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A D V I C E

TO THE

PEOPLE in GENERAL,

WITH REGARD TO THEIR

HEALTH:

But particularly calculated for those, who are the most unlikely to be provided in Time with the best Assistance, in acute Diseases, or upon any inward or outward Accident.

WITH

A TABLE of the most cheap, yet effectual Remedies, and the plainest Directions for preparing them readily.

Translated from the French Edition of

Dr. TISSOT's *Avis au Peuple*, &c.

Printed at Lyons; with all the Notes in the first English Edition, and a very few additional ones.

By J. KIRKPATRICK, M. D.

To which is added,

The ART of preserving HEALTH:

Containing the most important Rules recommended by Physicians and Philosophers for the Preservation of HEALTH in the several Periods and Circumstances of Life: together with the Reasons on which these Rules are founded.

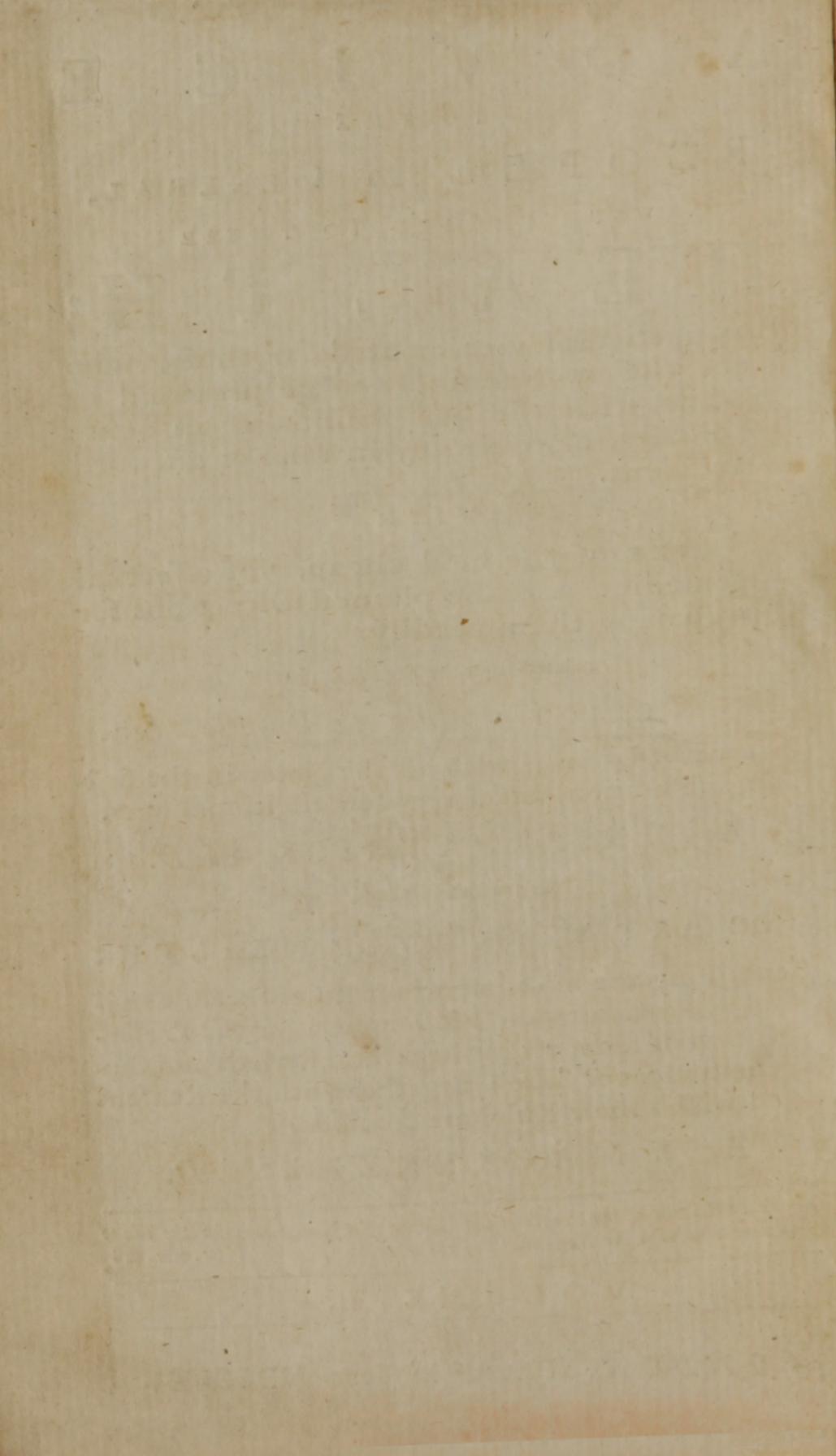
By J. MACKENZIE, M. D.

In the Multitude of the People is the Honour of a King; and for the Want of People cometh the Destruction of the Prince. Prov. xiv. 28.

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A D V I C E

TO THE

P E O P L E

With Respect to their HEALTH.

C H A P. XXVI.

The Treatment of Diseases peculiar to Women.

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BESIDES all the preceding diseases, to which women are liable in common with men, their sex also exposes them to others peculiar to it, and which depend upon four principal sources; which are their monthly discharges, their pregnancy, their labours in child-birth, and the consequences of their labours. It is not my present design to treat professedly on each of the diseases arising from these causes, which would require a larger volume than I have proposed; but I shall confine myself to certain general directions on these four heads.

§ 351. Nature, who intended women for the increase, and the nourishment of the human race at

the breast, has subjected them to a periodical efflux, or discharge, of blood: which circumstance constitutes the source, from whence the infant is afterwards to receive his nutrition and growth.

This discharge generally commences, with us, between the age of sixteen and eighteen. Young maidens, before the appearance of this discharge, are frequently, and many for a long time, in a state of weakness, attended with various complaints, which is termed the *chlorosis*, or green sickness, and obstructions; and when their appearance is extremely slow and backward, it occasions very grievous, and sometimes even mortal diseases. Nevertheless it is too usual, tho' very improper, to ascribe all the evils, to which they are subject at this term of life, solely to this cause; while they really often result from a different cause, of which the obstructions themselves are sometimes only the effect; and this is the natural, and, in some degree, even necessary feebleness of the sex. The fibres of women which are intended to be relaxed, and to give way, when they are unavoidably extended by the growth of the child, and its inclosing membranes (which frequently arise to a very considerable size) should necessarily be less stiff and rigid; less strong, and more lax and yielding than the fibres of men. Hence the circulation of their blood is more slow and languid than in males; their blood is less compact and dense, and more watery; their fluids are more liable to stagnate in their different bowels, and to form infarctions and obstructions.

§ 352 The disorders to which such a constitution subjects them might, in some measure, be prevented, by assisting that languor or feebleness of their natural movements, by such an increase of their force, as exercise might contribute to: but this assistance, which in some manner is more necessary for females than males, they are partly deprived of, by the general education and habitude

of the sex; as they are usually employed in managing household business, and such light sedentary work, as afford them less exercise and motion, than the more active occupations of men. They stir about but little, whence their natural tendency to weakness increases from habit, and thence becomes morbid and sickly. Their blood circulates imperfectly; its qualities become impaired; the humours tend to a pretty general stagnation; and none of the vital functions are completely discharged.

From such causes and circumstances, they begin to sink into a state of weakness, sometimes while they are very young, and many years before this periodical discharge could be expected. This state of languor disposes them to be inactive; a little exercise soon fatigues them, whence they take none at all. It might prove a remedy, and even effect a cure, at the beginning of their complaint; but as it is a remedy that is painful and disagreeable to them, they reject it, and thus increase their disorders.

Their appetite declines with the other vital functions, and gradually becomes still less; the usual salutary kinds of food never exciting it; instead of which they indulge themselves in whimsical cravings, and often of the oddest and most improper substances for nutrition, which entirely impair the stomach with its digestive functions, and consequently health itself.

But sometimes after the duration of this state for a few years, the ordinary time of their monthly evacuations approaches, which, however, make not the least appearance, for two reasons. The first is, that their health is too much impaired to accomplish this new function, at a time when all the others are so languid; and the second is, that under such circumstances, the evacuations themselves are unnecessary; since their final purpose is to discharge (when the sex are not pregnant) that superfluous blood, which they were intended to pre-

duce, and whose retention would be unhealthy, when not applied to the growth of the fœtus, or nourishment of the child : and this superfluity of blood does not exist in women, who have been long in a very low and languishing state.

§ 353. Their disorder, however, continues to increase, as every one daily must, which does not terminate. This increase of it is attributed to the suppression or non-appearance of their monthly efflux, which is often erroneous ; since the disorder is not always owing to that suppression, which is often the effect of their distemperature. This is so true, that even, when the efflux happens, if their weakness still continues, the patients are far from being the better for it ; but the reverse. Neither is it unusual to see young lads, who have received from nature, and from their parents, a sort of feminine constitution, education and habitude, infested with much the same symptoms, as obstructed young women.

Country girls, who are generally more accustomed to such hardy work and exercise, as country men, are less subject to these complaints, than women who live in cities.

§ 354. Let people then be careful not to deceive themselves on this important account ; since all the complaints of young maidens are not owing to the want of their customs. Nevertheless it is certain there are some of them, who are really afflicted from this cause. For instance, when a strong young virgin in full health, who is nearly arrived to her full growth, and who manifestly abounds with blood, does not obtain this discharge at the usual time of life, then indeed this superfluous blood is the fountain of very many disorders, and greatly more violent ones than those, which result from the contrary causes already mentioned.

If the lazy inactive city girls are more subject to the obstructions, which either arise from the weakness and langour I have formerly taken notice of,

or which accompany it, country girls are more subject to complaints from this latter cause (too great a retention of superfluous blood) than women who live in cities; and it is this last cause that excites those singular disorders, which appear so supernatural to the common people, that they ascribe them to sorcery.

§ 355. And even after these periodical discharges have appeared, it is known that they have often been suppressed, without the least unhealthy consequence resulting from that suppression. They are often suppressed, in the circumstances mentioned § 351. by a continuance of the disease, which was first an obstacle or retardment to their appearance; and in other cases, they have been suppressed by other causes, such as cold, moisture, violent fear, and very strong passion; by too chilly a course of diet, with indigestion; or too hot and irritating diet; by drinks cooled with ice; by exercise too long continued, and by unusual watching. The symptoms, occasioned by such suppressions, are sometimes more violent than those which preceded the first appearance of the discharge.

§ 356. The great facility with which this evacuation may be suppressed, diminished, or disordered, by the causes already assigned; the terrible evils which are the consequences of such interruptions and irregularities of them; seem to me very cogent reasons to engage the sex to use all possible care, in every respect, to preserve the regularity of them; by avoiding, during their approach and continuance, every cause that may prevent or lessen them. Would they be thoroughly persuaded, not solely by my advice, but by that of their mothers, their relations, their friends, and by their own experience, of what great importance it is to be very attentive to themselves, at those critical times, I think there is not one woman, who, from the first, to the very last appearance of

them, would not conduct herself with the most scrupulous regularity.

Their demeanour, in these circumstances, very fundamentally interests their own health, as well as that of their children; and consequently their own happiness, as well as that of their husbands and families.

The younger and more delicate they are, caution becomes the more necessary for them. I am very sensible, a strong country girl is too negligent in regulating herself at those critical seasons, and sometimes without any ill consequence; but at another time she may suffer severely for it: and I could produce a long list of many, who, by their imprudence on such occasions, have thrown themselves into the most terrible condition.

Besides the caution with which females should avoid these general causes, just mentioned in the preceding section, every person ought to remember what has most particularly disagreed with her during that term, and for ever, constantly to reject it.

§ 357. There are many women, whose customs visit them without the slightest impeachment of their health; others are sensibly disordered on every return of them; and to others again they are very tormenting by the violent cholics, of a longer or shorter duration, which precede or accompany them. I have known some of these violent attacks last but some minutes, and others, which continued a few hours. Nay, some indeed have persisted for many days, attended with vomiting, fainting, with convulsions from excessive pain, with vomiting of blood, bleedings from the nose, &c. which, in short, have brought them to the very jaws of death. So very dangerous a situation requires the closest attention; though, as it results from several, and frequently very opposite causes, it is impossible, within the present plan, to direct the treatment that may be proper for each

individual. Some women have the unhappiness to be subject to these symptoms every month from the first appearance, to the final termination, of these discharges; except proper remedies and regimen, and sometimes a happy child-birth, remove them. Others complain but now and then, every second, third, or fourth month; and there are some again, who having suffered very severely during the first months, or years, after their first eruptions, suffer no more afterwards. A fourth number, after having had their customs for a long time, without the least complaint, find themselves afflicted with cruel pains at every return of them; if by imprudence, or some inevitable fatality, they have incurred any cause, that has suppressed, diminished, or delayed them. This consideration ought to suggest a proper caution even to such, as generally undergo these discharges, without pain or complaint: since all may be assured, that though they suffer no sensible disorder at that time, they are nevertheless more delicate, more impressible by extraneous substances, more easily affected by the passions of the mind, and have also weaker stomachs at these particular periods.

§ 358. These discharges may also be sometimes too profuse in quantity, in which case the patients become obnoxious to very greivous maladies; into the discussion of which however I shall not enter here, as they are much less frequent than those, arising from a suppression of them. Besides which, in such cases, recourse may be had to the directions I shall give hereafter, when I treat of that loss of blood, which may be expedient, during the course of gravitation or pregnancy. see § 365.

§ 359. Finally, even when they are the most regular, after their continuance for a pretty certain number of years (rarely exceeding thirty-five) they go off of their own accord, and necessarily, between the age of forty-five and fifty; sometimes

even sooner, but seldom continuing longer: and this *crisis* of their ceasing is generally a very troublesome, and often a very dangerous one for the sex.

§ 360. The evils mentioned § 352 may be prevented, by avoiding the causes producing them; and, 1. By obliging young maidens to use considerable exercise; especially as soon as there is the least reason to suspect the approach of this disorder, the *chlorosis*, or green sickness.

2. By watching them carefully, that they eat nothing unwholesome or improper; as there are scarcely any natural substances, even among such as are most improper for them, and the most distasteful, which have not sometimes been the objects of their sickly, their unaccountable cravings. Fat aliments, pastry, farinaceous or mealy, and sour and watery foods, are pernicious to them. Herb-teas, which are frequently directed as a medicine for them, are sufficient to throw them into the disorder, by increasing that relaxation of their fibres, which is a principal cause of it. If they must drink any such infusions, as medicated drinks, let them be taken cold; but the best drink for them is water, in which red hot iron has been extinguished.

3. They must avoid hot sharp medicines, and such as are solely intended to force down their terms, which are frequently attended with very pernicious consequences, and never do any good: and they are still the more hurtful, as the patient is the younger.

4. If the malady increases, it will be necessary to give them some remedies; but these should not be purges, nor consist of diluters, and decoctions of herbs, of salts, and a heap of other useless and noxious ingredients; but they should take filings of iron, which is the most certain remedy in such cases. These filings should be of true simple iron,

and not from steel; and care should be taken that it be not rusty, in which state it has very little effect.

At the beginning of this distemper, and to young girls, it is sufficient to give twenty grains daily, enjoining due exercise, and a suitable diet. When it prevails in a more severe degree, and the patient is not so young, a quarter of an ounce may be safely ventured on: certain bitters or aromatics may be advantageously joined to the filings, which are numbered in the appendix, 54. 55. 56. and constitute the most effectual remedies in this distemper, to be taken in the form of powder, of vinous infusion, or of electary *. When there is a just indication to bring down the discharge, the vinous infusion N^o. 55. must be given, and generally succeeds: but I must again repeat it, (as it should carefully be considered) that the stoppage or obstruction of this discharge is frequently the effect, not the cause of this disease; and that there should be no attempt to force it down, which in such a case, may sometimes prove more hurtful than beneficial; since it would naturally return of its own accord, on the recovery, and with the strength of the patient; as their return should follow that of perfect health, and neither can precede health, nor introduce it. There are some cases particularly, in which it would be highly dangerous to use hot and active medicines, such cases for instance, as are attended with some degree of fever, a frequent coughing, a hæmorrhage or bleeding, with great leanness and considerable thirst: all which complaints should be removed, before any hot medicines are given to force this evacuation, which many very ignorantly imagine, cures all other female disorders; an error, that has prematurely occasioned the loss of many women's lives.

* The French word here *opiat*, is sometimes used by them for a compound medicine of the consistence of an electary; and cannot be supposed, in this place, to mean any preparation, into which *opium* enters. K.

§ 361. While the patient is under a course of these medicines, she should not take any of those I have forbidden in the preceding sections; and the efficacy of these should also be furthered with proper exercise. That in a carriage is very healthy; dancing is so too, provided it be not extended to an excess. In case of a relapse in these disorders, the patient is to be treated, as if it were an original attack.

§ 362. The other sort of obstructions, described § 354. requires a very different treatment. Bleeding, which is hurtful in the former sort, and the use, or rather abuse of which, has thrown several young women into irrecoverable weakneses, has often removed this latter species, as it were, in a moment. Bathing of the feet, the powders N^o. 20. and whey, have frequently succeeded: but at other times it is necessary to accommodate the remedies and the method to each particular case, and to judge of it from its own peculiar circumstances and appearances.

§ 363. When these evacuations naturally cease through age, (see § 359) if they stop suddenly and all at once, and had formerly flowed very largely, bleeding must 1. necessarily be directed, and repeated every six, every four, or even every three months.

2. The usual, quantity of food should be somewhat diminished, especially of flesh, of eggs, and of strong drink.

3. Exercise should be increased.

4. The patient should frequently take, in a morning fasting, the powder N^o. 21. which is very beneficial in such cases; as it moderately increases the natural excretions by stool, urine, and perspiration; and thence lessens that quantity of blood, which would otherwise superabound.

Nevertheless, should this total cessation of the monthly discharge be preceded by, or attended with, any extraordinary loss of blood, which is

frequently the case, bleeding is not so necessary; but the regimen and powder just directed are very much so; to which the purge N^o. 22. should now and then be joined, at moderate intervals. The use of astringent medicines at this critical time, might dispose the patient to a cancer of the womb.

Many women die about this age, as it is but too easy a matter to injure them then; a circumstance that should make them very cautious and prudent in the medicines they recur to. On the other hand, it also frequently happens, that their constitutions alter for the better, after this critical time of life; their fibres grow stronger; they find themselves sensibly more hearty and hardy; many former slight infirmities disappear, and they enjoy a healthy and happy old age. I have known several, who threw away their spectacles at the age of fifty-two, or fifty-three, which they had used five or six years before.

The regimen I have just directed, the powder N^o. 24. and the potion N^o. 32. agree very well in almost all inveterate discharges (I speak of the female peasantry) at whatever time of life.

Of Disorders attending Gravitation, or the Term of going with Child.

§ 364. Gravitation is generally a less ailing or unhealthy state in the country, than in very populous towns. Nevertheless country women are subject, as well as citizens, to pains of the stomach, to vomiting in a morning, to head-ach and tooth-ach; but these complaints very commonly yield to bleeding, which is almost the only remedy necessary * for pregnant women.

* Too great a fulness of blood is undoubtedly the cause of all these complaints; but as there are different methods of opposing this cause, the gentlest should always be preferred; nor should the constitution become habituated to such remedies, as might either impair the strength of the mother, or of her fruit. Some expedients therefore should be thought of, that may compensate for the want of bleeding, by en-

§ 365. Sometimes after carrying too heavy burthens; after much or too violent work; after receiving excessive jolts, or having had a fall, they are subject to violent pains of the loins, which extend down to their thighs, and terminate quite at the bottom of the belly; and which commonly signify, that they are in danger of an abortion, or miscarrying.

To prevent this consequence, which is always dangerous, they should, 1. Immediately go to bed, and if they have not a matrafs, they should lie upon a bed stuffed with straw, a feather bed being very improper in such cases. They should repose, or keep themselves quite still in this situation for several days, not stirring, and speaking as little as possible.

2. They should directly lose eight or nine ounces of blood from the arm.

3. They should not eat flesh, flesh-broth, nor eggs; but live solely on soups made of farinaceous or mealy substances.

4. They should take every two hours half a paper of the powder N^o. 20. and should drink nothing but the ptisan N^o. 2.

Some sanguine robust women are very liable to miscarry at a certain time, or stage, of their pregnancy. This may be obviated, by their bleeding some days before that time approaches, and by their observing the regimen I have advised. But this method would avail very little for delicate citizens, who miscarry from a very different cause;

joining proper exercise in a clear air, with a less nourishing, and less juicy diet. *E. L.*

This note might have its use sometimes, in the cases of such delicate and hysterical, yet pregnant women, as are apt to suffer from bleeding, or any other evacuation, though no ways immoderate. But it should have been considered, that Dr. TISSOT was professedly writing here to hearty active country wives, who are very rarely thus constituted; and whom he might be unwilling to confuse with such multiplied distinctions and directions, as would very seldom be necessary, and might sometimes prevent them from doing what was so. Besides which, this editor might have seen, our author has hinted at such cases very soon after. *K.*

and whose abortions are to be prevented by a very different treatment.

Of Delivery, or Child-birth.

§ 366. It has been observed that a greater proportion of women die in the country in, or very speedily after, their delivery, and that from the scarcity of good assistance, and the great plenty of what is bad; and that a greater proportion of those in cities die after their labours are effected, by a continuance of their former bad health.

The necessity there is for better instructed, better qualified midwives, through a great part of *Switzerland*, is but too manifest an unhappiness, which is attended with the most fatal consequences, and which merits the utmost attention of the government.

The errors which are incurred, during actual labour, are numberless, and too often indeed are also irremediable. It would require a whole book, expressly for that purpose (and in some countries there are such) to give all the directions that are necessary to prevent so many fatalities: and it would be as necessary to form a sufficient number of well-qualified midwives to comprehend, and to observe them; which exceeds the plan of the work I have proposed. I shall only mark out one of the causes, and the most injurious one on this occasion: this is the custom of giving hot irritating things, whenever the labour is very painful, or is slow; such as castor, or its tincture, saffron, sage, rue, savin, oil of amber, wine, Venice treacle, wine burnt with spices, coffee, brandy, aniseed-water, walnut-water, fennel-water, and other drams or strong liquors. All these things are so many poisons in this respect, which, very far from promoting the woman's delivery, render it more difficult by inflaming the womb (which cannot then so well contract itself) and the parts, thro' which the birth is to pass, in consequence of which

they swell, become more straitened, and cannot yield or be dilated. Sometimes these stimulating hot medicines also bring on hæmorrhages, which prove mortal in a few hours.

§ 367. A considerable number, both of mothers and infants, might be preserved by the directly opposite method. As soon as a woman who was in very good health, just before the approach of her labour, being robust and well made, finds her travail come on, and that it is painful and difficult; far from encouraging those premature efforts, which are always destructive: and from furthering them by the pernicious medicines I have just enumerated, the patient should be bled in the arm, which will prevent the swelling and inflammation; assuage the pains: relax the parts, and dispose every thing to a favourable issue.

During actual labour no other nourishment should be allowed, except a little panada every three hours, and as much toast and water, as the woman chooses.

Every fourth hour a glyster should be given, consisting of a decoction of mallows, and a little oil. In the intervals between these glysters, she should be set over a kind of stove, or in a pierced easy chair, containing a vessel in which there is some hot water; the passage should be gently rubbed with a little butter; and stupes wrung out of a fomentation of simple hot water, which is the most efficacious of any, should be applied over the belly.

The midwives, by taking this method, are not only certain of doing no mischief, but they also allow nature an opportunity of doing good: as a great many labours, which seem difficult at first, terminate happily; and this safe and unprecipitate manner of proceeding at least affords time to call in further assistance. Besides, the consequences of such deliveries are healthy and happy; when by pursuing the heating oppressing practice, even

though the delivery be effected, both the mother and infant have been so cruelly, though undesignedly, tormented, that both of them frequently perish.

§ 368. I acknowledge these means are insufficient when the child is unhappily situated in the womb; or when there is an embarrassing conformation in the mother: though at least they prevent the case from proving worse, and leave time for calling in men-midwives, or other female ones, who may be better qualified.

I beg leave again to remind the midwives, that they should be very cautious of urging their women to make any forced efforts to forward the birth, which are extremely injurious to them, and which may render a delivery very dangerous and embarrassing, that might otherwise have been happily effected: and I insist the more freely on the danger attending these unseasonable efforts, and on the very great importance of patience, as the other very pernicious practice is become next to universal amongst us.

The weakness, in which the labouring woman appears, makes the by-standers fearful that she will not have strength enough to be delivered; which they think abundantly justifies them in giving her cordials; but this way of reasoning is very weak and chimerical. Their strength, on such occasions, is not so very speedily dissipated: the small light pains sink them, but in proportion as the pains become stronger, their strength arises; being never deficient, when there is no extraordinary and uncommon symptom; and we may reasonably be assured, that in a healthy, well formed woman, mere weakness never prevents a delivery.

Of the Consequences of Labour, or Child-birth.

§ 369. The most usual consequences of child-birth in the country are, 1. An excessive hæmorrhage. 2. An inflammation of the womb. 3. A

sudden suppression of the *lochia*, or usual discharges after delivery. And, 4. the fever and other accidents resulting from the milk.

Excessive bleedings or floodings, should be treated according to the manner directed § 365. and if they are very excessive, folds of linen, which have been wrung out of a mixture of equal parts of water and vinegar, should be applied to the belly, the loins, and the thighs: these should be changed for fresh moist ones, as they dry; and should be omitted, as soon as the bleeding abates.

§ 370. The inflammation of the womb is discoverable by pains in all the lower parts of the belly; by a tension or tightness of the whole; by a sensible increase of pain upon touching it; a kind of red stain or spot, that mounts to the middle of the belly, as high as the navel; which spot, as the disease increases, turns black, and then is always a mortal symptom; by a very extraordinary degree of weakness; an astonishing change of countenance; a light *delirium* or raving; a continual fever with a weak and hard pulse; sometimes incessant vomitings; a frequent hiccup; a moderate discharge of a reddish, stinking, sharp water; frequent urgings to go to stool; a burning kind of heat of urine; and sometimes an entire suppression of it.

§ 371. This most dangerous and frequently mortal disease should be treated like inflammatory ones. After bleeding, frequent glysters of warm water must by no means be omitted; some should also be injected into the womb, and applied continually over the belly. The patient may also drink continually, either of simple barley-water, with a quarter of an ounce of nitre in every pot of it, or of almond milk N^o. 4.

§ 372. The total suppression of the *lochia*, the discharge after labour, which proves a cause of the most violent disorders, should be treated exactly in the same manner: but if unhappily hot

medicines have been given, in order to force them down, the case will generally prove a most hopeless one.

§ 373. If the milk-fever run very high, the barley ptisan directed § 371. and glysters, with a very light diet consisting only of panada, or made of some other farinaceous substances, and that very thin, very generally remove it.

§ 374. Delicate infirm women, who have not all the requisite and necessary attendance they want; and such as from indigence are obliged to work too soon, are exposed to many accidents, which frequently arise from a want of due perspiration, and an insufficient discharge of the *lochia*; and hence the separation of the milk in their breasts being disturbed, there are milky congestions, or knots as it were, which are always very painful and troublesome, and especially when they are formed more inwardly. They often happen on the thighs, in which case the ptisan N^o. 58. is to be drank, and the pultices N^o. 59. must be applied. These two remedies gradually dissipate and remove the tumour, if that may be effected without supuration. But if that proves impossible, and *pus*, or matter, is actually formed, a surgeon must open the abscess, and treat it like any other.

§ 375. Should the milk coagulate, or curdle as it were, in the breast, it is of the utmost importance immediately to attenuate or dissolve that thickness, which would otherwise degenerate into a hardness and prove a *schirrhus*; and from a *schirrhus* in process of time a cancer, that most tormenting and cruel distemper.

This horrible evil however may be prevented by an application to these small tumours, as soon as ever they appear. For this purpose nothing is more effectual than the prescriptions N^o. 57. and 60. but under such menacing circumstances, it is always prudent to take the best advice, as early as possible.

From the moment these hard tumours become excessively and obstinately so, and yet without any pain, we should abstain from every application: all are injurious; and greasy, sharp, resinous and spirituous ones speedily change the *schirrhus* into a cancer. Whenever it becomes manifestly such, all applications are also equally pernicious, except that of N^o. 60. Cancers have long been thought and found incurable; but within a few years past, some have been cured by the remedy N^o. 57. which nevertheless is not infallible, though it should always be tried*.

§ 376. The nipples of women, who give milk, are often fretted or excoriated, which proves very severely painful to them. One of the best applications is the most simple ointment, being a mixture of oil and wax melted together; or the ointment N^o. 66. Should the complaint prove very obstinate, the nurse ought to be purged, which generally removes it.

* The use of hemlock, which has been tried at *Lyons*, by all who have had cancerous patients, having been given in very large doses, has been attended with no effect there, that merited the serious attention of practitioners. Many were careful to obtain the extract from *Vienna*, and even to procure it from *Dr. Storck* himself. But now it appears to have had so little success, as to become entirely neglected. *E. L.*

Having exactly translated in this place, and in the table of remedies, our learned Author's considerable recommendation of the extract of hemlock in cancers, we think it but fair, on the other hand, to publish this note of his editor's against it; that the real efficacy or inefficacy of this medicine may at length be ascertained, on the most extensive evidence and experience. As far as my own opportunities and reflexions, and the experience of many others, have instructed me on this subject, it appears clear to myself, that though the consequences of it have not been constantly unsuccessful with us, yet its successes have come very short of its failures. Nevertheless, as in all such cancers, every other internal medicine almost universally fails, we think with *Dr. Tissot*, it should always be tried (from the mere possibility of its succeeding in some particular habit and circumstances) at least till longer experience shall finally determine against it. *K.*

C H A P. XXVII.

Medical Directions concerning Children.

S E C T. 377.

THE diseases of children, and every thing relative to their health, are objects which generally seem to have been too much neglected by physicians; and have been too long confided to the conduct of the most improper persons for such a charge. At the same time it must be admitted, their health is of no little importance, their preservation is as necessary as the continuance of the human race; and the application of the practice of physick to their disorders is susceptible of nearer approaches to perfection, than is generally conceived. It seems to have even some advantage over that practice which regards grown persons; and it consists in this, that the diseases of children are more simple, and less frequently complicated than those of adults.

It may be said, indeed, they cannot make themselves so well understood, and mere infants certainly not at all. This is true in fact to a certain degree, but not rigidly true; for though they do not speak our language, they have one which we should contrive to understand. Nay every distemper may be said, in some sense, to have a language of its own, which an attentive physician will learn. He should therefore use his utmost care to understand that of infants, and avail himself of it, to increase the means of rendering them healthy and vigorous, and to cure them of the different distempers to which they are liable. I do not propose actually to complete this task myself, in all that extent it may justly demand; but I shall set forth the principal causes of their distempers, and the general method of treating them. By this means I shall at least preserve them from some of the mischiefs

which are too frequently done them; and the lessening such evils as ignorance, or erroneous practice, occasions, is one of the most important purposes of the present work.

§ 378. Nearly all the children who die before they are one year, and even two years, old, die *with* convulsions: people say they died *of* them, which is partly true, as it is in effect the convulsions that have destroyed them. But then these very convulsions are the consequences, the effects, of other diseases, which require the utmost attention of those, who are entrusted with the care and health of the little innocents: as an effectual opposition to these diseases, these morbid causes, is the only means of removing the convulsions. The four principal known causes are, the *meconium*; the excrements contained in the body of the infant, at the birth; *acidities*, or sharp and sour humours; the cutting of the teeth, and worms. I shall treat briefly of each.

Of the Meconium.

§ 379. The stomach and guts of the infant, at its entrance into the world, are filled with a black sort of matter of a middling consistence, and very viscid or glutinous, which is called the *meconium*. It is necessary this matter should be discharged before the infant sucks, since it would otherwise corrupt the milk, and, becoming extremely sharp itself, there would result from their mixture a double source of evils, to the destruction of the infant.

The evacuation of this excrement is procured,
 1. By giving them no milk at all for the first twenty-four hours of their lives. 2. By making them drink during that time some water, to which a little sugar or honey must be added, which will dilute this *meconium*, and promote the discharge of it by stool, and sometimes by vomiting.

To be the more certain of expelling all this matter, they should take one ounce of compound syrup * of succory, which should be diluted with a little water, drinking up this quantity within the space of four or five hours. This practice is a very beneficial one, and it is to be wished it were to become general. This syrup is greatly preterable to all others, given in such cases, and especially to oil of almonds.

Should the great weakness of the child seem to call for some nourishment, there would be no inconvenience in allowing a little biscuit well boiled in water, which is pretty commonly done, or a little very thin light panada.

Of Acidities, or Sharp Humours.

§ 380. Notwithstanding the bodies of children have been properly emptied speedily after their

* This method (says the editor and annotator of Lyons) is useful, whenever the mother does not suckle her child. Art is then obliged to prove a kind of substitute to nature, though always a very imperfect one. But when a mother, attentive to her own true interest, as well as her infant's, and, listening to the voice of nature and her duty, suckles it herself, these remedies [he adds] seem hurtful, or, at least, useless. The mother should give her child the breast as soon as she can. The first milk, the *colostrum*, or *Strippings*, as it is called in quadrupeds, which is very serous or watery, will be serviceable as a purgative; it will forward the expulsion of the *meconium*, prove gradually nourishing, and is better than biscuits, or panada, which (he thinks) are dangerous in the first days after the birth. E. L.

This syrup of succory being scarcely ever prepared with us, though sufficiently proper for the use assigned it here, I have retained the preceding note, as the author of it directs these *Strippings*, for the same purpose, with an air of certain experience; and as this effect of them seems no ways repugnant to the physical wisdom and œconomy of nature, on such important points. Should it in fact be their very general operation, it cannot be unknown to any male or female practitioner in midwifery, and may save poor people a little expence, which was one object of our humane Author's plan. The oil of *Ricinus*, corruptly called *Castor* oil, (being expressed from the berries of the *palma Christi*) is particularly recommended by some late medical writers from *Jamaica*, &c. for this purpose of expelling the *meconium*, to the quantity of a small spoonful. These gentlemen also consider it as the most proper, and almost specific opener, in the dry belly-ach of that torrid climate, which tormenting disease has the closest affinity to the *miserre*, or iliac passion, of any I have seen. The annotator's objection to our Author's very thin light panada, seems to be of little weight. K.

birth, yet the milk very often turns sour in their stomachs, producing vomitings, violent cholics, convulsions, a looseness, and even terminating in death. There are but two purposes to be pursued in such cases, which are to carry off the sour or sharp humours, and to prevent the generation of more. The first of these intentions is best effected by the syrup of succory * just mentioned.

The generation of further acidities is prevented, by giving three doses daily, if the symptoms are violent, and but two, or even one only, if they are very moderate, of the powder N^o. 61. drinking after it bawm tea, or a tea of lime-tree flowers.

§ 381. It has been a custom to load children with oil of almonds, † as soon as ever they are infested with gripes; but it is a pernicious custom, and attended with very dangerous consequences. It is very true that this oil sometimes immediately allays the gripes, by involving, or sheathing up, as it were the acid humours, and somewhat blunting the sensibility of the nerves. But it proves only a palliative remedy, or assuaging for a time, which, far from removing, increases the cause, since it becomes sharp and rancid itself; whence the disorder speedily returns, and the more oil the infant takes, it is griped the more. I have cured some children of such disorders, without any other remedy, except abstaining from oil, which weakens their stomachs, whence their milk is less perfectly, and more slowly digested, and becomes more easily soured. Besides this weakness of the stomach, which thus commences at that very early age, has sometimes an unhealthy influence on the constitution of the child, throughout the remainder of his life.

A free and open belly is beneficial to children; now it is certain that the oil very often binds them,

* Or, for want of it, the solutive syrup of roses. K.

† The *magnesia* is an excellent substitute in children, for these oils Dr. Tissot so justly condemns here. K.

in consequence of its diminishing the force and action of the bowels. There is scarcely any person, who cannot observe this inconvenience attending it; notwithstanding they all continue to advise and to give it, to obtain a very different purpose: But such is the power of prejudice in this case, and in so many others; people are so strongly prepossessed with a notion, that such a medicine must produce such an effect, that its never having produced it avails nothing with them, their prejudice still prevails: they ascribe its want of efficacy to the smallness of the doses; these are doubled then, and notwithstanding its bad effects are augmented, their obstinate blindness continues.

This abuse of the oil also disposes the child to knotty hard tumours, and at length often proves the first cause of some diseases of the skin, whose cure is extremely difficult.

Hence it is evident, this oil should be used on such occasions but very seldom; and that it is always very injudicious to give it in cholics, which arise from sharp and sour humours in the stomach or in the bowels.

§ 382. Infants are commonly most subject to such cholics during their earliest months; after which they abate, in proportion as their stomachs grow stronger. They may be relieved in the fit by glysters of a decoction of chamomile flowers, in which a bit of soap of the size of a hazel nut is dissolved. A piece of flannel wrung out of a decoction of chamomile flowers, with the addition of some Venice treacle, and applied hot over the stomach and on the belly, is also very beneficial, and relieving.

Children cannot always take glysters, the continuance of which circumstance might be dangerous to them; and every one is acquainted with the common method of substituting suppositories to them, whether they are formed of the smooth and supple stalks of vines, &c. of soap, or of honey boiled up to a proper consistence.

But one of the most certain means to prevent these cholics, which are owing to children's not digesting their milk is to move and exercise them as much as possible; having a due regard however to their tender time of life.

§ 383. Before I proceed to the third cause of the diseases of children, which is, the cutting of their teeth, I must take notice of the first cares their birth immediately requires, that is the washing of them the first time, merely to cleanse, and afterwards, to strengthen them.

Of washing Children.

§ 384. The whole body of an infant just born is covered with a gross humour, which is occasioned by the fluids, in which it was suspended in the womb. There is a necessity to cleanse it directly from this, for which nothing is so proper as a mixture of one third wine, and two thirds water; wine alone would be dangerous. This washing may be repeated some days successively; but it is a bad custom to continue to wash them thus warm, the danger of which is augmented by adding some bitter to the wine and water, which is done too often. If this gross humour, that covers the child, seems more thick and glutinous than ordinary, a decoction of chamomile flowers, with a little bit of soap, may be used to remove it. The regularity of perspiration is the great foundation of health; to procure this regularity the teguments, the skin, must be strengthened; but warm washing tends to weaken it. When it is of a proper strength it always performs its functions; nor is perspiration disordered sensibly by the alteration of the weather. For this reason nothing should be omitted, that may fix it in this state; and to attain so important an advantage, children should be washed, some few days after their birth, with cold water, in the state it is brought from the spring.

For this purpose a sponge is employed, with

which they begin, by washing first the face, the ears, the back part of the head (carefully avoiding the * *fontanelle*, or mould of the head) the neck, the loins, the trunk of the body, the thighs, legs and arms, and in short every spot. This method which has obtained for so many ages, and which is practised at present by many people, who prove very healthy, will appear shocking to several mothers; they would be afraid of killing their children by it; and would particularly fail of courage enough to endure the cries, which children often make, the first time they are washed. Yet if their mothers truly love them, they cannot give a more substantial mark of their tenderness to them, than by subduing their fears and their repugnance, on this important head.

Weakly infants † are those who have the greatest need of being washed: such as are remarkably strong may be excused from it; and it seems scarcely credible (before a person has frequently seen the consequences of it) how greatly this method conduces to give, and to hasten on, their strength. I have had the pleasure to observe, since I first endeavoured to introduce this custom among us, that several of the most affectionate and most sensible mothers, have used it with the greatest success. The midwives, who have been witnesses of it; the nurses and the servants of the children, whom they have washed, publish it abroad; and should the custom become as general, as every thing seems to promise it will, I am fully persuaded, that by preserving the lives of a great number of children, it

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* That part of the head where a pulsation may be very plainly felt, where the bones are less hard, and not as yet firmly joined with those about them.

† There is however a certain degree of weakness, which may very reasonably deter us from this washing; as when the infant manifestly wants heat, and needs some cordial and frequent frictions, to prevent its expiring from downright feebleness; in which circumstances washing must be hurtful to it. *Tillot.*

will certainly contribute to check the progress of depopulation.

They should be washed very regularly every day, in every season, and every sort of weather; and in the fine warm season they should be plunged into a large pail of water, into the basins around fountains, in a brook, a river, or a lake.

After a few days crying, they grow so well accustomed to this exercise, that it becomes one of their pleasures; so that they laugh all the time of their going through it.

The first benefit of this practice is, as I have already said, the keeping up their perspiration, and rendering them less obnoxious to the impressions of the air and weather: and it is also in consequence of this first benefit, that they are preserved from a great number of maladies, especially from knotty tumours, often called kernels; from obstruction; from diseases of the skin, and from convulsions; its general consequence being to insure them firm, and even robust health.

§ 385. But care should be taken not to prevent, or, as it were to undo, the benefit this washing procures them, by the bad custom of keeping them too hot. There is not a more pernicious one than this, nor one that destroys more children. They should be accustomed to light cloathing by day, and light covering by night, to go with their heads very thinly covered, and not at all in the day-time, after their attaining the age of two years. They should avoid sleeping in chambers that are too hot, and should live in the open air, both in summer and winter, as much as possible. Children who have been kept too hot in such respects, are very often liable to colds; they are weakly, pale, languishing, bloated and melancholy. They are subject to hard knotty swellings, a consumption, all sorts of languid disorders, and either die in their infancy, or only grow up into a miserable valetudinary life; while those who are washed or plunged

into cold water, and habitually exposed to the open air; are just in the opposite circumstances.

§ 386. I must further add here, that infancy is not the only stage of life, in which cold bathing is advantageous. I have advised it with remarkable success to persons of every age, even to that of seventy: and there are two kinds of diseases, more frequent indeed in cities than in the country, in which cold baths succeed very greatly; that is, in debility, or weakness of the nerves; and when perspiration is disordered, when persons are fearful of every breath of air, liable to defluxions or colds, feeble and languishing, the cold bath re-establishes perspiration; restores strength to the nerves; and by that means dispels all the disorders, which arise from these two causes, in the animal œconomy. They should be used before dinner. But in the same proportion that cold bathing is beneficial, the habitual use, or rather abuse, of warm bathing is pernicious; they dispose the persons addicted to them to the apoplexy; to the dropsy; to vapours, and to the hypochondriacal disease: and cities, in which they are too frequently used, become, in some measure, desolate from such distempers.

Of the Cutting of the Teeth.

§ 387. Cutting of the teeth is often very tormenting to children, some dying under the severe symptoms attending it. If it proves very painful, we should during that period, 1. Keep their bellies open by glysters consisting only of a simple decoction of mallows; but glysters are not necessary, if the child, as it sometimes happens, has then a purging.

2. Their ordinary quantity of food should be lessened for two reasons; first, because the stomach is then weaker than usual; and next, because a small fever sometimes accompanies the cutting.

3. Their usual quantity of drink should be increased a little; the best for them certainly is an

infusion of the flowers of the lime or linden-tree, to which a little milk may be added.

4. Their gums should frequently be rubbed with a mixture of equal parts of honey, and mucilage of quince-seeds; and a root of march-mallows, or of liquorice, may be given them to chew.

It frequently happens, that during dentition, or the time of their tothing, children prove subject to knots or kernels.

Of Worms.

§ 388. The *meconium*, the acidity of the milk, and cutting of the teeth, are the three great causes of the diseases of children. There is also a fourth, worms, which is likewise very often pernicious to them; but which, nevertheless, is not, at least not near so much, a general cause of their disorders, as it is generally supposed, when a child exceeding two years of age proves sick. There are a great variety of symptoms, which dispose people to think a child has worms; though there is but one that demonstrates it, which is discharging them upwards or downwards. There is great difference among children too in this respect, some remaining healthy, though having several worms, and others being really sick with a few.

They prove hurtful, 1. By obstructing the guts, and compressing the neighbouring bowels by their size. 2. By sucking up the chyle intended to nourish the patient, and thus depriving him of his very substance as well as subsistence: and, 3. By irritating the guts and even * gnawing them.

* I have seen a child about three years old, whose navel, after swelling and inflaming, suppurated, and through a small orifice (which must have communicated with the cavity of the gut or the belly) discharged one of these worms we call *teretes*, about three inches long. He had voided several by stool, after taking some vermifuge medicines. The fact I perfectly remember; and to the best of my recollection, the ulcer healed some time after, and the orifice closed: but the child died the following year of a putrid fever, which might be caused, or was aggravated, by worms. K.

§ 389. The symptoms which make it probable they are infested with worms, are slight, frequent and irregular cholics; a great quantity of the spittle running off while they are fasting; a disagreeable smell of their breath, of a particular kind, especially in the morning; a frequent itchingness of their noses which makes them scratch or rub them often; a very irregular appetite, being sometimes voracious, and at other times having none at all: pains at stomach and vomitings: sometimes a costive belly; but more frequently loose stools of indigested matter; the belly rather larger than ordinary, the rest of the body meagre; a thirst which no drink allays; often great weakness, and some degree of melancholy. The countenance has generally an odd unhealthy look, and varies every quarter of an hour; the eyes often look dull and are surrounded with a kind of livid circle: the white of the eye is sometimes visible while they sleep, their sleep being often attended with terrifying dreams or *deliriums*, and with continual startings, and grindings of their teeth. Some children find it impossible to be at rest for a single moment. Their urine is often whitish, I have seen it from some as white as milk. They are afflicted with palpitations, swoonings, convulsions, long and profound drowsiness; cold sweats which come on suddenly; fevers which have the appearances of malignity; obscurities and even loss of sight and of speech, which continue for a considerable time; palsies either of their hands, their arms, or their legs, and numbnesses. Their gums are in a bad state, and as though they had been gnawed or corroded: they have often the hiccup, a small and irregular pulse, ravings, and, what is one of the least doubtful symptoms, frequently a small dry cough; and not seldom a mucosity or sliminess in their stools; sometimes very long and violent cholics, which terminate in an

abscess on the outside of the belly, from whence worms issue, (see note * p. 28.)

§ 390. There is a great multitude of medicines against worms. The * *grenette* or worm-feed, which is one of the commonest, is a very good one. The prescription N^o. 62. is also a very successful one: and the powder N^o. 14. is one of the best. Flower of brimstone, the juice of *nassurtium*, or cresses, acids, and honey-water have often been very serviceable; but the first three I have mentioned, succeeded by a purge, are the best. N^o. 63. is a purging medicine, that the most averse and difficult children may easily take. But when, notwithstanding these medicines, the worms are not expelled, it is necessary to take advice of some person qualified to prescribe more efficacious ones. This is of considerable importance, because, notwithstanding a great proportion of children may probably have worms, and yet many of them continue in good health, there are, nevertheless, some who are really killed by worms, after having been cruelly tormented by them for several years.

A disposition to breed worms always shews the digestions are weak and imperfect; for which reason children liable to worms should not be nourished with food difficult to digest. We should be particularly careful not to stuff them with oils, which, admitting such oils should immediately kill some of their worms, do yet increase that cause, which disposes them to generate others. A long continued use of filings of iron is the remedy, that most effectually destroys this disposition to generate worms.

Of Convulsions.

§ 391. I have already said, § 378, that the convulsions of children are almost constantly the ef-

* This word occurs in none of the common dictionaries; but suspecting it for the *semen santonici* of the shops, I find the learned Dr. Eikkez has rendered it so, in his very well received translation of this valuable work into *Low Dutch*. K.

fect of some other disease, and especially of some of the four I have mentioned. Some other, tho' less frequent causes, sometimes occasion them, and these may be reduced to the following.

The first of them is the corrupted humours, that often abound in their stomachs and intestines; and which, by their irritation, produce irregular motions throughout the whole system of the nerves, or at least through some parts of them; whence these convulsions arise, which are merely involuntary motions of the muscles. These putrid humours are the consequence of too great a load of aliments, of unsound ones, or of such, as the stomachs of children are incapable of digesting. These humours are also sometimes the effect of a mixture and confusion of different aliments, and of a bad distribution of their nourishment.

It may be known that the convulsions of a child are owing to this cause, by the circumstances that have preceded them, by a disgusted loathing stomach; by a certain heaviness and load at it; by a foul tongue; a great belly; by its bad complexion, and its disturbed unrefreshing sleep.

The child's proper diet, that is, a certain diminution of the quantity of its food; some glysters of warm water, and one purge of N^o. 63. very generally remove such convulsions.

§ 392. The second cause is the bad quality of their milk. Whether it be that the nurse has fallen into a violent passion, some considerable disgust, great fright or frequent fear: whether she has eat unwholesome food, drank too much wine, spirituous liquors, or any strong drink: whether she is seized with a descent of her monthly discharges, and that has greatly disordered her health; or, finally, whether she prove really sick: in all these cases the milk is vitiated, and exposes the infant to violent symptoms, which sometimes speedily destroy it.

The remedies for convulsions, from this cause,

consist, 1. In letting the child abstain from this corrupted milk, until the nurse shall have recovered her state of health and tranquillity, the speedy attainment of which may be forwarded by a few glysters; by gentle pacific medicines; by an entire absence of whatever caused or conduced to her bad health; and by drawing off all the milk that had been so vitiated.

2. In giving the child itself some glysters; in making it drink plentifully of a light infusion of the flowers of the lime-tree: in giving it no other nourishment for a day or two, except panada and other light spoon-meat, without milk.

3. In purging the child (supposing what has been just directed to have been unavailable) with an ounce, or an ounce and a half, of compound syrup of succory, or as much manna. These lenient gentle purges carry off the remainder of the corrupted milk, and remove the disorders occasioned by it.

§ 393. A third cause which also produces convulsions, is the feverish distempers which attack children, especially the small-pocks and the measles; but in general such convulsions require no other treatment, but that proper for the disease, which has introduced them.

§ 394. It is evident from what has been said in the course of this chapter, and it deserves to be attended to, that convulsions are commonly a symptom attending some other disease, rather than an original disease themselves: that they depend on many different causes; that from this consideration there can be no general remedy for removing or checking them; and that the only means and medicines which are suitable in each case, are those which are proper to oppose the particular cause producing them, and which I have already pointed out in treating of each cause.

The greater part of the pretended specifics,

which are indiscriminately and ignorantly employed in all sorts of convulsions, are often useless, and still oftner prejudicial. Of this last sort and character are,

1. All sharp and hot medicines, spirituous liquors, oil of amber, other hot oils and essences, volatile salts, and such other medicines as, by the violence of their action on the irritable organs of children, are likelier to produce convulsions, than to allay them.

2. Astringent medicines, which are highly pernicious, whenever the convulsions are caused by any sharp humour, that ought to be discharged from the body by stool; or when such convulsions are the consequences of an * effort of nature, in order to effect a *crisis*: and as they almost ever depend on one or the other of these causes, it follows that astringents can very rarely, if ever, be beneficial. Besides that there is always some danger in giving them to children, without a mature, a thorough consideration of their particular case and situation, as they often dispose them to obstructions.

3. The over early, and too considerable use of opiates, either not properly indicated, or continued too long, such as Venice treacle, mithridate, syrup of poppies (and it is very easy to run upon some of these shoals) are also attended with the most embarrassing events, in regard to convulsions: and it may be affirmed they are improper, for nine tenths of those they are advised to. It is true they often produce an apparent ease and tranquillity for some minutes, and sometimes for some hours too; but the disorder returns even with greater violence for this suspension, by reason they have augmented all the causes producing it; they impair the stomach; they bind up the belly;

* This very important consideration, on which I have treated pretty largely, in the *Analysis*, seems not to be attended to in practice, as frequently as it ought. K.

they lessen the usual quantity of urine ; and besides, by their abating the sensibility of the nerves, (which ought to be considered as one of the chief centinels appointed by nature, for the discovery of any approaching danger) they dispose the patient insensibly to such insarctions and obstructions, as tend speedily to produce some violent and mortal event, or which generate a disposition to languid and tedious diseases : and I do again repeat it, that notwithstanding there are some cases, in which they are absolutely necessary, they ought in general to be employed with great precaution and prudence. To mention the principal indications for them in convulsive cases, they are proper,

1. When the convulsions still continue, after the original cause of them is removed.

2. When they are so extremely violent, as to threaten a great and very speedy danger of life ; and when they prove an obstacle to the taking remedies calculated to extinguish their cause ; and,

3. When the cause producing them is of such a nature, as is apt to yield to the force of anodynes ; as when, for instance, they have been the immediate consequence of a fright.

§ 395. There is a very great difference in different children, in respect to their being more or less liable to convulsions. There are some, in whom very strong and irritating causes cannot excite them ; not even excruciating gripes and cholics ; the most painful cutting of their teeth ; violent fevers ; the small-pocks ; measles ; and tho' they are, as it were, continually corroded by worms, they have not the slightest tendency to be convulsed. On the other hand, some are so very obnoxious to convulsions, or so easily *convulsible*, if that expression may be allowed, that they are very often seized with them from such very slight causes, that the most attentive consideration cannot investigate them. This sort of constitution, which

is extremely dangerous, and exposes the unhappy subject of it, either to a very speedy death or to a very low and languid state of life, requires some peculiar considerations; the detail of which would be the more foreign to the design of this treatise, as they are pretty common in cities, but much less so in country places. In general cold bathing and the powder N^o. 14. are serviceable in such circumstances.

General Directions with Respect to Children.

§ 396. I shall conclude this chapter by such farther advice, as may contribute to give children a more vigorous constitution and temperament, and to preserve them from many disorders.

First then, we should be careful not to cram them too much, and to regulate both the quantity and the set time of their meals, which is a very practicable thing, even in the very earliest days of their life; when the woman who nurses them will be careful to do it regularly. Perhaps indeed this is the very age, when such a regulation may be the most easily attempted and effected; because it is that stage when the constant uniformity of their way of living should incline us to suppose that what they have occasion for is most constantly very much the same.

A child who has already attained to a few years, and who is surrendered up more to his own exercise and vivacity, feels other calls; his way of life is become a little more various and irregular; whence his appetite must prove so too. Hence it would be inconvenient to subject him over exactly to one certain rule, in the quantity of his nourishment, or the distance of his meals. The dissipation or passing off of his nutrition being unequal, the occasions he has for repairing it cannot be precisely stated and regular. But with respect to very little children in arms, or on the lap, an uniformity in the first of these respects, the quantity

of their food, very consistently conduces to an useful regularity with respect to the second, the times of feeding them. Sickness is probably the only circumstance, that can warrant any alteration in the order and intervals of their meals; and then this change should consist in a diminution of their usual quantity, notwithstanding a general and fatal conduct seems to establish the very reverse: and this pernicious fashion authorizes the nurses to cram these poor little creatures the more, in proportion as they have real need of less feeding. They conclude of course, that all their cries are the effects of hunger, and the moment an infant begins, then they immediately stop its mouth with its food; without once suspecting, that these wailings may be occasioned by the uneasiness which an over-loaded stomach may have introduced; or by pains whose cause is neither removed nor mitigated, by making the children eat; though the mere action of eating may render them insensible to slight pains, for a very few minutes; in the first place, by calling off their attention; and secondly, by hushing them to sleep, a common effect of feeding in children, being in fact a very general and constant one, and depending on the same causes, which dispose so many grown persons to sleep after meals.

A detail of the many evils children are exposed to, by thus forcing too much food upon them, at the very time when their complaints are owing to causes, very different from hunger, might appear incredible. They are however so numerous and certain, that I seriously wish sensible mothers would open their eyes to the consideration of this abuse, and agree to put an end to it.

Those who overload themselves with victuals, in hopes of strengthening them, are extremely deceived; there being no one prejudice equally fatal to such a number of them. Whatever unnecessary aliment a child receives, weakens, instead

of strengthening him. The stomach, when over-distended, suffers in its force and functions, and becomes less able to digest thoroughly. The excess of the food last received impairs the concoction of the quantity, that was really necessary; which, being badly digested, is so far from yielding any nourishment to the infant, that it weakens it, proves a source of diseases, and concurs to produce obstructions, rickets, the evil, slow fevers, a consumption and death.

Another unhappy custom prevails, with regard to the diet of children, when they begin to receive any other food besides their nurse's milk, and that is, to give them such as exceeds the digestive power of their stomachs; and to indulge them in a mixture of such things in their meals, as are hurtful in themselves, and more particularly so, with regard to their feeble, and delicate organs.

To justify this pernicious indulgence, they affirm it is necessary to accustom their stomachs to every kind of food; but this notion is highly absurd, since their stomachs should first be strengthened, in order to make them capable of digesting every food; and crowding indigestible, or very difficultly digestible materials into it, is not the way to strengthen it. To make a foal sufficiently strong for future labour, he is exempted from any, till he is four years old; which enables him to submit to considerable work, without being the worse for it. But if, to inure him to fatigue, he should be accustomed immediately from his birth to submit to burthens above his strength, he could never prove any thing but an utter jade, incapable of real service. The application of this to the stomach of a child is very obvious.

I shall add another very important remark, and it is this, that the too early work to which the children of peasants are forced, becomes of real prejudice to the public. Hence families them-

selves are less numerous, and the more children there are removed from their parents, while they are very young, those who are left are the more obliged to work, and very often even at hard labour, at an age when they should exercise themselves in the usual diversions and sports of children. Hence they wear out, in a manner, before they attain the ordinary term of manhood; they never arrive at their utmost strength, nor reach their full stature; and it is too common to see a countenance with the look of twenty years, joined to a stature of twelve or thirteen. In fact, they often sink under the weight of such hard involuntary labour, and fall into a mortal degree of wasting and exhaustion.

§ 397. Secondly, which indeed is but a repetition of the advice I have already given, and upon which I cannot insist too much, they must be frequently washed or bathed in cold water.

§ 398. Thirdly, they should be moved about and exercised as much as they can bear, after they are some weeks old: the earlier days of their tender lives seeming consecrated, by nature herself, to a nearly total repose, and to sleeping, which seems not to determine, until they have need of nourishment: so that, during this very tender term of life, too much agitation or exercise might be attended with mortal consequences. But as soon as their organs have attained a little more solidity and firmness, the more they are danced about, (provided it is not done about their usual time of repose, which ought still to be very considerable) they are so much the better for it; and by increasing it gradually, they may be accustomed to a very quick movement, and at length very safely to such, as may be called hard and hearty exercise. That sort of motion they receive in go-carts, or other vehicles, particularly contrived for their use, is more beneficial to them, than what they have from their nurses arms, because they are in a bet-

ter attitude in the former, and it heats them less in summer, which is a circumstance of no small importance to them; considerable heat and sweat disposing them to be ricketty.

§ 399. Fourthly, they should be accustomed to breathe in the free open air as much as possible.

If children have unhappily been less attended to than they ought, whence they are evidently feeble, thin, languid, obstructed, and liable to schirrhosities (which constitute what is termed a ricketty or consumptive state) these four directions duly observed retrieve them from that unhappy state; provided the execution of them has not been too long delayed.

§ 400. Fifthly, if they have any natural discharge of a humour by the skin, which is very common with them, or any eruption, such as tetters, white scurf, a rashe, or the like, care must be taken not to check or repel them, by any greasy or restraining applications. Not a year passes without numbers of children having been destroyed by imprudence in this respect; while others have been reduced to a deplorable and weakly habit.

I have been a witness to the most unhappy consequences of external medicines applied for the rashe and white scurf; which, however frightful they may appear, are never dangerous; provided nothing at all is applied to them, without the advice and consideration of a truly skilful person.

When such external disorders prove very obstinate, it is reasonable to suspect some fault or disagreement in the milk the child sucks; in which case it should immediately be discontinued, corrected, or changed. But I cannot enter here into a particular detail of all the treatment necessary in such cases.

C H A P. XXVIII.

Directions with respect to drowned Persons.*

S E C T. 401.

WHenever a person who has been drowned, has remained a quarter of an hour under water, there can be no considerable hopes of his recovery: the space of two or three minutes in such a situation being often sufficient to kill a man irrecoverably. Nevertheless, as several circumstances may happen to have continued life, in such an unfortunate situation, beyond the ordinary term, we should always endeavour to afford them the most effectual relief, and not give them up as irrecoverable too soon: since it has often been known, that until the expiration of two, and sometimes even of three hours, such bodies have exhibited some apparent tokens of life.

Water has sometimes been found in the stomachs of drowned persons; at other times none at all. Besides, the greatest quantity which has ever been found in it has not exceeded that, which may be drank without any inconvenience; whence we may conclude, the mere quantity was not mortal; neither is it very easy to conceive how drowning persons can swallow water. What really kills them is mere suffocation, or the interception of air, of the action of breathing; and the water which descends into the lungs, and which is determined there, by the efforts they necessarily, though involuntarily make, to draw breath, after they are

* The misfortune of a young man drowned in bathing himself, at the beginning of the season, occasioned the publication of this chapter by itself in June 1761. A few days after, the like misfortune happened to a labouring man; but he was happily taken out of the water sooner than the first, (who had remained about half an hour under it) and he was recovered by observing part of the advice this chapter contains; of which chapter several bystanders had copies.---This note seems to be from the Author himself.

under water: for there absolutely does not any water descend either into the stomach or the lungs of bodies plunged into water, after they are dead; a circumstance which serves to establish a legal sentence and judgment, in some criminal cases and trials. This water intimately blending itself with the air in the lungs, forms a viscid inactive kind of froth, which entirely destroys the functions of the lungs; whence the miserable sufferer is not only suffocated, but the return of the blood from the head being also intercepted, the blood vessels of the brain are overcharged, and an apoplexy is combined with the suffocation. This second cause, that is, the descent of the water into the lungs, is far from being general; it having been evident, from the dissection of several drowned bodies, that it really never had existed in them.

§ 402. The intention that should be pursued, is that of unloading the lungs and the brain, and of reviving the extinguished circulation. For which purpose we should, 1. Immediately strip the sufferer of all his wet cloaths; rub him strongly with dry coarse linen; put him, as soon as possible, into a well heated bed, and continue to rub him well a very considerable time together.

2. A strong and healthy person should force his own warm breath into the patient's lungs; and also the smoke of tobacco, if some was at hand, by means of some pipe, channel, funnel or the like, that may be introduced into the mouth. This air or fume, being forcibly blown in, by stopping the sufferer's nostrils close at the same time, penetrates into the lungs, and there rarifies by its heat that air, which blended with the water, composed the viscid spume or froth. Hence that air becomes disengaged from the water, recovers its spring, dilates the lungs; and, if there still remains within any principle of life, the circulation is renewed again that instant.

3. If a moderately expert surgeon is at hand, he

must open the jugular vein, or any large vein in the neck, and let out ten or twelve ounces of blood. Such a bleeding is serviceable on many accounts. First, merely as bleeding, it renews the circulation, which is the constant effect of bleeding in such swoonings, as arise from an intercepted or suffocated circulation. Secondly, it is that particular bleeding, which most suddenly removes, in such cases, the infarction or obstruction of the head and lungs; and, thirdly, it is sometimes the only vessel, whence blood will issue under such circumstances. The veins of the feet then afford none; and those of the arms seldom; but the jugulars almost constantly furnish it.

Fourthly, the fume of tobacco should be thrown up, as speedily and plentifully as possible, into the intestines by the fundament. There are very commodious contrivances devised for this purpose: but as they are not common, it may be effected by many speedy means. One, by which a woman's life was preserved, consisted only in introducing the small tube of a tobacco pipe well lighted up: the head or bowl of it was wrapped up in a paper, in which several holes were pricked, and thro' these the breath was strongly forced. At the fifth blast a considerable rumbling was heard in the woman's belly; she threw up a little water, and a moment afterwards came to her senses. Two pipes may be thus lighted and applied, with their bowls covered over; the extremity of one is to be introduced into the fundament; and the other may be blown through into the lungs.

Any other vapour may also be conveyed up, by introducing a *canula*, or any other pipe, with a bladder firmly fixed to it. This bladder is fastened at its other end to a large tin funnel, under which tobacco is to be lighted. This contrivance has succeeded with me upon other occasions, in which necessity compelled me to invent and apply it.

Fifthly, the strongest volatiles should be applied to the patient's nostrils. The powder of some strong dry herb should be blown up his nose, such as sage, rosemary, rue, mint, and especially marjoram, or very well dried tobacco; or even the fume, the smoke of these herbs. But all these means are most properly employed after bleeding, when they are most efficacious and certain.

Sixthly, as long as the patient shews no signs of life, he will be unable to swallow, and it is then useless, and even dangerous, to pour much liquid of any kind into his mouth, which could do nothing but keep up, or increase suffocation. It is sufficient, in such circumstances, to instil a few drops of some irritating liquor, which might also be cordial and reviving. But as soon as ever he discovers any motion, he should take, within the space of one hour, five or six common spoonfuls of oximel of squills diluted with warm water; or if that medicine was not to be had very speedily, a strong infusion of the blessed thistle, or *carduus benedictus*, of sage, or of chamomile flowers sweetened with honey, might do instead of it: and supposing nothing else to be had, some warm water, with the addition of a little common salt, should be given. Some persons are bold enough to recommend vomits in such cases; but they are not without their inconvenience; and it is not as a vomit that I recommend the oximel of squills in them.

Seventhly, notwithstanding the sick discover some tokens of life, we should not cease to continue our assistance; since they sometimes irrecoverably expire, after these first appearances of recovering.

And lastly, though they should be manifestly re-animated, there sometimes remains an oppression, a coughing and feverishness, which effectually constitute a disease: and then it becomes necessary sometimes to bleed them in the arms; to

give them barley-water plentifully, or elder-flower tea.

§ 403. Having thus pointed out such means as are necessary, and truly effectual, in such unfortunate accidents, I shall very briefly mention some others, which it is the general custom to use and apply in the first hurry.

1. These unhappy people are sometimes wrapped up in a sheep's, or a calf's, or a dog's skin, immediately flead from the animal: these applications have sometimes indeed revived the heat of the drowned; but their operations are more slow, and less efficacious, than the heat of a well-warmed bed; with the additional vapour of burnt sugar, and long continued frictions with hot flannels.

2. The method of rolling them in an empty hoghead is dangerous, and mispends a deal of important time.

3. That also of hanging them up by the feet is attended with danger, and ought to be wholly discontinued. The froth or foam, which is one of the causes of their death, is too thick and tough to discharge itself, in consequence of its own weight. Nevertheless, this is the only effect that can be expected, from this custom of suspending them by the feet; which must also be hurtful, by its tending to increase the overfulness of the head and of the lungs.

§ 404. It is some years since a girl of eighteen years old was recovered [though it is unknown whether she remained under water only a little time, or some hours] who was motionless, frozen as it were, insensible, with her eyes closed, her mouth wide open, a livid colour, a swollen visage, a tumour or bloating of the whole body, which was overladen as it were, or water-soaked. This miserable object was extended on a kind of bed, of hot or very warm ashes, quickly heated in great kettles; and by laying her quite naked on these ashes; by covering her with others equally hot; by put-

ting a bonnet round her head, with a stocking round her neck stuffed with the same, and heaping coverings over all this, at the end of half an hour her pulse returned, she recovered her speech, and cried out, *I freeze, I freeze*: a little cherry-brandy was given her, and then she remained buried, as it were, eight hours under the ashes; being taken out of them afterwards without any other complaint, except that of great lassitude or weariness, which went entirely off the third day. This method was undoubtedly so effectual, that it well deserves imitation; but it should not make us inattentive to the others. Heated gravel or sand mixed with salt, or hot salt alone, would have been equally efficacious, and they have been found so.

At the very time of writing this, two young ducks, who were drowned, have been revived by a dry bath of hot ashes. The heat of a dung-heap may also be beneficial; and I have just been informed, by a very creditable and sensible spectator of it, that it effectually contributed to restore life to a man, who had certainly remained six hours under water.

§ 405. I shall conclude these directions with an article printed in a little work at *Paris*, about twenty years since, by order of the king, to which there is not the least doubt, but that any other sovereign will readily accede.

“ Notwithstanding the common people are very
“ generally disposed to be compassionate, and may
“ wish to give all assistance to drowned persons, it
“ frequently happens they do not; and only be-
“ cause they dare not, imagining they expose them-
“ selves by it to prosecutions. It is therefore ne-
“ cessary that they should know, and it cannot be
“ too often repeated, in order to eradicate such a
“ pernicious prejudice, that the magistrates have
“ never interposed to prevent people from trying
“ every possible means to recover such unfortunate
“ persons, as shall be drowned and taken out of the

“ water. It is only in those cases, when the persons are known to be absolutely and irrecoverably dead, that justice renders it necessary to seize their bodies.”

C H A P. XXIX.

Of Substances stopt between the Mouth and the Stomach

S E C T. 406.

THE food we take in descends from the mouth through a very strait passage or channel, called the *œsophagus*, the gullet, which, going parallel with the spine or backbone, joins to, or terminates at, the stomach.

It happens sometimes that different bodies are stopt in this channel, without being able either to descend or to return up again; whether this difficulty arises from their being too large; or whether it be owing to their having such angles or points, as by penetrating into, and adhering to the sides of this membranous canal, absolutely prevent the usual action and motion of it.

§ 407. Very dangerous symptoms arise from this stoppage, which are frequently attended with a most acute pain in the part; and at other times, with a very incommodious, rather than painful, sensation; sometimes a very ineffectual commotion at, or rising of, the stomach, attended with great anguish; and if the stoppage be so circumstanced, that the *glottis* is closed, or the wind-pipe compressed, a dreadful suffocation is the consequence: the patient cannot breathe, the lungs are quite distended; and the blood being unable to return from the head, the countenance becomes red, then livid; the neck swells; the oppression increases, and the poor sufferer speedily dies,

When the patient's breathing is not stopt, nor greatly oppressed; if the passage is not entirely blocked up, and he can swallow something, he lives very easily for a few days, and then his case becomes a particular disorder of the *œsophagus*, or gullet. But if the passage is absolutely closed, and the obstruction cannot be removed for many days, a terrible death is the consequence.

§ 408. The danger of such cases does not depend so much on the nature of the obstructing substance, as on its size, with regard to that of the passage of the part where it stops, and of the manner in which it forms the obstruction; and frequently the very food may occasion death; while substances less adapted to be swallowed are not attended with any violent consequences, tho' swallowed.

A child of six days old swallowed a comfit or sugar plumb, which stuck in the passage, and instantly killed it,

A grown person perceived that a bit of mutton had stopt in the passage; not to alarm any body he arose from table; a moment afterwards, on looking where he might be gone, he was found dead. Another was choaked by a bit of cake; a third by a piece of the skin of a ham; and a fourth by an egg, which he swallowed whole in a bravado.

A child was killed by a chesnut swallowed whole. Another died suddenly, choaked (which is always the circumstance, when they die instantly after such accidents) by a pear which he had tossed up, and caught in his mouth. A woman was choaked with another pear. A piece of a sinew continued eight days in the passage, so that it prevented the patient from getting down any thing else: at the expiration of that time it fell into the stomach, being loosened by its putridity: the patient notwithstanding died soon after, being killed by the inflammation, gangrene, and weakness it had occasioned. Unhappily there occur but too many in-

stances of this sort, of which it is unnecessary to cite more.

§ 409. Whenever any substance is thus detained in the gullet, there are two ways of removing it; that is either by extracting it, or pushing it down. The safest and most certain way is always to extract or draw it out, but this is not always the easiest; and as the efforts made for this purpose greatly fatigue the patient, and are sometimes attended with grievous consequences; therefore if the occasion is extremely urging, it may be eligible to thrust it down, if that is easier; and if there is no danger from the reception of the obstructing body into the stomach.

The substances which may be pushed down without danger are all common nourishing ones, as bread, meat, cakes, fruits, puls, morsels of tripe, and even skin of bacon, It is only very large morsels of particular aliments, that prove very difficult to digest; yet even such are rarely attended with any fatality.

§ 410. The substances we should endeavour to extract or draw out, tho' it be more painful and less easy than to push them down, are all those, whose consequences might be highly dangerous, or even mortal, if swallowed. Such are all totally indigestible bodies, as cork, linen-rags, large fruit stones, bones, wood, glass, stones, metals; and more especially if any further danger may be super-added to that of its indigestibility, from the shape, whether rough, sharp, pointed, or angular, of the substance swallowed. Wherefore we should chiefly endeavour, to extract pins, needles, fish-bones, other pointed fragments of bones, bits of glass, scissars, rings or buckles.

Nevertheless it has happened, that every one of these substances have at one time or another been swallowed, and the most usual consequences of them are violent pains of the stomach, and in the guts; inflammations, suppurations, abscesses, a slow fe-

ver, gangrene, the *miserere* or iliac passion; external abscesses, through which the bodies swallowed down have been discharged; and frequently, after a long train of maladies, a dreadful death.

§ 411. When such substances have not passed in too deep, we should endeavour to extract them with our fingers, which often succeeds. If they are lower, we should make use of nippers or a small *forceps*; of which surgeons are provided with different sorts. Those which some smoakers carry about them might be very convenient for such purposes; and in case of necessity they might be made very readily out of two bits of wood. But this attempt to extract rarely succeeds, if the substance has descended far into the *oesophagus*, and if it be of a flexible nature, which exactly applies itself to, and fills up the cavity or channel of the gullet.

§ 412. If the fingers and the nippers fail, or cannot be duly applied, crotchets, a kind of hoops, must be employed.

Such may be made at once with a pretty strong iron wire, crooked at the end. It must be introduced in the flat way, and for the better conducting of it, there should be another curve or hook at the end it is held by, to serve as a kind of handle to it, which has this further use, that it may be secured by a string tied to it; a circumstance not to be omitted in any instrument employed on such occasions, to avoid such ill accidents as have sometimes ensued, from these instruments slipping out of the operator's hold. After the crotchet has passed beyond and below the substance, that obstructs the passage, it is drawn up again, and hooks up with it and extracts that impediment to swallowing.

This crotchet is also very convenient, whenever a substance somewhat flexible, as a pin or a fish-bone stick, as it were across the gullet: the crotchet in such cases seizing them about their middle part, crooks and thus disengages them. If they are ve-

ry brittle substances, it serves to break them; and if any fragments still adhere within, some other means must be used to extract them.

§ 413. When the obstructing bodies are small, and only stop up part of the passage; and which may either easily elude the hook, or straiten it by their resistance, a kind of rings may be used, and made either solid or flexible.

The solid ones are made of iron wire, or of a string of very fine brass wire. For this purpose the wire is bent into a circle about the middle part of its length, the sides of which circle do not touch each other, but leave a ring, or hollow cavity, of about an inch diameter. Then the long unbent sides of the wire are brought near each other; the circular part or ring is introduced into the gullet, in order to be conducted about the obstructing body, and so to extract it. Very flexible rings may be made of wool, thread, silk, or small packthread, which may be waxed, for their great strength and consistence. Then they are to be tied fast to a handle of iron-wire, of whalebone, or of any flexible wood; after which the ring is to be introduced to surround the obstructing substance, and to draw it out.

Several of these rings passed through one another are often made use of, the more certainly to lay hold of the obstructing body, which may be involved by one, if another should miss it. This sort of rings has one advantage, which is, that when the substance to be extracted is once laid hold of, it may then, by turning the handle, be retained so strongly in the ring thus twisted, as to be moved every way: which must be a considerable advantage in many such cases.

§ 414. A fourth material employed on these unhappy occasions is the sponge. Its property of swelling considerably, on being wet, is the foundation of its usefulness here.

If any substance is stopt in the gullet, but without filling up the whole passage, a bit of sponge is

introduced into that part that is unstopt, and beyond the substance. The sponge soon dilates, and grows larger in this moist situation, and indeed the enlargement of it may be forwarded, by making the patient swallow a few drops of water; and then drawing back the sponge by the handle it is fastened to, as it is now too large to return through the small cavity, by which it was conveyed in, it draws out the obstructing body with it, and thus unplugs, as it were, and opens the gullet.

As dry sponge may shrink or be contracted, this circumstance has proved the means of squeezing a pretty large piece of it into a very small space. It becomes greatly compressed by winding a string or tape very closely about it, which tape may be easily unwound and withdrawn, after the sponge has been introduced. It may also be inclosed in a piece of whalebone, split into four sticks at one end, and which, being endued with a considerable spring, contracts upon the sponge. The whalebone is so smoothed and accommodated, as not to wound; and the sponge is also to be safely tied to a strong thread; that after having disengaged the whalebone from it, the surgeon may also draw out the sponge at pleasure.

Sponge is also applied on these occasions in another manner. When there is no room to convey it into the gullet, because the obstructing substance ingrosses its whole cavity; and supposing it not hooked into the part, but solely detained by the straitness of the passage, a pretty large bet of sponge is to be introduced towards the gullet, and close to the obstructing substance; thus applied, the sponge swells, and thence dilates that part of the passage that is above this substance. The sponge is then withdrawn a little, and but a very little, and this substance being less pressed upon above than below, it sometimes happens, that the greater straitness and contraction of the lower part of the passage, than of its upper part, causes that

substance to ascend; and as soon as this first loosening or disengagement of it has happened, the total disengagement of it easily follows.

§ 415. Finally, when all these methods prove unavailable, there remains one more, which is to make the patient vomit: but this can scarcely be of any service, but when such obstructing bodies are simply engaged in, and not hooked or stuck into the sides of the *œsophagus*; since under this latter circumstance vomiting might occasion further mischief.

If the patient can swallow, a vomiting may be excited with the prescription N^o. 8. or with N^o. 34. or 35. By this operation a bone was thrown out, which had stopt in the passage four and twenty hours.

When the patient cannot swallow, an attempt should be made to excite him to vomit by introducing into, and twirling about the feathery end of a quill, in the bottom of the throat, which the feather however will not effect, if the obstructing body strongly compresses the whole circumference of the gullet; and then no other resource is left, but giving a glyster of tobacco. A certain person swallowed a large morsel of calf's lights, which stopt in the middle of the gullet, and exactly filled up the passage. A surgeon unsuccessfully attempted various methods to extract it; but another seeing how unavailable all of them were: and the patient's visage becoming black and swelled; his eyes ready to start, as it were, out of his head; and falling into frequent swoonings, attended with convulsions too, he caused a glyster of an ounce of tobacco boiled to be thrown up; the consequence of which was a violent vomiting, which threw up the substance that was so very near killing him.

§ 416. A sixth method, which I believe has never hitherto been attempted, but which may prove very useful in many cases, when the substances in

the passage are not too hard, and are very large, would be to fix a worm (used for withdrawing the charge of guns that have been loaded) fast to a flexible handle, with a waxed thread fastened to the handle in order to withdraw it, if the handle slip from the worm: and by this contrivance it might be very practicable, if the obstructing substance was not too deep in the passage of the gullet, to extract it.—It has been known that a thorn fastened in the throat, has been thrown out by laughing.

§ 417. In the circumstances mentioned § 409, when it is more easy and convenient to push the obstructing body downwards, it has been usual to make use of leeks, which may generally be had any where (but which indeed are very subject to break) or of a wax-candle oiled, and but a very little heated, so as to make it flexible; or of a piece of whalebone; or of iron-wire; one extremity of which may be thickened and blunted in a minute with a little melted lead. Small sticks of some flexible wood may be as convenient for the same use, such as the birch-tree, the hazel, the ash, the willow, a flexible plummet, or a leaden ring. All these substances should be very smooth, that they may not give the least irritation; for which reason they are sometimes covered over with a thin bit of sheep's gut. Sometimes a sponge is fastened to one end of them, which completely filling up the whole passage, pushes down whatever obstacle it meets with.

In such cases too, the patient may be prompted to attempt swallowing down large morsels of some unhurtful substance, such as a crust of bread, a small turnep, a lettuce stalk, or a bullet, in hopes of their carrying down the obstructing cause with them. It must be acknowledged, however, that these afford but a feeble assistance; and if they are swallowed without being well secured to a thread,

it may be apprehended they may even increase the obstruction, by their own stoppage.

It has sometimes very happily, though rarely, occurred, that those substances attempted to be detrued or thrust downwards, have stuck in the wax-candle, or the leek, and sprang up and out with them; but this can never happen, except in the case of pointed substances.

§ 418. Should it be impossible to extract the bodies mentioned § 410, and all such as it must be dangerous to admit into the stomach, we must then prefer the least of two evils, and rather run the hazard of pushing them down, than suffer the patient to perish dreadfully in a few moments. And we ought to scruple this resolution the less, as a great many instances have demonstrated, that notwithstanding several bad consequences, and even a tormenting death, have often followed the swallowing of such hurtful or indigestible substances; yet at other times they have been attended with little or no disorder.

§ 419. One of these four events is always the case, after swallowing such things. They either, 1. Go off by stool; or, 2. They are not discharged and kill the patient; or else, 3. They are discharged by urine; or, 4. Are visibly extruded to the skin. I shall give some instances of each of these events.

§ 420. When they are voided by stool, they are either voided soon after they have been swallowed, and that without having occasioned scarce any troublesome symptom; or the voiding of them has not happened till a long time after swallowing, and is preceded with very considerable pain. It has been seen that a bone of the leg of a fowl, a peach-stone, the cover of a small box of Venice treacle, pins, needles, and coins of different sorts, have been voided within a few days after they had slipt down into the stomach; and that with little or no complaint. A small flute, or pipe also, four

inches long, which occasioned acute pains for three days, has been voided happily afterwards, besides, knives, razors, and one shoe-buckle. I have seen but a few days since, a child between two or three years old, who swallowed a nail above an inch long, the head of which was more than three tenths of an inch broad: it stopt a few moments about the neck, but descended while its friends were looking for me; and was voided with a stool that night, without any bad consequence. And still more lately I have known the entire bone of a chicken's wing thus swallowed, which only occasioned a slight pain in the stomach for three or four days.

Sometimes such substances are retained within for a long time, not being voided till after several months, and even years, without the least ill effect: and some of them have never either appeared, nor been complained of.

§ 421. But the event is not always so happy; and sometimes tho' they are discharged thro' the natural passages, the discharges have been preceded by very acute pains in the stomach, and in the bowels. A girl swallowed down some pins, which afflicted her with violent pains for the space of six years; at the expiration of which term she voided them and recovered. Three needles being swallowed brought on cholics, swoonings and convulsions, for a year after: and then being voided by stool, the patient recovered. Another person who swallowed two, was much happier in suffering but six hours from them; when they were voided by stool, and he did well.

It sometimes happens that such indigestible substances, after having past all the meanders, the whole course of the intestines, have been stopt in the fundament, and brought on very troublesome symptoms; but such, however, as an expert surgeon may very generally remove. If it is practicable to cut them, as it is when they happen to be

thin bones, the jaw-bones of fish, or pins, they are then very easily extracted.

§ 422. The second event is, when these fatal substances are never voided, but cause very embarrassing symptoms which finally kill the patient; and of these cases there have been but too many examples.

A young girl having swallowed some pins which she held in her mouth, some of them were voided by stool; but others of them pricked and pierced into her guts, and even into the muscles of her belly, with the severest pain; and killed her at the end of three weeks.

A man swallowed a needle, which pierced thro' his stomach, and into his liver*, and ended in a mortal consumption.

A plummet which slipped down, while the throat of a patient was searching, killed him at the end of two years.

It is very common for different coins, and of different metals, to be swallowed without any fatal or troublesome effects. Even a hundred luidores † have been swallowed, and all voided.

Nevertheless these fortunate escapes ought not to make people too secure and incautious on such occasions, since such melancholy consequences have happened, as may very justly alarm them. One sin-

* I saw a very similar instance and event in a lady's little favourite bitch, whose body she desired to be opened, from suspecting her to have been poisoned. But it appeared that a small needle with fine thread, which she had swallowed, had passed out of the stomach into the *duodenum*, (one of the guts) through which the point had pierced, and pricked and corroded the concave part of the liver, which was all rough and putrid. The whole carcase was greatly bloated and extremely offensive, very soon after the poor animal's death, which happened two or three months after the accident, and was preceded by a great wheezing, restlessness and loss of appetite. The needle was rusty, but the thread entire, and very little altered. K.

† I knew a man of the name of *Poole*, who being taken in the same ship with me, 1717 or 18, by pirates, had swallowed four guineas, and a gold ring, all which he voided some days after without any injury or complaint, and saved them. I forget the exact number of days he retained them, but the pirates staid with us from Saturday night to Thursday noon. K.

gle piece of money that was swallowed, entirely obstructed the communication between the stomach and the intestines, and killed the patient. Whole nuts have often been inadvertently swallowed; but there have been some instances of persons in whom a heap * of them has been formed, which proved the cause of death, after producing much pain and inquietude.

§ 423. The third issue or event is, when these substances, thus swallowed down, have been discharged by urine: but these cases are very rare.

A pin of a middling size has been discharged by urine, three days after it slipt down; and a little bone has been expelled the same way, besides cherry-stones, plumb-stones, and even one peach-stone.

§ 424. Finally, the fourth consequence or event is, when the indigestible substances thus swallowed, have pierced thro' the stomach or intestines, and even to the skin itself; and occasioning an abscess, have made an outlet for themselves, or have been taken out of the abscess. A long time is often required to effect this extraordinary trajection and appearance of them; sometimes the pains they occasion are continual; in other cases the patient complains for a time, after which the pain ceases, and then returns again. The imposthume, or gathering, is formed in the stomach, or in some other part of the belly: and sometimes these very substances, after having pierced thro' the guts, make very singular routs, and are discharged very remotely from the belly. One needle that had been swallowed found its way out, at the end of four years, through the leg; another at the shoulder.

§ 425. All these examples, and many others of

* Many fatal examples of this kind may be seen in the Philosophical Transactions; and they should caution people against swallowing cherry-stones, and still more against those of prunes, or such as are pointed, though not very acutely. K,

cruel deaths, from swallowing noxious substances, demonstrate the great necessity of an habitual caution in this respect; and give their testimony against the horrid, I had almost said, the criminal imprudence, of people's amusing themselves with such tricks as may lead to such terrible accidents; or even holding any such substance in their mouths, as, by slipping down through imprudence or accident, may prove the occasion of their death. Is it possible that any one, without shuddering, can hold pins or needles in their mouths, after reflecting on the dreadful accidents, and cruel deaths, that have thus been caused by them.

§ 426. It has been shewn already, that substances obstructing the passage of the gullet sometimes suffocate the patient; that at other times they can neither be extracted nor thrust down; but that they stop in the passage, without killing the patient, at least not immediately and at once. This is the case when they are so circumstanced, as not to compress the *trachea*, the wind-pipe, and not totally to prevent the swallowing of food; which last circumstance can scarcely happen, except the obstruction has been formed by angular or pointed bodies. The stoppage of such bodies is sometimes attended, and that without much violence, with a small suppuration, which loosens them; and then they are either returned upwards thro' the mouth, or descend into the stomach. But at other times an extraordinary inflammation is produced, which kills the patient. Or if the contents of the abscess attending the inflammation tend outwardly, a tumour is formed on the external part of the neck, which is to be opened, and through whose orifice the obstructing body is discharged. In other instances again they take a different course, attended with little or no pain, and are at length discharged by a gathering behind the neck, on the breast, the shoulder, or various other parts.

§ 427. Some persons astonished at the extraordinary course and progression of such substances, which, from their size and especially from their shape, seem to them incapable of being introduced into, and in some sort, circulating through the human body, without destroying it, are very desirous of having the rout and progression of such intruding substances explained to them. To gratify such inquirers, I may be indulged in a short digression, which perhaps is the less foreign to my plan; as in dissipating what seems marvellous, and has been thought supernatural in such cases, I may eradicate that superstitious prejudice which has often ascribed effects of this sort to witchcraft; but which admit of an easy explanation. This very reason is the motive that has determined me to give a further extent to this chapter.

Wherever an incision is made through the skin, a certain membrane appears, which consists of two coats or *laminae*, separated from each other by small cells or cavities, which all communicate together; and which are furnished, more or less, with fat. There is not any fat throughout the human body, which is not inclosed in, or enveloped with, this coat, which is called the adipose, fatty, or cellular membrane.

This membrane is not only found under the skin, but further plying and insinuating itself in various manners, it is extended throughout the whole body. It distinguishes and separates all the muscles; it constitutes a part of the stomach, of the guts, of the bladder, and of all the *viscera* or bowels. It is this which forms what is termed the cawl, and which also furnishes a sheath or envelopement to the veins, arteries, and nerves. In some parts it is very thick, and is abundantly replenished with fat; in others it is very thin and unprovided with any; but wherever it extends, it is wholly insensible, or void of all, sensation, all feeling.

It may be compared to a quilted coverlet, the cotton, or other stuffing of which, is unequally distributed; greatly abounding in some places, with none at all in others, so that in these the stuff above and below touch each other. Within this membrane, or coverlet, as it were, such extraneous or foreign substances are moved about; and as there is a general communication throughout the whole extent of the membrane, it is no ways surprising, that they are moved from one part to another very distant, in a long course and duration of movement. Officers and soldiers very often experience, that bullets which do not pass through the parts where they have entered, are transferred to very different and remote ones.

The general communication throughout this membrane is daily demonstrated by facts, which the law prohibits; this is the butchers inflating, or blowing up, the cellular membrane throughout the whole carcase of a calf, by a small incision in the skin, into which they introduce a pipe or the nozzle of a small bellows; and then, on blowing forcibly, the air evidently puffs up the whole body of the calf into this artificial tumour or swelling.

Some very criminal impostors have availed themselves of this wicked contrivance, this to bloat up children into a kind of monsters, which they afterwards expose to view for money.

In this cellular membrane the extravasated waters of hydropic patients are commonly diffused; and here they give way to that motion, to which their own weight disposes them. But here I may be asked—As this membrane is crossed and intersected in different parts of it, by nerves, veins, arteries, &c. the wounding of which unavoidably occasions grievous symptoms, how comes it, that such do not ensue upon the intrusion of such noxious substances? To this I answer, 1. That such symptoms do sometimes really ensue; and 2. That

nevertheless they must happen but seldom, by reason that all the aforesaid parts, which traverse and intersect this membrane, being harder than the fat it contains; such foreign substances must almost necessarily, whenever they rencounter those parts, be turned aside towards the fat which surrounds them, whose resistance is very considerably less; and this the more certainly so, as these nerves, &c. are always of a cylindrical form.—But to return from this necessary digression.

§ 428. To all these methods and expedients, which I have already recommended on the important subject of this chapter, I shall further add some general directions.

1. It is often useful, and even necessary, to take a considerable quantity of blood from the arm; but especially if the patient's respiration, or breathing, is extremely oppressed; or when we cannot speedily succeed in our effort to remove the obstructing substance; as the bleeding is adapted to prevent the inflammation, which the frequent irritations from such substances occasion; and, as by its disposing the whole body into a state of relaxation, it might possibly procure an immediate discharge of the offending substance.

2. Whenever it is manifest that all endeavours, either to extract, or to push down the substance stopt in the passage, are ineffectual, they should be discontinued; because the inflammation occasioned by persisting in them, would be as dangerous as the obstruction itself; as there have been instances of people's dying in consequence of the inflammation; notwithstanding the body, which caused the obstruction, had been entirely removed.

3. While the means already advised are making use of, the patient should often swallow, or if he cannot, he should frequently receive by injection through a crooked tube or pipe, that may reach lower down than the *glottis*, some very emollient

liquor, as warm water, either alone or mixed with milk, or a decoction of barley, of mallows, or of bran. A two-fold advantage may arise from this; the first is, that these softening liquors smooth and sooth the irritated parts; and secondly, an injection, strongly thrown in, has often been more successful in loosening the obstructing body, than all attempts with instruments.

4. When after all we are obliged to leave this in the part, the patient must be treated as if he had an inflammatory disease; he must be bled, ordered to a regimen, and have his whole neck surrounded with emollient pultices. The like treatment must also be used, though the obstructing substance be removed; if there is room to suppose any inflammation left in the passage.

5. A proper degree of agitation has sometimes loosened the inhering body, more effectually than instruments. It has been experienced that a blow with the fist on the spine, the middle of the back, has often disengaged such obstructed and obstructing bodies; and I have known two instances of patients who had pins stopt in the passage; and who getting on horseback to ride out in search of relief at a neighbouring village, found each of them the pin disengaged after an hour's riding: one spat it out, and the other swallowed it, without any ill consequence.

6. When there is an immediate apprehension of the patient's being suffocated; when bleeding him has been of no service; when all hope of freeing the passage in time is vanished, and death seems at hand, if respiration be not restored; the operation of *bronchotomy*, or opening of the wind-pipe, must be directly performed; an operation neither difficult to a tolerably knowing and expert surgeon, nor very painful to the patient.

7. When the substance that was stopt, passes into the stomach, the patient must immediately be put into a very mild and smooth regimen. He should

avoid all sharp, irritating, inflaming food; wine, spirituous liquors, all strong drink and coffee; taking but little nourishment at once, and no solids, without their having been thoroughly well chewed. The best diet would be that of farinaceous mealy soups, made of various leguminous grains, and of milk and water, which is much better than the usual custom of swallowing different oils.

§ 429. The author of nature has provided, that in eating, nothing should pass by the *glottis* into the wind-pipe. This misfortune nevertheless does sometimes happen; at which very instant, there ensues an incessant and violent cough, an acute pain, with suffocation; all the blood being forced up into the head, the patient is in extreme anguish, being agitated with violent and involuntary motions, and sometimes dying on the spot. A *Hungarian* grenadier, by trade a shoemaker, was eating and working at the same time; he tumbled at once from his seat, without uttering a single word. His comrades called out for assistance; some surgeons speedily arrived, but after all their endeavours he discovered no token of life. On opening the body, they found a lump, or large morsel, of beef, weighing two ounces, forced into the wind-pipe, which it plugged up so exactly, that not the least air could pass through it into the lungs.

§ 430. In a case so circumstanced, the patient should be struck often on the middle of the back; some efforts to vomit should be excited; he should be prompted to sneeze with powder of lily of the valley, sage, or any cephalic snuffs, which should be blown strongly up his nose.

A pea, pitched into the mouth in playing, entered into the wind pipe, and sprung out again by vomiting the patient with oil. A little bone was brought up by making another sneeze, with powdered lily of the valley.

In short, if all these means of assisting, or saving the patient are evidently ineffectual, *bronchotomy* must be speedily performed (see N^o. 6. of the preceding section.) By this operation, some bones, a bean, and a fish-bone have been extracted, and the patient has been delivered from approaching death.

§ 431. Nothing should be left untried, when the preservation of human life is the object. In those cases, when an obstructing body can neither be disengaged from the throat, the passage to the stomach, nor be suffered to remain there without speedily killing the patient, it has been proposed to make an incision into this passage, the *æsofagus*, through which such a body is to be extracted; and to employ the like means, when a substance which had slipped even into the stomach itself, was of a nature to excite such symptoms, as must speedily destroy the patient.

When the *æsofagus* is so fully and strongly closed, that the patient can receive no food by the mouth, he is to be nourished by glysters of soup, gelly, and the like.

€ H A P. XXX.

Of external Disorders, and such as require Chirurgical Application. Of Burns, Wounds, Contusions or Bruises: Of Sprains, Ulcers, Frost-bitten Limbs, Chilblains, Ruptures, Boils: Of Fellons, Thorns or Splinters in the Fingers or Flesh: Of Warts, and of Corns.

S E C T. 432.

L ABOURING countrymen are exposed in the course of their daily work, to many outward accidents, such as cuts, contusions, &c. which,

However considerable in themselves, very generally end happily; and that chiefly in consequence of the pure and simple nature of their blood, which is generally much less acrimonious, or sharp, in the country, than in great towns or cities. Nevertheless, the very improper treatment of such accidents, in the country, frequently renders them, however light in themselves, very troublesome; and indeed, I have seen so many instances of this, that I have thought it necessary to mark out here the proper treatment of such accidents, as may not necessarily require the hand or attendance of a surgeon. I shall also add something very briefly, concerning some external disorders, which at the same time result from an inward cause.

Of Burns.

§ 433. When a burn is very trifling and superficial, and occasions no vesication or blister, it is sufficient to clap a compress of several folds of soft linen upon it, dipt in cold water, and to renew it every quarter of an hour, till the pain is entirely removed. But when the burn has blistered, a compress of very fine linen, spread over with the pomatum, N^o. 64. should be applied over it, and changed twice a day.

If the true skin is burnt, and even the muscles, the flesh under it, be injured, the same pomatum may be applied; but instead of a compress, it should be spread upon a pledget of soft lint, to be applied very exactly over it; and over the pledget again, a slip of the simple plaister N^o. 65. which every body may easily prepare; or, if they should prefer it, the plaister N^o. 66.

But, independently of these external applications, which are the most effectual ones, when they are directly to be had; whenever the burn has been very violent, is highly inflamed, and we are apprehensive of the progress and the conse-

quences of the inflammation, the same means and remedies must be recurred to, which are used in violent inflammations: the patient should be bled, and, if it is necessary, it should be repeated more than once, and he should be put into a regimen; drink nothing but the ptisans N^o. 2. and 4. and receive daily two simple glysters.

If the ingredients for the ointment, called *nutritum*, are not at hand to make the pomatum N^o. 64. one part of wax should be melted in eight such parts of oil, to two ounces of which mixture the yolk of an egg should be added. An application still more simple and sooner prepared, is that of one egg (both the yolk and the white) beat up with two common spoonfuls of the sweetest oil, without any rankness. When the pain of the burn, and all its other symptoms have very nearly disappeared, it is sufficient to apply the sparadrap, or oilcloth N^o. 66.

Of Wounds.

§ 434. If a wound has penetrated into any of the cavities, and has wounded any part contained in the breast, or in the belly: or if, without having entered into one of the cavities, it has opened some great blood-vessel; or if it has wounded a considerable nerve, which occasions symptoms much more violent, than would otherways have happened; if it has penetrated even to and injured the bone: in short, if any great and severe symptom supervenes, there is an absolute necessity for calling in a surgeon. But whenever the wound is not attended with any of these circumstances; when it affects only the skin, the fat membrane beneath it, the fleshy parts, and the small vessels, it may be easily and simply dressed without such assistance; since, in general, all that is truly necessary in such cases is, to defend the wound from the impressions of the air; and yet not so, as to give any material

obstruction to the discharge of the matter, that is to issue from the wound.

§ 435. If the blood does not particularly flow out of any considerable vessel, but trickles almost equally from every spot of the wound, it may very safely be permitted to bleed, while some lint is speedily preparing. As soon as the lint is ready, so much of it may be introduced into the wound as will nearly fill it, without being forced in; which is highly improper, and would be attended with the same inconveniencies as tents and dossils. It should be covered over with a compress dipt in sweet oil, or with the cerecloth N^o. 65. though I prefer the compress for the earliest dressings; and the whole dressing should be kept on, with a bandage of two fingers breadth, and of a length proportioned to the size of the part it is to surround: it should be rolled on tight enough to secure the dressings, and yet so moderately, as to bring on no inflammation.

This bandage with these dressings are to remain on twenty-four or forty-eight hours; wounds being healed the sooner, for being less frequently dress'd. At the second dressing all the lint must be removed, which can be done with ease, and with reasonable speed, to the wounded; and if any of it should stick close, in consequence of the clogged and dried blood, it should be left behind, adding a little fresh lint to it; this dressing in other respects exactly resembling the first.

When, from the continuance of this simple dressing, the wound is become very superficial, it is sufficient to apply the cerecloth, or plaister, without any lint.

Such as have conceived an extraordinary opinion of any medical oils, impregnated with the virtues of particular plants, may, if that will increase their satisfaction, make use of the common oil of yarrow, of trefoil, of lilies, of chamomile, of

balsamines, or of red roses; only being very careful, that such oils are not become stale and rank. |

§ 436. When the wound is considerable, it must be expected to inflame before suppuration (which, in such a case, advances more slowly) can ensue; which inflammation will necessarily be attended with pain, with a fever, and sometimes with a raving, or wandering, too. In such a situation, a pultice of bread and milk, with the addition of a little oil, that it may not stick too close, must be applied instead of the compress or the plaister: which pultice is to be changed, but without uncovering the wound, thrice and even four times every day.

§ 437. Should some pretty considerable blood-vessel be opened by the wound, there must be applied over it a piece of agaric of the oak, N^o. 67. of which no country place ought to be unprovided. It is to be kept on, by applying a good deal of lint over it, covering the whole with a thick compress, and then with a bandage a little tighter than usual. If this should not be sufficient to prevent the bleeding from the large vessel, and the wound be in the leg or arm, a strong ligature must be made above the wound with a *turniquet*, which is formed in a moment with a skain of thread, or of hemp, that is passed round the arm circularly into the middle of which is inserted a piece of wood or stick of an inch thickness, and four or five inches long; so that by turning round this piece of wood, any tightness or compression may be effected at pleasure: exactly as a countryman secures a hoghead, or a piece of timber on his cart, with a chain and ring. But care must be taken, 1. To dispose the skain in such a manner, that it must always be two inches wider than the part it surrounds: and, 2. Not to strain it so tight as to bring on an inflammation, which might terminate in a gangrene.

§ 438. All the boasted virtues of a multitude of

ointments are downright nonsense or quackery. Art, strictly considered, does not in the least contribute to the healing of wounds; the utmost we can do amounting only to our removing those accidents, which are so many obstacles to their reunion. On this account, if there is any extraneous body in the wound, such as iron, lead, wood, glass, bits of cloth or linen, they must be extracted, if that can be very easily done; but if not, application must be made to a good surgeon, who considers what measures are to be taken, and then dresses the wound, as I have already advised.

Very far from being useful, there are many ointments that are pernicious on these occasions; and the only cases in which they should be used, are those in which the wounds are distinguished with some particular appearances, which ought to be removed by particular applications; But a simple recent wound, in a healthy man, requires no other treatment but what I have already directed, besides that of the general regimen.

Spirituous applications are commonly hurtful, and can be suitable and proper but in a few cases, which physicians and surgeons only can distinguish.

When wounds happen in the head, instead of the compress dipt in oil, or of the cerecloth, the wound should be covered with a betony plaister; or, when none is to be had in time, with a compress squeezed out of hot wine.

§ 439. As the following symptoms, of which we should be most apprehensive, are such as attend inflammations, the means we ought to have recourse to are those which are most likely to prevent them; such as bleeding, the usual regimen, moderate coolers and glysters.

Should the wound be very inconsiderable in its degree, and in its situation, it may be sufficient to avoid taking any thing heating; and above all things to retrench the use of any strong drink, and of flesh-meat.

But when it is considerable, and an inflammation must be expected, there is a necessity for bleeding; the patient should be kept in the most quiet, and easy situation; he should be ordered immediately to a regimen; and sometimes the bleeding also must be repeated. Now all these means are the more indispensably necessary, when the wound has penetrated to some internal part; in which situation, no remedy is more certain than that of an extremely light diet. Such wounded persons as have been supposed incapable of living many hours, after wounds in the breast, in the belly, or in the kidneys, have been completely recovered, by living for the course of several weeks, on nothing but barley, or other farinaceous, mealy ptisans, without salt, without soup, without any medicine; and especially without the use of any ointment.

§ 440. In the same proportion that bleeding, moderately and judiciously employed, is serviceable; in that very same, an excess of it becomes pernicious. Great wounds are generally attended with a considerable loss of blood, which has already exhausted the wounded person; and the fever is often a consequence of this copious loss of blood. Now, if under such a circumstance, bleeding should be ordered and performed, the patient's strength is totally sunk; the humours stagnate and corrupt; a gangrene supervenes, and he dies miserably, at the end of two or three days, of a *series* of repeated bleedings, but not of the wound. Notwithstanding the certainty of this, the surgeon frequently boasts of his ten, twelve, or even his fifteen bleedings: assuring his hearers of the insuperable mortality of the wound, since the letting out such a quantity of blood could not recover the patient; when it really was that excessive artificial profusion of it, that downright dispatched him.——The pleasures of love are very mortal pleasures to the wounded.

§ 441. The balsams and vulnerary plants, which

have often been so highly celebrated for the cure of wounds, are very noxious, when taken inwardly; because the introduction of them gives or heightens the fever, which ought to have been abated.

Of Contusions, or Bruises.

§ 442. A contusion, which is commonly called a bruise, is the effect of the forcible impression or stroke of a substance not sharp or cutting, on the body of a man, or any animal; whether such an impression be violently made on the man, as when he is struck by a stick, or by a stone thrown at him; or whether the man be involuntarily forced against a post, a stone, or any hard substance by a fall; or whether, in short, he is squeezed and oppressed betwixt two hard bodies, as when his finger is squeezed betwixt the door and the door-post, or the whole body jammed in betwixt any carriage and the wall. These bruises, however, are still more frequent in the country than wounds, and commonly more dangerous too; and indeed the more so, as we cannot judge so exactly, and so soon, of the whole injury that has been incurred; and because all that is immediately visible of it is often but a small part of the real damage attending it: since it frequently happens that no hurt appears for a few successive days; nor does it become manifest, until it is too late to admit of an effectual cure.

§ 443. It is but a few weeks since a cooper came to ask my advice. His manner of breathing, his aspect, the quickness, smallness, and irregularity of his pulse, made me apprehensive at once, that some matter was formed within his breast. Nevertheless he still kept up, and went about, working also at some part of his trade. He had fallen in removing some casks or hogheads; and the whole weight of his body had been violently impressed upon the right side of his breast. Notwith-

standing this, he was sensible of no hurt at first; but some days afterwards he began to feel a dull heavy pain in that part, which continued and brought on a difficulty of breathing, weakness, broken sleep and loss of appetite. I ordered him immediately to stillness and repose, and advised him to drink a ptisan of barley sweetened with honey, in a plentiful quantity. He regularly obeyed only the latter part of my directions: yet on meeting him a few days after, he told me he was better. The very same week, however, I was informed he had been found dead in his bed. The imposthume had undoubtedly broke, and suffocated him.

§ 444. A young man, run away with by his horse, was forced with violence against a stable-door, without being sensible of any damage at the time. But at the expiration of twelve days, he found himself attacked by some such complaints, as generally occur at the beginning of a fever. This fever was mistaken for a putrid one, and he was very improperly treated, for the fever it really was, above a month. In short, it was agreed at a consultation, that matter was collected in the breast. In consequence of this, he was more properly attended, and at length happily cured by the operation for an *empyema*, after languishing a whole year. I have published these two instances, to demonstrate the great danger of neglecting violent strokes or bruises; since the first of these patients might have escaped death; and the second a tedious and afflicting disorder, if they had taken, immediately after each accident, the necessary precautions against its consequences.

§ 445. Whenever any part is bruised, one of two things always ensues, and commonly both happen together; especially if the contusion is pretty considerable: either the small blood-vessels of the contused part are broken, and the blood they contained is spread about in the adjoining

parts; or else, without such an effusion of it, these vessels have lost their tone, their active force, and no longer contributing to the circulation, their contents stagnate. In each of these cases, if nature, either without or with the assistance of art, does not remove the impediment, an inflammation comes on, attended with an imperfect, unkindly suppuration, with putrefaction and a gangrene; without mentioning the symptoms that arise from the contusion of some particular substance, as a nerve, a large vessel, a bone, &c. Hence we may also conceive the danger of a contusion, happening to any inward part, from which the blood is either internally effused, or the circulation wholly obstructed in some vital organ. This is the cause of the sudden death of persons after a violent fall; or of those who have received the violent force of heavy descending bodies on their heads; or of some violent strokes, without any evident external hurt or mark.

There have been many instances of sudden deaths, after one blow on the pit of the stomach, which has occasioned a rupture of the spleen.

It is in consequence of falls occasioning a general slight contusion, as well internal as external, that they are sometimes attended with such grievous consequences, especially in old men, where nature, already enfeebled, is less able to redress such disorders. And thus in fact has it been, that many such, who had before enjoyed a firm state of health, have immediately lost it after a fall (which seemed at first to have affected them little or not at all) and languished soon after to the moment of their death, which such accidents very generally accelerate.

§ 446. Different external and internal remedies are applicable in contusions. When the accident has occurred in a slight degree, and there has been no great nor general shock, which might produce an internal soreness or contusion, external appli-

cations may be sufficient. They should consist of such things as are adapted, first, to attenuate and resolve the effused and stagnant blood, which shews itself so apparently; and which, from its manifest blackness, very soon after the contusion, becomes successively brown, yellow, and greyish, in proportion as the magnitude of the suffusion or settling decreases, till at last it disappears entirely, and the skin recovers its colour, without the blood's having been discharged through the external surface, as it has been insensibly and gradually dissolved, and been taken in again by the vessels; and secondly, the medicines should be such as are qualified to restore the tone, and to recover the strength of the affected vessels.

The best application is vinegar, diluted, if very sharp, with twice as much warm water; in which mixture folds of linen are to be dipt, within which the contused parts are to be involved; and these folds are to be re-moistened and re-applied every two hours on the first day.

Parsley, chervil, and houseleek leaves, lightly pounded, have also been successfully employed; and these applications are preferable to vinegar, when a wound is joined to the bruise. The pultices N^o. 68. may also be used with advantage.

§ 447. It has been a common practice immediately to apply spirituous liquors, such as brandy, arquebussade and * *Alibour* water, and the like; but a long abuse ought not to be established by prescription. These liquids, which coagulate the blood, instead of resolving it, are truly pernicious; notwithstanding they are sometimes employed without any visible disadvantage, on very slight occasions: frequently by determining the settled blood towards the interstices of the muscles, the fleshy parts; or, sometimes even by preventing the

* This, Dr. Tiffot informs me, is a solution of white vitriol and some other drugs in spirit of wine, and is never used in regular practice now. It has its name from the author of the solution.

effusion, or visible settling of the blood, and fixing it, as it were, within the bruised vessels, they seem to be well; though this only arises from their concentrating and concealing the evil, which, at the end of a few months, breaks forth again in a very troublesome shape. Of this I have seen some miserable examples; whence it has been abundantly evinced, that applications of this sort should never be admitted, and that vinegar should be used instead of them. At the utmost, it should only be allowed, (after there is reason to suppose all the stagnant blood resolved and resorbed into the circulation) to add a third part of the arquebusade water to the vinegar, with an intention to restore some strength to the relaxed and weakened parts.

§ 448. It is still a more pernicious practice, to apply, in bruises, plaisters composed of greasy substances, rosins, gums, earths, &c. The most boasted of these is always hurtful, and there have been many instances of very slight contusions being aggravated into gangrenes, by such plaisters ignorantly applied; which bruises would have been entirely subdued by the œconomy of nature, if left to herself, in the space of four days.

Those sacs or suffusions of coagulated blood, which are visible under the skin, should never be opened, except for some urgent reason; since, however large they may be, they insensibly disappear and dissipate; instead of which termination, by opening them, they sometimes terminate in a dangerous ulceration.

§ 449. The internal treatment of contusions, is exactly the same with that of wounds; only, that in these cases, the best drink is the prescription N^o. 1. to each pot of which a drachm of nitre must be added.

When any person has got a violent fall, has lost his senses, or is become very stupid; when the blood starts out of his nostrils, or his ears; when he is greatly oppressed, or his belly feels very tight

and tense, which import an effusion of blood either into the head, the breast or the belly; he must, first of all, be bled upon the spot, and all the means must be recurred to, which have been mentioned § 439. giving the wretched patient the least possible disturbance or motion; and by all means avoiding to jog or shake him, with a design to bring him to his senses; which would be directly and effectually killing him, by causing a further effusion of blood. Instead of this the whole body should be fomented, with some one of the decoctions already mentioned; and when the violence has been chiefly impressed on the head, wine and water should be preferred to vinegar.

Falls attended with wounds, and even a fracture of the skull, and with the most alarming symptoms, have been cured by these internal remedies, and without any other external assistance, except the use of the aromatic fomentation, N^o. 68

A man from *Pully-petit* came to consult me some months ago, concerning his father, who had a high fall out of a tree. He had been twenty-four hours without feeling or sense, and without any other motion than frequent efforts to vomit; and blood had issued both from his nose and ears. He had no visible outward hurt neither on his head, nor any other part; and very fortunately for him, they had not as yet exerted the least effort to relieve him. I immediately directed a plentiful bleeding in the arm, and a large quantity of whey sweetened with honey to be drank, and to be also injected by way of glyster. This advice was very punctually observed; and fifteen days after the father came to *Lausanne*, which is four leagues from *Pully-petit*, and told me he was very well. It is proper, in all considerable bruises, to open the patient's belly with a mild cooling purge, such as N^o. 11. 23. 32. 49. The prescription N^o. 24. and the honeyed whey are excellent remedies, from the same reason.

§ 450. In these circumstances, wine, distilled spirits, and whatever has been supposed to revive and to rouse, are mortal. For this reason people should not be too impatient, because the patients remain some time without sense or feeling. The giving of turpentine is more likely to do mischief than good; and if it has been sometimes serviceable, it must have been in consequence of its purging the patient, who probably then needed to be purged. The fat of a whale, (*sperma cæti*) dragon's blood, crabs-eyes, and ointments of whatsoever sort are at least useless and dangerous medicines, if the case be very hazardous; either by the mischief they do, or the good they prevent from being done. The proper indication is to dilute the blood, to render it more fluid and disposed to circulate; and the medicines just mentioned produce a very contrary effect.

§ 451. When an aged person gets a fall, which is the more dangerous in proportion to his age and grossness; notwithstanding he should not seem in the least incommoded by it, if he is sanguine and still somewhat vigorous, he should part with three or four ounces of blood. He should take immediately a few successive cups of a lightly aromatic drink, which should be given him hot; such, for instance as an infusion of tea sweetened with honey, and he should be advised to move gently about. He must retrench a little from the usual quantity of his food, and accustom himself to very gentle, but very frequent, exercise.

§ 452. Sprains or wrenches, which very often happen, produce a kind of contusion, in the parts adjoining to the sprained joint. This contusion is caused by the violent friction of the bone against the neighbouring parts: and as soon as the bones are immediately returned into their proper situation, the disorder should be treated as a contusion. Indeed if the bones should not of themselves return into their proper natural position, recourse must be had to the hand of a surgeon.

The best remedy in this case is absolute rest and repose, after applying a compress, moistened in vinegar and water, which is to be renewed and continued, till the marks of the contusion entirely disappear; and there remains not the smallest apprehension of an inflammation. Then indeed, and not before, a little brandy, or arquebusade water may be added to vinegar: and the part (which is almost constantly the foot) should be strengthened and secured for a considerable time with a bandage; as it might otherwise be liable to fresh sprains, which would daily more and more enfeeble it; for if this evil is overlooked too much in its infancy, the part never recovers its full strength; and a small swelling often remains to the end of the patient's life.

If the sprain is very slight and moderate, a plunging of the part into cold water is excellent; but if this is not done at once immediately after the sprain, or if the contusion is violent it is even hurtful.

The custom of rolling the naked foot upon some round body is insufficient, when the bones are not perfectly replaced; and hurtful, when the sprain is accompanied with a contusion.

It happens continually almost, that country people, who encounter such accidents, apply themselves either to ignorant or knavish imposters, who find, or are determined to find, a disorder or dislocation of the bones, where there is none; and who, by their violent manner of handling the parts, or by the plaisters they surround them with, bring on a dangerous inflammation, and change the patient's dread of a small disorder, into a very grievous malady.

These are the very persons who have created, or indeed rather imagined, some impossible diseases, such as the opening, the splitting of the stomach, and of the kidneys. But these big words terrify

the poor country people, and dispose them to be more easily and effectually duped.

Of Ulcers.

§ 453. Whenever ulcers arise from a general fault of the blood, it is impossible to cure them, without destroying the cause and fuel of them. It is in fact imprudent to attempt to heal them up by outward remedies; and a real misfortune to the patient, if his assistant effectually heals and closes them.

But, for the greater part, ulcers in the country, are the consequence of some wound, bruise, or tumour improperly treated; and especially of such as have been dressed with too sharp, or too spirituous applications. Rancid oils are also one of the causes, which change the most simple wounds into obstinate ulcers; for which reason they should be avoided; and apothecaries should be careful, when they compound greasy ointments, to make but little at a time, and the oftener, as a very considerable quantity of any of them becomes rank before it is all sold; notwithstanding sweet fresh oil may have been employed in preparing them.

§ 454. What serves to distinguish ulcers from wounds, is the dryness and hardness of the sides or borders of ulcers, and the quality of the humour discharged from them; which, instead of being ripe consistent matter, is a liquid more thin, less white, sometimes yielding a disagreeable scent, and so very sharp, that if it touch the adjoining skin, it produces redness, inflammation, or pustules there; sometimes a serpiginous, or ring-worm like eruption, and even a further ulceration.

§ 455. Such ulcers as are of a long duration, which spread wide, and discharge much, prey upon the patient, and throw him into a slow fever, which melts and consumes him. Besides, when an ulcer is of a long standing, it is dangerous to dry it up; and indeed this never should be done,

but by substituting in the place of one discharge that is become almost natural, some other evacuation, such as purging from time to time.

We may daily see sudden deaths, or very tormenting diseases, ensue the sudden drying up such humours and drains as have been of a long continuance; and whenever any quack (and as many as promise the speedy cure of such, deserve that title) assures the patient of his curing an inveterate ulcer in a few days, he demonstrates himself to be a very dangerous and ignorant intermeddler, who must kill the patient, if he keeps his word. Some of these impudent impostors make use of the most corrosive applications, and even arsenical ones; notwithstanding the most violent death is generally the consequence of them.

§ 456. The utmost that art can effect, with regard to ulcers, which do not arise from any fault in the humours, is to change them into wounds. To this end, the hardness and dryness of the edges of the ulcer, and indeed of the whole ulcer, must be diminished, and its inflammation removed. But sometimes the hardness is so obstinate, that this cannot be mollified any other way, than by scarrifying the edges with a lancet. But when it may be effected by other means, let a pledget spread with the ointment N^o. 69. be applied all over the ulcer; and this pledget be covered again with a compress of several folds, moistened in the liquid N^o. 70. which should be renewed three times daily; though it is sufficient to apply a fresh pledget only twice.

As I have already affirmed, that ulcers were often the consequence of sharp and spirituous dressings, it is evident such should be abstained from, without which abstinence, they will prove incurable.

To forward the cure, salted food, spices, and strong drink should be avoided; the quantity of flesh-meat should be lessened; and the body be kept

open by a regimen of puls, or vegetables, and by the habitual use of whey sweetened with honey.

If the ulcers are in the legs, a very common situation of them, it is of great importance, as well as in wounds of the same parts, that the patients should walk about but little; and yet never stand up without walking. This indeed is one of these cases, in which those, who have some credit and influence in the estimation of the people, should omit nothing to make them thoroughly comprehend the necessity of confining themselves, some days, to undisturbed tranquillity and rest; and they should also convince them, that this term of rest is so far from being lost time, that it is likely to prove their most profitable time of life. Negligence, in this material point, changes the slightest wounds into ulcers, and the most trifling ulcers into obstinate and incurable ones: insomuch, that there is scarcely any man, who may not observe some family in his neighbourhood, reduced to the hospital *, from their having been too inattentive to the due care of some complaint of this sort.

I conclude this article on ulcers with repeating, that those which are owing to some internal cause; or even such as happen from an external one, in persons of a bad habit of body, frequently require a more particular treatment.

Of Frozen Limbs.

§ 457. It is but too common, in very rigorous winters, for some persons to be pierced with so violent a degree of cold, that their hands or feet, or sometimes both together, are frozen at once, just like a piece of flesh meat exposed to the air.

If a person thus pierced with the cold, dispose himself to walk about, which seems so natural and obvious a means to get warm; and especially, if he

* This seems just the same as coming on the parish, or being received into an alms-house here; in consequence of such an incurable disability happening to the poor working father of a family. K.

attempts to † warm the parts that have been frozen, his case proves irrecoverable. Intollerable pains are the consequence, which pains are speedily attended with an incurable gangrene; and there is no means left to save the patient's life, but by cutting off the gangrened limbs.

There was a very late and terrible example of this, in the case of an inhabitant at *Cossonay*, who had both his hands frozen. Some greasy ointments were applied hot to them, the consequence of which was, the necessity of cutting off six of his fingers.

§ 458. In short, there is but one certain remedy in such cases; and this is to convey the person affected into some place where it does not freeze, but where, however, it is but very moderately hot, and there continually to apply, to the frozen parts, snow, if it be at hand; and if not, to keep washing them incessantly, but very gently (since all frictions would at this juncture prove dangerous) in ice-water, as the ice thaws in the chamber. By this application the patients will be sensible of their feeling's returning very gradually to the part, and that they begin to recover their motion. In this state they may safely be moved into a place a little warmer, and drink some cups of the potion N^o. 13. or of another of the like quality.

§ 459. Every person may be a competent judge of the manifest danger of attempting to relieve such parts by heating them, and of the use of ice-water, by a common, a daily experience. Frozen pears, apples, and raddishes, being put into water just about to freeze, recover their former state, and

† The reason of the fatality of heat, in these cases, and of the success of an opposite application (see § 459) seems strictly and even beautifully analogous to what *Hippocrates* has observed of the danger, and even fatality, of all great and sudden changes in the human body, whether from the weather or otherwise. Whence this truly great founder of physic, when he observes elsewhere, that diseases are to be cured by something contrary to their causes, very consistently advises, not a direct and violent contrariety, but a gradual and regulated one, a *sub-contrariety*. K.

prove quickly eatable. But if they are put into warm water, or into a hot place, rottenness, which is one sort of gangrene, is the immediate effect. The following case will make this right method of treating them still more intelligible, and demonstrate its efficacy.

A man was travelling to the distance of six leagues in very cold weather; the road being covered with snow and ice. His shoes, not being very good, failed him on his march, so that he walked the three last leagues bare-footed; and felt immediately after the first half league, sharp pains in his legs and feet, which increased as he proceeded. He arrived at his journey's end in a manner nearly deprived of his lower extremities. They set him before a great fire, heated a bed well, and put him into it. His pains immediately became intollerable; he was incessantly in the most violent agitations, and cried out in the most piercing and affecting manner. A physician, being sent for in the night, found his toes of a blackish colour, and beginning to loose their feeling. His legs, and the upper part of his feet, which were excessively swelled, of a purplish red, and varied with spots of a violet colour, were still sensible of the most excruciating pains. The physician ordered in a pail of water from the adjoining river, adding more to it, and some ice withal. In this he obliged the patient to plunge his legs; they were kept in near an hour, and within that time, the pains became less violent. After another hour, he ordered a second cold bath, from which the patient perceiving still further relief, prolonged it to the extent of two hours. During that time, some water was taken out of the pail, and some ice and snow were put into it. Now his toes, which had been black, grew red; the violet spots in his legs, disappeared; the swelling abated; the pains became moderate, and intermitted. The bath was nevertheless repeated six times; after which there

remained no other complaint, but that of a great tenderness or extraordinary sensibility in the soles of his feet, which hindered him from walking. The parts were afterwards bathed with some aromatic fomentations; and he drank a ptisan of sarsaparilla (one of elder flowers would have answered the same purpose, and have been less expensive.) On the eighth day from his seizure he was perfectly recovered, and returned home on foot on the fifteenth.

§ 460. When cold weather is extremely severe, and a person is exposed to it for a long time at once, it proves mortal, in consequence of its congealing the blood, and because it forces too great a proportion of blood up to the brain; so that the patient dies of a kind of apoplexy, which is preceded by a sleepiness. In this circumstance the traveller, who finds he grows drowsy, should redouble his efforts to extricate himself from the imminent danger he is exposed to. This sleep, which he might consider as some alleviation of his sufferings, if indulged, would prove his last.

§ 461. The remedies in such cases are the same with those directed in frozen limbs. The patient must be conducted to an apartment, rather cold than hot, and be rubbed with snow or with ice-water. There have been many well attested instances of this method; and as such cases are still more frequent in more northern climates, a bath of the very coldest water, has been found the surest remedy.

Since it is known that many people have been revived, who had remained in the snow, or had been exposed to the freezing air during five, or even six successive days, and who had discovered no one mark of life for several hours, the utmost endeavours should be used for the recovery of persons in the like circumstances and situation.

Of Kibes, or Chilblains.

§ 462. These troublesome and smarting complaints attack the hands, feet, heels, ears, nose and lips, those of children especially, and mostly in winter; when these extremities are exposed to the sudden changes from hot to cold, and from cold to hot weather. They begin with an inflation or kind of swelling, which, at first, occasions but little heat, pain or itching. Sometimes they do not exceed this first state, and go off spontaneously without any application: but at other times, which may be termed the second degree of the disorder (whether it happens from their being neglected, or improperly treated) their heat, redness, itching and pain, increase considerably; so that the patient is often deprived of the free use of his fingers by the pain, swelling and numbness: in which case the malady is still aggravated, if effectual means are not used.

Whenever the inflammation mounts to a still higher degree, small vesications or blisters are formed, which are not long without bursting; when they leave a slight excoriation, or rawness, as it were, which speedily ulcerates, and frequently proves a very deep and obstinate ulcer, discharging a sharp and ill-conditioned matter.

The last and most virulent degree of chilblains, which is not infrequent in the very coldest countries, though very rare in the temperate ones, is when the inflammation degenerates into a gangrene.

§ 463. These tumours are owing to a fulness and obstruction of the vessels of the skin, which occurs from this circumstance, that the veins, which are more superficial than the arteries, being proportionably more affected and straitened by the cold, do not carry off all the blood communicated to them by the arteries; and perhaps also the particles or atoms of cold, which are ad-

mitted through the pores of the skin, may act upon our fluids, as it does upon water, and occasion a congelation of them, or a considerable approach towards it.

If these complaints are chiefly set, which in fact is the case, rather on the extreme parts than on others, it arises from two causes, the principal one being, that the circulation's being weaker at the extremities than elsewhere, the effect of those causes, that may impair it, must be more considerably felt there. The second reason is, because these parts are more exposed to the impressions from without than the others.

They occur most frequently to children, from their weakness, and the greater tenderness and sensibility of their organs, which necessarily increases the effect of external impressions. It is the frequent and strong alteration from heat to cold, that seems to contribute the most powerfully to the production of chilblains; and this effect of it is most considerable, when the heat of the air is at the same time blended with moisture; whence the extreme and superficial parts pass suddenly, as it were, out of a hot, into a cold, bath. A man sixty years of age, who never before was troubled with kibes, having worn for some hours on a journey, a pair of furred gloves, in which his hands sweated, felt them very tender, and found them swelled up with blood; as the common effect of the warm bath is to soften and relax, and to draw blood abundantly to the bathed parts, whence it renders them more sensible.

This man, I say, thus circumstanced, was at that age first attacked with chilblains, which proved extremely troublesome; and he was every succeeding winter, as certainly infested with them, within half an hour after he left off his gloves, and was exposed to a very cold air.

It is for this reason, that several persons are never infested with chilblains, but when they use

themselves to muffs, which are scarcely known in hot countries; nor are they very common among the more northern ones, in which the extraordinary changes from cold to heat are very rare and unusual.

Some people are subject to this troublesome complaint in the fall; while others have it only in the spring. The child of a labouring peasant, who has a hard skin, and one inured to all the impressions of the seasons and of the elements, is, and indeed necessarily must be, less liable to kibes, than the child of a rich citizen, whose skin is often cherished, at the expence of his constitution. But even among children of the same rank in life and circumstances, who seem pretty much of the same complexion, and live much in the same manner; whence they might of course be supposed equally liable to the same impressions, and to the like effects of them; there is, nevertheless, a very great difference with respect to their constitutional propensity to contract chilblains. Some are very cruelly tormented with them, from the setting in of autumn, to the very end of the spring: others have either none at all, or have them but very slightly, and for a very short time. This difference undoubtedly arises from the different quality of their humours, and the texture of their whole surface, but particularly from that of the skin of their hands; though we readily confess it is by no means easy to determine, with certainty and precision, in what this difference essentially consists.

Children of a sanguine complexion, and delicate skin, are pretty generally subject to this disorder; which is often regarded much too slightly, though it is really severe enough to engage our attention more; since, even abstracted from the sharp pains which smart these unhappy children for several months, it sometimes gives them a fever, hinders them from sleeping, and yet confines them to their bed, which is very prejudicial to their constitu-

tions. It also breaks in upon the order of their different duties and employments; it interrupt^s their innocent salutary pleasures, and sometimes, when they are obliged to earn their daily bread by doing some work or other, it sinks them down to misery. I knew a young man, who, from being rendered incapable by chilblains, of serving out his apprenticeship to a watch-maker, is become a lazy beggar.

Chilblains which attack the nose, often leave a mark that alters the physiognomy, the aspect of the patient, for the remainder of his life; and the hands of such as have suffered from very obstinate ones, are commonly ever sensible of their consequences.

§ 464. With respect, therefore, to these afflicting tumours and ulcerations, we should, in the first place, do our utmost to prevent them; and next exert our best endeavours to cure such as we could not prevent.

§ 465. Since they manifestly depend on the sensibility of the skin, the nature of the humours, and the changes of the weather from heat to cold; in order to prevent them, in the first place, the skin must be rendered firmer or less tender. 2. That vicious quality of the temperament, which contributes to their existence, must be corrected: and, 3. The persons so liable, must guard themselves, as well as possible, against these changes of the weather.

Now, the skin of the hands, as well as that of the whole body, may be strengthened by that habit of washing or bathing in cold water, which I have described at large, § 384. and in fact, I have never seen children, who had been early accustomed and inured to this habit, as much afflicted with chilblains as others. But still a more particular regard should be had to fortify the skin of the hands, which are more obnoxious to this disorder than the feet, by making children dip them in cold water,

and keep them for some moments together in it every morning, and every evening too, before supper; from the very beginning of the fall. It will give the children no sort of pain, during that season, to contract this habit; and when it is once contracted, it will give them no trouble to continue it throughout the winter; even when the water is ready to freeze every where. They may also be habituated to plunge their feet into cold water twice or thrice a week; and this method, which might be less adapted for grown persons, who had not been accustomed to it, must be without objection with respect to such children as have been accustomed to it; to whom all its consequences must be useful and salutary.

At the same time, care must be taken not to defeat or lessen the effect of the cold bathing, by suffering the bather or washer, to grow too warm between two baths or dippings; which is also avoiding the too speedy successions of heat and cold. For this purpose, 1. The children must be taught never to warm their hands before the fire at such times, and still less before the the stoves, which very probably is one of the principal causes of chilblains, that are less usual in countries which use no such stoves, and among those individuals who make the least use of them, where they are. Above all, the use of *cavettes* (that is, of seats or little stairs, as it were, contrived between the stove and the wall) is prejudicial to children, and even to grown people, upon several accounts. 2. They should never accustom themselves to wear muffs. 3. It would be also proper they should never use gloves, unless some particular circumstances require it; and I recommend this abstinence from gloves, especially to young boys: but if any should be allowed them, let the gloves be thin and smooth.

§ 466. When chilblains seem to be nourished by some fault in the temperament or humours, the consideration of a physician becomes necessary, to

direct a proper method of removing or altering it. I have seen children from the age of three, to that of twelve or thirteen years, in whom their chilblains, raw and flead, as it were, for eight months of the year, seemed to be a particular kind of issue, by which nature freed herself of an inconvenient superfluity of humours, when the perspiration was diminished, by the abatement of the violent heats. In such cases, I have been obliged to carry them through a pretty long course of regimen and remedies; which, however, being necessarily various, from a variety of circumstances, cannot be detailed here. The milder preparations of antimony are often necessary in such cases; and some purges conduce in particular ones, to allay, and to abridge the disorder.

§ 467. The first degree of this complaint goes off, as I have already said, without the aid of medicine; or should it prove somewhat more obstinate, it may easily be dissipated by some of the following remedies. But when they rise to the second degree, they must be treated like other complaints from congelation, or frost biting. (of which they are the first degree) with cold water, ice-water and snow.

No other method or medicine is nearly as efficacious as very cold water, so as to be ready to freeze, in which the hands are to be dipt and retained for some minutes together, and several times daily. In short it is the only remedy which ought to be applied, when the hands are the part affected; when the patient has the courage to bear this degree of cold; and when he is under no circumstance which may render it prejudicial. It is the only application I have used for myself, after having been attacked with chilblains for some years past, from having accustomed myself to too warm a muff.

There ensues a slight degree of pain for some moments, after plunging the hand into water, but it diminishes gradually. On taking the hand out,

the fingers are numbed with the cold, but they presently grow warm again; and within a quarter of an hour, it is entirely over.

The hands, on being taken out of the water, are to be well dried, and put into skin gloves; after bathing three or four times, their swelling subsides, so that the skin wrinkles: but by continuing the cold bathing, it grows tight and smooth again; the cure is completed after using it three or four days; and, in general, the disorder never returns again the same winter.

The most troublesome raging itching is certainly assuaged by plunging the hands into cold water.

The effect of snow is, perhaps, still more speedy: the hands are to be gently and often rubbed with it for a considerable time; they grow hot, and are of a very high red for some moments, but entire ease very quickly succeeds.

Nevertheless, a very small number of persons, who must have extremely delicate and sensible skins, do not experience the efficacy of this application. It seems too active for them; it affects the skin much like a common blistering plaister; and by bringing on a large flow of humours there, it increases, instead of lessening the complaint.

§ 468. When this last reason, indeed, or some other circumstance exists, such as the child's want of courage, or its affliction, the monthly discharges in a woman, a violent cough, habitual cholics, and some other maladies, which have been observed to be renewed or aggravated by the influence of cold at the extremities, do really forbid this very cold application, some others must be substituted.

One of the best, is to wear day and night, without ever putting it off, a glove made of some smooth skin, such as that of a dog; which seldom fails to extinguish the disorder in some days time.

When the feet are affected with chilblains,

socks of the same skin should be worn; and the patient kept close to his bed for some days.

§ 469. When the disorder is violent, the use of cold water is prohibited, and the gloves just recommended have but a slow effect; the diseased parts should be gently fomented or moistened several times a day, with some decoction rather more than warm; which at the same time should be dissolving and emollient. Such is that celebrated decoction of the scrapings, the peel of radishes, whose efficacy is still further increased, by adding one sixth part of vinegar to the decoction.

Another decoction, of whose great efficacy I have been a witness, but which dyes the hands yellow for a few days, is the prescription N^o. 71. many others may be made of nearly the same virtues, with all the vulnerary herbs, and even with the *saltranc*.

Urine, which some boast of in these cases, from their having used it with success; and the mixture of urine and lime-water, have the like virtues with the former decoctions.*

As soon as the hands affected are taken out of these decoctions, they must be defended from the air by gloves.

§ 470. Vapours, or steams, are often more efficacious than decoctions; whence, instead of dipping the hands into these already mentioned, we may expose them to their vapours, with still more success. That of hot vinegar is one of the most powerful remedies; those of † *asphalt* or of turpentine have frequently succeeded too. It may be need-

* Chilblains may also be advantageously washed with water and flower of mustard, which will concur, in a certain and easy manner, both to cleanse and to cure them. E. L.

† This is, or should be, the same with the *bitumen judaicum*, formerly kept in the shops; but which is never directed, except in that strange medley the *Venice treacle*, according to the old prescription. The best is found in *Egypt* and on the *Red Sea*: but a different sort, from *Germany*, *France*, and *Switzerland*, is now generally substituted here. K.

less to add that the affected parts must be defended from the air, as well after the steams, as the decoctions; since it is from this circumstance of keeping off the air, that the cerecloths are of service; and hence also the application of suet has sometimes answered.

When the distemper is subdued by the use of bathings or steams, which make the skin supple and soft, then it should be strengthened by washing the parts with a little camphorated brandy, diluted with an equal quantity of water.

§ 471. When the nose is affected with a chilblain, the steam of vinegar, and an artificial nose, or covering for it, made of dog-skin, are the most effectual applications. The same treatment is equally proper for the ears and the chin, when infested with them. Frequently washing these parts in cold water is a good preservative from their being attacked.

§ 472. Whenever the inflammation rises very high, and brings on some degree of a fever, the patient's usual quantity of strong drink, and of flesh-meat, must be lessened; his body should be kept open by a few glysters; he should take every evening a dose of nitre, as prescribed, N^o. 20. and if the fever proves strong, he should lose some blood too.

As many as are troubled with obstinate chilblains, should always be denied the use of strong liquor and flesh.

§ 473. When this distemper prevails in its third degree, and the parts are ulcerated; besides keeping the patients strictly to the regimen of persons in a way of recovery, and giving them a purge of manna, the swelled parts should be exposed to the steams of vinegar; the ulcerations should be covered with a diapalma plaister; and the whole part should be enveloped in smooth soft skin, or in thin serecloths.

§ 474. The fourth degree of this disease, in which the parts become gangrenous, must be prevented by the method and medicines which remove an inflammation; but if, unhappily, a gangrene has already appeared, the assistance of a surgeon proves indispensably necessary.

Of Ruptures.

§ 475. *Hernias* or ruptures, which country people term *being bursten*, are disorders which sometimes occur at the very birth; though, more frequently, they are the effects of violent crying, of a strong forcing cough, or of repeated efforts to vomit, in the first months of infancy.

They may happen afterwards indiscriminately at every age; either as consequences of particular maladies, or accidents, or from people's violent exertions of their strength. They happen much oftener to men, than women; and the most common sort, indeed the only one of which I propose to treat, and that but briefly, is that which consists in the descent of a part of the guts, or of the cawl, into the bag or codpiece.

It is not difficult to distinguish this rupture. When it occurs in little children, it is almost ever cured, by making them constantly wear a bandage; which should be made only of fustian, with a little pillow or pincushion, stuffed with linen rags, hair or bran. There should be at least two of these bandages, to change them alternately; nor should it ever be applied, but when the child is laid down on its back, and after being well assured that the gut or cawl, which had fallen down, has been safely returned into the cavity of the belly; since without this precaution, it might occasion the worst consequences.

The good effect of the bandage may be still further promoted, by applying upon the skin, and within the plait or fold of the groin (under which place the rings, or passage out of the belly into

the bag lie) some pretty astringent or strengthening plaister, such as that commonly used for fractures, or that I have already mentioned, § 144. Here we may observe by the way, that ruptured children should never be set on a horse, nor be carried by any person on horse-back, before the rupture is perfectly cured.

§ 476. In a more advanced age, a bandage only of fustian is not sufficient; one must be procured with a plate of steel; even so as to constrain and incommode the wearer a little at first: nevertheless, it soon becomes habitual, and is then no longer inconvenient to them.

§ 477. Ruptures sometimes attain a monstrous size; and a great part of the guts fall down into the *scrotum* or bag, without any symptom of an actual disease. This circumstance, nevertheless, is accompanied with very great inconvenience, which disables persons affected with it to work; and whenever the malady is so considerable, and of a long standing too, there are commonly some obstacles that prevent a complete return of the guts into the belly. In this state indeed, the application of the bandage or truss is impracticable, and the miserable patients are condemned to carry their grievous burthen for the remainder of their lives; which may however be palliated a little, by the use of a suspensary and bag, adapted to the size of the rupture. The dread of its increasing magnitude is a strong motive for checking the progress of it, when it first appears. But there is another still stronger, which is, that ruptures expose the patient to a symptom frequently mortal. This occurs, when that part of the intestines fallen into the *scrotum* inflames; when still encreasing in its bulk, and being extremely compressed, acute pains come on: for now, from the increase of the rupture's extent, the passage which gave way to its descent, cannot admit of its return or ascent: the blood-vessels themselves being oppressed, the

Inflammation increases every moment ; the communication between the stomach and the fundament is often entirely cut off, so that nothing passes through, but incessant vomitings come on (this being the kind of *miserere*, or iliac passion, I have mentioned, § 320.) which are succeeded by the hiccup, raving, swooning, cold sweats, and death.

§ 478. This symptom supervenes in ruptures, when the excrements become hard in that part of the guts fallen into the *scrotum* ; when the patient is overheated with wine, drams, an inflammatory diet, &c. or when he has received a stroke on the ailing part, or had a fall.

§ 479. The best means and remedies are, 1. As soon as ever this symptom or accident is manifest, to bleed the patient very plentifully, as he lies down in his bed, and upon his back, with his head a little raised, and his legs somewhat bent, so that his knees may be erect. This is the attitude or posture they should always preserve, as much as possible. When the malady is not too far advanced, the first bleeding often makes a complete cure ; and the guts return up as soon as it is over. At other times, this bleeding is less successful, and leaves a necessity for its repetition.

2. A glyster must be thrown up, consisting of a strong decoction of the large white beet leaves, with a small spoonful or pinch of common salt, and and a bit of fresh butter of the size of an egg.

3. Folds of linen dipt in ice water must be applied all over the tumour, and constantly renewed every quarter of an hour. This remedy, when immediately applied, has produced the most happy effects ; but if the symptom has endured violently more than ten or twelve hours, it is often too late to apply it ; and then, it is better to make use of flannels dipt in a warm decoction of mallow and elder flowers, shifting them frequently. It has

been known however, that ice-water, or ice itself, has succeeded as late as the third day.*

4. When these endeavours are insufficient, glysters of tobacco smoke must be tried, which have often redressed and returned ruptures, when every thing else had failed.

5. And lastly, if all these attempts are fruitless, the operation must be resolved on, without losing a moment's time; as the local disease proves sometimes mortal in the space of two days; but for this operation an excellent surgeon is indispensably necessary. The happy consequence with which I have ordered it, in a most desperate case since the first edition of this work, on the sixth day after a labour, has convinced me, still more than any former observation I had made, that the trial of it ought never to be omitted, when other attempts have been unavailing. It cannot even hasten the patient's death, which must be inevitable without it, but it rather renders that more gentle, where it might fail to prevent it. When it is performed as Mr. LEVADE effected it, in the case I have just referred to, the pain attending it is very tolerable and soon over.

I shall not attempt to describe the operation, as I could not explain myself sufficiently to instruct an ignorant surgeon in it; and an excellent and experienced one must be sufficiently apprised of all I could say concerning it.

A certain woman in this place, but now dead, had the great and impudent temerity to attempt this operation, and killed her patients after the

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* Pieces of ice applied between two pieces of linen, directly upon the rupture, as soon as possible after its first appearance, is one of those extraordinary remedies, which we should never hesitate to make immediate use of. We may be certain by this application, if the rupture is simple, and not complicated from some aggraving cause, to remove speedily, and with very little pain, a disorder, that might be attended with the most dreadful consequences. But the continuance of this application must be proportioned to the strength of the person ruptured, which may be sufficiently estimated by the pulse. *E. L.*

most excruciating torments, and an extirpation, or cutting away of the testicle; which quacks and ignorant surgeons always do, but which a good surgeon never does in this operation. This is often the custom too (in country places) of those castriffs, who perform this operation without the least necessity; and mercilessly emasculate a multitude of infants; whom nature, if left to her own conduct, or assisted only by a simple bandage, would have perfectly cured; instead of which, they absolutely kill a great many, and deprive those of their virility, who survive their robbery and violence. It were religiously to be wished such castriffs were to be duly, that is, severely punished; and it cannot be too much inculcated into the people, that this operation (termed the *bubonocèle*) in the manner it is performed by the best surgeons, is not necessary, except in the symptoms and circumstances I have mentioned, and that the cutting off the testicle never is so.

Of Phlegmons, or Boils,

§ 480. Every person knows what boils are at sight, which are considerably painful when large, highly inflamed, or so situated as to incommode the motions, or different positions, of the body. Whenever their inflammation is very considerable; when there are a great many of them at once, and they prevent the patients from sleeping, it becomes necessary to enter them into a cooling regimen; to throw up some opening glysters; and to make them drink plentifully of the ptisan N^o. 2. Sometimes it is also necessary to bleed the patient.

Should the inflammation be very high indeed, a pultice of bread and milk, or of sorrel a little boiled and bruised, must be applied to it. But if the inflammation is only moderate, a mucilage plaister, or one of the simple diachylon, may be sufficient. Diachylon with the gums is more active and efficacious; but it so greatly augments

the pain of some persons afflicted with boils, that they cannot bear it.

Boils, which often return, signify some fault in the temperament, and frequently one so considerable, that might dispose a physician to be so far apprehensive of its consequences, as to enquire into the cause, and to attempt the extinction of it. But the detail of this is no part nor purpose of the present work.

§ 481. The phlegmon, or boil, commonly terminates in suppuration, but a suppuration of a singular kind. It breaks open at first on its top, or the most pointed part, when some drops of *pus*, like that of an abscess, comes out, after which the germ, or what is called the core of it, may be discerned. This is a purulent matter or substance, but so thick and tenacious, that it appears like a solid body, which may be drawn out entirely in the shape of a small cylinder, like the pith of elder, to the length of some lines of an inch; sometimes to the length of a full inch, and even more. The emission of this core is commonly followed by the discharge of a certain quantity, according to the size of the tumour, of liquid matter, spread throughout the bottom of it. As soon as ever this discharge is made, the pain goes entirely off; and the swelling disappears at the end of a few days, by continuing to apply the simple diachylon, or the ointment N^o. 66.

Of Felons, or Whitlows.

§ 482. The danger of these small tumours is much greater than is generally supposed. It is an inflammation at the extremity or end of a finger, which is often the effect of a small quantity of humour extravasated, or stagnant, in that part; whether this has happened in consequence of a bruise, a sting, or a bite. At other times it is evident that it has resulted from no external cause, but is the effect of some inward one.

It is distinguished into many kinds, according to the place in which the inflammation begins; but the essential nature of the malady is always the same, and requires the same sort of remedies. Hence such as are neither physicians nor surgeons, may spare themselves the trouble of enquiring into the divisions of this distemper; which, though they vary the danger of it, and diversify the manner of the surgeons operation, yet have no relation to the general treatment of it; the power and activity of which must be regulated by the violence of the symptoms.

§ 483. This disorder begins with a slow heavy pain, attended by a slight pulsation, without swelling, without redness, and without heat; but in a little time the pain, heat, and pulsation or throbbing, become intolerable. The part grows very large and red; the adjoining fingers and the whole hand swelling up. In some cases, a kind of red and inflated fuse or streak may be observed, which, beginning at the affected part, is continued almost to the elbow; neither is it unusual for the patients to complain of a very sharp pain under the shoulder; and sometimes the whole arm is excessively inflamed and swelled. The sick have not a wink of sleep, the fever and other symptoms quickly increasing. If the distemper rises to a violent degree indeed, a *delirium* and convulsions supervene.

This inflammation of the finger terminates, either in suppuration, or in a gangrene. When the last of these occurs, the patient is in very great danger, if he is not very speedily relieved; and it has proved necessary more than once to cut off the arm, for the preservation of his life. When suppuration is effected, if the matter lies very deep, and is sharp; or if the assistance of a surgeon has arrived too late, the bone of the last *phalanx*, or row of bones of the finger, is generally carious and lost. But how gentle soever the complaint

has been, the nail is very generally separated and falls off.

§ 484. The internal treatment of whitlows is the same with that in other inflammatory distempers. The patient must enter upon a regimen more or less strict, in proportion to the degree of the fever; and if this runs very high, and the inflammation be very considerable, there may be a necessity for several bleedings.

The external treatment consists in allaying the inflammation; in softening the skin; and in procuring a discharge of the matter, as soon as it is formed. For this purpose,

1. The finger affected is to be plunged, as soon as the disorder is manifest, in water a little more than warm: the steam of boiling water may also be directed into it; and by doing these things almost constantly for the first day, a total dissipation of the malady has often been obtained. But unhappily it has been generally supposed, that such slight attacks could have but very slight consequences, whence they have been neglected until the disorder has greatly advanced; in which state suppuration becomes absolutely necessary.

2. This suppuration therefore may be forwarded, by continually involving the finger, as it were, in a decoction of mallow-flowers boiled in milk, or with a cataplasm of bread and milk. This may be rendered still more active and ripening, by adding a few white lily roots, or a little honey. But this last must not be applied before the inflammation is somewhat abated, and suppuration begins; before which term, all sharp applications are very dangerous. At this time, yeast, or leaven, may be advantageously used, which powerfully promotes suppuration. The forrel pultice, mentioned § 480. is also a very efficacious one.

§ 485. A speedy discharge of the ripe matter is of considerable importance, but this particu-

larly requires the attention of the surgeon; as it is not proper to wait till the tumour breaks and discharges of itself; and this the rather, as from the skin's proving sometimes extremely hard, the matter might be inwardly effused between the muscles, and upon their membranes, before it could penetrate through the skin. For this reason, as soon as matter is suspected to be formed, a surgeon should be called in, to determine exactly on the time, when an opening should be made; which had better be performed a little too soon than too late; and a little too deep than not deep enough.

When the orifice has been made, and the discharge is effected, it is to be dressed up with the plaister N^o. 66. spread upon linen, or with the cerecloth; and these dressings are to be repeated daily.

§ 486. When the whitlow is caused by a humour extravasated very near the nail, an expert surgeon speedily checks its progress, and cures it effectually by an incision which lets out the humour. Yet, notwithstanding this operation is in no wise difficult, all surgeons are not qualified to perform it, and but too many have no idea at all of it.

§ 487. Fungous, or, as it is commonly called, proud flesh, sometimes appears during the incarning or healing of the incision. Such may be kept down with sprinkling a little *minium* (red lead) or burnt alom over it.

§ 488. If a *caries*, a rottenness of the bone, should be a consequence, there is a necessity for a surgeon's attendance, as much as if there was a gangrene; for which reason I shall add nothing with respect to either of these symptoms; only observing, there are three very essential remedies against the last; *viz.* the bark, N^o. 14. a drachm of which must be taken every two hours; scarifications throughout

the whole gangrened part; and fomentations with a decoction of the bark, and the addition of spirit of sulphur. This medicine is certainly no cheap one; but a decoction of other bitter plants, with the addition of spirit of salt, may sometimes do instead of it. And here I take leave to insist again upon it, that in most cases of gangrened limbs, it is judicious not to proceed to an amputation of the mortified part, till the gangrene stops, which may be known by a very perceivable circle, (and easily distinguished by the most ignorant persons) that marks the bounds of the gangrene, and separates the living from the mortified parts.

Of Thorns, Splinters, or other pointed Substances, piercing into the Skin or Flesh.

§ 489. It is very common for the hands, feet, or legs, to be pierced by the forcible intrusion of small pointed substances, such as thorns or prickles, whether of roses, thistles or chestnuts, or little splinters of wood, bone, &c.

If such substances are immediately and entirely extracted, the accident is generally attended with no bad consequences; though more certainly to obviate any such, compresses of linen dipt in warm water may be applied to the part, or it may be kept a little while in a warm bath. But if any such pointed penetrating body cannot be directly extracted, or if a part of it be left within, it causes an inflammation, which, in its progress, soon produces the same symptoms as a whitlow: or if it happens in the leg, it inflames and forms a considerable abscess there.

§ 490. To prevent such consequences, if the penetrating substance is still near the surface, and an expert surgeon is at hand, he must immediately make a small incision, and thence extract it. But if the inflammation is already formed, this would be useless, and even dangerous.

When the incision, therefore, is improper, there should be applied to the affected part, (after conveying the steam of some hot water into it) either some very emollient pultices of the crumb of bread, milk and oil, or some very emollient unctuous matter alone; the fat of a * hare being generally employed in such cases, and being indeed very effectual to relax and supple the skin; and, by thus diminishing its resistance, to afford the offensive penetrating body an opportunity of springing forth. Nothing, however, but the grossest prejudice, could make any one imagine, that this fat attracted the splinter, thorn, or any other obtruded substance by any sympathetic virtue; no other sympathy in nature being clearly demonstrated, except that very common one between wrong heads, and absurd extravagant opinions.

It is absolutely necessary that the injured part should be kept in the easiest posture, and as immoveable as possible.

If suppuration has not been prevented by an immediate extraction of the offending substance, the abscess should be opened as soon as ever matter is formed. I have known very troublesome events from its being too long delayed.

§ 491. Sometimes the thorn, after having very painfully penetrated through the teguments, the skin, enters directly into the fat; upon which the pain ceases, and the patient begins to conclude no sharp prickly substance had ever been introduced into the part; and of course supposes none can remain there. Nevertheless, some days after, or, in other instances, some weeks, fresh pains are excited, to which an inflammation and abscess succeed, which are to be treated as usual, with emollients, and seasonably opened.

A patient has been reduced to lose his hand, in consequence of a sharp thorn's piercing into his

* These creatures perhaps are fatter in *Switzerland*, than we often see them here. K.

finger; from its having been neglected at first, and improperly treated afterwards.

Of Warts.

§ 492. Warts are sometimes the effects of a particular fault in the blood, which feeds and extrudes a surprising quantity of them. This happens to some children, from four to ten years old, and especially to those who feed most plentifully on milk or milk-meats. They may be removed by a moderate change of their diet, and the pills prescribed N^o. 18.

But they are more frequently an accidental disorder of the skin, arising from some external cause.

In this last case, if they are very troublesome in consequence of their great size, their situation, or their long standing, they may be destroyed, 1. By tying them closely with a silk thread, or with a strong flaxen one waxed. 2. By cutting them off with a sharp scissars or a bistory, and applying a plaister of diachylon with the gums, over the cut wart, which brings on a small suppuration that may destroy or dissolve the root of the wart: And, 3. By drying, or, as it were, withering them up by some moderately corroding application, such as that of the milky juice of * purslain, of fig-leaves, of *chelidonium*, (swallow-wort) or of spurge. But besides these corroding vegetable milks being procurable only in summer, people who have very delicate thin skins should not make use of them, as they may occasion a considerable and painful swell-

* Our garden purslain, though a very juicy herb, cannot strictly be termed milky. In the hotter climates where it is wild, and grows very rankly, they sometimes boil the leaves and stalks (besides eating them as a cooling salad) and find the whole an insipid mucilaginous pot-herb. But Dr. Tissot observes to me, that its juice will inflame the skin; and that some writers on diet, who disapprove it internally, affirm they have known it productive of bad effects. Yet none such have ever happened to myself, nor to many others, who have frequently eaten of it. Its seeds have sometimes been directed in cooling emulsions. The wart spurge is a very milky and common herb, which flowers in summer here. K.

ing. Strong vinegar, charged with as much common salt as it will dissolve, is a very proper application to them. A plaister may also be composed from sal ammoniac and some galbanum, which being kneaded up well together and applied, seldom fails of destroying them.

The most powerful corrosives should never be used, without the direction of a surgeon; and even then it is full as prudent not to meddle with them, any more than with actual cauteries. I have lately seen some very tedious and troublesome disorders and ulcerations of the kidneys, ensue the application of a corrosive water, by the advice of a quack. Cutting them away is a more certain, a less painful, and a less dangerous way of removing them.

Wens, if of a pretty considerable size, and duration, are incurable by any other remedy, except amputation.

Of Corns.

§ 493. The very general or only causes of corns, are shoes either too hard and stiff, or too small.

The whole cure consists in softening the corns, by repeated washings and soakings of the feet in pretty hot water; then in cutting them, when softened, with a penknife or scissars, without wounding the sound parts (which are the more sensible, in proportion as they are more extended than usual) and next in applying a leaf of house-leek, of ground-ivy, or of purslain dipt in vinegar, upon the part. Instead of these leaves, if any person will give himself the little trouble of dressing them every day, he may apply a plaister of simple diachylon, or of gum ammoniacum softened in vinegar.

The increase or return of corns can only be prevented, by avoiding the causes that produce them.

C H A P. XXXI.

Of some Cases which require immediate Assistance; such as Swoonings; Hæmorrhages, or involuntary Loss of Blood, convulsion Fits, and Suffocations; the sudden Effects of great Fear; of Disorders caused by noxious Vapours; of Poisons, and of acute Pains.

Of Swoonings.

S E C T. 494.

TH E R E are many degrees of swooning, or fainting away: the slightest is that in which the patient constantly perceives and understands, yet without the power of speaking. This is called a fainting, which happens very often to vapourish persons, and without any remarkable alteration of the pulse.

If the patient entirely loses sensation or feeling, and understanding, with a very considerable sinking of the pulse, this is called a *syncope*, and is the second degree of swooning.

But if this *syncope* is so violent, that the pulse seems totally extinguished; without any discernible breathing; with a manifest coldness of the whole body; and a wanly livid countenance, it constitutes a third and last degree, which is the true image of death, that in effect sometimes attends it, and it is called an *asphyxy*, which may signify a total resolution.

Swoonings result from many different causes, of which I shall only enumerate the principal; and these are, 1. Too large a quantity of blood. 2. A defect or insufficient proportion of it, and a general weakness. 3. A load at and violent disorders of the stomach. 4. Nervous maladies. 5. The passions; and 6. Some kinds of diseases.

Of Swoonings occasioned by Excess of Blood.

§ 495. An excessive quantity of blood is frequently a cause of swooning; and it may be inferred

that it is owing to this cause, when it attacks sanguine, hearty and robust persons; and more especially when it attacks them, after being combined with any additional or supervening cause, that suddenly increased the motion of the blood; such as heating meats or drinks, wine, spirituous liquors; smaller drinks, if taken very hot and plentifully, such as coffee, Indian tea, bawm tea and the like; a long exposure to the hot sun, or being detained in a very hot place; much and violent exercise; an over intense and assiduous study or application, or some excessive passion.

In such cases, first of all the patient should be made to smell to, or even to snuff up, some vinegar; and his forehead, his temples and his wrists should be bathed with it; adding an equal quantity of warm water, if at hand. Bathing them with distilled or spirituous liquids would be prejudicial in this kind of swooning.

2. The patient should be made, if possible, to swallow two or three spoonfuls of vinegar, with four or five times as much water.

3. The patient's garters should be tied very tightly above his knees; as by this means a greater quantity of blood is retained in the legs, whence the heart may be less overladen with it.

4. If the fainting proves obstinate, that is, if it continues longer than a quarter of an hour, or degenerates into a *syncope*, an abolition of feeling and understanding, he must be bled in the arm, which quickly revives him.

5. After the bleeding, the injection of a glyster will be highly proper; and then the patient should be kept still and calm, only letting him drink, every half hour, some cups of elder-flower tea, with the addition of a little sugar and vinegar.

When swoonings which result from this cause occur frequently in the same person, he should, in order to escape them, pursue the directions I shall

hereafter mention, § 544. when treating of persons who superabound with blood.

The very same cause, or causes, which occasion these swoonings, also frequently produce violent palpitations, under the same circumstances; the palpitation often preceding or following the *deliquium*, or swooning.

Of Swoonings occasioned by Weakness.

§ 496. If too great a quantity of blood, which may be considered as some excess of health, is sometimes the cause of swooning, this last is oftener the effect of a very contrary cause, that is, of a want of blood, or an exhaustion of too much.

This sort of swooning happens after great hæmorrhages, or discharges of blood; after sudden or excessive evacuations, such as one of some hours continuance in a *cholera morbus* (§ 321) or such as are more slow, but of longer duration, as for instance, after an inveterate *diarrhœa*, or purging; excessive sweats; a flood of urine; such excesses as tend to exhaust nature; obstinate wakefulness; a long inappetency, which, by depriving the body of its necessary sustenance, is attended with the same consequence as profuse evacuations.

These different causes of swooning should be opposed by the means and remedies adapted to each of them. A detail of all these would be improper here; but the assistances that are necessary at the time of swooning, are nearly the same for all cases of this class; excepting for that attending a great loss of blood, of which I shall treat hereafter. First of all, the patients should be laid down on a bed, and being covered, should have their legs and thighs, their arms, and their whole bodies rubbed pretty strongly with hot flannels; and no ligature should remain on any part of them.

2. They should have very spirituous things to smell or snuff up, such as the carmelite water,

Hungary water, the * *English salt*, spirit of sal ammoniac, strong smelling herbs, such as rue, sage, rosemary, mint, wormwood, and the like.

3. These should be conveyed into their mouths, and they should be forced, if possible, to swallow some drops of carmelite water, or of brandy, or of some other potable liquor, mixed with a little water; while some hot wine mixed with sugar and cinnamon, which makes one of the best cordials, is getting ready.

4. A compress of flannel, or of some other woollen stuff, dipt in hot wine, in which some aromatic herb has been steeped, must be applied to the pit of the stomach,

5. If the swooning seems likely to continue, the patient must be put into a well heated bed, which has before been perfumed with burning sugar and cinnamon: the frictions of the whole body with hot flannels being still continued.

6. As soon as the patient can swallow, he should take some soup or broth, with the yolk of an egg; or a little bread or biscuit, soaked in the hot spiced wine.

7. Lastly, during the whole time that all other precautions are taken to oppose the cause of the swooning, care must be had for some days to prevent any *deliquium* or fainting, by giving them often, and but little at a time, some light yet strengthening nourishment, such as panada made with soup instead of water, new laid eggs very lightly poached, light roast meats with sweet sauce, chocolate, soups of the most nourishing meats, jellies, milk, &c.

* Dr. Tissot informs me, that in Swisserland, they call volatile salt of vipers, or the volatile salt of raw silk, *sel. d' Angleterre*, of which one Goddard made a secret, and which he brought into vogue the latter end of the last century. But he justly observes at the same time, that on the present occasion every other volatile alkali will equally answer the purpose; and indeed the smell of some of them, as the spirit of sal ammoniac, with quicklime, *eau de luce*, &c. seem more penetrating. K.

§ 497. Those swoonings, which are the effect of bleeding, or of the violent operation of some purge, are to be ranged in this class.

Such as happen after artificial bleeding, are generally very moderate, commonly terminating as soon as the patient is laid upon the bed: and persons subject to this kind, should be bled lying down, in order to prevent it. But should the fainting continue longer than usual, some vinegar smelt to, and a little swallowed with some water, is a very good remedy.

The treatment of such faintings or swoonings, as are the consequences of too violent vomits or purges, may be seen hereafter § 552:

Of faintings occasioned by a Load, or Uneasiness at Stomach.

§ 498. It has been already observed, § 308. that indigestions were sometimes attended with swoonings, and indeed such vehement ones, as required speedy and very active succour too, such as that of a vomit. The indigestion is sometimes less the effect of the quantity, than of the quality, or the corruption of the food, contained in the stomach. Thus we see there are some persons, who are disordered by eating eggs, fish, craw-fish, or any fat meat; being thrown by them into inexpressible anguish attended with swooning too. It may be supposed to depend on this cause, when these very aliments have been lately eaten; and when it evidently neither depends on the other causes I have mentioned, nor on such as I shall soon proceed to enumerate.

We should, in cases of this sort, excite and revive the patients as in the former, by making them receive some very strong smell, of whatever kind is at hand; but the most essential point is to make them swallow down a large quantity of light warm fluid; which may serve to drown, as it were, the indigested matter; which may soften its acri-

mony; and either effect the discharge of it by vomiting, or force it down into the channel of the intestines.

A light infusion of chamomile flowers, of tea, of sage, of elder flowers, or of *carduus benedictus*, operate with much the same efficacy; though the chamomile and *carduus* promote the operation of vomiting rather more powerfully, which warm water alone will sometimes sufficiently do.

The swooning ceases, or at least, considerably abates in these cases, as soon as ever the vomiting commences. It frequently happens too, that, during the swooning, nature herself brings on a certain *nausea*, a wambling and sickish commotion of the stomach, that revives or rouses the patient for a moment; but yet not being sufficient to excite an actual vomiting, it lets him soon sink down again into this temporary dissolution, which often continues a pretty considerable time; leaving behind it a sickness at stomach, vertigos, and a depression and anxiety, which do not occur in the former species of this malady.

Whenever these swoonings from this cause are entirely terminated, the patient must be kept for some days to a very light diet, and take, at the same time, every morning fasting, a dose of the powder, N^o. 38. which relieves and exonerates the stomach of whatever noxious contents might remain in it; and then restores its natural strength and functions.

§ 499. There is another kind of swooning, which also results from a cause in the stomach; but which is, nevertheless, very different from this we have just been treating of; and which requires a very different kind of assistance. It arises from an extraordinary sensibility of this important organ, and from a general weakness of the patient.

Those subject to this malady are valetudinary weakly persons, who are disordered from many slight causes, and whose stomachs are at once very

feeble and extremely sensible. They have almost continually a little uneasiness after a meal, though they should indulge but a little more than usual; or if they eat of any food not quite so easy of digestion, they have some qualm or commotion after it: nay, should the weather only be unfavourable, and sometimes without any perceivable assignable cause, their uneasiness terminates in a swoon.

Patients swooning, from these causes, have a greater necessity for much tranquillity and repose, than for any other remedy; and it might be sufficient to lay them down on the bed. But as the bystanders in such cases, find it difficult to remain inactive spectators of persons in a swoon, some spirituous liquid may be held to their nose, while their temples and wrists are rubbed with it; and at the same time a little wine should be given them. Frictions are also useful in these cases.

This species of swooning, is oftener attended with a little feverishness, than the others.

Of those Swoonings, which arise from Nervous Disorders.

§ 500. This species of swooning, is almost wholly unknown to those persons, for whom this treatise is chiefly intended. Yet as there are some citizens, who pass a part of their lives in the country; and some country people, who are unhappily afflicted with the ailments of the inhabitants of large towns and cities, it seemed necessary to treat briefly of them.

By disorders of the nerves, I understand in this place, only that fault or defect in them, which is the cause of their exciting in the body, either irregular motions, that is, motions without any external cause, at least any perceivable one: and without our will's consenting to the production of them; or such motions, as are greatly more considerable than they should be, if they had been pro-

portioned to the force of the impression from without. This is very exactly that state, or affection, termed the *vapours*, and by the common people, the *mother*; and as there is no organ unprovided with nerves, and none, or hardly any function, in which the nerves have not their influence, it may be easily comprehended, that the vapours being a state or condition, which arises from the nerves exerting irregular involuntary motions, without any evident cause, and all the functions of the body depending partly on the nerves; there is no one symptom of other diseases, which the vapours may not produce or imitate; and that these symptoms, for the same reason, must vary infinitely, according to those branches of the nerves which are disordered. It may also hence be conceived, why the vapours of one person, have frequently no resemblance to those of another; and why the vapours of the very same person, in one day, are so very different from those in the next. It is also very conceivable, that the vapours are a certain, a real malady; and that oddity of the symptoms, which cannot be accounted for, by people unacquainted with the animal œconomy, has been the cause of their being considered, rather as the effect of a depraved imagination, than as a real disease. It is very conceivable, I say, that this surprizing oddity of the symptoms, is a necessary effect of the cause of the vapours; and, that no person can any more prevent his being invaded by the vapours, than he can prevent the attack of a fever, or of the tooth-ach.

§ 501. A few plain instances will furnish out a more complete notion of the mechanism, or nature of vapours. An emetic, a vomiting medicine, excites the act, or rather the passion, the convulsion of vomiting, chiefly by the irritation it gives to the nerves of the stomach; which irritation produces a spasm, a contraction of this organ. Now, in consequence of this morbid or defective

texture of the nerves, which constitutes the vapours, those of the stomach are excited to act with the same violence, as in consequence of taking a vomit, the patient will be agitated and worked by violent efforts to vomit, as much as if he had really taken one.

If an involuntary unusual motion in the nerves, that are distributed through the lungs, should constrain and straiten the very little visicles, or bladders, as it were, which admit the fresh air at every respiration, the patient will feel a degree of suffocation; just as if that straitening or contraction of the vessels were occasioned by some noxious steam or vapour.

Should the nerves which are distributed throughout the whole skin, by a succession of these irregular morbid motions, contract themselves; as they may from external cold, or by some stimulating application, perspiration by the pores will be prevented or checked; whence the humours, which should be evacuated through the pores of the skin, will be thrown upon the kidneys, and the patient will make a great quantity of thin clear urine, a symptom very common to vapourish people; or it may be diverted to the glands of the intestines, the guts, and terminate in a watery *diarrhœa*, or looseness, which frequently proves a very obstinate one.

§ 502. Neither are swoonings the least usual symptoms attending the vapours; and we may be certain they spring from this source, when they happen to a person subject to the vapours; and none of the other causes producing them are evident, or have lately preceded them.

Such swoonings, however, are indeed very rarely dangerous, and scarcely require any medical assistance. The patient should be laid upon a bed, the fresh air should be very freely admitted to him, and he should be made to smell rather to some disagreeable and fetid, than to any fragrant, sub-

stance. It is in such faintings as these that the smell of burnt leather, of feathers, or of paper, have often proved of great service.

§ 503. Patients also frequently faint away, in consequence of fasting too long; or from having eat a little too much; from being confined in too hot a chamber; from having seen too much company; from smelling too over-pouring a scent; from being too costive; from being too forcibly affected with some discourse or sentiments; and in a word, from a great variety of causes, which might not make the least impression on persons in perfect health; but which violently operate upon those vapourish people; because, as I have said, the fault of their nerves consists in their being too vividly, too acutely affected; the force of their sensation being no ways proportioned to the external cause of it.

As soon as that particular cause is distinguished from all the rest, which has occasioned the present swooning; it is manifest that this swooning is to be remedied, by removing that particular cause of it.

Of Swoonings occasioned by the Passions.

§ 504. There have been some instances of persons dying within a moment, through excessive joy. But such instances are so very rare and sudden, that assistance has seldom been sought for on this occasion. The case is otherwise with respect to those produced from rage, vexation, and dread or horror. I shall treat in a separate article of those resulting from great fear; and shall briefly consider here such as ensue from rage, and vehement grief or disappointment.

§ 505. Excessive rage and violent affliction, are sometimes fatal in the twinkling of an eye; tho' they oftner terminate in fainting only. Excessive grief or chagrine is especially accompanied with this consequence; and it is very common to see persons thus affected, sink into successive faintings for several hours. It is plainly obvious that

very little assistance can be given in such cases: it is proper, however, they should smell to strong vinegar; and frequently take a few cups of some hot and temperately cordial drink, such as bawm tea, or lemonade with a little orange or lemon-peel.

The calming assuaging cordial, that has seem'd the most efficacious to me, is one small coffee spoonful of a mixture of three parts of the mineral anodyne liquor of HOFFMAN*, and one part of the spirituous tincture of amber, which should be swallowed in a spoonful of water; taking after it a few cups of such drinks as I shall presently direct.

It is not to be supposed, that swoonings or faintings from excessive passions, can be cured by nourishment. The physical state or condition, into which vehement grief throws the body, is that, of all others, in which nourishment would be most injurious to it; and as long as the vehemence of the affliction endures, the sufferer should take nothing but some spoonfuls of soup or broth, or a few morsels of some light meat roasted.

§ 506. When wrath or rage has risen to so high a pitch, that the human machine, the body, entirely exhausted, as it were, by that violent effort, sinks down at once into excessive relaxation, a fainting sometimes succeeds, and even the most perilous degree of it, a *syncope*.

It is sufficient, or rather the most that can be done here, is to let the patient be perfectly still a while in this state; only making him smell to some vinegar. But when he is come to himself, he should drink plentifully of hot lemonade, and take one or more of the glysters N^o 5.

Sometimes there remain in these cases, sicknesses at stomach, reachings to vomit, a bitterness in the mouth, and some vertiginous symptoms, which seem

* Our sweet spirit of vitriol is a similar, and as effectual a medicine. K.

to require a vomit. But such a medicine must be very carefully avoided, since it may be attended with the most fatal consequence; and lemonade with glysters generally and gradually remove these swoonings. If the *nausea* and sickness at stomach continue, the utmost medicine we should allow besides, would be that of N^o. 23. or a few doses of N^o. 24.

Of Symptomatical Swoonings, or such as happen in the Progress of other Diseases.

§ 507. Swoonings, which supervene in the course of other diseases, never afford a favourable prognostic; as they denote weakness, and weakness is an obstacle to recovery.

In the beginning of putrid diseases, they also denote an oppression at stomach, or a mass of corrupt humours; and they cease as soon as an evacuation supervenes, whether by vomit or by stool.

When they occur, at the beginning of malignant fevers, they declare the high degree of their malignancy, and the great diminution of the patient's natural strength.

In each of these cases, vinegar used externally and internally, is the best remedy during the exacerbation or height of the paroxysm; and plenty of lemon juice and water, after it.

§ 508. Swoonings which supervene in diseases, accompanied with great evacuations, are cured like those which are owing to weakness; and endeavours should be used to restrain or moderate the evacuations.

§ 509. Those who have any inward abscess or imposthume, are apt to swoon frequently. They may sometimes be revived a little by vinegar, but they prove too frequently mortal.

§ 510. Many persons have a slighter or a deeper swooning, at the end of a violent fit of an intermitting fever, or at that of each exacerbation of a continual fever; this constantly shews the fever

has run very high, the swooning having been the consequence of that great relaxation, which has succeeded to a very high tension. A spoonful or two of light white wine, with an equal quantity of water, affords all the succour proper in such a case.

§ 511. Persons subject to frequent swoonings, should neglect nothing that may enable them to remove them when known; since the consequences of them are always detrimental, except in some fevers, in which they seem to mark the *crisis*.

Every swooning fit leaves the patient in dejection and weakness; the secretions from the blood are suspended; the humours disposed to stagnation; grumosities, or coagulations and obstructions are formed; and if the motion of the blood is totally intercepted, or considerably checked, *poly-puses*, and these often incurable, are formed in the heart, or in the larger vessels; the consequences of which are dreadful, and sometimes give rise to internal aneurisms, which always prove mortal, after long anxiety and oppression.

Swoonings which attack old people, without any manifest cause, always afford an unfavourable prognostic.

Of Hemorrhages, or an involuntary Loss of Blood.

§ 512. Hæmorrhages of the nose, supervening in inflammatory fevers, commonly prove a favourable *crisis*; which bleeding we should carefully avoid stopping, except it becomes excessive, and seems to threaten the patient's life.

As they scarcely ever happen in very healthy subjects, but from a superfluous abundance of blood, it is very improper to check them too soon, lest some internal stuffings and obstructions should prove the consequence.

A swooning sometimes ensues after the loss of only a moderate quantity of blood. This swooning stops the hæmorrhage, and goes off without

any further assistance, except the smelling to vinegar. But in other cases, there is a succession of fainting fits, without the blood's stopping; while at the same time, slight convulsive motions and twitchings ensue, attended with a raving; when, it becomes really necessary to stop the bleeding: and indeed, without waiting till these violent symptoms appear, the following signs will sufficiently direct us when it is right to stop the flux of blood, or to permit its continuance—As long as the pulse is still pretty full; while the heat of the body is equally extended to the very extremities; and the countenance and lips preserve their natural redness, no ill consequence is to be apprehended from the hæmorrhage, though it has been very copious, and even somewhat profuse.

But whenever the pulse begins to falter and tremble; when the countenance and the lips grow pale, and the patient complains of a sickness at stomach, it is absolutely necessary to stop the discharge of blood. And, considering that the operation of remedies, does not immediately follow the exhibition or application of them, it is safer to begin a little too early with them, than to delay them, though ever so little too long.

§ 513. First of all then, tight bandages, or ligatures, should be applied round both arms, on the part they are applied over in order to bleeding; and round the lower part of both thighs, on the gartering place; and all these are to be drawn very tight, with an intention to detain and accumulate the blood in the extremities.

2. In order to increase this effect, the legs are to be plunged in warm water up to the knees; for, by relaxing the blood-vessels of the legs and feet, they are dilated at the same time, and thence receive, and, in consequence of the ligatures above the knees, retain the more blood. If the water were cold, it would repel the blood to the head; if hot, it would increase the motion of it; and,

by giving a greater quickness to the pulse, would even contribute to increase the hæmorrhage.

As soon, however, as the hæmorrhage is stopt, these ligatures (on the thighs) may be relaxed a little, or one of them be entirely removed; allowing the others to continue on an hour or two longer without touching them: but great precaution should be taken not to slacken them entirely, nor all at once.

3. Seven or eight grains of nitre, and a spoonful of vinegar in half a glass of cool water, should be given the patient every half hour.

4. One drachm of white vitriol must be dissolved in two common spoonfuls of spring water; and a tent of lint, or bits of soft fine linen dipt in this solution, are to be introduced into the nostrils, horizontally at first, but afterwards to be intruded upwards, and as high as may be, by the assistance of a flexible bit of wood or whalebone. But should this application be ineffectual, the mineral anodyne liquor of HOFFMAN is certain to succeed; and in the country, where it often happens that neither of these applications are to be had speedily, brandy, and even spirit of wine, mixt with a third part vinegar, have answered entirely well, of which I have been a witness.

The prescription N^o. 67. which I have already referred to, on the article of wounds, may also be serviceable on this occasion. It must be reduced to powder, and conveyed up the nostrils as high as may be, on the point or extremity of a tent of lint, which may easily be covered with it: or a quill, well charged with the powder, may be introduced high into the nostrils, and its contents be strongly blown up from its other extremity; tho' after all the former method is preferable.

5. When the flux of blood is totally stopt, the patient is to be kept as still and quiet as possible; taking great care not to extract the tent which remains in the nose, nor to remove the clots of co-

agulated blood which fill up the passage. The loosening and removing of these should be effected very gradually and cautiously; and frequently the tent does not spring out spontaneously, till after many days.

§ 514. I have not, hitherto, said any thing of artificial bleeding in these cases, as I think it at best unserviceable; since, tho' it may sometimes have stopt the morbid loss of blood, it has at other times increased it. Neither have I mentioned anodynes here, whose constant effect is to determine a larger quantity of blood to the head.

Applications of cold water to the nape of the neck, ought to be wholly disused; having sometimes been attended with the most embarrassing consequences.

In all hæmorrhages, all fluxes of blood, great tranquillity, ligatures, and the use of the drinks N^o. 2. or 4. are very useful.

§ 515. People who are very liable to frequent hæmorrhages, ought to manage themselves conformably to the directions contained in the next chapter, § 544. They should take very little supper; avoid all sharp and spirituous liquors; apartments that are over hot; and cover their heads but very lightly.

When a patient has for a long time been subject to hæmorrhages, if they cease, he should retrench from his usual quantity of food; accustom himself to artificial bleedings at proper intervals; and take some gentle opening purges, especially that of N^o. 24. and frequently a little nitre in an evening.

Of Convulsions.

§ 516. Convulsions are, in general, more terrifying than dangerous; they result from many and various causes; and on the removal or extirpation of these, their cure depends.

In the fit itself very little is to be done, or even attempted.

As nothing does shorten the duration, nor even lessen the violence, of an epileptic fit, so nothing at all should be attempted in it; and the rather, because means and medicines often aggravate the disease. We should confine our endeavours solely to the security of the patient, by preventing him from giving himself any violent strokes; by getting something, if possible, between his teeth, such as a small roller of linen, to prevent his tongue from being hurt, or very dangerously squeezed and bruised, in a strong convulsion.

The only case which requires immediate assistance in the fit, is, when it is so extremely violent, the neck so swelled, and the face so very red, that there is room to be apprehensive of an apoplexy, which we should endeavour to obviate, by drawing eight or ten ounces of blood from the arm.

As this terrible disease is common in the country, it is doing a real service to the unfortunate victims of it, to inform them, how very dangerous it is to give themselves blindly up to take all the medicines which are cried up to them in such cases. If there be any one disease which requires a more attentive, delicate, and exquisite kind of treatment, it is this very disease. Some species of it are wholly incurable; and such as may be susceptible of a cure, require the utmost care, and consideration of the most enlightened and most experienced physicians; while those who pretend to cure all epileptic patients, with one invariable medicine, are either ignorants, or impostors, and sometimes both in one.

§ 517. Simple convulsion fits, which are not epileptic, are frequently of a long continuance, persevering, with very few and short intervals, for days, and even for weeks.

The true genuine cause should be investigated as strictly as possible, though nothing should be attempted in the fits. The nerves are, during that term, in so high a degree of tension and sensibility, that the very medicines supposed to be strongly indicated, often redouble the storm they were intended to appease.

Thin watery liquors, moderately imbued with aromatics, are the least hurtful, the most innocent things that can be given; such as bawm, lime-tree, and elder-flower tea. A ptisan of liquorice-root only, has sometimes answered better than any other.

Of suffocating, or strangling Fits.

§ 518. These fits (by whatever other name they may be called) whenever they very suddenly attack a person, whose breathing was easy and natural just before, depend almost constantly on a spasm or contraction of the nerves, in the vesicles of the lungs; or upon an infarction, a stuffing of the same parts, produced by viscid clammy humours.

That suffocation which arises from a spasm is not dangerous; it goes off of itself, or it may be treated like swoonings owing to the same cause. See § 502.

§ 519. That suffocation, which is the effect of a sanguineous fulness and obstruction, may be distinguished by its attacking strong, vigorous, sanguine persons, who are great eaters, using much juicy nutritious food, and strong wine and liquors, and who frequently heat and inflame themselves; and when the fit has come on after any inflaming cause, when the pulse is full and strong, and the countenance red.

Such are cured, 1. By a very plentiful discharge of blood from the arm, which is to be repeated, if necessary.

2. By the use of glysters.

3. By drinking plentifully of the ptisan N^o. 1. to each pot of which a dram of nitre is to be added; and,

4. By the vapour of hot vinegar, continually received by respiration or breathing. See § 55.

§ 520. There is reason to think, that one of these fits is owing to a quantity of tough viscid humours in the lungs, when it attacks persons, whose temperament, and whose manner of living are opposite to those I have just described; such as valetudinary, weakly, phlegmatic, pituitous, inactive, and squeamish persons, who feed badly, or on fat, viscid, and insipid diet; and who drink much hot water, either alone, or in tea-like infusions. And these signs of suffocation, resulting from such causes, are still more probable, if the fit came on in rainy weather, and during a southerly wind; and when the pulse is soft and small, the visage pale and hollow.

The most efficacious treatment we can advise, is, 1. To give every half hour, half a cup of the potion N^o. 8. if it can be readily had. 2. To make the patient drink very plentifully of the drink N^o. 12. and, 3. To apply two strong blisters to the fleshy parts of his legs.

If he was strong and hearty before the fit, and the pulse still continues vigorous, and feels somewhat full withal, the loss of seven or eight ounces of blood is sometimes indispensably necessary. A glyster has also frequently been attended with extraordinary good effects.

Those afflicted with this oppressing malady, are commonly relieved, as soon as they expectorate, and sometimes even by vomiting a little.

The medicine N^o. 25. a dose of which may be taken every two hours, with a cup of the ptisan N^o. 12. often succeeds very well.

But if neither this medicine, nor the prescription N^o. 8. are at hand, which may be the case in country places; an onion of a moderate size should

be pounded in an iron or marble mortar; upon this, a glass of vinegar is to be poured, and then strongly squeezed out again through a piece of linen. An equal quantity of honey is then to be added to it. A spoonful of this mixture, whose remarkable efficacy I have been a witness of, is to be given every half hour.

Of the violent Effects of Fear.

§ 521. Here I shall insert some directions, to prevent the ill consequences of great fear or terror, which are very prejudicial at every term of life, but chiefly during infancy.

The general effects of terror, are a great straitening or contraction of all the small vessels, and a repulsion of the blood into the large and internal ones. Hence follows the suppression of perspiration, the general seizure or oppression, the trembling, the palpitations and anguish, from the heart and the lungs being over charged with blood; and sometimes attended with swoonings, irremediable disorders of the heart, and death itself. A heavy drowsiness, raving, and a kind of furious or raging *delirium* happen in other cases, which I have frequently observed in children, when the blood-vessels of the neck were swelled and stuffed up; and convulsions, and even the epilepsy have come on, all which have proved the horrible consequence of a most senseless and wicked foolery or sporting. One half of those epilepsies, which do not depend on such causes as might exist before the child's birth, are owing to this detestible custom; and it cannot be too much inculcated into children, never to frighten one another; a point, which persons intrusted with their education, ought to have the strictest regard to.

When the humours that should have passed off by perspiration, are repelled to the intestines, a tedious and very obstinate looseness is the frequent consequence.

§ 522. Our endeavours should be directed, to re-establish the disordered circulation; to restore the obstructed perspiration; and to allay the agitation of the nerves.

The popular custom in these cases, has been to give the terrified patient some cold water directly; but when the fright has been considerable, this is a very pernicious custom, and I have seen some terrible consequences from it.

They should, on the contrary, be conveyed into some very quiet situation, leaving there but very few persons, and such only as they are thoroughly familiar with. They should take a few cups of pretty warm drink, particularly of an infusion of lime-tree flowers and bawm. Their legs should be put into warm water, and remain there an hour, if they will patiently permit it, rubbing them gently now and then, and giving them every half-quarter of an hour, a small cup of the same drink. When their composure and tranquillity are returned a little, and their skin seems to have recovered its wonted and general warmth, care should be taken to dispose them to sleep, and to perspire plentifully. For this purpose, they may be allowed a few spoonfuls of wine, on putting them into bed, with one cup of the former infusion; or, which is more certain and effectual, a few drops of SYDENHAM'S liquid laudanum, N^o. 44. but should that not be near at hand, a small dose, of *Venice treacle*.

§ 523. It sometimes happens, that children do not seem at first extremely terrified; but the fright is renewed while they sleep, and with no small violence. The directions I have just given must then be observed, for some successive evenings before they are put to bed.

Their fright frequently returns about the latter end of the night, and agitates them violently every day. The same treatment should be continued.

in such cases; and we should endeavour to dispose them to be asleep at the usual hour of its return.

By this very method, I have dissipated the dismal consequences of fear on women in child-bed, which is so commonly, and often speedily, mortal.

If a suffocation from this cause is violent, there is sometimes a necessity for opening a vein in the arm.

These patients should gradually be inured to an almost continual, but gentle, kind of exercise.

All violent medicines render those diseases, which are the consequences of great fear, incurable. A pretty common one is that of an obstruction of the liver, which has been productive of a jaundice.*

Of Accidents or Symptoms produced by the Vapours of Coal, and of Wine.

§ 524. Not a single year passes over here, without the destruction of many people by the vapour of charcoal, or of small coal, and by the steam or vapour of wine.

The symptoms by coal occur, when † small coal, and especially when ‡ charcoal is burnt in a chamber close shut, which is direct poison to a person shut up in it. The sulphureous oil, which is set at liberty and diffused by the action of fire, expands itself through the chamber; while those who are in it perceive a disorder and confusion in their heads; contract vertigos, sickness at stomach, a weakness, and very unusual kind of numbness; become raving, convulsed and trembling; and

* I have seen this actually verified by great and disagreeable surprise, attended indeed with much concern, in a person of exquisite sensations. K.

† *La Braise.*

‡ *Charbon.* Dr. Tissot informs me, their difference consists in this, that the charcoal is prepared from wood burnt in a close or stifled fire: and that the small coal is made of wood (and of smaller wood) burnt in an open fire, and extinguished before it is reduced to the state of a cinder. He says the latter is smaller, softer, less durable in the fire, and the vapour of it less dangerous than that of charcoal.

if they fail of presence of mind, or of strength, to get out of the chamber, they die within a short time.

I have seen a woman who had vertiginous commotions in her head for two days, and almost continual vomitings, from her having been confined less than six minutes in a chamber (and that, notwithstanding both one window and one door were open) in which there was a chafing dish, with some burning coals. Had the room been quite close, she must have perished by it.

This vapour is narcotic or stupefying, and proves mortal, in consequence of its producing a sleepy or apoplectic disorder, tho' blended, at the same time, with something convulsive; which sufficiently appears from the closure of the mouth, and the strict contraction or locking of the jaws.

The condition of the brain, in the dissected bodies of persons thus destroyed, proves that they die of an apoplexy: notwithstanding it is very probable, that suffocation is also partly the cause of their deaths, as the lungs have been found stuffed up with blood, and livid.

It has also been observed in some other such bodies, that patients killed by the vapour of burning coals, have commonly their whole bodies swelled out to one third more than their magnitude, when living. The face, neck, and arms are swelled, as if they had been blown up; and the whole human machine appears in such a state, as the dead body of a person would, who had been violently strangled; and who had made all possible resistance for a long time, before he was overpowered.

§ 525. Such as are sensible of the great danger they are in, and retreat seasonably from it, are generally relieved as soon as they get into the open air; or if they have any remaining uneasiness, a little water and vinegar, or lemonade, drank hot, affords them speedy relief. But when they are so far poisoned, as to have lost their feeling and un-

derstanding, if there be any means of reviving them, such means consist,

1. In exposing them to a very pure, fresh and open air.

2. In making them smell to some very penetrating odour, which is somewhat stimulating and-reviving, such as the volatile spirit of sal ammoniac, the * *English* salt; and afterwards to surround them, as it were, with the steam of vinegar.

3. In taking some blood from their arm.

4. In putting their legs into warm or hot water, and chafing them well.

5. In making them swallow, if practicable, much lemonade, or water and vinegar, with the addition of nitre; and,

6. In throwing up some sharp glysters.

As it is manifest there is something spasmodic in these cases, it were proper to be provided with some antispasmodic remedies, such as the mineral anodyne liquid of HOFFMAN. Even opium has sometimes been successfully given here, but it should be allowed to physicians only to direct it in such cases.

A vomit would be hurtful; and the reachings to vomit arise only from the oppression on the brain.

It is a common, but erroneous opinion, that if the coal be suffered to burn for a minute or so in the open air, or in a chimney, it is sufficient to prevent any danger from the vapour of it.

Hence it amounts even to a criminal degree of imprudence, to sleep in a chamber while charcoal or small coal is burning in it; and the number of such imprudent persons, as have never awaked after it, is so considerable, and so generally known too, that the continuance of this unhappy custom is astonishing.

§ 526. The bakers, who make use of much small coal, often keep great quantities of it in

* See note * Page 110. Vol. II.

their cellars, which frequently abound so much with the vapour of it, that it seizes them violently the moment they enter into the cellar. They sink down at once, deprived of all sensation, and die, if they are not drawn out of it soon enough to be assisted, according to the directions I have just given.

One certain means of preventing such fatal accidents, is, upon going into the cellar, to throw some flaming paper or straw into it, and if these continue to flame out and consume, there is no reason for dreading the vapour; but if they should be extinguished, no person ought to venture in. But after opening the vent-hole, a bundle of flaming straw must be set at the door, which serves to attract the external air strongly. Soon after, the experiment of the flaming paper must be repeated, and if it goes out, more straw is to be set on fire before the cellar door.

§ 527. Small coal, burnt in an open fire, is not near so dangerous as *charcoal*, properly so called; the danger of which arises from this, that in extinguishing it by the usual methods, all those sulphureous particles of it, in which its danger consists, are concentrated. Nevertheless, small coal is not entirely deprived of all its noxious quality, without some of which it could not strictly be coal.

The common method of throwing some salt on live coals, before they are conveyed into a chamber; or of casting a piece of iron among them, to imbibe some part of their deadly narcotic sulphur, is not without its utility; though by no means sufficient to prevent all danger from them.

§ 528. When the most dangerous symptoms from this cause disappear, and there remains only some degree of weakness, of numbness, and a little inappetency, or loathing at stomach, nothing is better than lemonade with one fourth part wine,

half a cup of which should frequently be taken, with a small crust of bread.

§ 529. The vapour which exhales from wine, and in general from all fermenting liquours, such as beer, cyder, &c. contains something poisonous, which kills in the like manner, with the vapour of coal; and there is always some danger in going into a cellar, where there is much wine in the state of fermentation, if it has been shut up close for several hours. There have been many examples of persons struck dead on entering one, and of others who have escaped out of it with difficulty.

When such unhappy accidents occur, men should not be successively exposed, one after another, to perish, by endeavouring to fetch out the first who sunk down upon his entrance; but the air should immediately be purified by the method already directed, or by discharging some guns into the cellar; after which people may venter in with precaution. And when the persons unfortunately afflicted are brought out, they are to be treated like those who were affected with the coal-vapour.

I saw a man, about eight years since, who was not sensible of the application of spirit of sal ammoniac, till about an hour after he was struck down, and who was entirely freed at last, by a plentiful bleeding; though he had been so insensible, that it was several hours before he discovered a very great wound he had, which extended from the middle of his arm to his armpit; and, which was made by a hook, intended to be used, in case of a house catching fire, to assist persons in escaping from the flames.

§ 530. When subterraneous caves that have been very long shut, are opened; or when deep wells are cleaned, that have not been emptied for several years, the vapours arising from them produce the same symptoms I have mentioned, and require the same assistance. They are to be cleans-

ed and purified, by burning sulphur and salt petre in them, or gunpowder, as compounded of both.

§ 531. The offensive stinck of lamps, and of candles, especially when their flames are extinguished, operate like other vapours, though with less violence, and less suddenly. Nevertheless there have been instances of people killed by the fumes of lamps fed with nut oil, which had been extinguished in a close room. These last smells or fumes prove noxious also, in consequence of their greasiness, which being conveyed, together with the air, into the lungs, prevent their respiration; and hence we may observe, that persons of weak, delicate breasts, find themselves quickly oppressed, in chambers or apartments illuminated with many candles.

The proper remedies have been already directed § 525. The steam of vinegar is very serviceable in such cases.

Of Poisons.

§ 532. There are a great number of poisons, whose manner of acting is not alike, and whose ill effects are to be opposed by different remedies; but arsenic, or ratsbane, and some particular plants, are the poisons which are the most frequently productive of mischief, in country places.

§ 533. It is in consequence of its excessive acrimony, or violent heat and sharpness, which corrodes or gnaws, that arsenic destroys by an excessive inflammation, with a burning fire as it were, most torturing pains in the mouth, throat, stomach, guts; with rending and often bloody vomitings and stools, convulsions, faintings. &c.

The best remedy of all, is pouring down whole torrents of milk; or, where there is not milk, of warm water. Nothing, but a prodigious quantity of such weak liquids can avail such a miserable patient. If the cause of the disorder is immediately known, after having very speedily taken

down a large quantity of warm water, vomiting may be excited, with oil, or with melted butter, and by tickling the inside of the throat with a feather. But when the poison has already inflamed the stomach and the guts, we must not expect to discharge it by vomiting. Whatever is healing or emollient, decoctions of mealy puls, of barley, of oatmeal, of marshmallows, and butter and oil, are the most suitable.

As soon as ever the tormenting pains are felt in the belly, and the intestines seem attacked, glysters of milk must be very frequently thrown up.

If at the very beginning of the attack, the patient has a strong pulse, a very large bleeding may be considerably serviceable, by its delaying the progress, and diminishing the degree, of inflammation.

And even though it should happen, that a patient overcomes the first violence of this dreadful accident, it is too common for him to continue in a languid state for a long time, and sometimes for all the remainder of his life. The most certain method of preventing this misery, is to live for some months solely upon milk, and some very new laid eggs, just received from the hen, and dissolved or blended in the milk, without boiling them.

§ 534. The plants which chiefly produce these unhappy accidents, are some kinds of hemlock, whether it be the leaf or the root, the berries of the *bella donna*, or deadly nightshade, which children eat by mistake for cherries; some kind of mushrooms, the seed of the *datura*, or the stinking thorn-apple.

All the poisons of this class prove mortal, rather from a narcotic, or stupefying, than from an acrid, or very sharp quality. Vertigos, faintings, reachings to vomit, and actual vomitings, are the first symptoms produced by them.

The patient should immediately swallow down a large quantity of water, moderately seasoned

with salt, or with sugar; and then a vomiting should be excited as soon as possible, by the prescription N^o. 34. or 35. or, if neither of these is very readily procurable, with radish-seed pounded, to the quantity of a coffee spoonful, swallowed in warm water, soon after forcing a feather or a finger into the patient's throat, to expedite the vomiting.

After the operation of the vomit, he must continue to take a large quantity of water, sweetened with honey or sugar, together with a considerable quantity of vinegar, which is the true specific, or antidote, as it were, against those poisons; the intestines must also be emptied by a few glysters.

Thirty-seven soldiers having unhappily eaten, instead of carrots, of the roots of the *enanthe*, or water-hemlock; became all extremely sick; when the emetic, N^o. 34. with the assistance of glysters, and very plentiful drinking of warm water, saved all but one of them, who died before he could be assisted.

§ 535. If a person has taken too much opium, or any medicine into which it enters, as *Venice treacle*, *mithridate*, *diascordium*, &c. whether by imprudence, mistake, ignorance, or through any bad design, he must be bled upon the spot, and treated as if he had a sanguine apoplexy, (see § 147.) by reason that opium in effect produces such a one. He should snuff up and inhale the vapour of vinegar plentifully, adding it also liberally to the water he is to drink.

Of acute Pains.

§ 536. It is not my intention to treat here of those pains, that accompany any evident known disease, and which should be conducted as relating to such diseases; nor of pains to which infirm valetudinary persons are habitually subject; since experience has informed such of the most effectual relief for them: but when a person sound and

hale, finds himself suddenly attacked with some excessive pain, in whatever part it occurs, without knowing either the nature, or the cause of it, they may, till proper advice can be procured,

1. Part with some blood, which, by abating the fulness and tension, almost constantly alluages the pains, at least for some time; and it may even be repeated, if, without weakening the patient much, it has lessened the violence of the pain.

2. The patient should drink abundantly of some very mild temperate drink, such as the ptisan N°. 2. the almond emulsion N°. 4. or warm water, with a fourth or fifth part milk.

3. Several emollient glysters should be given.

4. The whole part that is affected, and the adjoining parts, should be covered with cataplasms, or soothed with the emollient fomentation, N°. 9

5. The warm bath may also be advantageously used.

6. If notwithstanding all these assistances, the pain should still continue violent, and the pulse is neither full nor hard, the grown patient may take an ounce of syrup of diacodium, or sixteen drops of liquid laudanum; and when neither of these are to be had, * an *English* pint of boiling water must be poured upon three or four poppy-heads with their seeds, but without the leaves, and this decoction is to be drank like tea.

§ 537. Persons very subject to frequent pains, and especially to violent head-achs, should abstain from all strong drink; such abstinence being often the only means of curing them; and people are very often mistaken in supposing wine necessary for as many as seem to have a weak stomach.

C H A P. XXXII.

Of Medicines taken by Way of Precaution, or Prevention.

S E C T. 538.

I Have pointed out, in some parts of this work, the means of preventing the bad effects of several causes of diseases; and of prohibiting the return of some habitual disorders. In the present chapter, I shall adjoin some observations on the use of the principal remedies, which are employed as general preservatives; pretty regularly too at certain stated times, and almost always from mere custom only; without knowing, and often with very little consideration, whether they are right or wrong.

Nevertheless, the use, the habit of taking medicines, is certainly no indifferent matter: it is ridiculous, dangerous, and even criminal, to omit them, when they are necessary; but not less so to take them when they are not wanted. A good medicine taken seasonably, when there is some disorder, some *disarrangement* in the body, which would in a short time occasion a distemper, has often prevented it. But yet the very same medicine, when given to a person in perfect health, if it does not directly make him sick, leaves him at the best in a greater propensity to the impressions of diseases; and there are but too many examples of people, who having very unhappily contracted a habit, a disposition to take physick, have really injured their health, and impaired their constitutions, however naturally strong, by an abuse of those materials, which providence has given for the recovery and re-establishment of it: an abuse which, tho' it should not injure the health of the person, would occasion those remedies, when he should be really sick, to be less efficacious and ser-

viceable to him, from their having been familiar to his constitution; and thus he becomes deprived of the assistance he would have received from them, if taken only in those times and circumstances, in which they were necessary for him.

Of Bleeding.

§ 539. Bleeding is necessary only in these four cases. 1. When there is too great a quantity of blood in the body. 2. When there is any inflammation, or an inflammatory disease. 3. When some cause supervenes, or is about to supervene, in the constitution, which would speedily produce an inflammation, or some other dangerous symptoms, if the vessels were not relaxed by bleeding. It is upon this principle that patients are bled after wounds and after bruises; that bleeding is directed for a pregnant woman, if she has a violent cough; and that bleeding is performed, by way of precaution, in several other cases. 4. We also advise bleeding sometimes to assuage an excessive pain, though such pain is not owing to excess of blood, nor arises from any inflamed blood; but in order to appease and moderate the pain by bleeding, and thereby to obtain time for destroying the cause of it by other remedies. But as these two last reasons are in effect involved or implied in the two first, it may be very generally concluded, that an excess of blood, and an inflamed state of it, are the only two necessary motives for bleeding.

§ 540. An inflammation of the blood is known by the symptoms accompanying those diseases, which that cause produces. Of these I have already spoken, and I have at the same time regulated the practice of bleeding in such cases. Here I shall point out those symptoms and circumstances, which manifest an excess of blood.

The first, then, is the general course and manner of the patient's living, while in health. If

he is a great eater, and indulges in juicy nutritious food, and especially on much flesh-meat; if he drinks rich and nourishing wine, or other strong drink, and at the same time enjoys a good digestion; if he takes but little exercise, sleeps much, and has not been subject to any very considerable evacuation, he may well be supposed to abound in blood. It is very obvious that all these causes rarely occur in country people; if we except only the abatement of their exercise during some weeks in winter, which indeed may contribute to their generating more blood than they commonly do.

The labouring country-man, for much the greater part of his time, lives only on bread, water and vegetables; materials but very moderately nourishing; as one pound of bread probably does not make, in the same body, more blood than one ounce of flesh; tho' a general prejudice seems to have established a contrary opinion. The 2d, is the total stopping or long interruption of some involuntary bleeding or hæmorrhage, to which he had been accustomed. 3. A full and strong pulse, and veins visibly filled with blood, in a body that is not lean and thin, and when he is not heated. 4. A florid lively ruddiness. 5. A considerable and unusual numbness; sleep more profound, of more duration, and yet less tranquil and calm, than at other times; a greater propensity than ordinary to be fatigued after moderate exercise or work; and a little oppression and heaviness from walking. 6. Palpitations, accompanied sometimes with very great dejection, and even with a slight fainting fit; especially on being in any hot place, or after moving about considerably. 7. Vertigos, or swimings of the head, especially on bowing down and raising it up at once, and after sleeping. 8. Frequent pains of the head, to which the person was not formerly subject; and which seem not to arise from any defect in the digesti-

ons. 9. An evident sensation of heat, pretty generally diffused over the whole body. 10. A smarting sort of itching all over, from a very little more heat than usual. And lastly, frequent hæmorrhages; and these attended with manifest relief, and more vivacity.

People should, notwithstanding, be cautious of supposing an unhealthy excess of blood, from any one of these symptoms only. Many of them must concur; and they should endeavour to be certain, that even such a concurrence of them does not result from a very different cause, and wholly opposite in effect to that of an excess of blood.

But when it is certain, from the whole appearance, that such an excess doth really exist, then a single, or even a second bleeding is attended with very good effects. Nor is it material, in such cases, from what part the blood is taken.

§ 541. On the other hand, when these circumstances do not exist, bleeding is in no wise necessary; nor should it ever be practised in these following conditions and circumstances, except for some particular and very strong reasons; of the due force of which none but physicians can judge.

First, when the person is in a very advanced age, or in very early infancy. 2. When he is either naturally of a weakly constitution, or it has been rendered such by sickness, or by some other accident. 3. When the pulse is small, soft, feeble, and intermits, and the skin is manifestly pale. 4. When the limbs, the extremities of the body, are often cold, puffed up and soft. 5. When their appetite has been very small for a long time; their food but little nourishing; and their perspiration too plentiful, from great exercise. 6. When the stomach has long been disordered, and the digestion bad, whence very little blood could be generated. 7. When the patient has been considerably emptied, whether by hæmorrhages,

looseness, profuse urine or sweat; or when the *crisis* of some distemper has been effected by any one of these evacuations. 8. When the patient has long been afflicted with some depressing disease; and troubled with many such obstructions as prevent the formation of blood. 9. Whenever a person is exhausted, from whatever cause. 10. When the blood is in a thin, pale, and dissolved state.

§ 542. In all these cases, and in some others less frequent, a single bleeding often precipitates the patient, into an absolutely incurable state; an irreparable train of evils. Many dismal examples of it are but too obvious.

Whatever, therefore, be the situation of the patient, and however naturally robust, that bleeding, which is unnecessary, is noxious. Repeated, re-iterated bleedings, weaken and enervate, hasten old age, diminish the force of the circulation, thence fatten and puff up the body; and next, by weakening, and lastly by destroying, the digestions, they lead to a fatal dropsy: they disorder the perspiration by the skin, and leave the patient liable to colds and defluxions: they weaken the nervous system, and render persons subject to vapours, to the hypochondriac disorders, and to all nervous maladies.

The ill consequence of a single, though erroneous, bleeding, is not immediately discernible: on the contrary, when it was not performed in such a quantity, as to weaken the patient perceptibly, it appears to have been rather beneficial. Yet I still here insist upon it, that it is not the less true that, when unnecessary, is is prejudicial; and that people should never bleed, as sometimes has been done, for mere whim; or, as it were, for diversion: It avails nothing to affirm, that within a few days after it, they have got more blood than they had before it, that is, that they weigh more than at first, whence they infer the loss of blood

very speedily repaired. The fact of their augmented weight is admitted; but this very fact testifies against the real benefit of that bleeding; since it is a proof; that the natural evacuations of the body are less compleatly made; and that humours, which ought to be expelled, are retained in it. There remains the same quantity of blood, and perhaps a little more; but it is not a blood so well made, so perfectly elaborated; and this is so very true, that if the thing were otherwise; if some days after the bleeding, they had a greater quantity of the same kind of blood, it would amount to a demonstration, that more re-iterated bleedings must necessarily have brought on an inflammatory disease, in a man of a robust habit of body.

§ 543. The quantity of blood, which a grown man may part with, by way of precaution, is about ten ounces.

§ 544. Persons so constituted, as to breed much blood, should carefully avoid all those causes which tend to augment it, (see § 540. Art. 1.) and when they are sensible of the quantity augmented, they should confine themselves to a light frugal diet. on puls, fruits, bread and water; they should often bathe their feet in warm water, taking night and morning the powder N^o. 20. drink of the ptisan N^o. 1. sleep but very moderately, and take much exercise. By using these precautions, they may either prevent any occasion for bleeding, or should they really be obliged to admit of it, they would increase and prolong its good effects. These are also the very means, which may remove all the danger that might ensue from a person's omitting to bleed at the usual season or interval, when the habit, the fashion of bleeding had been inveterately established in him.

§ 545. We learn with horror and astonishment, that some have been bled eighteen, twenty, and even twenty-four times in two days; and some o-

thers, some * hundred times, in the course of some months. Such instances irrefragably demonstrate the continual ignorance of their physician or surgeon; and should the patient escape, we ought to admire the inexhaustible resources of nature, that survived so many murderous incisions.

§ 546. The people entertain a common notion, which is, that the first time of bleeding certainly saves the life of the patient; but to convince them of the falsity of this silly notion, they need only open their eyes, and see the very contrary fact to this occur but too unhappily every day, many people dying soon after their first bleeding. Were their opinion right, it would be impossible that any person should die of the first disease that seized him, which yet daily happens. Now the extirpation of this absurd opinion is really become important, as the continuance of it is attended with some unhappy consequences: their faith in, their great dependance on, the extraordinary virtue of this first bleeding, makes them willing to omit it, that is, to treasure it up against a distemper, from which they shall be in the greatest danger; and thus it is deferred as long as the patient is not extremely bad, in hopes that if they can do without it then, they shall keep it for another and more pressing occasion. Their present disease in the mean time rises to a violent height; and then they bleed, but when it is too late, and I have seen instances of many patients, who were permitted to die, that the first bleeding might be reserved for a more important occasion. The only difference between the first bleeding, and any sub-

* How shocking is this! and yet how true in some countries! I have been most certainly assured, that bleeding has been inflicted and repeated in the last sinking and totally relaxing stage of a sea-scurvy, whose fatal termination is doubtless accelerated. This did not happen in our own fleet: yet we are not as yet wholly exempt on shore, from some abuse of bleeding, which a few raw, unthinking operators are apt to consider as a meer matter of course. I have in some other place stigmatized the madness of bleeding in convulsions, from manifest exhaustion and emptiness, with the abhorrence it deserves. K.

frequent one is, that the first, commonly gives the patient an emotion which is rather hurtful than salutary.

Of Purges.

§ 547. The stomach and bowels are emptied either by vomiting, or by stools, the latter discharge being much more natural than the first, which is not effected without a violent motion, and one indeed to which nature is repugnant. Nevertheless, there are some cases, which really require this artificial vomiting; but these excepted (some of which I have already pointed out) we should rather prefer those remedies, which empty the belly by stool.

§ 548. The signs, which indicate a necessity for purging, are, 1. A disagreeable taste or flavour of the mouth in a morning, and especially a bitter taste; a foul furred tongue and teeth, disagreeable eructations or belchings, windiness and distention.

2. A want of appetite which increases very gradually, without any fever, which degenerates into a disgust or total aversion to food; and sometimes communicates a bad taste to the very little such persons do eat.

3. Reachings to vomit in a morning fasting, and sometimes throughout the day; supposing such not to depend on a woman's pregnancy, or some other disorder, in which purges would be either useless or hurtful.

4. A vomiting up of bitter or corrupted humours.

5. A manifest sensation of a weight, or heaviness in the stomach, the loins, or the knees.

6. A want of strength sometimes attended with restlessness, ill humour, or peevishness, and melancholy.

7. Pains of the stomach, frequent pains of the head, or vertigos; sometimes a drowsiness, which increases after meals.

8. Some species of cholics; irregular stools, which are sometimes very great in quantity, and too li-

quid for many days together; after which an obstinate costiveness ensues.

9. A pulse less regular, and less strong, than what is natural to the patient, and which sometimes intermits.

§ 549. When these symptoms, or some of them, ascertain the necessity of purging a person, not then attacked by any manifest disease (for I am not speaking here of purges in such cases) a proper purging medicine may be given him. The bad taste in his mouth; the continual belchings; the frequent reachings to vomit; the actual vomitings and melancholy discover, that the cause of his disorder resides in the stomach, and shew that a vomit will be of service to him. But when these signs or symptoms are not evident, the patient should take such purging or opening remedies, as are particularly indicated by the pains, whether of the loins, from the cholic, or by a sensation of weight or heaviness in the knees.

§ 550. But we should abstain from either vomiting or purging, 1. Whenever the complaints of the patients are founded in their weakness, and their being already exhausted. 2. When there is a general dryness of the habit, a very considerable degree of heat, some inflammation, or a strong fever. 3. Whenever nature is exerting herself in some other salutary evacuation; whence purging must never be attempted in critical sweats, during the monthly discharges, nor during a fit of the gout. 4. Nor in such inveterate obstructions as purges cannot remove, and really do augment. 5. Neither when the nervous system is considerably weakened.

§ 551. There are other cases again, in which it may be proper to purge, but not to give a vomit. These cases are, 1. When the patient abounds too much with blood, (see § 540) since the efforts which attend vomiting, greatly augment the force of the circulation; whence the blood-

vessels of the head and of the breast, being extremely distended with blood, might burst, which must prove fatal on the spot, and has repeatedly proved so. 2. For the same reason they should not be given to persons, who are subject to frequent bleeding from the nose, or to coughing up or vomiting of blood; to women who are subject to excessive or unseasonable discharges of blood, &c. from the *vagina*, the neck of the womb; nor to those who are with child. 3. Vomits are improper for ruptured persons.

§ 552. When any person has taken too acrid, too sharp a vomit, or a purge, which operates with excessive violence; whether this consists in the most vehement efforts and agitations, the pains, convulsions or swoonings, which are their frequent consequences; or whether that prodigious evacuation and emptiness their operation causes (which is commonly termed a *super-purgation*) and which may hurry the patient off; instances of which are but too common among the lower class of the people, who much too frequently confide themselves to the conduct of ignorant men-slayers: in all such unhappy accidents, I say, we should treat these unfortunate persons, as if they had been actually poisoned by violent corroding poisons, (see § 533) that is, we should fill them, as it were, with draughts of warm water, milk, oil, barley-water, almond-milk, emollient glysters with milk, and the yolks of eggs; and also bleed them plentifully, if their pains are excessive, and their pulses strong and feverish.

The super-purgation, the excessive discharge is to be stopt, after having plied the patient plentifully with diluting drinks, by giving the calming anodyne medicines directed in the removal of acute pains, § 536. Art. 6.

Flannels dipt in hot water, in which some *Venice* treacle is dissolved, are very serviceable, and should the evacuations by stool be excessive, and

the patient has not a high fever, and a parching kind of heat, a morsel of the same treacle, as large as a nutmeg, may be dissolved in his glyster.

But should the vomiting solely be excessive, without any purging, the number of the emollient glysters with oil and the yolk of an egg, must be increased; and the patient should be placed in a warm bath.

§ 553. Purges frequently repeated, without just and necessary indications, are attended with much the same ill effects as frequent bleedings. They destroy the digestions; the stomach no longer, or very languidly, exerts its functions; the intestines prove inactive; the patient becomes liable to very severe cholics; the plight of the body, deprived of its salutary nutrition, falls off; perspiration is disordered; defluxions ensue; nervous maladies come on, with a general languor; and the patient proves old, long before the number of his years have made him so.

Much irreparable mischief has been done to the health of children, by purges injudiciously given and repeated. They prevent them from attaining their utmost natural strength, and frequently contract their due growth. They ruin their teeth; dispose young girls to future obstructions, and when they have been already affected by them, they render them still more obstinate.

It is a prejudice too generally received, that persons who have little or no appetite need purging; since this is often very false, and most of those causes, which lessen or destroy the appetite, cannot be removed by purging; tho' many of them may be increased by it.

Persons whose stomachs contain much glairy viscid matter, suppose they may be cured by purges, which seem indeed at first to relieve them; but this proves a very slight and deceitful relief. These humours are owing to that weakness and laxity of the stomach, which purges augment;

since, notwithstanding they carry off part of these viscid humours generated in it, at the expiration of a few days there is a greater accumulation of them than before; and thus, by a re-iteration of purging medicines, the malady soon becomes incurable, and health is irrecoverably lost. The real cure of such cases is effected by directly opposite medicines. Those referred to, or mentioned, § 272. are highly conducive to it.

§ 554. The custom of taking stomachic medicines infused in brandy, spirit of wine, cherry water, &c. is always dangerous; for notwithstanding the present immediate relief such infusions afford in some disorders of the stomach, they really, by slow degrees, impair and ruin that organ; and it may be observed, that as many as accustom themselves to drams, go off, just like excessive drinkers, in consequence of their having no digestion; whence they sink into a state of depression and languor, and die dropical.

§ 555. Either vomits or purges may be often beneficially omitted, even when they have some appearance of seeming necessary, by abating one meal a day for some time; by abstaining from the most nourishing sorts of food; and especially from those which are fat; by drinking freely of cool water, and taking extraordinary exercise. The same regimen also serves to subdue, without the use of purges, the various complaints which often invade those, who omit taking purging medicines, at those seasons and intervals, in which they have made it a custom to take them.

§ 556. The medicines N^o. 34. and 35. are the most certain vomits. The powder N^o. 21. is a good purge, when the patient is in no wise feverish.

The doses recommended in the table of remedies are those, which are proper for a grown man of a vigorous constitution. Nevertheless there are some few, for whom they may be too weak: in such circumstances they may be increased by the

addition of a third or fourth part of the dose prescribed. But should they not operate in that quantity, we must be careful not to double the dose, much less to give a threefold quantity, which has sometimes been done, and that even without its operation, and at the risk of killing the patient, which has not seldom been the consequence. In case of such purging not ensuing, we should rather give large draughts of whey sweetened with honey, or of warm water, in a pot of which an ounce, or an ounce and a half of common salt must be dissolved; and this quantity is to be taken from time to time in small cups, moving about with it.

The fibres of country people who inhabit the mountains, and live almost solely on milk, are so little susceptible of sensation, that they must take such large doses to purge them, as would kill all the peasantry in the vallies. In the mountains of *Valais* there are men who take twenty, and even twenty four grains of glass of antimony for a single dose; a grain or two of which were sufficient to poison ordinary men.

§ 557. Notwithstanding our cautions on this important head, whenever an urgent necessity commands it, purging must be recurred to at all times and seasons: but when the season may be safely selected, it were right to decline purging in the extremities of either heat or cold; and to take the purge early in the morning, that the medicines may find less obstruction or embarrassment from the contents of the stomach. Every other consideration, with relation to the stars and moon, is ridiculous, and void of any foundation. The people are particularly averse to purging in the dog-days; and if this were only on account of the great heat, it would be very pardonable; but it is from an astrological prejudice, which is so much the more absurd, as the real dog-days are at thirty six days distance from those commonly reckon-

ed such; and it is a melancholy reflection, that the ignorance of the people should be so gross, in this respect, in our enlightened age; and that they should still imagine the virtue and efficacy of medicines, to depend on what sign of the zodiac the sun is in, or on any particular quarter of the moon. Yet it is certain in this point, they are so inveterately attached to this prejudice, that it is but too common to see country-people die, in waiting for the sign or quarter most favourable to the operation and effect of a medicine, which was truly necessary five or six days before either of them. Sometimes too, that particular medicine is given, to which a certain day is supposed to be auspicious and favourable, in preference to that which is most prevalent against the disease. And thus it is, that an ignorant almanack maker determines on the lives of the human race; and contracts the duration of them with impunity.

§ 558. When a vomit or purge is to be taken, the patient's body should be prepared for the reception of it twenty-four hours before-hand; by taking very little food, and drinking some glasses of warm water, or of a light tea of some herbs.

He should not drink after a vomit, until it begins to work; but then he should drink very plentifully of warm water, or a light infusion of chamomile flowers, which is preferable.

It is usual, after purges, to take some thin broth or soup during their operation; but warm water sweetened with sugar or honey, or an infusion of succory flowers, would sometimes be more suitable.

§ 559. As the stomach suffers, in some degree, as often as either a vomit, or a purge, is taken, the patient should be careful how he lives and orders himself for some days after taking them, as well in regard to the quantity, as quality of his food.

§ 560. I shall say nothing of other articles taken by way of precaution, such as soups, whey, wa-

ters, &c. which are but little used among the people; but confine myself to this general remark, that when they take any of these precautionary things, they should enter on a regimen or way of living, that may co-operate with them, and contribute to the same purpose. Whey is commonly taken to refresh and cool the body; and while they drink it, they deny themselves puls, fruits, and sallads. They eat nothing then, but the best and heartiest flesh-meats they can come at; fush vegetables as are used in good soups, eggs, and good wine; notwithstanding this is to destroy, by high and heating aliments, all the attemperating; cooling effects expected from the whey.

Some persons propose to cool and attemperate their blood by soups and a thin diet, into which they cram craw-fish, that heat considerably, or *nasturtium*, cresses, which also heat; and thus defeat their own purpose. Happily, in such a case, the error, in one respect, often cures that in the other; and these kinds of soup, which are in no wise cooling, prove very serviceable, in consequence of the cause of the symptoms, which they were intended to remove, not requiring any coolers at all.

The general physical practice of the community, which unhappily is but too much in fashion, abounds with similar errors. I will just cite one, because I have seen its dismal effects. Many people suppose pepper cooling, though their smell, taste, and common sense, concur to inform them of the contrary. It is the very hottest of spices.

§ 561. The most certain preservative, and the most attainable too by every man, is to avoid all excess, and especially excess in eating and drinking. People generally eat more than thoroughly consists with health, or permits them to attain the utmost vigour, of which their natural constitutions are capable. The custom is established, and it is difficult to eradicate it; notwithstanding, we

should at least resolve not to eat, but thro' hunger, and always under a subjection to reason; because, except in a very few cases, reason constantly suggests to us not to eat, when the stomach has an aversion to food. A sober moderate person is capable of labour; I may say, even of excessive labour of some kinds; of which great eaters are absolutely incapable. Sobriety of itself cures such maladies as are otherwise incurable, and may recover the most shattered and unhealthy persons.

C H A P. XXXIII.

Of Mountebanks, Quacks, and Conjurers.

S E C T. 562.

ONE dreadful scourge still remains to be treated of; which occasions a greater mortality, than all the distempers I have hitherto described; and which, as long as it continues, will defeat our utmost precautions to preserve the healths and lives of the common people. This, or rather, these scourges, for they are very numerous, are quacks; of which there are two species: the mountebanks or travelling quacks, and those pretended physicians in villages and country places, both male and female, known in *Switzerland* by the name of conjurers, and who very effectually unpeople it.

The first of these, the mountebanks, without visiting the sick, or thinking of their distempers, sell different medicines, some of which are for external use, and these often do little or no mischief; but their internal ones are much oftener pernicious. I have been a witness of their dreadful effects; and we are not visited by one of these wandering caitiffs, whose admission into our country is not mortally fatal to some of its inhabitants.

They are injurious also in another respect, as they carry off great sums of money with them, and levy annually some thousands of livres, amongst that order of the people, who have the least to spare. I have seen, and with a very painful concern, the poor labourer and artisan, who have scarcely possessed the common necessaries of life, borrow wherewithal to purchase, and at a dear price, the poison that was to complete their misery, by increasing their maladies; and which, where they escaped with their lives, has left them in such a languid and inactive state, as has reduced their whole family to beggary.

§ 563. An ignorant, knavish, lying, and impudent fellow, will always seduce the gross and credulous mass of people, incapable to judge of, and estimate any thing rightly; and adapted to be the eternal dupes of such, as are base enough to endeavour to dazzle their weak understandings; by which method these vile quacks will certainly defraud them, as long as they are tolerated. But ought not the magistrates, the guardians, the protectors, the political fathers of the people, to interpose, and defend them from this danger, by severely prohibiting the entrance of such pernicious fellows into a country, where men's lives are very estimable, and where money is scarce; since they extinguish the first, and carry off the last, without the least possibility of their being in any wise useful to it. Can such forcible motives as these suffer our magistrates to delay *their* expulsion any longer, *whom* there never was the least reason for admitting?

§ 564. It is acknowledged the conjurers, the residing conjurers, do not carry out the current money of the country, like the itinerant quacks; but the havock they make among their fellow subjects is without intermission, whence it must be very great, as every day in the year is marked with many of their victims. Without the least know-

ledge or experience, and offensively armed with three or four medicines, whose nature they are as thoroughly ignorant of, as of their unhappy patients diseases; and which medicines, being almost all violent ones, are very certainly so many swords in the hands of raging madmen. Thus armed and qualified, I say, they aggravate the slightest disorders, and make those that are a little more considerable, mortal; but from which the patients would have recovered, if left solely to the conduct of nature; and, for a still stronger reason, if they had confided to the guidance of her experienced observers and assistants.

§ 565. The robber who assassinate^s on the highway, leaves the traveller the resource of defending himself, and the chance of being aided by the arrival of other travellers: but the poisoner, who forces himself into the confidence of a sick person, is a hundred times more dangerous, and as just an object of punishment.

The bands of highwaymen, and their individuals, that enter into any country or district, are described as particularly as possible to the publick. It were equally to be wished, we had also a list of these physical impostors and ignorants male and female; and that a most exact description of them, with the number, and a brief summary of their murderous exploits, were faithfully published. By this means the populace might probably be inspired with such a wholesome dread of them, that they would no longer expose their lives to the mercy of such executioners.

§ 566. But their blindness, with respect to these two sorts of maleficent beings, is inconceivable. That indeed in favour of the mountebank is somewhat less gross, because, as they are not personally acquainted with him, they may the more easily credit him with some part of the talents and the knowledge he arrogates. I shall therefore inform them, and it cannot be repeated too often, that

whatever ostentatious dress and figure some of these impostors make, they are constantly vile wretches, who, incapable of earning a livelyhood in an honest way, have laid the foundation of their subsistence on their own amazing stock of impudence, and that of the weak credulity of the people; that they have no scientifick knowledge; that their titles and patents are so many impositions, and inauthentick; since by a shameful abuse, such patents and titles are become articles of commerce, which are to be obtained at very low prices, just like the second-hand laced cloaks which they purchase at the brokers; that their certificates of cures are so many chimeras or forgeries; and that in short, if among the prodigious multitudes of people who take their medicines, some of them should recover, which it is almost physically impossible must not sometimes be the case, yet it would not be the less certain, that they are a pernicious destructive set of men. A thrust of a rapier into the breast has saved a man's life by seasonably opening an imposthume in it, which might otherwise have killed him; and yet internal penetrating wounds, with a small sword, are not the less mortal for one such extraordinary consequence. Nor is it even surprizing that these mountebanks (which is equally applicable to conjurers) who kill thousands of people, whom nature alone, or assisted by a physician, would have saved, should now and then cure a patient who had been treated before by the ablest physicians. Frequently patients of that class, who apply to these mountebanks and conjurers (whether it has been, that they would not submit to the treatment proper for their distempers; or whether the real physician tired of the intractable creatures has discontinued his advice and attendance) look out for such doctors, as assure them of a speedy cure, and venture to give them such medicines as kill many, and cure one (who has had constitution enough to

overcome them) a little sooner than a justly reputable physician would have done. It is but too easy to procure, in every parish, such lists of their patients, and of their feats, as would clearly evince the truth of whatever has been said here relating to them

§ 567. The credit of this market, this fairhunting doctor, surrounded by five or six hundred peasants, staring and gaping at him, and counting themselves happy in his condescending to cheat them of their very scarce and necessary cash, by selling them, for twenty times more than its real worth, a medicine, whose best quality were to be only a useless one; the credit, I say, of this vile, yet tolerated cheat, would quickly vanish, could each of his auditors be persuaded of what is strictly true, that except a little more tenderness and agility of hand, he knows full as much as his doctor; and that if he could assume as much impudence, he would immediately have as much ability, would equally deserve the same reputation, and to have the same confidence reposed in him.

§ 568. Were the populace capable of reasoning, it were easy to disabuse them in these respects; but as it is, their guardians and conductors should reason for them. I have already proved the absurdity of reposing any confidence in mountebanks, properly so called; and that reliance some have on the conjurer is still more stupid and ridiculous.

The very meanest trade requires some instruction: a man does not commence even a cobbler, a botcher of old leather, without serving an apprenticeship to it; and yet no time has been served, no instruction has been attended to, by these pretenders to the most necessary, useful and elegant profession. We do not confide the mending, the cleaning of a watch to any, who have not spent several years in considering how a watch is made;

what are the requisites and causes of its going right; and the defects or impediments that make it go wrong; and yet the preserving and rectifying the movements of the most complex, the most delicate and exquisite, and the most estimable machine upon earth, is entrusted to people who have not the least notion of its structure; of the causes of its motions; nor of the instruments proper to rectify their deviations.

Let a soldier, discarded from his regiment for his roguish tricks, or who is a deserter from it, a bankrupt, a disreputable ecclesiastic, a drunken barber, or a multitude of such other worthless people, advertise that they mount, set and fit up all kinds of jewels and trinkets in perfection; if any of these are not known; if no person in the place has ever seen any of their work; or if they cannot produce authentic testimonials of their honesty, and their ability in their business, not a single individual will trust them with two penny-worth of false stones to work upon; in short they must be famished. But if, instead of professing themselves jewellers, they post themselves up as physicians; the crowd purchase, at a high rate, the pleasure of trusting them with the care of their lives, the remaining part of which they rarely fail to empoison.

§ 569. The most genuine and excellent physicians, these extraordinary men, who born with the happiest talents, began to inform their understandings from their earliest youth; who have afterwards carefully qualified themselves by cultivating every branch of physick; who have sacrificed the best and most pleasurable days of their lives, to a regular and assiduous investigation of the human body; of its various functions; of the causes that may impair or embarrass them; and informed themselves of the qualities and virtues of every simple and compound medicine; who have surmounted the difficulty and loathsomeness of liv-

ing in hospitals among thousands of patients; and who have added the medical observations of all ages and places to their own; these few and extraordinary men, I say, still consider themselves as short of that perfect ability, and consummate knowledge, which they contemplate and wish for, as necessary to guarding the precious *depositum* of human life and health, confided to their charge. Nevertheless, we see the same inestimable treasures, intrusted to gross and stupid men, born without talents, brought up without education or culture; who frequently can scarcely read; who are as profoundly ignorant of every subject that has any relation to physick, as the savages of *Asia*; who awake only to drink away; who often exercise their horrid trade, merely to find themselves in strong liquour, and execute it chiefly when they are drunk: who, in short, became physicians, only from their incapacity to arrive at any trade or attainment! Certainly such a conduct, in creatures of the human species, must appear very astonishing, and even melancholy, to every sensible thinking man; and constitute the highest degree of absurdity and extravagance.

Should any person duly qualified, enter into an examination of the medicines they use, and compare them with the situation and symptoms of the patients to whom they give them, he must be struck with horror, and heartily deplore the fate of that unfortunate part of the human race, whose lives, so important to the community, are committed to the charge of the most murderous set of beings.

§ 570. Some of these caitiffs however, apprehending the force and danger of that objection, founded on their want of study and education, have endeavoured to elude it, by infusing and spreading a false, and indeed, an impudent impious prejudice among the people, which prevails too much at present; and this is, that their talents for phy-

sick are a supernatural gift, and, of course, greatly superior to all human knowledge. It were going out of my province to expatiate on the indecency, the sin, and the irreligion of such knavery, and incroaching upon the rights and perhaps the duty of the clergy; but I intreat the liberty of observing to this respectable order of men, that this superstition, which is attended with dreadful consequences, seems to call for their utmost attention; and in general, the expulsion of superstition is the more to be wished, as a mind, imbued with false prejudices, is less adapted to imbibe a true and valuable doctrine. There are some very callous hardened villains among this murdering band, who, with a view to establish their influence and revenue, as well upon fear as upon hope, have horribly ventured so far as to incline the populace to doubt, whether they received their boasted gift and power from heaven or from hell! And yet these are the men who are trusted with the health and lives of many others.

§ 571. One fact which I have already mentioned, and which it seems impossible to account for, is, that great earnestness of the peasant to procure the best assistance he can for his sick cattle. At whatever distance the farrier lives, or some person who is supposed qualified to be one (for unfortunately there is not one in *Switzerland*) if he has considerable reputation in this way, the countryman goes to consult him, or purchases his visit at any price. However expensive the medicines are, which the horse-doctor directs, if they are accounted the best, he procures them for his poor beast. But if himself, his wife or children fall sick, he either calls in no assistance nor medicines, or contents himself with such as are next at hand, however pernicious they may be, though nothing the cheaper on that account; for certainly the money, extorted by some of these physical conjurers from their patients, but oftner from their

heirs, is a very shameful injustice, and calls loudly for reformation.

§ 572. In an excellent memoir or tract, which will shortly be published, on the population of *Switzerland*, we shall find an important and very affecting remark, which strictly demonstrates the havock made by these immedical magicians or conjurers; and which is this; that in the common course of years, the proportion between the numbers and deaths of the inhabitants of any one place, is not extremely different in city and country: but when the very same epidemical disease attacks the city and the villages, the difference is enormous; and the number of deaths of the former, compared with that of the inhabitants of the villages, where the conjurer exercises his bloody dominion, is infinitely more than the deaths in the city.

I find in the second volume of the memoirs of the œconomical society of *Berne*, for the year 1762, another fact equally interesting, which is related by one of the most intelligent and sagacious observers, concerned in that work. “Pleurisies and peripneumonies (he says) prevailed at *Cottens a la Cote*; and some peasants died under them, who had consulted the conjurers, and taken their heating medicines; while of those, who pursued a directly opposite method, almost every one recovered.”

§ 573. But I shall employ myself no longer on this topic, on which the love of my species alone has prompted me to say thus much; tho’ it deserves to be considered more in detail, and is, in reality, of the greatest consequence. None, methinks, could make themselves easy with respect to it so much as physicians, if they were conducted only by lucrative views; since these conjurers diminish the number of those poor people, who sometimes consult the real physicians, and with some care and trouble, but without the least profit, to those gentlemen. But what good physician is mean and vile enough to purchase a few hours

of ease and tranquillity at so high, so very odious a price ?

§ 574. Having thus clearly shewn the evils attending this crying nuisance, I wish I were able to prescribe an effectual remedy against it, which I acknowledge is far from being easy to do.

The first necessary point probably was to publish and demonstrate the great and public danger, and to dispose the state to employ their attention on this fatal, this mortal abuse ; which, joined to other causes of depopulation, has a manifest tendency to render *Switzerland* a desert.

§ 575. The second, and doubtless the most effectual means, which I have already mentioned is, not to admit any travelling mountebank to enter this country ; and to set a mark on all the conjurers : it may probably also be found convenient, to inflict corporal punishment on them ; as it has been already adjudged in different countries, by sovereign edicts. At the very least they should be marked with public infamy, according to the following custom practised in a great city in *France*. " When any mountebanks appeared in *Montpelier*, the magistrates had a power to mount each of them upon a meagre miserable ass, with his head to the ass's tail. In this condition they were led throughout the whole city, attended with the shouts and hooting of the children and the mob, beating them, throwing filth and ordure at them, reviling them, and dragging them all about."

§ 576. A third conducive means, would be the instructions and admonitions of the clergy on this subject, to the peasants in their several parishes. For this conduct of the common people amounting, in effect, to suicide, to self-murder, it must be important to convince them of it. But the little efficacy of the strongest and repeated exhortations on so many other articles, may cause us to entertain a very reasonable doubt of their success on this. Custom seems to have determined, that

there is nothing in our day, which excludes a person from the title and appellation of an honest or honourable man, except it be meer and convicted theft; and that for this simple and obvious reason, that we attach ourselves more strongly to our property, than to any thing else. Even homicide is esteemed and reputed honourable in many cases. Can we reasonably expect then to convince the multitude, that it is criminal to confide the care of their health to these poisoners, in hopes of a cure of their disorders? A much likelier method of succeeding on this point would certainly be, to convince the deluded people, that it will cost them less to be honestly and judiciously treated, than to suffer under the hands of these executioners. The expectation of a good and cheap health-market, will be apt to influence them more, than their dread of a crime would.

§ 577. A fourth means of removing or restraining this nuisance, would be to expunge, from the almanacks, all the astrological rules relating to physic; as they continually conduce to preserve and increase some dangerous prejudices and notions in a science, the smallest errors in which are sometimes fatal. I had already reflected on the multitude of peasants that have been lost, from postponing, or mistiming a bleeding; only because the sovereign decision of an almanack had directed it at some other time. May it not also be dreaded, to mention it by the way, that the same cause, the almanacks may prove injurious to their rural œconomy and management; and that, by advising with the moon, which has no influence, and is of no consequence in vegetation or other country business, they may be wanting in a due attention to such other circumstances and regulations, as are of real importance in them?

§ 578. A fifth concurring remedy against this popular evil would be the establishment of hospi-

tals, for the reception of poor patients, in the different cities and towns of *Switzerland*.

There may be a great many easy and concurring means of erecting and endowing such, with very little new expence; and immense advantages might result from them: besides, however considerable the expences might prove, is not the object of them of the most interesting, the most important nature? It is incontestably our serious duty; and it would soon be manifest, that the performance of it would be attended with more essential intrinsic benefit to the community, than any other application of money could produce. We must either admit, that the multitude, the body of the people is useless to the state, or agree, that care should be taken to preserve and continue them. A very respectable *Englishman*, who, after a previous and thorough consideration of this subject, had applied himself very assiduously and usefully on the means of increasing the riches and the happiness of his countrymen, complains, that in *England*, the very country in which there are the most hospitals, the poor who are sick are not sufficiently assisted. What a deplorable deficiency of the necessary assistance for such must then be in a country, that is not provided with a single hospital? That aid from surgery and physic, which abounds in cities, is not sufficiently diffused into country-places; and the peasants are liable to some simple and moderate diseases, which, for want of proper care, degenerate into a state of infirmity, that sinks them into premature death.

§ 579. In fine, if it be found impossible to extinguish these abuses (for those arising from Quacks are not the only ones, nor is that title applied to as many as really deserve it) beyond all doubt it would be for the benefit and safety of the public, upon the whole, entirely to prohibit the art, the practice of physic itself. When real and good physicians cannot effect as much good

as ignorant ones and impostures can do mischief, some real advantages must accrue to the state, and to the whole species, from employing none of either. I affirm it, after much reflection, and from thorough conviction, that anarchy in medicine, is the most dangerous anarchy. For this profession, when loosed from every restraint, and subjected to no regulations, no laws, is the more cruel scourge and affliction, from the incessant exercise of it; and should its anarchy, its disorders prove irremediable, the practice of an art, become so very noxious, should be prohibited under the severest penalties: or, if the constitution of any government was inconsistent with the application of so violent a remedy, they should order public prayers against the mortality of it, to be offered up in all the churches; as the custom has been in other great and general calamities.

§ 580. Another abuse, less fatal indeed than those already mentioned (but which, however has real ill consequences, and at the best, carries out a great deal of money from us, tho' less at the expence of the common people, than of those of easy circumstances) is that blindness and facility, with which many suffer themselves to be imposed upon, by the pompous advertisements of some *catholicon*, some universal remedy, which they purchase at a high rate, from some foreign pretender to a mighty secret or *nostrum*. Persons of a class or two above the populace do not care to run after a Mountebank, from supposing they should deprectiate themselves by mixing with the herd. Yet if that very Quack, instead of coming among us, were to reside in some foreign city; if, instead of posting up his lying puffs and pretentions at the corners of the streets, he would get them inserted in the gazettes, and news-papers; if instead of selling his boasted remedies in person, he should establish shops or offices for that purpose in every city; and finally, if instead of selling them twenty times above their

real value, he would still double that price; instead of having the common people for his customers, he would take in the wealthy citizen, persons of all ranks, and from almost every country; for strange as it seems, it is certain, that a person of such a condition, who is sensible in every other respect; and who will scruple to confide his health to the conduct of such physicians as would be the justest objects of his confidence, will venture to take, through a very unaccountable infatuation, the most dangerous medicine, upon the credit of an imposing advertisement, published by as worthless and ignorant a fellow as the Mountebank whom he despises, because the latter blows a horn under his window; and yet who differs from the former in no other respects except those I have just pointed out.

§ 581. Scarcely a year passes, without one or another such advertised and vaunted medicine's getting into high credit; the ravages of which are more or less, in proportion to its being more or less in vogue. Fortunately, for the human species, but few of these *nostrums* have attained an equal reputation with *Ailhaud's* powders, an inhabitant of *Aix in Provence*, and unworthy the name of a physician; who has over-run *Europe* for some years with a violent purge, the remembrance of which will not be effaced before the extinction of all its victims. I attend now, and have for a long time past, several patients, whose disorders I palliate without hopes of ever curing them; and who owe their present melancholy state of body, to nothing but the manifest consequences of these powders; and I have actually seen, very lately, two persons who have been cruelly poisoned by this boasted remedy of his. A French physician, as eminent for his talents and his science, as estimable for his personal character in other respects, has published some of the unhappy and tragical consequences which the use of them has occasioned;

and were a collection published of the same events from them, in every place where they have been introduced, the size and the contents of the volume would make a very terrible one.

§ 582. It is some comfort however, that all the other medicines thus puff'd and vend'd have not been altogether so fashionable, nor yet quite so dangerous: but all posted and advertised medicines should be judged of upon this principle, (and I do not know a more infallible one in physicks, nor in the practice of physick) that whoever advertises any medicine, as an universal remedy for all diseases, is an absolute impostor, such a remedy being impossible and contradictory. I shall not here offer to detail such proofs as may be given of the verity of this proposition; but I freely appeal for it to every sensible man, who will reflect a little on the different causes of diseases; on the opposition of these causes; and on the absurdity of attempting to oppose such various diseases, and their causes, by one and the same remedy.

As many as shall settle their judgments properly on this principle, will never be imposed upon, by the superficial gloss of those sophisms contrived to prove, that all diseases proceed from one cause; and that this cause is so very tractable, as to yield to one boasted remedy. They will perceive at once, that such an assertion must be founded in the utmost knavery or ignorance; and they will readily discover where the fallacy lies. Can any one expect to cure a dropfy, which arises from too great a laxity of the fibres, and too great an attenuation or thinness of the blood, by the same medicines that are used to cure an inflammatory disease, in which the fibres are too stiff and tense, and the blood too thick and dense? Yet consult the news-papers and the posts, and you will see published in and on all of them, virtues just as contradictory; and certainly the authors of such poi-

Abnous contradictions ought to be legally punished for them.

§ 583. I heartily wish the publick would attend here to a very natural and obvious reflection. I have treated in this book but of a small number of diseases, most of them acute ones; and I am positive, that no competent well qualified physician has ever employed fewer medicines, in the treatment of the diseases themselves. Nevertheless I have prescribed seventy one, and I do not see which of them I could retrench, or dispense with the want of, if I were obliged to use one less. Can it be supposed then, that any one single medicine, compounded or simple, shall cure thirty times as many diseases as those I have treated of?

§ 584. I shall add another very important observation, which doubtless may have occurred to many of my readers; and it is this, that the different causes of diseases, their different characters; the differences which arise from the necessary alterations that happen throughout their progress and duration; the complications of which they are susceptible; the varieties which result from the state of different epidemics, of seasons, of sexes, and of many other circumstances; that these diversities, I say, oblige us very often to vary and change the medicines; which proves how very ticklish and dangerous it is to have them directed by persons, who have such an imperfect knowledge of them, as those who are not physicians must be supposed to have. And the circumspection to be used in such cases, ought to be proportioned to the interest the assistant takes in the preservation of the patient; and that love of his neighbour with which he is animated.

§ 585. Must not the same arguments and reflections unavoidably suggest the necessity of an entire tractability on the part of the patient, and of his friends and assistants? The history of diseases,

which have their stated times of beginning, of manifesting and displaying themselves, of arriving at, and continuing in their height, and of decreasing; do not all these demonstrate the necessity of continuing the same medicines, as long as the character of the distemper is the same; and the danger of changing them often, only because what has been given, has not afforded immediate relief? nothing can injure the patient more than this instability and caprice. After the indication which his distemper suggests, appears to be well deduced, the medicine must be chosen that is likeliest to resist the cause of it; and it must be continued as long as no new symptom or circumstance supervenes, which requires an alteration of it; except it should be evident, that an error had been incurred in giving it. But to conclude that a medicine is useless or insignificant, because it does not remove or abate the distemper as speedily, as the impatience of the sick would naturally desire it; and to change it for another, is as unreasonable, as it would be for a man to break his watch, because the hand takes twelve hours, to make a revolution round the dial-plate.

§ 586. Physicians have some regard to the state of the urine of sick persons, especially in inflammatory fevers; as the alterations occurring in it help them to judge of the changes that may have been made in the character and consistence of the humours in the mass of blood; and thence may conduce to determine the time, in which it will be proper to dispose them to some evacuation. But it is gross ignorance to imagine, and utter knavery and imposture to persuade the sick, that the mere inspection of their urine *solely*, sufficiently enables others to judge of the symptoms and cause of the disease, and to direct the best remedies for it. This inspection of the urine can only be of use when it is duly inspected; when we consider at the same time the exact state, and the very looks

of the patient; when these are compared with the degree of the symptoms of the malady; with the other evacuations; and when the physician is strictly informed of all external circumstances, which may be considered as foreign to the malady; which may alter or affect the evacuations, such as particular articles of food, particular drinks, different medicines, or the very quantity of drink. Where a person is not furnished with an exact account of these circumstances, the mere inspection of the urine is of no service, it suggests no indication, nor any expedient; and mere common sense sufficiently proves, and it may be boldly affirmed, that whoever orders any medicine, without any other knowledge of the disease, than what an inspection of urine affords, is a rank knave, and the patient who takes them is a dupe.

§ 587. And here now any reader may very naturally ask, whence can such a ridiculous credulity proceed, upon a subject so essentially interesting to us, as our own health?

In answer to this it should be observed, that some sources, some causes of it seem appropriated merely to the people, the multitude. The first of these is, the mechanical impression of parade and shew upon the senses. 2. The prejudice they have conceived, as I said before, of the conjurers curing by a supernatural gift. 3. The notion the country people entertain, that their distemper and disorders are of a character and species peculiar to themselves, and that the physicians, attending the rich, know nothing concerning them. 4. The general mistake that their employing the conjurer is much cheaper. 5. Perhaps a sheepish shame-faced timidity may be one motive, at least with some of them. 6. A kind of fear too, that physicians will consider their cases with less care and concern, and be likely to treat them more cavalierly; a fear which increases that confidence which the peasant, and which indeed every man has in his

equal; being founded in equality itself. And, 7th the discourse and conversation of such illiterate empirics being more to their taste, and more adapted to their apprehension.

But it is less easy to account for this blind confidence, which persons of a superior class (whose education being considered as much better are regarded as better reasoners) repose in these boasted remedies; and even for some conjurer in vogue. Nevertheless, even some of their motives may be probably assigned.

The first is, that great principle of *self-interest*, as it may be called, innate to man, which, attaching him to the prolongation of his own existence, more than to any other thing in the universe, keeps his eyes, his utmost attention, continually fixed upon this object, and compels him to make it the very point, the purpose of all his advances and proceedings: notwithstanding it does not permit him to distinguish the safest paths to it from the dangerous ones. This is the surest and shortest way, says some collector at the turnpike, he pays, passes and perishes from the precipices that occur in his route.

This very principle is the source of another error, which consists in reposing, involuntarily, a greater degree of confidence in those, who flatter and fall in the most with us in our favourite opinions. The well apprised physician, who foresees the length and the danger of a disease; and who is a man of too much integrity to affirm what he does not think, must, from a necessary construction of the human frame and mind, be listened to less favourably, than he who flatters us by saying what we wish. We endeavour to elongate, to absent ourselves, from the sentiments, the judgment of the first; we smile, from self-complacency, at those of the last, which in a very little time are sure of obtaining our preference.

A third cause, which results from the same principle, is, that we give ourselves up the most readily to his conduct, whose method seems the least disagreeable, and flatters our inclinations the most. The physician who enjoins a strict regimen; who insists upon some restraints and self-denials; who intimates the necessity of time and patience for the accomplishment of the cure, and who expects a thorough regularity through the course of it; disgusts a patient who has been accustomed to indulge his own taste and humour; the quack, who never hesitates at complying with it, charms him. The idea of a long and somewhat distant cure, to be obtained at the end of an unpleasant and unrelaxing regimen, supposes a very perilous disease: this idea disposes the patient to disgust and melancholy, he cannot submit to it without pain; and he embraces, almost unconsciously, merely to avoid this, an opposite system which presents him only with the idea of such a distemper, as will give way to a few doses of simples.

That propensity to the new and marvellous, which tyrannizes over so large a proportion of our species, and which has advanced so many absurd persons and things into reputation, is a fourth and a very powerful motive. An irksome satiety, and a tiresomeness, as it were, from the same objects, is what our nature is apt to be very apprehensive of; though we are incessantly conducted towards it, by a perception of some void, some emptiness in ourselves, and even in society too; but new and extraordinary sensations rousing us from this disagreeable state, more effectually than any thing else, we unthinkingly abandon ourselves to them, without foreseeing their consequences.

A fifth cause arises from seven eights of mankind being managed by, or following, the other eighth; and, generally speaking, the eighth that is so very forward to manage them, is the least fit and worthy to do it; whence all must go amiss,

and absurd and embarrassing consequences ensue from the condition of society. A man of excellent sense frequently sees only through the eyes of a fool, of an intriguing fellow, or of a cheat; in this he judges wrong, and his conduct must be so too. A man of real merit cannot connect himself with those who are addicted to caballing; and yet such are the persons, who frequently conduct others.

Some other causes might be annexed to these, but I shall mention only one of them, which I have already hinted, and the truth of which I am confirmed in from several years experience; which is, that we generally love those who reason more absurdly than ourselves, better than those who convince us of our own weak reasoning.

I hope the reflections every reader will make on these causes of our ill conduct on this important head, may contribute to correct or diminish it; and to destroy those prejudices whose fatal effects we may continually observe.

[N. B. *The multitude of all the objects of this excellent chapter in this metropolis, and doubtless throughout England, were strong inducements to have taken a little wholesome notice of the impostors of a few of the most pernicious. But on a second perusal of this part of the original and its translation, I thought it impossible (without descending to personal, nominal anecdotes about the vermin) to add any thing material upon a subject, which the Author has with such energy exhausted. He even seems, by some of his descriptions, to have taken cognizance of a few of our most self-dignified itinerant empirics; as these geniuses find it necessary sometimes to appease the publick with a transportation of themselves. In truth, Dr. Tissot has, in a masterly way, thoroughly dissected and displayed the whole genus, every species of quacks. And when he comes to account for that facility, with which persons of very different principles from them, and of better intellects, first list-*

en to, and finally countenance such caitiffs, he penetrates into some of the most latent weaknesses of the human mind; even such as are often secrets to their owners. It is difficult, throughout this disquisition, not to admire the writer; but impossible not to love the man, the ardent philanthropist. His sentiment that——“ A
“ man of real merit cannot connect himself with those
“ who are addicted to caballing,”——is exquisitely just, and so liberal, that it never entered into the mind of any disingenuous man, however dignified, in any profession. Persons of the simplest hearts and purest reflections must shrink at every consciousness of artifice; and secretly reproach themselves for each success, that has redounded to them at the expence of truth.] K.

C H A P. XXXIV.

Containing Questions absolutely necessary to be answered exactly by the Patient, who consults a Physician.

S E C T. 588.

GREAT consideration and experience are necessary to form a right judgment of the state of a patient, whom the physician has not personally seen; even though he should receive the best information it is possible to give him, at a distance from the patient. But this difficulty is greatly augmented, or rather changed into an impossibility, when his information is not exact and sufficient. It has frequently happened to myself, that after having examined peasants who came to get advice for others, I did not venture to prescribe, because they were not able to give me a sufficient information, in order to my being certain of the distemper. To prevent this great inconvenience, I subjoin a list of such questions, as indispensably require clear and direct answers.

General Questions.

What is the patient's age ?

Is he generally a healthy person ?

What is his general course of life ?

How long has he been sick ?

In what manner did his present sickness begin, or appear ?

Has he any fever ?

Is his pulse hard or soft ?

Has he still tolerable strength, or is he weak ?

Does he keep his bed in the day time, or quit it ?

Is he in the same condition throughout the whole day ?

Is he still, or restless ?

Is he hot, or cold ?

Has he pains in the head, the throat, the breast, the stomach, the belly, the loins, or in the limbs, the extremities of the body ?

Is his tongue dry ? Does he complain of thirst ? of an ill taste in his mouth ? or reachings to vomit ? or of an aversion to food ?

Does he go to stool often or seldom ?

What appearance have his stools, and what is their usual quantity ?

Does he make much urine ? What appearance has his urine, as to colour and contents ? Are they generally much alike, or do they change often ?

Does he sweat ?

Does he expectorate, or cough up ?

Does he get sleep ?

Does he draw his breath easily ?

What regimen does he observe in his sickness ?

What medicines has he taken ?

What effects have they produced ?

Has he never had the same distemper before ?

§ 589. The diseases of women and children are attended with peculiar circumstances; so that when advice is asked for them, answers must be given,

not only to the preceding questions, which relate to sick persons in general; but also to the following, which regard these particularly.

Questions with Respect to Women.

Have they arrived at their monthly discharges, and are these regular?

Are they pregnant? If so, how long since?

Are they in child-bed?

Has their delivery been happily accomplished?

Has the mother cleansed sufficiently?

Has her milk come in due time and quantity?

Does she suckle the infant herself?

Is she subject to the whites?

Questions relating to Children.

What is the child's exact age?

How many teeth has he cut?

Does he cut them painfully?

Is he any wise ricketty, or subject to knots or kernels?

Has he had the small-pocks?

Does the child void worms, upwards or downwards?

Is his belly large, swelled, or hard?

Is his sleep quiet, or otherwise?

§ 590. Besides these general questions, common in all the diseases of the different sexes and ages, the person consulting must also answer to those, which have a close and direct relation to the disease, at that very time affecting the sick.

For example, in the quinsy, the condition of the throat must be exactly enquired into. In diseases of the breast, an account must be given of the patient's pains; of his cough; of the oppression, and of his breathing, and expectoration. I shall not enter upon a more particular detail; common sense will sufficiently extend this plan or spe-

cimen to other diseases; and though these questions may seem numerous, it will always be easy to write down their answers in as little room, as the questions take up here. It were even to be wished, that persons of every rank, who occasionally write for medical advice and directions, would observe such a plan or succession, in the body of their letters. By this means, they would frequently procure the most satisfactory answers; and save themselves the trouble of writing second letters, to give a necessary explanation of the first.

The success of remedies depends, in a very great measure, on a very exact knowledge of the disease; and that knowledge on the precise information of it, which is laid before the physician.

T A B L E

OF THE

PRESCRIPTIONS and MEDICINES,

Referred to in the foregoing TREATISE ;
which, with the Notes beneath them, are
to be read before the taking, or Applica-
tion, of any of the said Medicines.

AS, in order to ascertain the doses of medicines,
I have generally done it by pounds, ounces,
half ounces, &c. &c. and as this method, especi-
ally to the common people, might prove a little
too obscure and embarrassing, I have specified here
the exact weight of water, contained in such ves-
sels, or liquid measures, as are most commonly
used in the country.

The pound which I mean, throughout all these
prescriptions, is that consisting of sixteen ounces.
These ounces contain eight drachms, each drachm
consisting of three scruples, and each scruple of
twenty grains; the medical scruple of *Paris* solely
containing twenty four grains.

The liquid measure, the *pot* used at *Berne*, being
that I always speak of, may be estimated, without
any material error, to contain three pounds and
a quarter, which is equal to three pints, and eight
common spoonfuls, English measure. But the ex-
act weight of the water, contained in the *pot* of
Berne, being fifty one ounces and a quarter only,

it is strictly equal but to three pints and six common spoonfuls *English*. This, however, is a difference of no importance, in the usual drinks or aliments of the sick.

The small drinking glass we talk of, filled so as not to run over, contains three ounces and three quarters. But filled, as we propose it should for the sick, it is to be estimated only at three ounces.

The common middle sized cup, though rather large than little, contains three ounces and a quarter: but, as dealt out to the sick, it should not be estimated, at the utmost, above three ounces.

The small glass contains seven common spoonfuls; so that a spoonful is supposed to be equal to half an ounce.

The small spoon, or coffee spoon, when of its usual size and cavity, may contain thirty drops, or a few more; but, in the exhibition of medicines, it may be reckoned at thirty drops. Five or six of these are deemed equal in measure to a common soup-spoon.

The basin or porringer, mentioned in the present treatise, holds, without running over, the quantity of five glasses, which is equivalent to eighteen ounces and three quarters. It may be estimated, however, without a fraction, at eighteen ounces; and a sick person should never be allowed to take more than a third part of this quantity of nourishment, at any one time.

The doses in all the following prescriptions are adjusted to the age of an adult or grown man, from the age of eighteen to that of sixty years. From the age of twelve to eighteen, two thirds of that dose will generally be sufficient; and from twelve down to seven years, one half; diminishing this still lower, in proportion to the greater youth of the patient: so that not more than one eighth of the dose prescribed should be given to an infant of some months old, or under one year.

But it must also be considered, that their different constitutions will make a considerable difference in adjusting their different doses. It were to be wished, on this account, that every person would carefully observe, whether a strong dose is necessary to purge him, or if a small one is sufficient; as exactness is most important, in adjusting the doses of such medicines, as are intended to purge, or to evacuate in any other manner.

N^o. 1.

Take a pugil or large pinch between the thumb and fingers, of elder-flowers; put them into an earthen-ware mug or porringer, with two ounces of honey, and an ounce and a half of good vinegar. Pour upon them three pints and one quarter of boiling water. Stir it about a little with a spoon, to mix and dissolve the honey; then cover up the mug; and, when the liquor is cold, strain it thro' a linen cloth.

N^o. 2.

Take two ounces of whole barley, cleanse and wash it well in hot water, throwing away this water afterwards. Then boil it in five chopins or *English* pints of water, till the barley bursts and opens. Towards the end of the boiling, throw in one drachm and a half of nitre (saltpetre) strain it through a linen cloth, and then add to it one ounce and a half of honey, and one ounce of vinegar.*

N^o. 3.

Take the same quantity of barley as before, and instead of nitre, boil in it, as soon as the barley is put in to boil, a quarter of an ounce of cream of tartar. Strain it, and add nothing else † to it.

* This makes an agreeable drink: and the notion of its being windy is idle; since it is so only to those, with whom barley does not agree. It may, where barley is not procurable, be made from oats.

† In those cases mentioned § 241. 262. 280. instead of the barley, four ounces of grass roots may be boiled in the same quantity of water for half an hour, with the cream of tartar.

N^o. 4.

Take three ounces of the freshest sweet almonds, and one ounce of gourd or melon seeds; bruise them in a mortar, adding to them, by a little at a time, one pint of water, then strain it through linen. Bruise what remains again, adding gradually to it another pint of water; then straining, and adding water to the residue, till full three pints at least of water are thus used; after which it may again be poured upon the bruised mass, stirred well about, and then be finally strained off. Half an ounce of sugar may safely be bruised with the almonds and seeds at first, tho' some weakly imagine it too heating; and delicate persons may be allowed a little orange-flower water with it.

N^o. 5.

Take two pugils of mallow leaves and flowers, cut them small, and pour a pint of boiling water upon them. After standing some time, strain it, adding one ounce of honey to it. For want of mallows, which is preferable, a similar glyster may be made of the leaves of mercury, pellitory of the wall, the marsh-mallows, the greater mallows, from lettuce, or from spinage. A few very particular constitutions are not to be purged by any glyster but warm water alone; such should receive no other, and the water should not be very hot.

N^o. 6.

Boil a pugil of mallow-flowers, in a pint of barley water for a glyster.

N^o. 7.

Take three pints of simple barley water, add to it three ounces of the juice of sow-thistle, or of groundsel, or of the greater houseleek, or of borage.*

* These juices are to be procured from the herbs when fresh and very young, if possible, by beating them in a marble mortar, or for want of such (or a wooden mortar) in an iron one, and then squeezing out the juice through a linen bag. It must be left to settle a little in an earthen vessel, after which the clear juice must be decanted gently off, and the sediment be left behind.

N^o. 8.

To one ounce of oxymel of quills, add five ounces of a strong infusion of elder flowers.

N^o. 9.

There are many different emollient applications, which have very nearly the same virtues.

The following are the most efficacious.

1. Flannels wrung out of a hot decoction of mallow flowers,

2. Small bags filled with mallow flowers, or with those of mullein, of elder, of chamomile, of wild corn poppy, and boiled either in milk or water.

3. Pultices of the same flowers boiled in milk and water.

4. Bladders half filled with hot milk and water, or with some emollient decoction.

5. A pultice of boiled bread and milk, or of barley or rice, boiled till thoroughly soft and tender.

6. In the pleurisy (see § 89) the affected part may be rubbed sometimes with ointment of marsh-mallows.

N^o. 10.

To one ounce of spirit of sulphur, add six ounces of syrup of violets, or for want of the latter, as much barley water, of a thicker consistence than ordinary.*

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* Some friends, says Dr. Tissot, whose judgment I greatly respect, have thought the doses of acid spirit which I direct extremely strong; and doubtless they are so, if compared with the doses generally prescribed, and to which I should have limited myself, if I had not frequently seen their insufficiency. Experience has taught me to encrease them considerably; and, augmenting the dose gradually, I now venture to give larger doses of them than have ever been done before, and always with much success; the same doses which I have advised in this work, not being so large as those I frequently prescribe. For this reason I intreat those physicians, who have thought them excessive, to try the acid spirits in larger doses than those commonly ordered: and I am persuaded they will see reason to congratulate themselves upon the effect. †

† Our author's French annotator has a note against this acid, which I have omitted; for tho' I have given his note page 63, Vol. I. (with the substance of the immediately preceding one) to which I have also added some doubts of my own, from facts, concerning the benefit of acids in inflammatory disorders of the breast; yet with regard to the ardent, the putrid, the malignant fe-

N^o. 11.

Take two ounces of manna, and half an ounce of Sedlitz salt, or for the want of it, as much Epfom salt; dissolving them in four ounces of hot water, and straining them.

N^o. 12.

Take of elder-flowers one pugil, of hyssop leaves half as much. Pour three pints of boiling water, upon them. After infusing some time, strain, and dissolve three ounces of honey in the infusion.

N^o. 13.

Is only the same kind of drink made by omitting the hyssop, and adding instead of it as much more elder-flowers.

N^o. 14.

Let one ounce of the best Jesuits bark in fine powder be divided into sixteen equal portions.

N^o. 15.

Take of the flowers of St. *John's* wort, of elder, and of melilot, of each a few pinches; put them into the bottom of an ewer or vessel containing five or six *English* pints, with half an ounce of oil of turpentine, and fill it up with boiling water.

N^o. 16.

Is only the syrurp of the flowers of the wild red corn poppy.

N^o. 17.

Is only very clear sweet whey, in every pint of which one ounce of honey is to be dissolved.

N^o. 18.

Take of Castile or hard white soap six drachms; of extract of dandelion one drachm and a half; of

ver, and erisipelas, in which Dr. Tissot directs this, I have no doubt of its propriety, (supposing no insuperable disagreement to acids in the constitution) and with respect to their doses, I think we may safely rely on our honest author's veracity. Dr. Fuller assures us, a gentleman's coachman was recovered from the bleeding small pocks, by large and repeated doses of the oil of vitriol, in considerable draughts of cold water. K.

gum ammoniacum half a drachm, and with syrup of maidenhair make a mass of pills, to be formed into pills, weighing three grains each.

N^o. 19.

Gargarisms may be prepared from a decoction, or rather an infusion, of the leaves of periwinkle, or of red rose-leaves, or of mallows. Two ounces of vinegar and as much honey must be added to every pint of it, and the patient should gargle with it pretty hot. The deterging, cleansing gargarism referred to § 112. is a light infusion of the tops of sage, adding two ounces of honey to each pint of it.

N^o. 20.

Is only one ounce of powdered nitre, divided into sixteen equal doses.

N^o. 21.

Take of jalap, of senna, and of cream of tartar, of each thirty grains finely powdered, and let them be very well mixed.*

N^o. 22.

Take of *Cbina* root, and of sarsaparilla of each one ounce and a half, of saffrafr root, and of the shavings of guiacum, otherways called *lignum vita*, of each one ounce. Let the whole be cut very fine, Then put them into a glazed earthen vessel; pouring upon them about five pints of boiling water. Let them boil gently for an hour; then take it from the fire, and strain it off through linen. This is called the decoction of the woods, and is often of different proportions of these ingredients, or with the addition of a few others. More water may, after the first boiling, be poured on the same ingredients, and be boiled up into a small decoction for common drink.

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* This, our author observes, will work a strong country-man very well by which, however, he does not seem to mean an inhabitant of the mountains in *Valais*. See page 149. Vol. II.

N^o. 23.

Take one ounce of the pulp of tamarinds, half a drachm of nitre, and four ounces of water; let them boil not more than one minute, then add two ounces of manna, and when dissolved, strain the mixture off.

N^o. 24.

Is only an ounce of cream of tartar, divided into eight equal parts.

N^o. 25.

This prescription is only the preparation of Kerme's mineral, otherways called the chartrufian powder. Dr. TISSOT orders but one grain for a dose. It has been directed from one to three.

N^o. 26.

Take three ounces of the common burdock root; boil it for half an hour, with half a drachm of nitre, in three full pints of water.

N^o. 27.

Take half a pinch of the herbs prescribed N^o. 9. art. 2. and half an ounce of hard white soap shaved thin. Pour on these one pint and a half of boiling water, and one glass of wine. Strain the liquor, and squeeze it strongly out.

N^o. 28.

Take of the purest quicksilver, one ounce; of Venice turpentine half a drachm, of the freshest hog's lard two ounces, and let the whole be very well rubbed together into an ointment.*

N^o. 29.

This prescription is nothing but the yellow basilicon.

N^o. 30.

Take of natural and factitious or artificial cinabar, twenty-four grains each; of musk sixteen

* This ointment should be prepared at the apothecaries; the receipt of it being given here, only because the proportions of the quicksilver and the lard are not always the same in different places.

grains and let the whole be reduced into fine powder, and very well mixed †.

N^o. 31.

Take one drachm of *Virginia* snake-root in powder, of camphor, and of *assa-foetida* ten grains each; of opium one grain, and with a sufficient quantity of conserve, or rob of elder, make a bolus †.

N^o. 32.

Take three ounces of tamarinds. Pour on them one pint of boiling water, and after letting them boil a minute or two, strain the liquor through a linen cloth.

N^o. 33.

Take seven grains of turbith mineral, and make it into a pill or bolus with a little crumb of bread †.

N^o. 34.

This is nothing but a prescription of six grains of tartar * emetic.

R 3

† This medicine is known by the name of *Cob's powder*; and as its reputation is very considerable, I did not chuse to omit it; though I must repeat here what I have said § 195-----That the cinnabar is probably of little or no efficacy; and there are other medicines that have also much more than the musk; which besides is extremely dear for poor people, as the requisite doses of it, in very dangerous cases, would cost ten or twelve shillings daily. The prescription N^o. 31. is more effectual than the musk; and instead of the useles cinnabar, the powerful quicksilver may be given to the quantity of forty-five grains. I have said nothing hitherto in this work of the red blossomed mulberry-tree, which passes for a real peific, among some persons, in this dreadful malady. An account of it may be seen in the first volume of the *œconomical journal of Berne*. It is my opinion however, that none of the instances related there are satisfactory and decisive; its efficacy still appearing to me very doubtful.

‡ When this is preferred to N^o. 30. of which musk is an ingredient, the grain of opium should be omitted, except once, or at most twice in the twenty-four hours. Two doses of quicksilver, of fifteen grains each, should be given daily in the morning, in the interval between the other boluses.

§ This medicine makes the dogs vomit and slaver abundantly. It has effected many cures after the *Hydrophobia*, the dread of water was manifested. It must be given three days successively, and afterwards twice a week, for fifteen days.

* When the people are ignorant of the strength of the tartar emetic (which is often various) or of the patient's being easy or hard to vomit,

N^o. 35.

Take thirty-five grains of ipecacuanna, which, in the very strongest constitutions, may be augmented to forty-five, or even to fifty grains.

N^o. 36.

Prescribes only the common blistering plaister; and the note observes, that very young infants who have delicate skins, may have sinapisms applied instead of blisters; and made of a little old leaven, kneaded up with a few drops of sharp vinegar.

N^o. 37.

Take the tops of *chamaedrys* or ground oak, of the lesser centaury, of wormwood and of chamomile, of each one pugil. Pour on them three pints of boiling water; and suffering them to infuse until it is cold, strain the liquor through a linen cloth, pressing it out strongly.

N^o. 38.

Take forty grains of rhubarb, and as much cream of tartar in powder, mixing them well together.

N^o. 39.

Take three drachms of cream of tartar, and one drachm of ipecacuanna finely powdered. Rub them well together, and divide them into six equal parts.

N^o. 40.

Take of the simple mixture one ounce, of spirit of vitriol half an ounce, and mix them. The dose is one or two tea-spoonfuls in a cup of the patient's common drink. The simple mixture is composed of five ounces of treacle water camphorated, of

a dose and a half may be dissolved in a quart of warm water, of which he may take a glass every quarter of an hour, whence the operation may be forwarded, or otherwise regulated, according to the number of vomits or stools. This method, much used in Paris, seems a safe and eligible one.

three ounces of spirit of tartar rectified, and one ounce of spirit of vitriol. If the patient has an insuperable aversion to the camphor, it must be omitted, though the medicine is less efficacious without it. And if his thirst is not very considerable, the simple mixture may be given alone, without any further addition of spirit of vitriol.

N^o. 41.

Take half a drachm of *Virginia* snake-root, ten grains of camphor, and make them into a bolus with rob of elder-berries. If the patient's stomach cannot bear so large a dose of camphor, he may take it in smaller doses and oftner, viz. three grains, every two hours. If there is a violent looseness, diascordium must be substituted instead of the rob of elder-berries.

N^o. 42.

Prescribes only the *theriaca pauperum*, or poor man's treacle, in the dose of a quarter of an ounce. The following composition of it is that chiefly preferred by our author. Take equal parts of round birthwort roots, of elecampane, of myrrh, and of rob or conserve of juniper-berries, and make them into an electuary of a rather thin, than very stiff consistence, with syrup of orange-peel.

N^o. 43.

The first of the three medicines referred to in this number, is that already directed, N^o. 37. The second is as follows.

Take equal parts of the lesser centaury, of wormwood, of myrrh, all powdered, and of conserve of juniper-berries, making them up into a pretty thick consistence with syrup of wormwood. The dose is a quarter of an ounce; to be taken at the same intervals as the bark.

For the third composition—Take of the roots of *calamus aromaticus* and elecampane well bruised, two ounces; of the tops of the lesser centaury cut

small, a pugil; of filings of unruſted iron two ounces, of old white wine three pints. Put them all into a wide-necked bottle, and ſet it upon embers, or on a ſtove, or by the chimney, that it may be always kept hot. Let them infuſe twenty-four hours, ſhaking them well for five or ſix times; then let the infuſion ſettle, and ſtrain it. The doſe is a common cup every four hours, four times daily, and timing it one hour before dinner.

N^o. 44.

Take a quarter of an ounce of cream of tartar, a pugil of common chamomile; boil them in twelve ounces of water for half an hour, and ſtrain it off.

N^o. 45.

Directs only the common ſal ammoniac, from two ſcruples to one drachm for a doſe. The note to it adds, that it may be made into a bolus with rob of elder; and obſerves, that thoſe feveriſh patients, who have a weak delicate ſtomach, do not well admit of this ſalt, no more than of ſeveral others, which affect them with great diſorder and anxiety.

N^o. 46.

The powder. Take one pugil of chamomile flowers, and as much elder flowers, bruiling them well; of fine flower or ſtarch three ounces; of ceruſs and of blue ſmalt each half an ounce. Rub the whole and mix them well. This powder may be applied immediately to the part.

The plaifter. Take of the ointment called *nutritum*, made with the neweſt ſweet oil, two ounces; of white wax three quarters of an ounce, and one quarter of an ounce of blue ſmalt. Melt the wax, then add the *nutritum* to it, after the ſmalt finely powdered has been exactly incorporated with it; ſtirring it about with an iron ſpatula or rod, till the whole is well mixed and cold. This is to be ſmoothly ſpread on linen cloth.

A quarter of an ounce of ſmalt may alſo be mix-

ed exactly with two ounces of butter or ointment of lead, to be used occasionally instead of the plaster.

N^o. 47.

Take one ounce of Sedlitz, or for want of that, as much Epsom salt, and two ounces of tamarinds: pour upon them eight ounces of boiling water, stirring them about to dissolve the tamarinds. Strain it off, and divide it into two equal draughts, to be given at the interval of half an hour between the first and last.

N^o. 48.

Take of *Sydenham's* liquid laudanum eighty drops; of bawm water two ounces and a half. If the first, or the second dose stops, or considerably lessens the vomiting, this † medicine should not be further repeated.

N^o. 49.

Dissolve three ounces of manna, and twenty grains of nitre, in twenty ounces, or six glasses, of sweet whey.

N^o. 50.

To two ounces of syrup of diacodium, or white poppy heads, add an equal weight of elder flower water, or, for want of it, of spring water.

N^o. 51.

Directs nothing but a drachm of rhubarb in powder.

N^o. 52.

Take of *sulphur vivum*, or of flower of brimstone, one ounce; of sal ammoniac, one drachm;

† The medical editor at Lyons justly notes here, that these eighty drops are a very strong dose of liquid laudanum; adding that it is scarcely ever given at Lyons in a greater dose than thirty drops; and recommending a spoonful of syrup of lemon-pill to be given with it----But we must observe here in answer to this note, that when Dr. TISSOT directs this mixture in the iliac passion § 318. art. 3. to appease the vomitings, he orders but one spoonful of this mixture to be taken at once, and an interval of two hours to be observed between the first and second repetition, which reduces each dose to sixteen drops, and which is not to be repeated without necessity. K.

of fresh hog's lard, two ounces ; and mix the whole very well in a mortar.

N^o. 53.

Take two dracims of crude antimony, and as much nitre, both finely powdered and very well mixed ; dividing the whole into eight equal doses †.

N^o. 54.

* Take of filings of iron, not the least rusty, and of sugar, each one ounce ; of aniseeds powdered half an ounce. After rubbing them very well together, divide the powder into twenty-four equal portions ; one of which is to be taken three times a day an hour before eating.

N^o. 55.

Take filings of sound iron two ounces ; of leaves of rue, and of white hoar-hound, one pugil each ; of black hellebore-root, one quarter of an ounce, and infuse the whole in three pints of wine in the manner already directed, N^o. 43. The dose of this is one small cup three times a day, an hour before eating. †

† This medicine which often occasions cholics in some persons of a weakly stomach, is attended with no such inconvenience in strong country people ; and has been effectual in some disorders of the skin, which have baffled other medicines.---The remainder of this note observes the great efficacy of antimony in promoting perspiration, and the extraordinary benefit it is of to Lorses in different cases.

* The prescriptions No. 54. 55. 56. are calculated against distempers which arise from obstructions, and a stoppage of the monthly discharges ; which No. 55. is more particularly intended to remove ; those of 54. and 56. are most convenient, either when the suppression does not exist, or is not to be much regarded, tho' it does. This medicine may be rendered less unpalatable for persons in easy circumstances, by adding as much cinnamon instead of aniseeds : and though the quantity of iron be small, it may be sufficient, if given early in the complaint ; one, or at the most, two of these doses daily, being sufficient for a very young maiden.

† I chuse to repeat here, the more strongly to inculcate so important a point, that in women who have long been ill and languid, our endeavours must be directed towards the restoring of the patient's health and strength, and not to forcing down the monthly discharges, which is a very pernicious practice. These will return of course, if the patient is of a proper age, as she grows better. Their return succeeds the return of her health, and should not, very often cannot, precede it.

N^o. 56.

Take two ounces of filings of iron; of rue leaves and aniseeds powdered, each half an ounce. Add to them a sufficient quantity of honey to make an electuary of a good consistence. The dose is a quarter of an ounce three times daily.

N^o. 57.

Take of the extract of the stinking hemlock, with the purple spotted stalk, one ounce. Form it into pills weighing two grains each; adding as much of the powder of dry hemlock leaves, as the pills will easily take up. Begin the use of this medicine, by giving one pill night and morning. Some patients have been so familiarized to it, as as to take at length half an ounce daily. *

N^o. 58.

Take of the roots of grass and of succory well washed, each one ounce. Boil them a quarter of an hour in a pint of water. Then dissolve in it half an ounce of Sedlitz, or of *Epsom* salt, and two ounces of manna; and strain it off to drink one glass

* Our learned and candid author has a very long note in this place, strongly in favour of *Storck's* extract of hemlock; in which it is evident he credits the greater part of the cures affirmed by *Dr. Storck* to have been effected by it. He says he made some himself, but not of the right hemlock, which we think is very difficult to mistake, from its peculiar rank fetid smell, and its purple spotted stalk. After first taking this himself, he found it mitigated the pain of cancers, but did not cure them. But then addressing himself to *Dr. Storck*, and exactly following his directions in making it, he took of *Dr. Storck's* extract, and of his own, which exactly resembled each other, to the quantity of a drachm and a half daily; and finding his health not in the least impaired by it, he then gave it to several patients, curing many scrophulous and cancerous cases, and mitigating others, which he supposes were incurable. So that he seems fully persuaded *Dr. Storck's* extract is always innocent (which in fact, except in a very few instances, none of which were fatal, it has been) and he thinks it a specific in many cases, to which nothing can be substituted as an equivalent remedy; that it should be taken with entire confidence, and that it would be absurd to neglect its continuance.

The translator of this work of *Dr. Tissot's* has thought it but fair to give all the force of this note here, which must be his own, as his editor at *Lyons* seems to entertain a very different opinion of the efficacy of this medicine; for which opinion we refer back to his note, § 375, of this treatise, which the reader may compare with this of our author's.

of it from half hour to half hour, till its effects are sufficient. It is to be repeated at the interval of two or three days.

N^o. 59.

Is a cataplasm or pultice made of crumb of bread, with chamomile flowers boiled in milk, and the addition of some soap, so that each pultice may contain half a quarter of an ounce of this last ingredient. And when the circumstances of female patients have not afforded them that regular attendance, which the repetition of the pultice requires, as it should be renewed every three hours, I have successfully directed the hemlock plaister of the shops.

N^o. 60.

Take a sufficient quantity of dry hemlock leaves. Secure them properly between two pieces of thin linen cloth, so as to make a very flexible sort of small matras, letting it boil a few moments in water, then squeeze it out and apply it to the affected part. It must thus be moistened and heated afresh, and re-applied every two hours.

N^o. 61.

• Take of the eyes of the craw-fish, or of the true white magnesia, two drachms; of cinnamon powdered four grains. Rub them very well together, and divide the whole into eight doses. One of these is to be given in a spoonful of milk, or of water, before the infant sucks.

N^o. 62.

Take of an extract of walnuts, made in water, two drachms; and dissolve it in half an ounce of cinnamon water. Fifty drops a day of this solution is to be given to a child of two years old; and after the whole has been taken, the child should be purged. This extract is to be made of the unripe nuts, when they are of a proper growth and consistence for pickling.

N^o. 63.

Take of resin of jalap two grains. Rub it a considerable time with twelve or fifteen grains of sugar, and afterwards with three or four sweet almonds; adding, very gradually, two common spoonfuls of water. Then strain it through clear thin linen, as the emulsion of almonds was ordered to be. Lastly, add a tea spoonful of syrup of capillaire to it. This is no disagreeable draught, and may be given to a child of two years old; and if they are older, a grain or two more of the resin may be allowed. But under two years old, it is prudent to purge children rather with syrup of succory, or with manna.

N^o. 64.

Take of the ointment called *nutritum*, one ounce; the entire yolk of one small egg, or the half of a large one, and mix them well together. This *nutritum* may be readily made by rubbing very well together, and for some time, two drachms of ceruis, [white lead] half an ounce of vinegar, and three ounces of common oil.

N^o. 65.

Melt four ounces of white wax; add to it, if made in winter, two spoonfuls of oil; if in summer none at all, or at most, not above a spoonful. Dip in this, slips of linen cloth not worn too thin, and let them dry; or spread it thin and evenly over them.

N^o. 66.

Take of oil of roses one pound; of red lead half a pound; of vinegar four ounces. Boil them together; nearly to the consistence of a plaister; then dissolve in the liquid mass an ounce and a half of yellow wax, and two drachms of camphor, stirring the whole about well. Remove it then from the fire, and spread it on sheets or slips of paper, of what size you think most convenient.

The ointment of *Chambauderie*, so famous in many families on the continent, is made of a quarter of a pound of yellow wax, of the plaister of three ingredients, (very nearly the same with N^o. 66.) of compound diachylon, and of common oil, of each the same quantity, all melted together, and then stirred about well, after it is removed from the fire, till it grows cold. To make a sparadrap, or oil-cloth, which is linen, covered with, or dipt in an emplastic substance or ointment, it must be melted over again with the addition of a little oil, and applied to the linen as directed at N^o. 65.

N^o. 67.

Gather in autumn, while the fine weather lasts, the agaric of the oak, which is a kind of *fungus*, or excrescence, issuing from the wood of that tree.

It consists at first of four parts, which present themselves successively. 1. The outward rind or skin, which may be thrown away. 2. That part immediately under this rind, which is the best of all. It is to be beat well with a hammer, till it becomes soft and very pliable. This is the only preparation it requires; and a slice of it, of a proper size, is to be applied directly over the bursting, open blood-vessels. It constricts and brings them close together; stops the bleedings; and generally falls off at the end of two days. 3. The third part, adhering to the second, may serve to stop the bleeding from the smaller vessels: and the fourth and last part may be reduced to powder, as conducing to the same purpose.*

N^o. 68.

Take four ounces of crumbs of bread, a pugil of elder-flowers, and the same quantity of those of chamomile, and of *St. John's wort*. Boil them

* Our author attests his seeing the happiest consequences from this application, which *M. Broffard*, a very eminent *French* surgeon, first published: and declared his preference of that agaric which sprung from those parts of the tree, from whence large boughs had been lopped.

into a pulvise in equal quantities of vinegar and water.

If fomentations should be thought preferable, take the same herbs, or some pugils of the ingredients for *salfrank*: throw them into a pint and a half of boiling water: and let them infuse some minutes. Then a pint of vinegar is to be added, and flannels or other woollen cloths dipt in the fomentation, and wrung out, are to be applied to the part affected.

For the aromatic fomentations recommended § 449, take leaves of betony and of rue, flowers of rosemary and lavender, and red roses of each a pugil and a half. Boil them for a quarter of an hour, in a pot with a cover, with three pints of old white wine. Then strain off, squeezing the liquor strongly from the herbs, and apply it as already directed.

N^o. 69.

Directs only the plaister of Diapalma.*

N^o. 70.

Directs only a mixture of two parts water, and one part of vinegar of litharge.

N^o. 71.

Take of the leaves of sow-bread, and of chamomile tops, of each one pugil. Put them into an earthen vessel with half an ounce of soap, and as much sal ammoniac, and pour upon them three pints of boiling water. †

* To spread this upon lint as directed, § 456, it must be melted down again with a little oil.

† N. B. I conceive all the notes to this table, in which I have not mentioned the editor at Lyons, nor subscribed with my initial letter K. to come from the author, having omitted nothing of them but the prices.

T H E

HISTORY of HEALTH,

AND THE

ART of PRESERVING IT:

CONTAINING

The most important Rules recommended by Physicians and Philosophers for the Preservation of HEALTH in the several Periods and Circumstances of Life; together with the Reasons on which these Rules are founded.

By JAMES MACKENZIE, M.D.
Physician lately at Worcester, and Fellow of the
Royal College of Physicians in Edinburgh.

By surfeiting many have perished, but he that taketh heed prolongeth his life. ECCLUS.

L O N D O N: Printed in the Year MDCLXVII.

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THE
HISTORY of HEALTH,
AND THE
ART of PRESERVING IT.

CHAP. I.

Exhibits a short View of Concoction, or the mechanism by which our Aliment is digested; and of the Circulation of the Blood; from which it will be obvious to perceive the Ground and Reason of the Rules laid down for the preservation of Health, and the expediency of observing them.

THE art of preserving health promises three things: *First*, To secure or maintain the health which a man enjoys at present. *Secondly*, To prevent approaching distempers. *Thirdly*, To prolong life. Of all which I shall treat in the order here mentioned.

The first of these, in a great measure, includes the other two, because a diligent observation of the rules proper to preserve health, will, for the most part, prevent approaching distempers; and dispose the body to longevity. The first, therefore, requires to be treated of more largely than either of the other articles. But to set it in a clear light, we must previously describe some parts of the animal structure and œconomy, from which we may

readily perceive the reason of the rules recommended to preserve health, and the necessity of putting them in practice.

And here we may, with pleasure, remark a surprising agreement and harmony between the successful practice of the ancients, directed only by their assiduous observation of nature, and the mechanical theory of the moderns, founded upon the wonderful structure of our solids, and the perpetual rotation of our fluids, with which the ancients were unacquainted.

Anatomy discovers ten thousand beauties in the human fabric, which I have no room to mention here; nor is it possible, in a performance of this kind, to describe the geometrical accuracy with which the author of nature has formed every part of the body to carry on the animal œconomy, and answer the various purposes of life. All I propose in this place is, by touching upon a few particulars, to give those who are unacquainted with our profession, a general idea of the structure of their own bodies, from which they will easily apprehend, that intemperance, sloth, and several other vices and errors, have a necessary and mechanical tendency to destroy health. To this end it will be indispensably requisite to give some account of concoction, or the mechanism by which our aliment is digested; and then to take notice of the circulation of the blood, with some of its necessary consequences.

Of Concoction.

Among all the wise contrivances observed in the human fabric, none can excite our attention and admiration more than the disposition and mechanism of those parts, by which our aliment is concocted, or fitted for our daily support and nourishment. To have a clear idea of the manner in which concoction is performed, we must distinguish it into three stages. The first stage is performed

in the progress of the aliment from the mouth down to the lacteal veins*. The second is performed in the passage of the milky liquor, called chyle, through the lacteal vessels to the loins, and then up to where it mingles with the blood, under the collar bone. The third or ultimate concoction is performed by the circulation of the blood and chyle together through the lungs, and the whole arterial system. In all these stages, the design of the great architect has evidently been to grind and dissolve the aliment, and to mix and incorporate it with a large quantity of animal juices already prepared, in such a manner as to reduce it at last to the very same substance with our blood and humours. How wonderfully and completely this design has been executed we shall see presently.

In the first stage of concoction, by a curious configuration of parts, and action of muscles†, adapted to their respective functions, our food is ground small by the teeth, and moistened by a copious saliva ‡ in the mouth. It is in the next place swallowed, and conveyed down the gullet, where it is further mollified and lubricated by a viscid unctuous humour, distilled from the glands of that canal. From thence it slips into the stomach, where several causes concur towards its more complete dissolution. It is diluted by the juices, it is swelled and

* The lacteal, or milky veins, are small vessels, that receive the chyle from the intestines.

† Vid. Boerh. instit. § 58. et seq.

Boerhaave has given a fuller and clearer view of the animal œconomy than any other man ever did. His institutions contain an accurate description of all the principal actions performed in the human body, deduced in the most consequential order that can be imagined; and intelligible to those who are previously acquainted with all the branches of anatomy. But this book was calculated for physicians only; and no man probably of any other profession will ever take the pains to understand it.

N. B. A muscle is a mass or collection of fibres, of different dimensions, by which all the motions of every part of the body are performed.

‡ The saliva, or spittle, is a pure, pellucid, penetrating humour, containing oil, salt, water, and spirit, straining from the arterial blood, and very useful in digestion; and therefore the habitual and immoderate discharge of it, in chewing and smoking tobacco, must be of bad consequence.

subtilized by the internal air, and it is macerated and dissolved by the heat which it meets with in that cavity. It is also agitated and attenuated by the perpetual friction of the coats of the stomach, and the pulsation of the arteries there; by the alternate elevation and depression of the diaphragm* in breathing; and by the compression of the strong muscles of the belly. And after a proper stay, it is gradually propelled into the intestines, in the form of a thick, smooth, uniform, ash-coloured fluid.

When our aliment, thus prepared, arrives at the intestines, it is there mixed with three different sorts of liquor. It receives two sorts of bile †; the one thick, yellow, and extremely bitter, from the the gall-bladder; the other scarce yellow, or bitter, but in a much larger quantity, from the liver. The third liquor, that falls here upon the aliment, issues plentifully from a large glandular substance, situated beneath the stomach, called the pancreas or sweet-bread, and is a limpid, mild fluid like the saliva, which serves to dilute and sweeten what may be too spiss and acrimonious. The two sapanaceous biles resolve and attenuate viscid substances; incorporate oily fluids with aqueous, making the whole mixture homogeneous; and by their penetrating and detergent qualities render the chyle fit to enter the lacteal veins, into which it is conveyed partly by the absorbent nature of these veins, and partly by the peristaltic‡ motion of the intestines.

If we consider the change which our aliment has undergone in the mouth, gullet, and stomach,

* The diaphragm or midriff, is a very large transverse muscle, which separates the thorax or chest from the abdomen or belly, and squeezes the contents of the stomach and intestines.

† The bile or gall is the principle dissolvent of the aliment, and when it is vitiated or defective, there can be no good digestion.

‡ Peristaltic is that vermicular motion of the intestines, produced by the alternate and progressive contraction and dilation of their spiral and orbicular fibres, which presses the chyle into the lacteals, and answers many other good purposes.

together with the large quantity of bile and pancreatic juice poured upon it in the intestines: and if we reflect also on the incessant action of the muscles, blending, churning, and incorporating the whole, we shall readily perceive, that their united agency must alter the particular tastes, flavours, and properties of our different kinds of food, in such a manner as to bring the chyle nearer in its nature to our animal juices, than to the original substances from which it was formed. Our aliment thus changed into chyle, constitutes the first stage of concoction; and we shall find the same assimilation carried on through the second.

The second stage of concoction begins with the slender lacteal veins, where they arise from the intestines by an innumerable multitude of invisible pores, through which the fine, white, fluid part of the chyle is strained or absorbed; while, at the same time, the gross, yellow, fibrous part, conveyed slowly forward, and further attenuated in the long intestinal tube, is perpetually pressed and drained of its remaining chyle, until the dregs, becoming at last useless, are ejected out of the body.

These lacteal veins issue from the intestines in various directions, now streight and now oblique, often uniting and growing larger, but presently separating again. They frequently meet at sharp angles, and enter into soft glands, dispersed through the mesentery*, from which they proceed larger than before, and more turgid, with a fine lymphatic fluid. In most places also they run contiguous with the mesentric arteries, by whose pulsation their load is pushed forward. And thus, after various communications, separations and protrusions, the lacteal veins pour their chyle into

* The mesentery is that strong double membrane within which the intestines are convolved, and is interspersed with innumerable glands, nerves, arteries, lacteal and lymphatic vessels.

a sort of cistern * or reservoir formed for that purpose between the lowest portion of the diaphragm, and the highest vertebre of the loins †. It is very remarkable that these veins are furnished with proper valves which permit the chyle to move forward, but effectually stop its return; and that a great number of veins purely lymphatic, as well as the lacteal, empty themselves into the same cistern.

In all this contrivance it is evident that the chyle, being more and more diluted and blended with abundance of lymph ‡ from the glands through which it passes, and from other sources, approaches still nearer to the nature of our animal juices, and consequently becomes fitter for nutrition.

From its reservoir the chyle is pushed into a narrow transparent pipe, called the *thoracic duct*, which climbs in a perpendicular direction by the side of the back-bone, from the loins up to the collar bone, and opens into the subclavian vein §; where, by a particular arrangement of several small valves, the chyle mingles gently with the blood, after it has been thoroughly elaborated, churned, and attenuated with lymph from every part of the thorax †, and is from thence soon conveyed to the heart.

Thus, by a wonderful mechanism, we may plainly perceive that a large quantity of chyle and lymph is forced upwards, in a perpendicular course, through a thin slender pipe, if we attend to the following particulars: *First*, to the progress of the chyle, urged forward and continued from the

* This cistern (as anatomists call it) is often found to consist only of some large branches of the lacteal veins.

† The several bones which compose the chine are called vertebres, of which five belong to the loins.

‡ The lymph is the most elaborated and finest part of the blood, which is continually flowing into the chyle throughout its whole course.

§ Most commonly into the left, but sometimes though very rarely, into the right. Nay, sometimes, as that accurate anatomist Dr. Monro observes, it divides into two under the curvature of the great artery; one goes to the right, and the other to the left subclavian vein.

† By thorax is meant the great cavity of the breast.

antecedent action of the intestines, and the beating of the mesentric arteries. *Secondly*, To the motion of the diaphragm and lungs, in respiration, pressing this thoracic duct that lies under them, while the thorax rising and falling resists their action, whereby the duct is squeezed between two contrary forces, and the liquor which it contains pushed upwards. *Thirdly*, This duct runs close by the side of the great artery, (called by anatomists the superior portion of the descending aorta) whose strong pulsation presses its yielding sides, and compels the chyle and lymph to mount in an upright ascent. *Fourthly*, We are to observe that this duct is accommodated with valves, which permit its contents to move upwards by every compression, but never to fall back again. Thus terminates the second stage of concoction, when the chyle falls into the heart. And we see that, in its progress through these two stages, our aliment has been accurately mixed with all the nourishing juices of the body, and with all the substances or principles that compose the blood, *viz.* saliva, mucus, lymph, bile, water, salts, oil, and spirits.

But here we must take notice, that the most fluid and subtile part of our aliment, before and after it is elaborated into chyle, passes into the blood by certain absorbent veins dispersed all over the mouth, gullet, stomach and intestines. This is evident from the sudden refreshment and strength communicated to weary, faint and hungry people, immediately upon drinking a glass of good wine; or eating any cordial spoon meat; and from the flavour which different sorts of food give to the urine, much sooner than it is possible for the chyle to reach the heart in its common windings.

The third stage of concoction begins, where the chyle mingles with the blood, and falling soon into the right ventricle of the heart, is from thence propelled into the lungs. It will appear that the lungs are the principal instrument of sanguifica-

tion, or converting the chyle into blood, if we consider their structure, first with regard to the air vessels of which they are composed, and secondly with regard to their blood vessels; for we shall then very clearly perceive the change which their fabric and action must necessarily produce on the chyle. The wind-pipe is composed of segments of cartilaginous rings on the fore part, to give a free passage to the air in respiration; and of a strong membrane on its back part, to bend with the neck, and give way to the gullet in deglutition. This pipe is lined throughout with an infinity of glands, which perpetually distil an unctuous dense humour to lubricate and anoint the passages of the air. Soon after the wind-pipe has descended into the cavity of the breast, it is divided into two great branches, and these two are subdivided into innumerable ramifications called Bronchia, which grow smaller in their progress, (not unlike a bushy tree inverted) until at last they terminate in millions of little bladders, which hang in clusters on their extremities, and are inflated by the admission of the air, and subside at its expulsion. These clusters constitute the lobes of the lungs. The blood vessels of the lungs next deserve our attention. The branches of the pulmonary artery run along with those of the wind-pipe, and are ultimately subdivided into an endless number of capillary ramifications, which are spread like a fine net-work, over the surface of every individual air bladder. And the pulmonary vein, whose extreme branches receive the blood and chyle from those of the arteries, run likewise in form of a net over all the air bladders of the Bronchia.

From this admirable structure of the lungs, it is obvious, that the crude mixture of the blood and chyle, passing through the minute ramifications of the pulmonary artery and vein, is compressed and ground by two contrary forces, *viz.* by the force of the heart driving the mixture forward against

the sides of the bronchia and air bladders; and by the elastic force of the air equally repelling this mixture from the contrary side.

By these two opposite forces, the chyle and blood are more intimately blended and incorporated; and by the admission and expulsion of the air in respiration, the vessels are alternately inflated and compressed (and probably some subtiler air or æther is received * into the blood) by which means the mixture is still further attenuated and dissolved; and after various circulations through the lungs, and heart, and the whole arterial system, is at last perfectly assimilated with the blood, and fitted to nourish the body, and answer the different purposes of animal life.

When the blood thus prepared from the aliment is by repeated circulations gradually drained of all its bland and useful parts, and begins to acquire too great a degree of acrimony, it is carried off by sensible and insensible evacuations, through the several channels and distributions of nature. By these evacuations the body becomes languid, and requires a fresh supply of aliment; while at the same time the saliva, and juices of the stomach and intestines, growing thin and acrid by multiplied circulations, vellicate the nerves of those passages, and excite hunger, as a faithful monitor, to remind us of that refreshment which is now become necessary.

From this short view of concoction it follows, first, that the immense variety of aliments, which the bounty of heaven has provided on the earth and in the waters, for the sustenance of man, is by this divine mechanism, reduced at last to one

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* This seems, at least, probable from the following simple experiment: Some physicians at Worcester laid bare the crural artery of a fowl, and made two firm ligatures on the artery, at the distance of an inch one from the other. They then cut out the artery above and below the two ligatures, and put it immediately into an air pump, and upon exhausting the air, the section of the artery between the ligatures, which was full of blood, swelled instantly to a considerable degree.

red, uniform, vital fluid, proper to nourish and support the human fabric.

It follows in the next place, that when we take in a larger quantity of aliment than our digestive faculties are able to conquer and assimilate, such a quantity can never turn to good nourishment.

Thirdly, when by the arts of luxury our food is rendered too high and rich, and consequently too much saturated with pungent salts, and oils; such mixtures with the blood will contribute rather to destroy than maintain health.

It follows, fourthly, that exercise is necessary to assist the solids* in rubbing, agitating, and levigating our aliment, to mix it intimately with our animal juices, and make it pass with ease through these narrow pipes and subtile strainers, which it must pervade, in order to nourish the body. And here we may observe, that moderate riding on horseback, accommodated to a person's strength, is, of all exercises, the most proper to promote a good digestion, by means of that infinity of gentle succussions which it gives to the bowels; whereby the stomach is assisted to dissolve the remains of the aliment; the chyle is forwarded in passing from the intestines into the lacteal veins; the lymph and chyle together are pushed briskly through the thoracic duct into the heart; and the circulation is invigorated to assimilate that mixture into good blood and healthful nourishment; and to throw all superfluities through the natural drains, out of the body. From this corollary may be clearly deduced the reasonableness of every argument advanced by Sydenham, Fuller, and others, to recommend riding.

Fifthly, people in health should not force themselves to eat when they have no inclination to it; but should wait the return of appetite, which will not fail to admonish them of the proper time for

* By solids here I mean the muscular fibres of the body, or the action of the several muscles concerned in concoction.

refreshment. To act contrary to this rule frequently, will overload the powers of digestion, and pervert the purpose of nature.

And to add but one consequence more, it is evident from what has been said, that to facilitate a complete digestion, our aliment ought to be well chewed.

In short, the reason and expediency of every rule established by experience to direct us in the quantity and choice of our aliment, may, with a little attention, be plainly deduced from the mechanism by which concoction is performed.

Of the Circulation of the Blood, and its Consequences.

Every man talks familiarly of the circulation of the blood, and seems to be well acquainted with that subject. But when it is thoroughly considered, it will appear to be one of the most stupendous* works of omnipotence. Tho' the life of the animal absolutely depends upon it, yet the greatest physicians and philosophers of antiquity knew it not. To England, and modern times, was reserved the glory of bringing this important secret to light. And even after the immortal Harvey† published his discovery with all the evidence of a demonstration, it was a long time before Riolanus, and the best anatomists of those days, could be persuaded of the truth of it. So great was their attachment to the ancients, that they could scarce believe their own eyes.

To form a distinct judgment of the mechanism and importance of the circulation, it will be neces-

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* Ne igitur mireris solem, lunam, et universam astrorum seriem summo artificio dispositam esse, neve te attonitum magnitudo eorum, vel pulchritudo, vel motus perpetuus reddat adeo, ut si inferiora hæc comparaveris, parva tibi videantur esse: etenim sapientiam, et virtutem, et providentiam hæc quoque similem invenies. Gal. de usu partium, lib. 3. cap. 10. vers. latin. vulgar.

† William Harvey was born at Folkston in Kent, anno 1557, and educated at Cambridge. He studied five years at Padua, was physician to Charles I. and lived to four score.

fary to describe the structure of the arteries, veins, and nerves; and take notice of some experiments made upon them. We must in the next place touch upon the cavities of the heart, by means of which the blood is propelled through the body. And then proceed to observe the extensive use and benefit of this circulation to every branch of the animal œconomy. From all which it will be obvious to deduce the congruity of the principle rules established by experience for the conservation of health.

The arteries are blood-vessels consisting of a close texture of strong elastic* fibres†, woven in various webs, laid in different directions, and interspersed with an infinity of delicate nerves, veins, and minute arteries. They are divided and subdivided into numberless branches and ramifications, that grow smaller and smaller as they recede from the heart, until at last their extremities become much more slender than the hairs of a man's head, (called therefore capillary arteries) which are found either to unite in continued pipes with the beginnings of the veins, or to terminate in small receptacles, from which the veins derive their origin. The arteries have no valves but only where their trunks spring from the heart. They throb and beat perpetually while life remains; and their extremities differ in the thickness of their coats, and some other particulars, according to the nature of the part which they pervade. All the arteries in the lungs (except the small ones that convey nourishment to them) are derived from the great pulmonary artery, which issues from the right ventricle of the heart. And all the arteries in the rest of the body proceed from the aorta‡,

* Elastic bodies are those which have the power of a spring, or of restoring themselves to the posture from which they were displaced by any external force.

† By fibres are meant small animal threads, which are the first constituent parts of the solids.

‡ Aorta properly signifies an air vessel, because the ancients thought that this artery contained air only.

whose trunk springs from the left ventricle of the heart:

The veins resemble the arteries in their figure and distribution, but their cavities are larger, and their branches perhaps more numerous. Their coats are much weaker and slenderer than those of the arteries. They are furnished with several valves, contrived in such a manner as to permit the blood to pass freely from the smaller into the larger branches, but stop its retrogression. They neither throb nor beat. Their beginnings form continued pipes with the extremities of the arteries, or arise from some gland or receptacle where the arteries terminate. All the veins in the lungs, from their capillary beginnings growing still larger, unite at last and discharge their blood into the left auricle * of the heart. And all the veins in the rest of the body empty themselves in like manner, into the *vena cava*, which opens into the right auricle of the heart.

The nerves deduce their origin from the brain or its appendages, in several pairs, of a cylindric form, like so many skains of thread within their respective sheaths, which in their progress decrease by endless divisions and subdivisions, until at last they spread themselves into a texture of filaments so slender, and so closely interwoven with each other over the whole body, that the point of a needle can hardly be put upon any part or particle of it, without touching the delicate branch of some nerve.

The great Harvey, and others, made several experiments upon the vessels we have described, in order to demonstrate the circulation of the blood. For instance, it has been found by many trials, that when an artery is laid bare, and a ligature

* The right and left auricle are two muscular caps covering the two ventricles of the heart, thus called from the resemblance they bear to the external ear. They move regularly like the heart, but in an inverted order, their contraction corresponding to the dilatation of the ventricles.

made upon it, if you open the artery with a lancet between the ligature and the heart, the blood will rush out with great violence; and this rapid jerking stream will continue (unless you stop it by art) until, through loss of blood, the animal faints or dies. But if you open the same artery between the ligature and the extremities, a few drops only will ooze out from the wounded coats of the artery.

On the other hand, when a vein is laid bare, and a ligature made upon it, if you open that vein between the ligature and the extremities, the blood will gush out, as we see in common venæsection. But if we open the same vein between the binding and the heart, no blood will appear. From these experiments it is obvious to the slightest attention, that the blood flows from the heart, through the arteries, to the extreme parts of the body; and returns again through the veins to the heart.

For the regular performance and continuation of this motion of the blood (called its circulation) thro' all the different parts of the body, the wise Architect has furnished the heart, which is the *primum mobile*, and gives the first impulse, with four distinct muscular cavities, that is, with an auricle and a ventricle on the right side, and an auricle and a ventricle on the left. Through these cavities, curiously adapted to their respective offices, the blood circulates in the following order: it is received from the veins first into the right auricle, which contracting itself, pushes the blood into the right ventricle at that instant dilated. The moment this ventricle is filled, it contracts itself with great force, and impells the blood into the pulmonary artery, which passing through the lungs, and returning by the pulmonary veins, is received into the left auricle of the heart, and from thence it is pushed into the left ventricle. The left ventricle thus filled, contracts itself, and drives the blood with great rapidity to all the parts of the body,

and from them it returns again through the veins into the right auricle of the heart as before. It is very remarkable, that we have here a double circulation: one from the right ventricle *through the lungs*, to the left auricle of the heart, in order to convert the chyle into blood, and finally prepare it for the nourishment of the animal. The other from the left ventricle *through the whole body*, to the right auricle of the heart, which serves to apply that nourishment to every part, besides various other purposes.

But to proceed. Of these four muscular cavities, the two auricles are contracted at the same instant, while the two ventricles are dilated; the ventricles, in their turn, are contracting themselves at the very instant that the auricles are dilated. The arteries, in like manner, beat in alternate time with the ventricles of the heart, that is, when the ventricles are contracted the arteries are distended, and while the arteries contract themselves the ventricles are distended.

The nerves, as well as the veins and arteries, act their part in this rotation of the blood; for if you bind up the eighth pair which proceeds from the brain to the heart, the motion of the heart immediately languishes, and soon ceases intirely.

Thus we have a *perpetual motion* (so vainly sought for by some philosophers and mathematicians) which none but a being of infinite wisdom and power could produce; and perhaps its continuation requires the constant aid of the same hand that first gave it existence. The brain transmits animal spirits to the heart, to give it a vigorous contraction. The heart, at the same instant, pushes the blood into the brain to supply it with new spirits: by which means the head and the heart mutually support each other every moment. But this is not all: the action of the heart sends the blood and other vital humours over the whole body by the arteries, and distributes nourishment

and vigour to every part*, (while perhaps the animal spirits, from the extremities of the nerves, return again into the blood) and the whole refluxing mass is conveyed back through the veins into the heart, which enables it, without intermission, to persist in rolling this tide of life.

If we now take a view of the use and importance of the circulation of the blood to the whole animal œconomy, we shall find it very extensive.

1. When this circulation is duly performed, man continues in good health; when it grows irregular he sickens: and when it ceases he dies. Nay, if but one member should be deprived of it, that member presently corrupts and mortifies. By means of this circulation, every natural secretion is mechanically regulated, the perspiration promoted, all the dregs of the body discharged, and distempers frequently cured without any other assistance.

2. When the circulation is naturally quick and vigorous, the temperament of the body becomes habitually hot: when it is languid and slow, the temperament is cold. When the original stamina of the solids, which press forward this circulation, are compact and firm, the constitution is proportionably strong; when they are lax and delicate, the constitution is weak and tender. When bile or phlegm prevails in the fluids, the complexion corresponds with the prevailing humour, and is accordingly called bilious or phlegmatic. Thus, from the different velocity of the circulation, the different strength of the stamina, and the different mixture of the fluids in every individual, arises that peculiar disposition, or † *ἰδιοσυνηγασία*, which is the true cause why several things that are hurtful to some are beneficial to others: and why the

* The lungs not excepted, which receive their nourishment by the bronchial arteries from the aorta.

† This word cannot be accurately translated into our language, but it means that singular disposition of the solids, and mixture of the fluids, which exist in every individual.

same person finds some things agree with him at one time, which have disagreed at another.

But further, a moderate and calm circulation of the blood is necessary even towards the right government of our passions, and the true use of our reason. We know by daily experience, that the influence of the mind upon the body, with respect to health, and of the body upon the mind, with respect to the intellectual faculties, is very great. Sudden terrors have killed some, and distracted others. Anger and grief impair health, cheerfulness and contentment promote it: inflammations, and other disorders of the brain, suspend the right use of our reason: many arguments induce us to believe, that the nerves serve for *sensation and muscular motion*, and that by means of these two, the mind carries on its correspondence with external objects. We know also that the nerves are supplied with spirits from the brain, and the brain with blood from the heart. From all which it is evident, that the circulation must be gentle and regular, in order to prevent the passions from growing boisterous or headstrong; and that consequently it is the source of that rational correspondence and harmony, which should subsist between the human mind and body.

I shall conclude this article of the uses of the circulation, with observing that the same circulation which supports life so long, and preserves it in vigour, does at last, by a mechanical necessity, stop its own course, and destroy the animal. From the perpetual friction and attrition of the parts one against the other, the stamina or fibres in a course of years become rigid, and lose their spring; the larger pipes grow hard, and the small ones, contracting gradually, become at last impervious; the body is shrivelled, and the motion of the fluids first languishes, and then ceases: and these causes gradually bring on old age and death, which approach sooner or later, as the attrition of the parts

has been either rashly hurried on with the violence and impetuosity of excess and riot, or gently led with the calmness of moderation and temperance.

From what has been said, it should seem manifest that health consists in a moderate, equable and free circulation of the blood, and other vital fluids of the body, through their correspondent canals. It is no less certain, that a proper degree of strength and elasticity in the stamina of these cavities and pipes, is necessary, to enable them to push on the fluids with vigour, and that the fluids must be of a proper consistence and quantity, to make them yield to the impulse of the solids. Let us now apply this idea of health to the *six instruments of life*, and we shall see the reasonableness of the rules laid down with regard to every one of them. It will be sufficient to give one instance of the most important precepts of each; and first, as to the air:

1. The principal rule in reference to the air is, that we should choose such as is pure, and free from all pernicious damps and redundant mixtures, and known by experience to be salubrious. The reasonableness of this rule will appear, when we consider, that the air is indispensably necessary to expand the lungs, and that it mingles not only with our aliment, but also with our blood and juices, and consequently that it ought to be pure and elastic, because any pernicious qualities in it would soon taint the blood, and disturb the circulation, or, which is the same thing in other words, would afflict or destroy the life of the animal.

2. An important rule with respect to aliment is, that it should be used just in such a quantity as we find by experience to agree with us, and sufficient to invigorate, but not to load the body. The expediency of this rule will be evident, when we reflect that aliment was appointed to supply what is thrown off by the continual attrition of the solids,

and dissipation of the fluids, and that consequently too rigid abstinence will render the solids languid, and unfit for action; and too great excess will increase the fluids so as to choak up, or burst the tubes thro' which they pass; and it is plain that either of these errors would in a short time stop the circulation.

3. We are advised to use moderate exercise, adjusted as exactly as we can to the quantity of our aliment, that so an equipoise may be maintained between what is thrown off, and what is taken into the body. Now, since moderate exercise is known to give strength to the solids, and motion to the fluids, it is obvious to the slightest consideration, that too much would over-heat the fluids, and render the solids stiff; and too little would relax the solids, and make the fluids stagnate: both which extremes are inconsistent with a free circulation.

4. As sleep was intended by nature to cherish the body after the action or fatigue of the day, by a new and refreshing apposition of parts, which work requires an adequate proportion of time, that differs in different constitutions; it follows that too little sleep must waste and dry the animal, and too much would render it dull and heavy.

5. In reference to repletion and evacuation; since the quantity and quality of the fluids should bear an exact proportion to the strength and elasticity of the solids, it is certain, that all superfluous recrements and hurtful humours must be discharged out of the body, lest they should disturb or destroy the necessary equipoise between the solids and fluids; and that all useful humours must be retained, in order to preserve this balance.

6. Lastly, As the passions and affections of the mind, by creating disorders in the blood, have so great an influence on health, it is evident that a habit of virtue which can govern these passions,

and make them subservient to reason, is the first and principle rule in which mankind ought to be trained up, to secure a good state of health in all the periods of life.

C H A P. II.

A Summary of the Rules of Health proper to be observed, with Regard to every one of the six Things necessary to human Life, as Air, Aliment, Exercise, &c. together with some other general Maxims.

OF the rules requisite to preserve health, some are general or common to all ages and conditions of men; and some are particular, or adapted to different periods and circumstances of life. Under the general rules are comprehended those which relate to *the six instruments of life*, as air, aliment, &c. together with some other useful maxims. Under the particular rules are reckoned, *first*, Those which are peculiar to different temperaments, namely the bilious, sanguine, melancholic, and phlegmatic. *Secondly*, Those rules that belong to different periods of life, as infancy, youth, manhood, and old age. *Thirdly*, Those that are appropriated to different conditions and circumstances of men, considered as active or indolent, wealthy or indigent, free or servile.

I shall mention all these in order, beginning with the general rules which relate to Galen's *Six Non-naturals*, viz. Air, aliment, exercise and rest, sleep and wakefulness, repletion and evacuation, together with the passions and affections of the mind.

Of Air.

Air, by its extreme subtilty and weight penetrates into, and mingles with every part of the body; and by its elasticity gives an intestine motion

to all the fluids, and a lively spring to all the fibres, which promote the circulation. As it is therefore the principal moving cause of all the fluids and solids of the human body, we ought to be very careful in choosing a healthy air, as far as it is in our power.

1. That air is best which is pure,* dry, and temperate, untainted with noxious damps, or putrid exhalations from any cause whatsoever; but the surest mark of a good air, in any place, is the common longevity of its inhabitants.

2. A house is healthy which is situated on a rising † ground and a gravelly soil, in an open dry country; the rooms should be pretty large, but not cold; the exposure prudently adapted to the nature of the climate, but so contrived that your house may be persflated by the east or north winds whenever you please, which should be done at least once every day, to blow away animal steams and other noxious vapours. But especially let the air of your bed-chamber be pure and untainted, not near the ground, or any kind of dampness.

3. Evident marks of a bad air in any house, are dampness or discolouring of plaister or wainscot, mouldiness of bread, wetness of sponge, melting of sugar, rusting of brass and iron, and rotting of furniture.

4. There is nothing more apt to load the air with putrid steams, or breed bad distempers, than the general and pernicious custom of permitting *common and crowded burial places* to be within the precincts of populous cities.

5. The air of cities being loaded with steams of fuel, and exhalations from animals, is unfriendly

* By pure and dry is not meant an air absolutely clear from any heterogeneous mixture, for that is impossible, nor would such be fit for animals, but an air not overcharged with any steams.

† See Columel. de re rust. lib. 1. cap. 4. Petatur igitur aer calore et frigore temperatus, quem medius fere obtinet collis, loca paululum intumescente, quod neque depressus hieme pruinis torpet, aut torret aestate vaporibus.

to infants * not yet habituated to such noxious mixtures.

6. Sudden extremes of heat and cold should be avoided as much as possible; and they commit a most dangerous error, who, in the winter nights, come out of the close, hot rooms of public houses, into a cold and chilling air, without cloaks or furtouts.

Of Aliment.

1. The best food is that which is simple, nourishing, without acrimony, and easily digested; and the principal rule to be observed with regard to aliment in general, is to eat and drink wholesome things in a proper quantity. But, you will ask, how shall the bulk of the people distinguish wholesome aliment from unwholesome? And how shall they measure the quantity proper for them? I answer, that almost all the aliment in common use has been found wholesome by the experience of ages, and a temperate healthy man need not be under great apprehensions of danger in partaking of such. But there is an obvious rule which will direct every individual aright in the choice of his aliment. Let him observe what agrees with his constitution and what does not, and let his experience and reason direct him to use the one and avoid the other. And as to the proper quantity of aliment, the rule is, to take just such a proportion as will be sufficient to support and nourish him, but not such as will overload the stomach, and be difficult to digest; yet in this measure also, every individual has a sure guide, if he will be directed by a natural undepraved appetite; for whenever he has eat of any good food, as much as his appetite requires, and leaves off before his stomach is cloy-

* Founded upon experience, is mentioned a calculation in the bishop of Worcester's excellent sermon (page 18, 19.) preached for the benefit of the Foundling hospital anno 1756, shewing that many more children die in proportion, which are nursed in a populous city, or brought up by hand, than if they were nursed in the country, and nourished at the breast.

ed*, or finishes his meal with some relish for more, he has eat a proper quantity. But to prevent any deception, he may be still farther convinced that he has committed no excess, if immediately after dinner he can write or walk, or go about any other necessary business with pleasure; and if after supper his sleep shall not be disturbed, or shortened by what he has eat or drank; if he has no head-ach next morning, nor any uncommon haughing or spitting, nor a bad taste in his mouth; but rises at his usual hour refreshed and chearful.

2. Another useful rule is, that we should not indulge ourselves in a discordant variety of aliments at the same meal. Tho' a good stomach, for example, may make a shift to digest fish, flesh, wine and beer at one repast; yet if one adds salad, cream and fruit to them (which is too frequently done) the flatulent mixture will distend the bowels, and pervert the digestion.

3. The quantity and solidity of a man's aliment ought to bear a just proportion to the strength of his constitution, and to the exercises which he uses: for young, strong, labouring people will turn to good nourishment any kind of food in common use; and they can digest with ease a quantity that would oppress or destroy the delicate and sedentary.

4. Bread, made of good wheat flour, properly fermented and baked, is the most valuable article of our diet, wholesome and nourishing by itself, mixing well with all sorts of aliment, and frequently agreeable to the stomach when it loaths every other food.

5. It is to be observed, that liquid aliments, or spoon meats, are most proper, when immediate refreshment is required after great abstinence or fatigue, because they mingle sooner with the blood than solid aliments.

* Vid, Hippoc. aph. sect. 2. aphor. 17, Ubi copiosior præter naturam cibus ingestus fuerit, id morbum creat.

6. As drink makes a considerable part of our aliment, it may not be amiss here to inquire which sort of common drink, generally speaking, is the most proper to preserve health. “ Pure water “ (says Frederick Hoffman *) is the best drink for “ persons of all ages and temperaments. By its “ fluidity and mildness it promotes a free and e- “ quable circulation of the blood and humours “ through all the vessels of the body, upon which “ the due performance of every animal function “ depends ; and hence water drinkers are not on- “ ly the most active and nimble, but also the most “ chearful and sprightly of all people. In san- “ guine complexions, water, by diluting the “ blood, renders the circulation easy and uniform. “ In the choleric, the coolness of the water re- “ strains the quick motion, and intense heat of “ the humours. It attenuates the glutinous vici- “ dity of the juices in the phlegmatic, and the “ gross earthiness which prevails in melancholic “ temperaments. And as to different ages, water “ is good for children, to make their tenacious “ milky diet thin, and easy to digest : for youth “ and middle aged people, to sweeten and dissolve “ any scorbutic acrimony, or sharpness that may “ be in the humours, by which means pains and “ obstructions are prevented : and for old peo- “ ple, to moisten and mollify their rigid fibres, “ and to promote a less difficult circulation thro’ “ their hard and shrivel’d pipes. In short, (says “ he) of all the productions of nature or art, “ water comes nearest to that universal reme- “ dy or panacea, so much searched after by “ mankind, but never discovered.” The truth of it is, pure, light, soft, cold water, from a clear stream, drank in such a quantity as is neces- sary to quench their thirst, dilute their food, and cool their heat, is the best drink for children, for

* Dissert. physico-med. vol. 2. dissert. 5.

heartly people, and for persons of a hot temperament, especially if they have been habituated to the use of it: but to delicate or cold constitutions, to weak stomachs, and to persons unaccustomed to it, water without wine is a very improper drink*, and they will find it so, who try it under such circumstances.

Good wine † is an admirable liquor, and, used in a moderate quantity, answers many excellent purposes of health. Beer well brewed, light, clear, and of a proper strength and age, if we except water and wine, is perhaps the most ancient, and best sort of drink in common use among mankind.

7. It is necessary to observe, that water or small beer, or some other weak liquor, should be drank at meals, in a quantity sufficient to dilute our solid food, and make it fluid enough to circulate through the small blood vessels, otherways the animal functions will grow languid, and obstructions must follow.

8. Tea, to some, is a refreshing cordial after any fatigue. To some it is useful, and seems to assist digestion, drank at a proper distance of time after dinner: but to others it occasions sickness, fainting, and tremors at all times; so that the experience of every individual must determine not only the use or forbearance, but also the strength and quantity of this exotic beverage.

As the nature of coffee is more fiery and active than that of tea, and the frequent use of it may consequently be more dangerous, every man's own experience should direct him how and when to use or forbear it; but the trial should be fairly made with care and caution.

* See Hippocrates' opinion on this article, page 106, &c.‡

† Plutarch, in his life of Cæsar, tells us, that when he had taken Gomphi, a town in Thessaly, by assault, he not only found provisions for his army, but physick also: for there they met with plenty of wine, which they drank freely. Warmed with this, and inspired with the god, they jollily danced along, and so shook off their disease contracted from their former crude and scanty diet, and changed their whole constitution.

Chocolate is nourishing and balsamic, when fresh and good, but very disagreeable to the stomach when the nut is badly prepared, and is greasy, decayed or rancid.

9. Persons of tender constitutions should be careful to chew their meat well, that it may be more easily digested.

Of Exercise.

As the human body is a system of pipes, through which fluids are perpetually circulating; and as life subsists by this circulation, contrived by infinite wisdom to perform all the animal functions, it is obvious that exercise must be necessary to health, because it preserves this circulation by assisting digestion, and throwing off superfluities. Besides, we see every day that the active * are stronger than the sedentary: and that those limbs of labouring men which happen to be most exercised in their respective occupations, grow proportionably larger and firmer than those limbs which are less employed.

1. Three things are necessarily to be considered with regard to exercise. *First*, What is the best sort of exercise. *Secondly*, What is the best time to use it: and, *thirdly*, What is the proper degree or measure to be used. As to the first, tho' various exercises suit various constitutions, as they happen to be robust or delicate, yet in general that sort is best to which one has been accustomed, which he has always found to agree with him, and in which he takes the greatest delight.

2. In the second place, the best time to use exercise is when the stomach is most empty. Some cannot bear it quite fasting, and therefore, to them exercise is proper enough after a light

* Julius Cæsar was of a weak and delicate constitution, says Plutarch, which however he hardened by exercise, and drew even from the incommodities of war a remedy for his indispositions, by inuring himself to all sorts of fatigue, and turning even his repose into action.

breakfast, or towards evening when dinner is pretty well digested, but should never be attempted soon after a full meal, by such as are under no necessity to work for their daily subsistence.

3. Lastly, The measure or proportion of exercise fit for every individual, is to be estimated by the strength or weakness of his constitution; for when any person begins to sweat, or grow weary, or short breasted, he should forbear a while, in order to recover himself, and then resume his exercise again, as long as he can pursue that method with ease and pleasure: but if he persists until he turns pale, or languid, or stiff, he has proceeded too far, and must not only forbear exercise for the present, but should also use less next day. In general it is to be observed, that children and old people require much less exercise than those who are in the vigour of life.

4. Exercise may properly be divided into three sorts. *First*, That which is performed by the intrinsic powers of our own body only, as walking, running, dancing, playing at ball, reading * aloud &c. *Secondly*, That which is performed by the powers of some other bodies extrinsic to us, as gestation in wheel machines, horse litters, sedan chairs, sailing, &c. And, *Thirdly*, That which partakes of both the former, as riding on horseback, wherein we exercise our own powers by managing our horse, and holding our bodies firm and upright, while the horse performs the part of a vehicle.

Without entering into the ancient disputes of philosophers, about the most healthful of all these sorts, we may venture to affirm in general, that what

* Dr. Andry observes, that singing is a most healthful exercise, and subjoins the following words: "Tanta denique est vocis et loquelæ in exercendo corpore præstantia, ut id fortasse causa sit, cur feminae non tanto alias exercito indigent quanto indigent viri, quoniam scilicet sunt illæ loquaciores. Quæst. medic. An præcipua valetudinis tutela exercitatio? In schol. medic. Paris. discussa, an. 1723, Præsid. Nic. Andry."

is performed by our own powers, is the most proper for persons of a strong and healthy constitution ; that what is performed by external helps only, is most proper for the infirm and delicate ; and that the exercise performed partly by ourselves, and partly by foreign assistance, is most suitable to such as are neither very robust nor very tender : and as to the particular benefits which arise from riding on horseback, they have been set forth in so rational and lively a manner by Sydenham and Fuller, that nothing material can be added to their arguments : and it has been already observed, that whatever advantage can be received from a good digestion, may, in an eminent degree be expected from this exercise, adjusted accurately to the strength of the rider.

5. After exercise we run a great risk of catching cold, (especially if we have been in any degree of sweat) unless we take care to prevent it, by rubbing our bodies well with a dry cloth, and changing our linen, which should be previously well aired : but of all the follies committed immediately after exercise, the most pernicious is that of drinking small liquors of any sort quite cold, when a man is hot ; whereas if we drank them blood warm they would quench our thirst better, and could do us no injury.

6. Lean people are sooner weakened and wasted by too much exercise than those who are plump : and every man should rest for some time after exercise, before he sits down to dinner or supper.

Of Sleep and Wakefulness.

1. Sleep and wakefulness bear a great resemblance to exercise and rest ; as wakefulness is the natural state of action, in which the animal machine is fatigued and wasted, and sleep the state of ease, in which it is refreshed and repaired. The vicissitude of sleeping and waking is not only necessary but pleasing to our nature, while each is

confined within its proper limits. But you will ask what limits should be assigned to sleep? The answer is, that though different constitutions require different measures of sleep, yet it has been in general observed, that six or seven hours are sufficient for youth or manhood, and eight or nine for infancy, or old age, when they are strong and healthy, but the infirm are not to be limited; and the weaker any person is, the longer he ought to indulge himself in such a measure of sleep as he finds by experience sufficient to refresh him.

2. Moderate sleep increases the perspiration, promotes digestion, cherishes the body, and exhilarates the mind; and they whose sleep is apt to be interrupted by slight causes, should nevertheless keep themselves quiet and warm in bed, with their eyes shut, and without tossing or tumbling, which will in some degree answer the purposes of a more sound sleep.

3. Excessive sleep, on the other hand, renders the body phlegmatic and inactive, impairs the memory, and stupifies the understanding. And excessive wakefulness dissipates the strength, produces fevers, dries and wastes the body, and anticipates old age.

4. He who sleeps long in the morning, and sits up late at night, inverts the order of nature, and hurts his constitution, without gaining any time; and he who will do it merely in compliance with the fashion, ought not to repine at a fashionable state of bad health, or a broken constitution.

5. A man should forbear to sleep after dinner, or indeed at any other time of the day in our cold climate, except where a long habit has rendered such a custom almost natural to him, or where extraordinary fatigue, or want of rest the preceding night, obliges him to it; in which case he should be well covered to defend him against catching cold.

6. Two hours or more should intervene between

supper and the time of going to bed : and a late heavy supper is a great enemy to sleep, as it disturbs that sweet tranquillity of the body and mind which is so refreshing to both, and produces restlessness and anxiety.

Of Repletion and Evacuation.

1. The whole art of preserving health may properly enough be said to consist in filling up what is deficient, and emptying what is redundant, that so the body may be habitually kept in its natural state ; and hence it follows, that all the supplies from eating and drinking, and all the discharges by perspiration, and by the other channels and distributions of nature, should be regulated in such a manner that the body shall not be oppressed with repletion, or wasted by evacuation. Of these two, one is the cure or antidote of the other ; every error in repletion being corrected by a seasonable and congruous evacuation ; and every excess in evacuation (if it has not proceeded too far) being cured by a gradual and suitable repletion.

2. When any repletion has been accumulated, it requires a particular and correspondent evacuation, well known to physicians. Repletion, for instance, from eating or drinking, requires a puke or abstinence. A fulness of blood requires immediate venæsection. A redundancy of humours requires purging. And a retention of any excrementitious matter, which should have been discharged by sweat, urine, or spitting, requires assistance from such means as are found by experience to promote these several evacuations. And if those cautions are neglected, there will succeed an oppression of the stomach or breast, a weight of the head, a rupture of the blood vessels, or some other troublesome disorder.

3. It is to be observed, that a person in perfect health, all whose secretions are duly performed, ought never to take any medicine that is either e-

vacuating or acrimonious, because it may disturb the operations of nature without any necessity; and Hippocrates expressly declares *, that those who are of a strong and healthy constitution are much the worse for taking purges †. But as to external ablutions of the skin, by washing, bathing, or swimming, they are proper for healthy people, provided they are not carried to excess.

4. It also is to be observed, that chewing or smoking tobacco soon after meals, generally destroys the appetite, and hurts the constitution, both by weakening the springs of life, (as other opiates do) and by evacuating the saliva which nature has appointed to fall into the stomach to promote digestion.

5. Nothing exhausts and enervates the body more, or hurries on old age faster than premature concubinage; and hence the ancient Germans ‡ are extolled by Tacitus for not marrying before they arrived at their full vigour.

Of the Passions and Affections of the Mind.

1. He who seriously resolves to preserve his health, must previously learn to conquer his passions, and keep them in absolute subjection to reason; for let a man be ever so temperate in his diet, and regular in his exercise, yet still some unhappy passions, if indulged to excess, will prevail over all his regularity, and prevent the good effects of his temperance; it is necessary therefore that he should be upon his guard against an influence so destructive.

2. Fear, grief, and those passions which partake of them, as envy, hatred, malice, revenge, and despair, are known by experience to weaken the nerves, retard the circular motion of the fluids, hinder perspiration, impair digestion, and often

* Sect. 2. aphor. 36, 37.

† It is to be observed that the purges used in Hippocrates' time were all somewhat violent.

‡ Tarda illis venus, et pares validique miscabantur. De mor. Germ.

to produce spasms, obstructions, and hypochondriacal disorders. And extreme sudden terror* has sometimes brought on immediate death.

3. Moderate joy and anger, on the other hand, and those passions and affections of the mind which partake of their nature, as cheerfulness, contentment, hope, virtuous and mutual love, and courage in doing good, invigorate the nerves, accelerate the circulating fluids, promote perspiration, and assist digestion; but violent anger (which differs from madness only in duration) creates bilious, inflammatory, convulsive, and sometimes apoplectic disorders, especially in hot temperaments; and excess of joy destroys sleep, and often has sudden and fatal † effects.

4. It is observable, that the perspiration is larger from any vehement passion of the mind when the body is quiet, than from the strongest bodily exercise when the mind is composed. Those therefore who are prone to anger, cannot bear much exercise, because the exuberant perspiration of both would exhaust and waste the body. It is also remarkable, that a disorder which arises from any vehement agitation of the mind, is more stubborn than that which arises from violent corporal exercise, because the latter is cured by rest and sleep, which have but little influence on the former.

5. A constant serenity, supported by hope, or cheerfulness arising from a good conscience, is the most healthful of all the affections of the mind. Cheerfulness of spirit, (as the great lord Verulam observes) is particularly useful when we sit down to our meals, or compose ourselves to sleep; because anxiety or grief are known to prevent the benefits which we ought naturally to receive from these refreshments: "If therefore," says he, "any

* See Valer. Maxim. who mentions several such instances.

† Vid. Plin. hist. nat. lib. 7. cap. 53. Aul. Gell. Noct. Attic. lib. 3. cap. 15.

“ violent passion should chance to surprize us near
“ those times, it would be prudent to defer eat-
“ ing, or going to bed, until it subsides, and the
“ mind recovers its former tranquillity.”

Having thus mentioned the principal rules relating to the *Six things necessary to life*, considered singly, I shall here subjoin a very important rule, which considers two of the six together, and shews the mutual influence which they have one upon the other, with respect to health. The rule is, that our exercise should bear an exact proportion to our diet, and our diet in like manner to our exercise; or, in other words, that he who eats and drinks plentifully should use much exercise; and he who cannot use exercise, should, in order to preserve his health, live abstemiously. Persons who can use moderate and constant exercise, are able to digest a large quantity of aliment, without any injury to their health, because their exercise throws off whatever is superfluous; but tender people, who can use little or no exercise, if they should take in a large quantity of food, some indigested superfluity must remain in the body, which becomes a perpetual source of distempers. Hippocrates looks upon this rule of adjusting our diet to our exercise as the most important in the whole art of preserving health, and has taken particular care to recommend it.

But one caution I must here recommend, which is less attended to than it deserves, *viz.* when a man happens to be much fatigued and spent after a hard journey or violent exercise, and stands in need of immediate refreshment, let him eat things that are light and easy to digest, and drink some small liquor warm; for heavy meat and strong drink will increase the artificial fever, (if I may so call it) which violent exercise raises in the blood, and will rather waste than recruit his strength and spirits.

Besides those appertaining to the six things already mentioned, there are three other general

rules greatly conducive to the preservation of health, which must not be forgotten.

The first rule is: every excess is an enemy to nature. Whether it be in heat or cold, in grief or joy, in eating or drinking, or in any other sensual gratification, excess never fails to disorder the body; whereas, to be moderate in every affection and enjoyment, is the way to preserve health.

Rule the second: it is dangerous suddenly * to alter a settled habit or an old custom, and to fly from one extreme to another. Even those things which are in themselves bad, as *dram-drinking, chewing tobacco, sitting up late at night, sleeping immediately after dinner, morning whets* as they are called, &c. when by long use they have unhappily grown familiar to any person, must not be broke off all at once, but should be relinquished by degrees.

The third rule is, that whatever tends to impair our strength, should be carefully avoided. To bleed often, for instance, without an urgent cause; to take strong purges or vomits; to go into a slender and vegetable diet rashly, and rather from whim than necessity: all such errors as these, I say, change the small pipes, through which the circulation is performed, into impervious cords, and impair the strength by drying up the conduits of life.

Having thus taken notice of the general rules to be observed by all, let us in the next place consider the particular rules appropriated to the various temperaments, ages, and conditions of men.

* Semel multum et repente vel evacuare, vel replere vel calefacere, vel refrigerare, aut alio quovis modo movere, periculofam. Hippoc. aph. sect. 2. aph. 51.

C H A P. III.

Of the different Temperaments of the human Body, viz. the choleric, the melancholic, the phlegmatic, and the sanguine, with the Rules of Health relating to them, and some Inferences deduced from them.

TO be acquainted with the temperaments of men is of no small importance to health. Hippocrates * says, "that the human body contains four humours very different with respect to heat, cold, moisture, and dryness, viz. blood, phlegm, yellow bile, and black bile; which several humours are frequently brought up by vomiting, and discharged by stool; that health consists in a due mixture of these four; and that distempers are produced by a redundancy in any of them." Upon this observation of Hippocrates, the four principal temperaments of choleric, melancholic, phlegmatic, and sanguine, have been established. But Galen †, too fond of subtilties and divisions, has reckoned up nine temperaments, viz. four simple, the hot, the cold, the moist, and the dry; four compound, the hot and moist, the hot and dry, the cold and moist, the cold and dry; and one moderate or healthy temperament, consisting in a mediocrity that leans to no extreme.

These two great men, and their respective followers, mean nearly the same thing, though they differ in words; for the choleric of Hippocrates and his adherents has a great affinity with the hot and dry temperament of Galen; the phlegmatic with the cold and moist; the melancholic with the cold and dry; and the sanguine of the one with the moderate temperament of the other: it

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* De natur. hom. pag. 225, 226.

† De temperament. lib. 2. cap. 1.

will not therefore be of so great moment to determine which division we should adopt, as it will be to give a just notion of these temperaments, consistently with the laws of circulation, to which the ancients were strangers. To form therefore a distinct idea of the different temperaments which Hippocrates points out, (for I choose to follow him) it will be necessary to consider what change is produced in the whole mass of fluids, by the prevailing humours from which these temperaments take their names, and what effect this change has upon the human body and mind.

In choleric * temperaments, or in bodies abounding with yellow bile, the blood is hot and thin, moves with great rapidity thro' the pipes, disposes the body to inflammations and acute distempers, and the mind to a promptness and impetuosity in all its deliberations and actions. Persons of this temperament ought to avoid all occasions of dispute, strong liquors, violent exercise, and every thing by which they are apt to be overheated.

In melancholic temperaments, where persons abound with a gross, earthy, austere humour, called by the ancients black bile, the blood is heavy and thick, moves slowly, disposes the body to glandulous obstructions and lowness of spirits, and the mind to fear and grief. To such persons a healthy air, moderate exercise, light food, a little good wine, which should be mixt with water for common drink, and cheerful company, are the best means to preserve health.

In phlegmatic temperaments, where there is a large proportion of a watery tenacious mucilage, the slimy blood moves languidly, disposes the body to white swellings and dropical disorders, and the mind to stupidity and sloth. In this temperament, a diet moderately attenuating, constant exercise,

* Vid. Hoffm. dissert. de temperamento, fundamento morum et morborum in gentibus.

and some warm gentle physic at proper times, will prevent bad disorders.

In sanguine temperaments, where there is no redundancy of bile or phlegm, the blood (except in cases of fulness from high living, or inanition from hæmorrhages) circulates freely and equably through all the vessels, which disposes the body to health and long life, and the mind to cheerfulness and benevolence. The principal care of such persons should be, by a moderate and prudent use of all the necessaries of life, to avoid the extremes of plenitude and voluptuousness, and every sort of intemperance which may spoil a benign and healthy constitution.

It is true, that these temperaments are not easily distinguished at first sight, in every individual; but a considerate man may, by observation and experience, discover which temperament he himself principally partakes of, and consequently may, by proper precautions, obviate any inconvenience apt to arise from it.

From what has been said of these different temperaments, it will clearly follow, first, That there can be no such thing contrived by man, as an universal remedy to prevent or remove all sorts of complaints, because that which would agree with the hot, must disagree with the cold. Besides, all such boasted specifics have been found ineffectual from experience, and every pretender to them has at last been convicted either of ignorance or dishonesty. In a word, none but he who had skill to create the human body, can contrive a specific for all distempers; and I am fully persuaded, that except the *tree of life*, there never was, nor will be an universal panacea.

It follows, secondly, That we cannot with certainty promise for any particular aliment, or any kind of medicine, that it will agree with this or the other individual, until we are acquainted with his peculiar temperament; and consequently, that

it is absurd to prescribe a method of diet or physic for any man, without such a previous knowledge.

After this short sketch of the temperaments, we come next to take a view of those rules of health which are peculiar to the different periods of life.

C H A P. IV.

Of Infancy, Youth, Manhood, and Old Age, together with the Precepts of Health peculiar to each of them.

HAD the philosopher, "whom Aulus Gellius * " introduces delaining against the unnatural behaviour of mothers, who neglect to suckle " their own children," lived in our days, and known that men of rank and fashion frequently choose their wives not for the graces of their person, or the virtues of their mind, but only for the largeness of their fortune, he would perhaps, in compassion to the infant, have preferred a healthy discreet nurse to a weakly capricious mother. Such parents therefore as have not taken care, by their own temperance, good humour and health, to secure a vigorous and happy constitution to their children, may surely be permitted to make up that deficiency as well as they can, in the choice of a proper nurse.

The first care to be taken of the infant, (in case the mother should not be fit for the momentuous task) is to choose a virtuous, healthy, cheerful, cleanly and experienced nurse. Her milk should be white, sweet, and of a good flavour, untainted with any foreign taste or smell, between two and

* Lib. 12. cap. 1. Oro te, inquit, mulier, sine eam totam integram esse matrem filii sui; quod est enim hoc contra naturam imperfectum atque dimidiatum matris genus, peperisse, ac statim ab sese abjecisse? aluisse in utero sanguine suo nescio quid, quod non videret; non alere nunc suo lacte quod videat, jam viventem, jam hominem, jam matris officia implorantem?

six months old, and of a thin rather than a thick consistence. The child's other food should be simple, and of a very easy digestion; his cloaths should neither be strait nor too warm, and the nurse should be discharged from using pins in dressing him, where there can be any danger of pricking his skin; and she must give as much as he can bear of air and exercise.

To prevent rickets, scrophulous disorders, coughs and broken bellies, to which children are very liable in this island, the most likely means would be to introduce the custom of dipping their whole bodies every morning in cold water, after which they should be immediately rubbed dry and dressed; deferring nevertheless the commencement of this practice for some months, or to the next summer after the infant is born, lest there should be too quick a transition from the warmth in which the fœtus was formed to the extreme coldness of the water. If the infant becomes warm and lively upon rising out of the bath, there can be no danger in this immersion; but in case he should remain chilly and pale for a considerable part of the day, the use of the cold bath must be laid aside for some time, and may be tried again when the child grows stronger.

When the first dawn of reason appears in children, the parents should take the earliest care possible to make their minds obedient to discipline, and “gradually * instil into them that great principle (as Mr. Locke calls it) of all virtue and worth, *viz.* to deny themselves their own desires, and purely follow what reason dictates as best, tho' the appetite should lean the other way. We frequently see parents, by humouring them when little, corrupt the principles of nature in their children, and wonder afterwards to taste the bitter waters, when they themselves have

* Locke on education.

“poisoned the fountain; why should we think it
 “strange, that he who has been accustomed to
 “have his will in every thing when he was in
 “coats, should desire it, and contend for it, when
 “he is in breeches?”

And in this our judicious author has adopted or confirmed the remark which the admirable Quintilian made long before him, part of whose words * I have quoted at the bottom of the page: and indeed we frequently see, that those indulgences to the child have grown into settled habits, and proved the ruin of the man, with respect both to his health and his morals.

Of Youth.

The diet of youth should be indeed plentiful, as Hippocrates advises †, but simple, and of easy digestion; because food which cannot be well digested breeds cross humours, and imperceptibly lays a foundation for scurvy, stone, rheumatism, and other very bad distempers. Wine also, or strong drink, should never, or very sparingly, be allowed to youth. They should be kept intirely from unripe fruit, and from too much of what is ripe. Their exercise should be moderate, for too little would bloat them and make them short breathed; and too much would waste their strength. Too much sleep also (like too little exercise) would stupify them, and too little would render them thin and subject to fevers.

But, above every other care and consideration, youth is the most proper season to inure the mind to the practice of virtue, upon which their future health and reputation must depend, and without which it will be impossible to deliver their consti-

* Utinam liberorum nostrorum mores ipsi non perderemus, infantiam statim deliciis solvimus. Mollis illa educatio, quam indulgentiam vocamus, nervos omnes et mentis et corporis frangit. Fit ex his consuetudo, deinde natura. Instit. orat. lib. 1. cap. 2.

† Sect. 1. aph. 13.

tutions unbroken to manhood and old age. Many vices are absolutely inconsistent with health, which never dwells where lewdness, drunkenness, luxury, or sloth, have taken possession. The life of the rake and epicure is not only short but miserable. It would shock the modest and compassionate to hear of those exquisite pains and dreadful agonies which profligate young persons suffer under the reiterated courses of their debauchery, before they can reach the grave into which they often hurry themselves: or, if some stop short in their career of riot, before they have quite destroyed the springs of life, yet these springs are generally rendered so feeble and crazy by the liberties which they have already taken, that they only support a gloomy, dispirited, dying life, tedious to themselves, and troublesome to all about them; and (which is still more pitiable) often transmit their complaints to an innocent unhappy offspring.

The expediency of virtue towards the preservation of health, is no new doctrine with those who studied and recommended that art; it was taught many ages ago by Galen, who speaking of youth, expresses himself in the manner following: “ This
 “ * is the proper season to discipline the mind,
 “ and train it up in virtuous habits, especially in
 “ modesty and obedience, which will prove the
 “ most compendious method to attain whatever
 “ may be necessary towards the health of the bo-
 “ dy in the future periods of life.”

But how shall giddy youth, hurried away by strong appetites and passions, be prevented from running into those excesses which may cut them off in the prime of their days, or at least hoard up diseases and remorse for old age? I answer, that their passions and appetites must be restrained early by proper discipline and example. This is to be done by their parents, whose first care should be

* De san. tuend. lib. 1. cap. 12. Vide insuper ejusdem libellum de cognoscend. et curand. animi morbis. cap. 7.

to train up their children at home in “ the way
“ they should go, that when they are old they
“ may not depart from it.”

In the next place, such as can afford their sons a liberal education, ought to send them, for instruction and example, to those seminaries of learning where religion and virtue are held in the highest esteem, and practised with the greatest care and decency; for such an education will not only prove a benefit to the youth themselves, but a blessing also to the community, which is always ready to imitate as well the good as the bad example of their superiors.

We have reason to felicitate our youth upon the many opportunities which they have of a virtuous education in the excellent universities of Great Britain. Oxford is certainly one of the most commodious residences for study on the face of the earth. I was never so charmed with any place of public resort as I was with that university. *There* religion, learning, and good manners appear in all their beauty. *There* ignorance, vice, and infidelity are reputed clownish and contemptible: and *there* the virtues and the graces are united, or, in other words, the knowledge of the scholar is joined with the politeness of the gentleman. I never indeed had the good fortune to be at Cambridge, but from the great and good men which that university has produced, it is reasonable to conclude, that she is not inferior to her sister of Oxford. Nor have the several universities of Scotland been at any time destitute of masters or scholars, conspicuous for genius, literature or virtue.

Those gentlemen, therefore, who send their sons abroad for a foreign education, before they are grounded in virtue and learning at our own universities, seem to have no great value for the *future health and dignity of their children*, or (give me leave to add) for the *prosperity of their country*. *

* “ What can be expected from those young adventurers, but an imitation of all the follies, sopperies, vices, and luxuries of the severa

Of Manhood.

To this period belong all the general rules of health before mentioned, and, in a word, all these rules that are not distinctly appropriated to infancy, youth or old age.

The best security to health in this period is the good habit of temperance and moderation, transmitted to it from childhood and youth: for a man arrived to the perfect use of his reason, is not very apt (unless he lays reflexion quite aside) to indulge any vicious appetites over which he had an absolute command in the former part of his life.

It is also reasonable to expect that a person will, in this period, attend to the temperament most predominant in himself, whether it inclines to the choleric, melancholic, phlegmatic or sanguine, and will regulate his way of living in such a manner that his peculiar temperament shall be kept within the bounds necessary to the conservation of health; or (which is the same thing) that he will be careful to avoid whatever he finds by experience to be detrimental to his health, and will persist in the use of such things as he finds by the same experience and observation to agree with him; seriously reflecting how easy it is either by a supine indolence, or by criminal excesses, to destroy even a good constitution in the prime and vigour of life, beyond the possibility of repair: of this unhappy conduct, too many sad examples fall within the circle of every man's acquaintance.

Of Old Age.

Health is an invaluable blessing in age, when the judgment arrived at full maturity, displays more strength and beauty than ever it did before; and therefore it should be secured, as far as lies in our power, by a diligent observation of the following

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countries through which they have passed." Sherridan on British education, book 1. chap. 2, page 32, 33.

plain rules, which point out to the aged, first what they ought to avoid; and secondly, what they ought to pursue.

In the first place, old people must be careful to avoid whatever they have by experience found always hurtful to them in the former part of their lives, for age is not the proper season to struggle with new or unnecessary evils. They must also shun every excess that has a natural tendency to impair their remaining strength; for tho' men may sometimes escape the bad effect of those excesses in the vigour of life, old age would quickly be demolished by them; such are too much care and anxiety about wealth, an over assiduous application to study, habitual fretfulness; or, in a word, whatever is known to weaken * a good constitution.

Secondly, As to what they ought to pursue. Old men should be careful to practise the following important rules. *First*, To chuse a pure and healthy air for the place of their residence. In the next place, To adjust their diet to their exercise; to be moderate in both; to retrench a little in their solid food, and add proportionably to their drink; and to rise from meals always with some appetite to eat more; but in case of any accidental excess one day, to retrench the next, or for a longer space, unless the stomach is quite easy. *Thirdly*, To contrive that their evacuations be regular by nature or by art. *Fourthly*, To study every means that can contribute to make their night's rest sweet, and their sleep sound; for quiet sleep † wonderfully cherishes old people. *Fifthly*, To be clean and neat in their persons, and to keep their bodies well clothed, especially their stomach, legs and feet, without which they cannot enjoy a good state of

* Excessive venery enervates old men extremely. The adventurer, in one of his admirable essays, humourously applies to them what Virgil reports of his fighting bees, *animasque in vulnere ponunt*.

† Pax animi quem cura fugit, qui corpora duris
Festa ministeriis mulces, reparasque labori.

health: and *sixthly*, To be of a contented, chearful mind, and endeavour to render their behaviour and conversation agreeable to, and courted by, young people, and to be frequently in their company.

C H A P. V.

Of the various Conditions and Circumstances of Men considered as robust or delicate, free or servile, wealthy or indigent; together with the rules of health accommodated to them respectively.

THE several conditions and circumstances of men, supposed to enjoy their usual health, may be reduced to two sorts, *viz.* internal and external. The internal conditions of men are strength, or weakness of constitution. Their external circumstances are either wealth and freedom, which enable them to live as they please; or ambition and poverty, which bind them down to splendid or obscure servitude, and other inconveniencies.

Persons of a healthy and strong constitution should observe the two following rules. The first is, to avoid a precise and uniform diet, and to diversify their method of living; to be sometimes in the city, and sometimes in the country; to eat and drink sometimes more, and sometimes less than usual, but always within the bounds of temperance; to partake of whatever wholesome food comes in their way, be it ever so ordinary; to use at one time little, at another much exercise; and in short, by a various life, to be always prepared, and ready to fall in with any condition which may be appointed for them by providence.

The second rule is, to be cautious not to destroy in their gay days of pleasure and health, by any great excess or debauchery, that vigour of consti-

tution which should support them under unavoidable infirmities.

On the other hand, persons of a tender and delicate habit of body, (among whom Celsus reckons most of those who live in great cities, and all the studious and contemplative) should endeavour to repair by their temperance, regularity and care, what is perpetually impaired by their weakness, situation and study: and, in effect, we often see that persons of a weakly constitution, who are immediately injured by any excess, and consequently obliged to be careful in the management of their health, live more comfortably, and longer than those of a robust constitution, who from a vain confidence in their vigour, are apt to despise all rules and order.

As to external circumstances, those who, by birth or acquisition, are possessed of a fortune which makes them able, and of a disposition which makes them free to live as they please, having it in their power to put every rule in practice that can conduce to the preservation of their health, are to blame if they neglect so great a blessing, which every man will know the value of and deplore, when once he has lost it.

Those again, who either by choice are engaged to serve the public, or by poverty obliged to serve private families, and are not at liberty to bestow much time or care on their health, must make the best use they can of such opportunities as their engagements will afford them. Every condition has some vacant hours, which may be employed to the purpose of health. "The emperor Antoninus," says Galen, who dispatched so much business in the day, began his exercise always about sunset." It is important for a statesman to observe, that "the more business he has been fatigued with upon any particular occasion, the more temperately he ought to live;" and that he should not at such times, eat any thing hard of digestion, or

drink more wine than what is just sufficient to refresh him.

It is moreover to be observed, that persons of all ranks who eat and drink freely, and are at the same time so much confined by their employments, as to be able to use little or no exercise abroad, should be sure to use some exercise within doors, of which a great variety may be contrived to every man's taste, as shuttle-cock, billiards, hand-ball, dumb bell, &c. and should also frequently chaff his body with a flesh brush in the morning, and now and then take some very gentle physic, to carry off what may remain indigested in his stomach and bowels.

To conclude, the poor, if they are virtuous and cleanly, have great advantages over the rich, with respect to health and long life, as the narrowness of their circumstances prompts them to labour, and withdraws all temptations to luxury.

CHAP. VI.

Of the Prophylaxis, or Ways to prevent approaching Distempers.

IN the beginning of Chap. I. I observed, that the art of preserving health might be divided into three branches, whereof the first points out the rules calculated to maintain the health we enjoy at present. The second treats of the best method to prevent distempers; and the third directs the way to long life. I have already spoke of the first branch. The precepts which relate to the two following will be but few.

When distempers are perceived to make their approach, they should be prevented, by removing their causes as soon as possible. "A man, says Ga-

" len*, seems to be in a middle state between health
 " and sickness, when he has some slight ailment
 " that does not confine him to bed, or from bu-
 " siness, such as an inconsiderable head-ach, loss
 " of appetite, some unusual weariness, weight or
 " drowsiness: but it is the part of a wise man to
 " prevent those small disorders from growing worse
 " by correcting without delay the disposition by
 " which they are propagated. If, for example,
 " the beginning complaint arises from too great a
 " fulness, that fulness should be diminished by ab-
 " stinence, or (if abstinence is not sufficient) by
 " bleeding, purging or sweating. If it arises from
 " crudities, and indigestion, the remedy to pre-
 " vent its growing worse, is to keep one's self
 " warm, to live abstemiously and quietly for some
 " days, and to drink a little good wine to strength-
 " en the stomach. And in general we should en-
 " deavour (continues he) to remove the present
 " slight complaint by pursuing a method, in its
 " tendency and effects, directly contrary to the
 " cause which produced that complaint; or, in o-
 " ther words, thick humours must be attenuated;
 " acrimonious and redundant humours corrected
 " and discharged; crude humours concocted;
 " contractions relaxed, and obstructions opened."

When a beginning cold or cough threatened an
 impending fever, the sagacious Sydenham fre-
 quently† removed the cough, and prevented the
 fever, by prescribing air and exercise, and a cool-
 ing ptisan for drink, together with abstinence from
 flesh meat, and strong liquors.

Boerhaave, who had studied all the ancient and
 modern physicians of any reputation, and knew
 perfectly well how to extract what was most use-
 ful from their several writings, has, in his Pro-
 phylaxis ‡, recommended the three following ex-
 cellent precepts to prevent distempers.

* De med. art. constitut, cap. 19.

† De tuss. epidem. pag. 208;

‡ Instit. medic. sect. 1046.

1. As soon as we perceive, from certain symptoms, says he, that any distemper is approaching we should prevent it, by pursuing a method opposite to the cause which is likely to produce it: and this method chiefly consists in using the following means, *viz.* “ We must, in the first place, practise
 “ abstinence and rest, and drink several draughts
 “ of warm water. We ought, in the next place,
 “ to use some moderate exercise, and persist in it
 “ until a gentle sweat begins to break out; after
 “ which we should immediately go into a warm
 “ bed, and there indulge a free perspiration, and
 “ sleep as long as conveniently we can; for it is
 “ obvious that by these means the vessels are relaxed,
 “ gross humours are diluted, and noxious humours discharged; and thus impending distempers are prevented by removing their causes.

2. “ To guard against distempers in general, there cannot be a more useful precaution in our climate, than to keep up a free and uniform perspiration, by not laying aside our winter garments before a warm May; and by putting them on again before a cold November.

3. “ In summer (continues he) our diet should be light, soft, and mild; our drink cooling; and our exercise gentle. In winter, on the contrary, our food ought to be solid, dry and savoury, warmed with a little good wine; and the exercise vigorous. In spring and autumn the ailment and exercise should keep a medium between both, but leaning to those of summer or winter, as one is more or less affected with the heat or cold.”

To the directions of these great men, I shall subjoin a simple and easy method of preventing impendent distempers, frequently practised with good success, *viz.* When you find yourself indisposed, go directly to bed, and there ly for one, two, or three days, until your complaints are removed; living all the while on water gruel or

panada for food; and on water or small warm negus, or white wine whey for drink. Your gruel or panada may be made more or less substantial as you require them. This is very nearly the advice of Cellius, an author of no mean reputation, whose sentiments * to the same effect, expressed with assurance of success, may be seen at the bottom of the page.

And tho' some may deride the simplicity of this prescription, they will find that where such food agrees with the stomach, and time can be spared to make the experiment, it will prove more beneficial than they may imagine. I have been often told by a lady of quality, whose circumstances obliged her to be a good oeconomist, and whose prudence and temperance preserved her health and senses unimpaired to a great age, that she had kept herself out of the hands of the faculty many years, by this simple regimen. Gruel indeed is a very insipid diet to a person of a nice palate. Plutarch, in his life of Lycurgus, tells that one of the kings of Pontus, who loved good eating, having heard great encomiums made on the *black broth of Sparta*, hired a cook from that city. But when he came to taste this celebrated dish, he called immediately for his cook and with some warmth told him, that it was a vile abominable mess. To which the other modestly replied, *Sir, to make this broth relish well, a man must bathe himself in the river Eurotas* *.

* Igitur si quid ex his (notis futuræ adversæ valetudinis) incidit, optimum optima sunt quies et abstinentia: si quid bibendum, aqua; idque interdum uno die fieri satis est; interdum, si terrentia manent, biduo: proximeque abstinentiam sumendus cibus exiguus, bibenda aqua, postero die etiam vinum, deinde alternis diebus, modo aqua, modo vinum, donec omnis causa metus finiatur. Per hæc enim sæpe instans gravis morbus discutitur.-----Neque dubium est, quin vix quisquam, qui non dissimulavit, sed per hæc morbo mature occurrit, ægrotet. Lib. 3. cap. 2.

* A river of Laconia, running by Sparta, so that to bathe in Eurotas, means to imitate the discipline and temperance of the Lacedæmonians.

C H A P. VII.

Of longevity.—The natural marks of it.—The means of attaining it.—The rise and fall of the transfusion of blood from one animal into another. The conclusion.

I Have already observed, that when the continual attritions of the solids and fluids of the human body against each other, is hurried on with violence, death must advance hastily, and arrive early; but when it is performed with moderation, the springs of life last longer, and death is more slow in its approaches.

Longevity may proceed either from nature or from art; but chiefly from their happy conjunction.

The natural marks by which we discern that a man is made for long life, are principally as follows:

1. To be descended, at least by one side, from long lived parents.
2. To be of a calm, contented, and cheerful disposition.
3. To have a just symmetry, or proper conformation of parts; a full chest, well formed joints and limbs, with a neck and head large rather than small in proportion to the size of the body.
4. A firm and compact system of vessels and stamina, not too fat: veins large and prominent; a voice somewhat deep; and a skin not too white and smooth.
5. To be a long and sound sleeper.

The great assistance which art affords towards attaining long life, arises from the benefit of good air * and good water †, from a frugal and simple

* Brasiliæ salubritatis fama non paucos olim senes, aliosque minus prospera utentes valetudine, ex Hispania, et Indiis, aliisque distitis locis, excitavit ad ærem et aquas has cælo datas, tanquam ad duo validissima præsidia vitæ et valetudinis. Perquam mature enim pabescunt incioæ

diet, from the wise government of our appetites and passions, and, in a word, from a prudent choice and proper use of all the instruments of life, and rules of health, of which we have spoken before.

But some of the moderns have gone farther, and recommended new and bold methods to prolong life, which the antients either had not perspicacity to discern, or wanted resolution to practise. The comprehensive and exalted genius of lord Verulam was not to be limited by common rules. He advises old people "once every two years to change their whole juices, and render themselves very lean by a course of abstinence and proper diet-drinks, in order to sweeten their blood and renew their age." And Boerhaave *, who like the industrious bee collected honey from every flower, adopts his lordship's opinion with some small amendment; for, speaking of the most proper diet to attain longevity, he expresses himself in the manner following; "Great abstinence, or an extremely slender, drying and emaciating diet now and then, but very rarely put in practice, is of wonderful use to attain longevity." And a little lower he explains his meaning more perspi-

senescunt tarde, idque sine canitie aut calvitio. Quo fit, quod longe ultra centesimum ætatis annum viridi senecta, non Americani tantum, sed et ipsi Europæi fruuntur, totamque adeo territorium *Macrobius* dici mereator. Guil. Pisonis hist. nat. et medic. Brasiliæ continentis.

† Audio in Ægypti locis homines vivere longiorem vitam quam alibi, (dicit Melchior Guilandinus) quando ipsorum per multi annos plus centum vivunt: communis fere omnibus iis habitatoribus vita annorum nonaginta solet esse.---Aquæ Nili fluminis clarescæ, dulces, tenuissimæ, splendidissimæ atque levissimæ existunt, ita ut celerem corporis viscera permeant. Audio etiam (quid olim, cum Cayri morem facerem etiam observavi) in singulis fere corporibus ab ipsi epotis aquis statim vel copiosas urinas, vel sudores, vel per alvum dejectiones observari, atque in hypochondriis nullam fluctuationem ab ipsis ostendi: loquor de iis quæ Cayri habentur et potantur, quando Alexandriæ aquæ content substantia crassiofi, quæ pessimæ existunt, tardissimeque viscera permeant. Confirmo tuam sententiam, (respondent A pinus) atque me in omnibus corporibus observasse, citissime illas aquas Cayri clarescæ, vel per alvum, vel per urinam vel sudorem exiisse. Prosper Alpinus de medic. Egypt. lib. 1. cap. 11. et 12.

* Instit. med. num. 1059---1062.

cuously, by telling us, that “ a radical, or almost
 “ total change of the humours by resolvent medi-
 “ cines, and a succeeding discharge of them out
 “ of the body, such as happens under a course of
 “ mercury, or under a course of attenuating,
 “ drying, and sudorific decoctions, often dispose
 “ the body in an admirable manner, to expel old
 “ distempered humours, and to fill the vessels with
 fresh vital juices.” And thus art, conducted with
 prudence, may effectually lead to long life.

But how far this method of renewing their age
 may be safely practised by old people, I will not
 take upon me to determine, since the success must,
 in a great measure, depend upon the goodness of
 their stamina, the strength and perseverance of
 their resolution, and the skill of the artist who
 conducts the regimen. And though this and the
 following brave but unsuccessful effort to prolong
 life, discover a quick penetration and a laudable
 boldness of the human mind; yet a sure and ea-
 sy road to longevity, different from the general
 rules of health already mentioned, seems to be a-
 mong the desiderata in our art, the discovery of
 which is reserved, perhaps, for a more meritori-
 ous generation.

About a hundred * years ago, a new and gallant
 effort was made to mend distempered constituti-
 ons, and consequently to prolong life, by sup-
 plying the human body with young and healthy
 blood from other animals.

The first hint of this great attempt was given
 at Oxford, *anno* 1658, by Dr. Christopher Wren,
 Savilian Professor of astronomy there, who pro-
 posed to the honourable Mr. Boyle, a method of
transfusing liquors into the veins of living animals.

In 1666, his hint was farther improved, at the
 same perennial source of ingenuity and learning,
 by Dr. Richard Lower, who invented the method

* See the original transactions of the royal society, vol. 1.

of *transfusing* blood out of one animal into another.

He was followed by several ingenious men at London, and particularly by Dr. Edmund King, who rendered Lower's method of transfusion still more easy and commodious. And as it was intended by the royal society that those trials should be prosecuted to the utmost variety which the subject would bear, by exchanging the blood of old and young, sick and healthy, fierce and timid animals; various experiments were accordingly made with surprising effects upon lambs, sheep, dogs, calves and horses, &c.

From England this invention passed into France and Italy; where, after old, decrepid and deaf animals had their hearing, and the agility of their limbs, restored by the transfusion of young and healthy blood into their veins, and other wonderful cures had been atchieved, J. Denis, doctor of physic at Paris, with the assistance of Mr. Emeretz, ventured to perform the operation on men in that city: And Johann. Gulielm. Riva*, a surgeon of good reputation, made the same experiments at Rome.

After some trials, Monsieur Denis published one account of a young man that was cured of an uncommon lethargy, (subsequent to a fever in which he had been blooded twenty times) by *transfusing* the arterial blood of a lamb into his veins: and another account of the cure of an inveterate and raging phrenzy performed on a man thirty-four years old, by *transfusing* the arterial blood of a calf into his veins, in the presence of several persons of quality and learning.

This daring enterprize having succeeded so well at the first setting out in France, it was also practised in England from the arteries of a young sheep, into the veins of one Mr. Arthur Coga,

* Vide Merklin. de ortu et occasu transfus. sang. Edit. Noremberg; anno. 1679.

November the 23d, anno 1667, at Arundel-house, before a splendid company, by Dr. Edmund King, and Dr. Richard Lower. And Coga published under his own hand, an account of the great benefit which he received from the operation. But unfortunately this *transfusion* happened to be soon after performed in France and Italy with bad success on some persons of distinction*; by which unhappy accidents the practice (being yet in its infancy, and unsupported by a sufficient number of experiments) fell into discredit, and was prohibited by the king's authority in France, and by the Pope's mandate at Rome.

Thus was defeated a noble essay, begun with prudence in England, but rashly pursued in foreign countries, which, had the first trials on the human species been conducted with care and caution, might in time have produced most useful and surprising effects.

But after all, I am of opinion, that the greatest efforts of the human mind to extend a vigorous longevity much beyond fourscore, will generally prove ineffectual; and that neither the total alteration and discharge of old distempered humours, by a course of resolvent medicines, nor the substitution of fresh vital juices in their room, prescribed by the great lord Verulam and Boerhaave, nor the transfusion of young blood into old veins, tho' performed with the utmost precaution and dexterity, will ever avail to bestow strength and vigour on the bulk of mankind, for any great number of years, beyond the limits marked out by the Psalmist, and much less to produce rejuvenescency. Tho' I am persuaded, at the same time, that these methods prosecuted to accuracy,

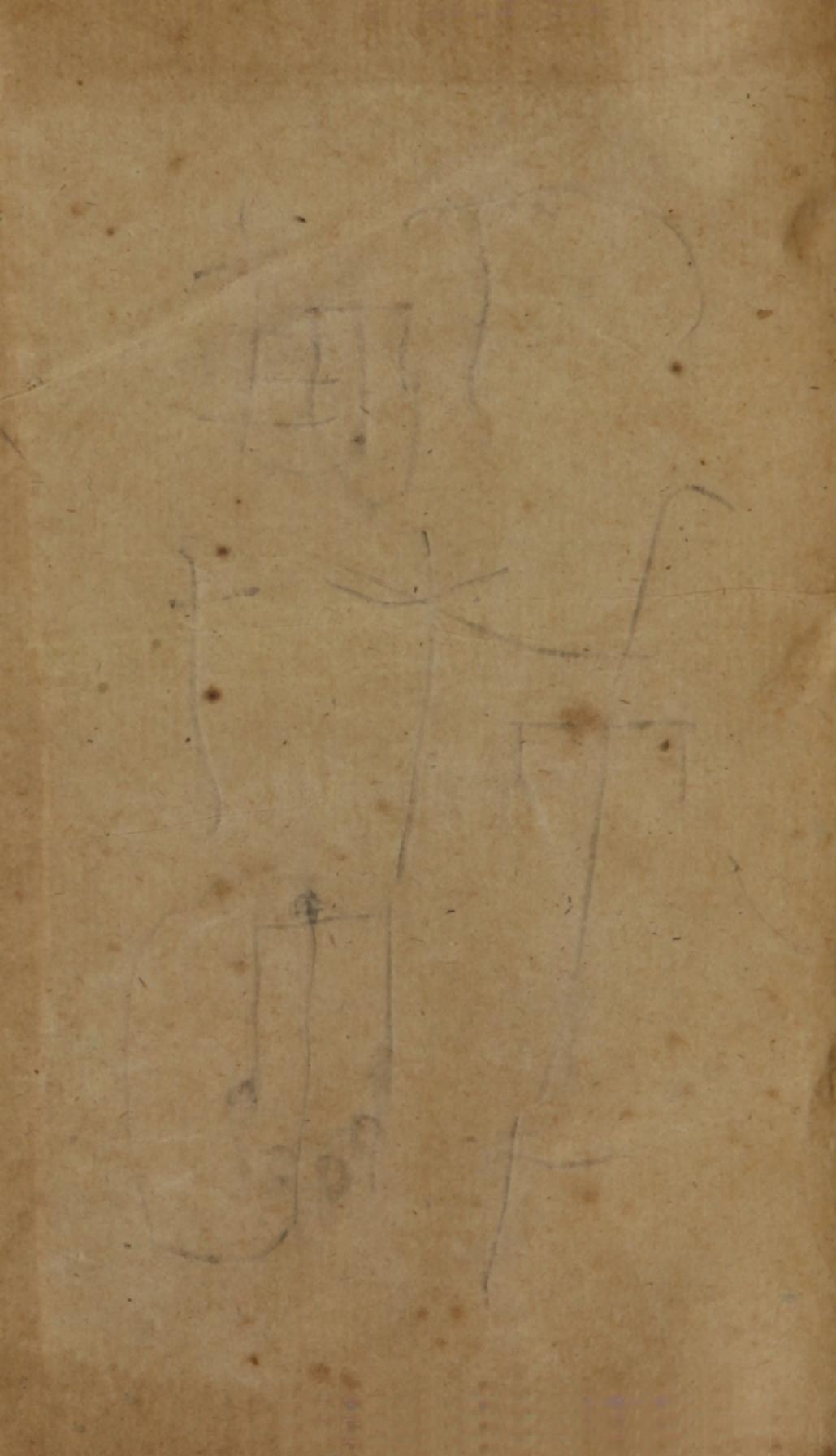
* It was imprudently and fatally tried in France on baron Bond, son to the first minister of state in Sweden, after he was given over by his physicians, and his bowels began to mortify; and had the same ill fate at Rome, being injudiciously tried on a person just worn out with a consumption. Vide Merklin de ortu et occasu transf. sang.

and reduced, if possible, to a general and easy practice, would make the life of man hold out, free from the usual complaints of decrepitude, longer than it does at present, since we see every day, that an extraordinary strength of constitution, managed with common prudence, often exceeds an hundred years.*

Let us in the mean time make the best use of those advantages which we can easily compass. Let us, by a virtuous course of life, and by the practice of such rules as the experience of ages has established, endeavour to preserve health of body and soundness of mind, until we arrive at the boundaries which providence (unless we are our own enemies) seems to have nearly marked out for our respective constitutions. And then let us cheerfully submit to have the curtain drawn for a little while between our friends and us; and be ready and willing to enter into that happy state for which we were originally intended, and where we shall be secure from the approach of age and infirmities.

* See the diligent and good bishop of Bergen's natural history of Norway, where he relates from credible vouchers, that in the year 1733, four married couple danced in the presence of Christian VI. king of Denmark, whose ages joined together, amounted to more than eight hundred years, none of the four couple being under an hundred. Part 2. chap. 9. sect. 8.





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