm: infuse these ingredients in a pint and half of rectified spirits of wine, and strain off.

Of this let the patient take from thirty to fifty drops (that is, as much as can be given without danger of bringing on a strangury) morning and night, in a glass of warm water.

A hectic fever is now and then the consequence of a long salivation. In this case a decoction of the
woods

woods of guaiacum and saffraſas, and the roots of china and ſarſaparilla, with a little liquorice, and coriander-ſeeds, is to be drank plentifully, mixed with milk. And the patient ſhould continue this courſe, till he has recovered ſtrength and fleſh.

Laſtly, it may not be amiſs to admoniſh, that the moſt proper time for ordering a ſalivation is, when either pocky eruptions have for ſome time appeared on the body, or ulcers, eſpecially in the mouth and throat; and the bones are not yet become carious. For when they are actually foul, there is reaſon to apprehend, that their lamellæ may be broke aſunder by the ponderoſity of the mercurial globules. Wherefore, it is ſafer to protract the cure by a more ſparing uſe of this medicine, than to hurry it on by a contrary practice.

C H A P. XXI.

Of diſeaſes which come upon, or are changed into others.

IT is of great moment, both for the benefit of the patient, and the honour of the phyſician, to know what diſeaſes come upon, or are changed into others. Wherefore I will briefly mention ſome of theſe.

Authors indeed have raiſed great diſputes on the cauſes of theſe changes: but they are certainly different according to the nature of the reſpective diſeaſes. For ſometimes the conſent, and a certain affinity of the affected parts with others not yet affected, cauſe the diſeaſe to paſs from the former to the latter.

More frequently the vicinity of the parts makes the evil to spread from one to another. But most commonly such is the nature of the disease, that it terminates in another, either by way of crisis, or through the foulness of the habit. Out of a number of examples, which I could produce, I shall select some few.

Through the consent of the head and stomach, when this is loaded with phlegm, that is seized with giddiness; and on the other hand, the repletion or other injury of the brain is attended with a sickness at stomach. Through a similar affinity between the liver and intestines, colic-pains are often succeeded by a jaundice; and a jaundice sometimes occasions a colic, by pouring sharp bile into the guts. And such is the connection of the uterus with many other parts, that Hippocrates pronounced this organ to be the cause of all diseases in women *. Now, these parts are chiefly the head, lungs, and stomach; and the instruments of this sympathy are the animal spirits, which, being hurried by the passions, either convey the disorders of the womb to the rest of the body, or communicate the distempers of the body to that organ.

The vicinity of the parts, which I have alleged as another cause of the succession of diseases, takes place chiefly in inflammations, by the translation of the humour to the adjacent part. Thus a pleurisy becomes a peripneumony; the iliac passion supervenes a strangury; the disorders of the kidneys spread to the loins; and the pains in the loins are communicated to the kidneys.

* De morbis mulierum, lib. ii.

In fine, the third cause which I have assigned for the supervention or transition of diseases, is the very nature of these diseases ; which as it is various, so it produces its effect various ways. The gout sometimes turns into the colic, and the colic into the gout. Varicose swellings of the veins, supervening pains in the joints, indicate the distemper going off. An apoplexy is succeeded by a palsy ; and this paralytic seizure of the nerves, whether of the whole body, or of some particular part, is the crisis of the apoplectic fit. But if from the paralytic limbs the disorder returns to the head, death is generally the physician. Difficulty of breathing, of long continuance, gives rise to a dropsy in the breast as well as in the belly. An anasarca affords great reason to apprehend an ascites : and melancholy of long standing is frequently succeeded by an epilepsy, which is hardly within the power of art to remove.

Hippocrates collected a great number of observations to this purpose, and upon them built the divine art of prognostic in diseases, to which I refer my readers. Wherefore I quit the subject with this admonition, that although the causes which I have enumerated, often exert their power singly ; yet it commonly happens, that more than one of them concur in effecting those successions and transitions of diseases.

C O N C L U S I O N.

Of the regimen of life.

I Hope it will not be thought inconsistent with the scope of this treatise on the diseases of the human body, to subjoin, by way of conclusion, some short rules for the management of persons in health through the different stages of life. Although indeed this task seems to be rendered almost superfluous by the precepts delivered by Celsus *: which whosoever will observe, with due regard to the difference of climates, and manner of living now and in the time of that wise author, most certainly, to use his own words, will not in good health squander the resources of infirmities †.

For such is the natural constitution of the body of man, that it can easily bear some changes and irregularities without much injury : had it been otherwise, we should be almost constantly put out of order by every slight cause. This advantage arises from those wonderful communications of the inward parts, whereby, when one part is affected, another comes immediately to its relief. Thus, when the body is too full and overloaded, nature causes evacuations through some of the outlets. And for this reason it is, that diseases from inanition are generally more dangerous than from repletion ; because we can more expeditiously diminish than increase the juices of the body. Upon the same account also, though tempe-

* Lib. i. cap. 1. 2. 3.
adversæ præsidia non consumet.

† In secunda valetudine

rance be beneficial to all men, the ancient physicians advised persons in good health, and their own masters, to indulge a little now and then, by eating and drinking more plentifully than usual. But of the two, intemperance in drinking is safer than in eating. And if a person has committed excess in the latter, cold water drank upon a full stomach will help digestion : to which it will be of service to add lemon-juice, or elixir of vitriol, if he has eaten high-seasoned things, rich sauces, &c. Then let him sit up for some little time, and afterwards sleep. But if a man happens to be obliged to fast, he ought to avoid all laborious work. From satiety it is not proper to pass directly to sharp hunger, nor from hunger to satiety : neither will it be safe to indulge absolute rest immediately after excessive labour, nor suddenly fall to hard work after long idleness. In a word, therefore, all changes in the way of living should be made by degrees.

It is also beneficial to vary the scenes of life ; to be sometimes in the country, sometimes in town ; to go to sea, to hunt, to be at rest now and then, but more frequently to use exercise : because inaction renders the body weak and listless, and labour strengthens it. But a mean is to be observed in all these things, and too much fatigue to be avoided ; for frequent and violent exercise overpowers the natural strength, and wastes the body ; but moderate exercise ought always to be used before meals. Now, of all kinds of exercise riding on horseback is the most convenient ; or, if the person be too weak to bear it, riding in a coach, or at least in a litter : next follow fencing, playing at ball, running, walking. But it
is

is one of the inconveniencies of old age, that there is seldom sufficient strength for using bodily exercise, though it be extremely requisite for health. Wherefore frictions with the flesh-brush are necessary at this time of life, which should be performed by the person himself, if possible; if not, by his servants.

Sleep is the sweet soother of cares, and restorer of strength, as it repairs and replaces the wastes that are made by the labours and exercises of the day. But excessive sleep has its inconveniencies; for it blunts the senses, and renders them less fit for the duties of life. The proper time for sleep is the night, when darkness and silence invite and bring it on: day-sleep is less refreshing. Which rule if it be proper for the multitude to observe, much more is the observance of it necessary for persons addicted to literary studies, whose minds and bodies are more susceptible of injuries.

The softer and milder kinds of aliment are proper for children, and for youths the stronger. Old people ought to lessen the quantity of their food, and increase that of their drink. But yet some allowance is to be made for custom, especially in the colder climates, like ours: for as in these the appetite is keener, so is the digestion better performed.

Physicians are agreed, that copulation,
When age adult and high-brac'd nerves invite,
Should neither be immoderately desir'd,
Nor dreaded to excess. The good old man
Is by his tame frigidity admonish'd,
Not to engage in the dull drudgery,
Mistaken for enchanting scenes of pleasure;

Left

Lest thus he snap his feeble thread of life.
 But what more base, more noxious to the body,
 Than by the power of fancy to excite
 Such lewd ideas of an absent object,
 As rouse the organs, form'd for nobler ends,
 To rush into th' embraces of a phantom,
 And do the deed of personal enjoyment !

In fine, this truth ought to be deeply imprinted on
 every mind, that this, and indeed all other,

Voluptates commendat rarior usus.

Pleasures are heighten'd by a sparing use.

For my part, after mature consideration, I am long
 since come to this way of thinking : That although
 pleasures, riches, power, and other things, which are
 called the gifts of fortune, seem to be dealt out to
 mankind with too much partiality ; yet, if we take
 in the whole compass of the matter, we shall find a
 greater degree of equality of those things which con-
 stitute real happiness, than is generally imagined.
 People of low condition, for the most part, enjoy the
 common advantages of life more commodiously than
 those of the highest rank. Wholesome food is acqui-
 red by moderate labour ; which likewise mends the
 appetite and digestion : hence sound sleep, uninter-
 rupted by gnawing cares, refreshes the wearied limbs ;
 a flock of healthy children fill the cottage ; the sons
 grow up robust, and execute the father's task, ma-
 king his hoary locks sit comfortable on him. How
 vastly inferior to these blessings are the vain delicacies
 of most persons of affluent fortunes, which are closer

ly attended with real evils ! In order to get down their food, their stomachs require high fauces, which heat and corrupt the blood, and render the body obnoxious to distempers : the debauches of the day disturb their rest by night : and in punishment for their vices, their sons, the great ornament and support of families, contract diseases in their mother's womb ; with which they are afflicted through the whole course of a languid life, which seldom reaches to old age. They are likewise frequently racked with anxieties for obtaining honours and splendid titles, so as to be despoiled of the comforts which they might reap from their plentiful possessions, by the vain desire of new acquisitions. Wherefore

——— *Horum*

*Semper ego optarim pauperrimus esse bonorum *.*

I always wish to be extremely poor

In wealth like this.

But there is one great inconvenience more attending high living, that, by over-loading the body, the faculties of the soul are clogged, and the passions set all on fire ; whereas, on the contrary, the slender and homely diet of the poor and laborious, neither oppresses the strength of body, nor supplies the vices with fuel. Therefore, unless prudence be a constant attendant on opulence,

Vivitur exiguo melius.

'Tis better living on a slender fortune.

* Horat. satir. ver. 78.

Nor is nature to be deemed an unjust stepmother,
but a most provident and beneficent parent.

Upon the whole, it behoves a wise man in every
stage of life,

—— *Servare modum, finemque tenere,
Naturamque sequi* *.

—— To hold the golden mean,
To keep the end in view, and follow nature.

But whosoever forms a right judgment of human nature, will certainly find, that as some men are vastly superior to others in the endowments of the mind, and yet, a sad reflection! even the best minds are blended with some degree of depravity; so the most healthy bodies are frequently afflicted with great infirmities: and these being the seeds of death, ought to put us in mind of the shortness of this life, and of the propriety of this expression of Lucretius:

Vitaque mancupio nulli datur, omnibus usu †;

None have a right to life, all to its use.

And likewise that there is no absurdity in this saying of Hippocrates:

Ὅλος ἀνθρώπος ἐκ γενετῆς νόσος ἐστίν. ‡.

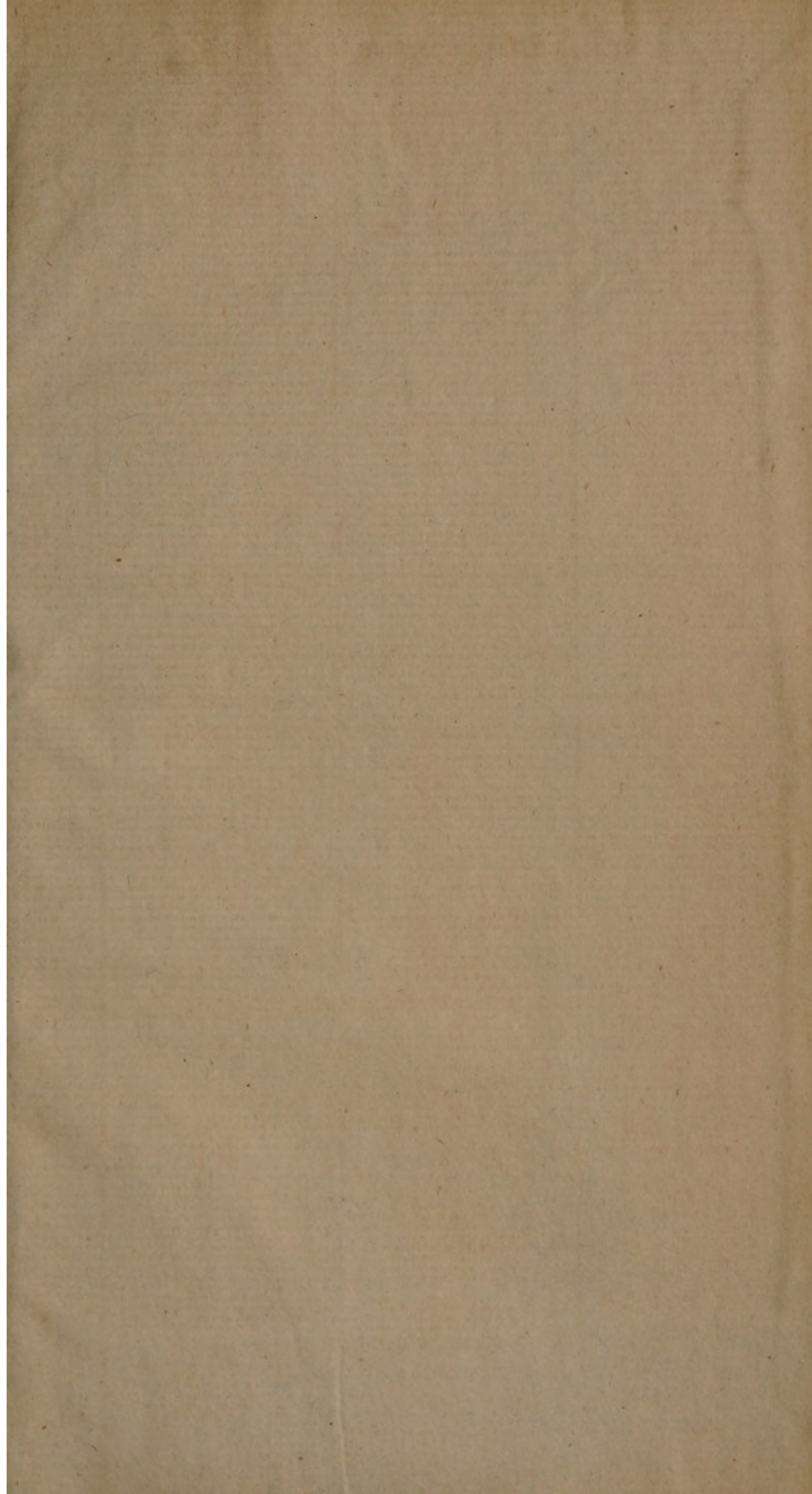
The whole man from his birth is a disease.

* Lucan, lib. ii. ver. 381.

† Lib. iii. ver. 984. ‡ Epist. ad Damaget.

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speculations. The author then proceeds to discuss
the various theories which have been advanced,
and to show that they are all based on the
assumption that life is a result of chance.
The author then shows that this assumption is
untenable, and that life is in fact a result of
a process of evolution. The author then proceeds
to discuss the various stages of evolution, and
to show that they are all based on the same
principles. The author then concludes by saying
that the study of the origin of life is one of
the most important in the history of science,
and that it is one which should be the subject
of much more research.



