

which have yet been pretended to be discovered, we shall beg leave again to recommend the most strict attention to the following rules, *viz.* That when any poisonous substance has been taken into the stomach, it ought, as soon as possible, to be discharged by vomits, clysters, and purges; and, when poison has been received into the body by a wound, that it be expelled by medicines which promote the different secretions, especially those of perspiration and urine; to which may be added antispasmodics, or such medicines as take off tension and irritation; the chief of which are opium, musk, camphor, and asafœtida.

PART III.

CHAP. I.

OF SURGERY.

To describe all the operations of surgery, and to point out the different diseases in which these operations are necessary, would extend this article far beyond the limits allotted to it; we must therefore confine our observations to such cases as most generally occur, and in which proper assistance is either not asked, or not always to be obtained.

Though an acquaintance with the structure of the human body is indispensably necessary to qualify a man for being an expert surgeon; yet many things may be done to save the lives of their fellow-men in emergencies by those who are not adepts in anatomy. It is amazing with what facility the peasants daily perform operations upon brute animals, which are not of a less difficult nature than those performed on the human species; yet they seldom fail of success.

Indeed every man is in some measure a surgeon, whether he will or not. He feels an inclination to assist his fellow-men in distress, accidents happen every hour, which give occasion to exercise this feeling. The feelings of the heart, however, when not directed by the judgment, are apt to mislead. Thus one, by a rash attempt to save his friend, may sometimes destroy him; while another, for fear of doing amiss, stands still and sees his bosom-friend expire, without so much as attempting to relieve him, even when the means are in his power. As every good man would wish to steer a course different from either of these, it will no doubt be agreeable to him to know what ought to be done upon such emergencies.

BLEEDING.

No operation of surgery is so frequently necessary as bleeding; it ought therefore to be very generally understood. But though practised by midwives, gardeners, blacksmiths, barbers, and tooth-drawers, we have reason to believe that very few know when it is proper. Even physicians themselves have been so much the dupes of theory in this article, as to render it the subject of ridicule. It is, however, an operation of great importance, and must, when

reasonably and properly performed, be of singular service to those in distress.

Bleeding is proper at the beginning of all inflammatory fevers, as pleurisies, peripneumonies, &c. It is likewise proper in all topical inflammations, as those of the intestines, womb, bladder, stomach, kidneys, throat, eyes, &c. as also in the asthma in certain cases, head-achs, acute rheumatism, apoplexy, epilepsy, and bloody flux under certain states. After falls, blows, bruises, or any violent hurt received either externally, or internally, bleeding is necessary. It is likewise necessary for persons who have had the misfortune to be strangled, drowned, suffocated with foul air, the fumes of metal, or the like. In a word, whenever the vital motions have been suddenly stopped from any cause whatever, except in swoonings occasioned by mere weakness or hysteric affections, it is proper to open a vein. But in all disorders proceeding from relaxation of the solids, and an impoverished state of the blood, as dropsies, cacochymies, &c. bleeding is improper.

Bleeding for topical inflammations ought always to be performed as near the part affected as possible. When this can be done with a lancet, it is to be preferred to any other method; but where a vein cannot be found, recourse must be had to leeches or cupping.

The quantity of blood to be taken away must always be regulated by the strength, age, constitution, manner of life, and other circumstances relating to the patient. It would be ridiculous to suppose that a child could bear to lose as much blood as a grown person, or that a delicate lady should be bled to the same extent as a robust man.

The mode of bleeding most frequently practised, is that of opening a vein; and it may be done in the arm, ankle, jugular vein, frontal vein, veins under the tongue, and on the back of the hand, &c. In whatever part, however, venesection is performed, a bandage must be applied between that part and the heart. As it is often necessary, in order to raise the vein, to make the bandage pretty tight, it will be proper in such cases, as soon as the blood begins to flow, to slacken it a little. The bandage ought to be applied at least an inch, or an inch and a half from the place where the puncture is intended to be made. Thus, the return of the blood through the vein is stopped, the vein swells, becomes conspicuous, and when opened, bleeds much more freely than would otherwise happen.

Persons not skilled in anatomy ought never to bleed with the lancet in a vein that lies over an artery or a tendon, if they can avoid it.* The former may easily be known from its pulsation or beating, and the latter from its feeling hard or tight like a whipcord under the finger.

It was formerly a rule, even among those who had the character of being regular practitioners, to bleed their patients in certain diseases till they fainted. Surely a more ridiculous rule could not be proposed. One person will faint at the very sight of a lancet,

* Persons not skilled in anatomy ought never to bleed at all. The risk is greater than the benefit; as the advantage to be derived from such a step must depend on practical knowledge. Ed.

while another will lose almost the whole blood of his body before he faints. Swooning depends more upon the state of the mind than of the body : besides it may often be occasioned or prevented by the manner in which the operation is performed.

Children are generally bled with leeches. This, though sometimes necessary, is a very troublesome and uncertain practice. It is impossible to know what quantity of blood is taken away by leeches ; besides, the bleeding is often very difficult to stop, and the wounds are not easily healed. Would those who practise bleeding take a little more pains, and accustom themselves to bleed children, they would not find it such a difficult operation as they imagine.

Certain vulgar prejudices with regard to bleeding still prevail among the country people. They talk, for instance, of head-veins heart-veins, breast-veins, &c. and believe that bleeding in these will certainly cure all diseases of the parts whence they are supposed to come, without considering that all the blood-vessels arise from the heart, and return to it again ; for which reason, unless in topical inflammations, it signifies very little from what part of the body blood is taken. But this, though a foolish prejudice, is not near so hurtful as the vulgar notion that the first bleeding will perform wonders. This belief makes them often postpone the operation when necessary, in order to reserve it for some more important occasion, and, when they think themselves in extreme danger, they fly to it for relief, whether it be proper or not. Bleeding at certain stated periods or seasons has likewise bad effects.

It is a common notion that bleeding in the feet draws the humours downwards, and consequently cures diseases of the head and other superior parts ; but we have already observed that, in all topical affections, the blood ought to be drawn as near the part as possible. When it is necessary, however, to bleed in the foot or hand, as the veins are small, and the bleeding is apt to stop too soon, the part ought to be immersed in warm water, and kept there till a sufficient quantity of blood be let.

All the apparatus essential for blood-letting, on the part of the patient, is a bandage or fillet, two or more small pieces of folded linen for compresses, a bason to receive the blood, and a little clean water and a towel. The bandage ought to be about a yard in length, and near two inches broad, a common riband or garter being frequently employed. The compresses are made by doubling a bit of linen rag about two inches square. On the part of the surgeon, it is necessary for him to have a good lancet, of proper shape ; for if the shoulders of the lancet be too broad, it will not readily enter the vein, and when it does enter, it invariably makes a large opening, which is not always desirable. If the lancet be too spear-pointed, an incautious operator would often run a risk of transfixing the vein, and wounding the artery beneath it. More, however, depends on the mode of introducing the lancet than on its shape.

During the operation of bleeding, the patient may lie down, sit down, or stand up, each of which positions may be chosen, as circumstances may require. If the patient be apt to faint from the loss of a small quantity of blood, and such fainting can answer no

surgical purpose, it is best to bleed him in a recumbent posture. But when the person is strong and vigorous, there is little occasion for this precaution, and a sitting posture is to be preferred, as the most convenient, both for the surgeon and patient.

At the bend of the arm, there are several veins in which a puncture may be made, viz. the basilic, cephalic, median basilic, and median cephalic. The median basilic vein being usually the largest and most conspicuous, is that in which the operation is mostly performed; but it should never be forgotten, that it is under this vessel that the brachial artery runs, with the mere intervention of the thin aponeurotic sheath, sent off by the biceps muscle. In very thin persons, indeed, the median basilic vein lies almost close to the artery, and nothing is then more easy than to transfix the first of these vessels and wound the last.

In fat subjects, the large veins at the bend of the arm are sometimes totally imperceptible, notwithstanding the fillet is tightly applied, the limb is put in warm water, and every thing done to make those vessels as turgid as possible. Under these circumstances, if the surgeon has not had much experience in the practice of venesection, he will do well to be content with opening one of the veins of the back of the hand, after putting the member for some time in warm water, and applying a ligature round the wrist.

In children, a sufficient quantity of blood cannot always be obtained by venesection, and, in this event, the free application of leeches, and, occasionally, the puncture of the temporal artery, are the only effectual methods.

One of the most common ill consequences of bleeding in the arm is a thrombus, or ecchymosis, that is, a small tumour around the orifice, and occasioned by the blood insinuating itself into the adjoining cellular substance, at the time this fluid is escaping from the vein. Changing the posture of the arm will frequently hinder the thrombus from increasing in size, so as to obstruct the evacuation of blood. The best applications for promoting the absorption of these tumours, are those containing spirit, vinegar, or urinate of ammonia. Compresses wetted with any lotion of this sort, may be advantageously put on the swelling, and confined there with a slack bandage.

The integuments and subjacent cellular substance, the absorbents, the vein, &c. are all liable to inflammation, in consequence of bleeding, a nerve also may be wounded, all requiring proper surgical treatment.

TOPICAL BLOOD-LETTING.

This is performed either by means of a scarificator and cupping-glass, or leeches, or by dividing the visibly distended vessels with a lancet, as is frequently done in cases of inflammation of the eye.

INFLAMMATIONS AND ABSCESES.

From whatever cause inflammation proceeds, it must terminate either by dispersion, suppuration, or gangrene. Though it is impossible to foretell with certainty in which of these ways any particular inflammation will terminate, yet a probable conjecture may

be formed with regard to the event, from a knowledge of the patient's age and constitution. Inflammations happening in a slight degree upon colds, and without any previous indisposition, will most probably be dispersed; those which follow close upon a fever, or happen to persons of a gross habit of body, will generally suppurate; and those which attack very old people, or persons of a dropsical habit, will have a strong tendency to gangrene.

If the inflammation be slight, and the constitution sound, the dispersion ought always to be attempted. This will be best promoted by a slender diluting diet, plentiful bleeding, and repeated purges. The part itself must be fomented, and, if the skin be very tense, it may be embrocated with a mixture of three-fourths of sweet oil, and one-fourth of vinegar, and afterwards covered with a piece of wax-plaster.

If, notwithstanding these applications, the symptomatic fever increases, and the tumour becomes larger, with violent pain and pulsation, it will be proper to promote the suppuration. The best application for this purpose is a soft poultice, which may be renewed twice a-day. If the suppuration proceeds but slowly, a raw onion cut small or bruised may be spread upon the poultice. When the abscess is ripe or fit for opening, which may easily be known from the thinness of the skin in the most prominent part of it, fluctuation of matter, which may be felt under the finger, and, generally speaking, an abatement of the pain, it may be opened either with a lancet, or by means of caustic.

The last way in which an inflammation terminates, is in a gangrene or mortification, the approach of which may be known by the following symptoms:—The inflammation loses its redness, and becomes duskish or livid; the tension of the skin goes off, and it feels flabby; little bladders filled with ichor of different colours spread all over it; the tumour subsides, and from a duskish complexion becomes black; a quick low pulse, with cold clammy sweats, are the immediate forerunners of death.

When these symptoms first appear, the part ought to be dressed with London treacle, or a cataplasm made of lixivium and bran. Should the symptoms become worse, the part must be scarified, and afterwards dressed with basilicum softened with oil of turpentine. All the dressings must be applied warm. With regard to internal medicines, the patient must be supported with generous cordials, and the Peruvian bark exhibited in as large doses as the stomach will bear it. If the mortified parts should separate, the wound will become a common ulcer; and must be treated accordingly.

This article includes the treatment of all those diseases, which, in different parts of the country, go by the names of *biles*, *imposthumes*, *whitloes*,* &c. They are all abscesses in consequence of a

* A whitloes is a very painful complaint. It is generally caused by a small quantity of purulent matter lodged very deep, and compressed by the hard unyielding skin covering the finger. The pain may be instantly relieved by making a pretty deep incision with a lancet. The skin should also be rather freely divided, which will prevent the compression of the fungous flesh that is frequently thrown out from a whitloes, and which, when girt by the skin, occasions great pain. The wound may be dressed with a little Peruvian balsam spread on lint. An incipient whitloes may occasionally be dispersed by immersing the part in water as hot as it can be borne.

previous inflammation, which, if possible, ought to be discussed; but, when this cannot be done, the suppuration should be promoted, and the matter discharged by an incision, if necessary; afterwards, the sore may be dressed with yellow basilicum, or some other digestive ointment.

WOUNDS.

No part of medicine has been more mistaken than the treatment or cure of wounds. Mankind in general believe that certain herbs, ointments, and plasters, are possessed of wonderful healing powers, and imagine that no one can be cured without the application of them. It is, however, a fact, that no external application whatever contributes towards the cure of a wound, any other way than by keeping the parts soft, clean, and defending them from the external air, which may be as effectually done by dry lint, as by the most pompous applications, while it is exempt from many of the bad consequences attending them.

The same observation holds with respect to internal applications. These only promote the cure of wounds as far as they tend to prevent a fever, or to remove any cause that might obstruct or impede the operations of Nature. It is Nature alone that cures wounds. All that art can do is to remove obstacles, and to put the parts in such a condition as is the most favourable to Nature's efforts.

With this simple view we shall consider the treatment of wounds, and endeavour to point out such steps as ought to be taken to facilitate their cure.

The first thing to be done when a person has received a wound, is to examine whether any foreign body be lodged in it, as wood, stone, iron, lead, glass, dirt, bits of cloth, or the like. These, if possible, if it can be conveniently done, ought to be extracted, and the wound cleaned before any dressings be applied. When that cannot be effected with safety, on account of the patient's weakness or loss of blood, they must be suffered to remain in the wound, and afterwards extracted when he is more able to bear it.

When a wound penetrates into any of the cavities of the body, as the breast, the bowels, &c., or where any considerable blood-vessel is cut, a skilful surgeon ought immediately to be called, otherwise the patient may lose his life. But sometimes the discharge of blood is so great, that if it be not stopped, the patient may die, even before a surgeon, though at no great distance, can arrive. In this case, something must be done by those who are present. If the wound be in any of the limbs, the bleeding may generally be stopped by applying a tight ligature or bandage round the member, a little above the wound. The best method of doing this is to put a strong broad garter round the part, but so slack as easily to admit a small piece of stick to be put under it, which must be twisted, in the same manner as a countryman does a cart-rope to secure his loading, till the bleeding stops. Whenever this is the case, he must take care to twist it no longer, as straining it too much might occasion an inflammation of the parts, and endanger a gangrene.

In parts where this bandage cannot be applied, various other methods may be tried to stop the bleeding, as the application of

styptics, astringents, &c. Cloths dipped in a solution of blue vitriol in water, or the *styptic water* of the dispensatories, may be applied to the wound. When these cannot be obtained, strong spirits of wine may be used. Some recommend the *agaric** of the oak as preferable to any of the other styptics; and indeed it deserves considerable encomiums. It is easily obtained, and ought to be kept in every family, in case of accidents. A piece of it must be laid upon the wound, and covered with a good deal of lint, above which a bandage may be applied so tight as to keep it firmly on.

Though spirits, tinctures, and hot balsams, may be used, in order to stop the bleeding from small vessels when it is excessive, they are improper at other times. They do not promote, but retard the cure, and often change a simple wound into an ulcer. People imagine, because hot balsams congeal the blood, and seem, as it were, to solder up the wound, that they therefore heal it; but this is only a deception. They may indeed stop the flowing blood, by searing the mouth of the vessels; but, by rendering the parts callous, they obstruct the cure.

In slight wounds, which do not penetrate much deeper than the skin, the best application is a bit of the common black sticking-plaster. This keeps the sides of the wound together, and prevents the air from hurting it, which is all that is necessary. When a wound penetrates deep, the edges of it, if a clean incised wound, ought to be brought in contact, and retained in that position by means of slips of adhesive plaster, when, in all probability, it will become glued together by what surgeons term the adhesive inflammation. If a deep irregular wound, from blunted instruments, it is not safe to keep the lips quite close; this keeps in the matter, and is apt to make the wound fester. In this case the best way is to fill the wound with soft lint, commonly called *caddis*. It, however, must not be stuffed in too hard, otherwise it will do hurt. The lint may be covered with a cloth dipped in oil, or spread with the common wax-plaster or poultice; and the whole must be kept on by a proper bandage, as circumstances may point out.

The first dressing ought to continue on for at least two days; after which it may be removed, and fresh lint applied as before. If any part of the first dressing sticks so close as not to be removed with ease or safety to the patient, it may be allowed to continue, and fresh lint dipped in sweet oil laid over it. This will soften it so as to make it come off easily at next dressing. Afterwards, the wound may be dressed twice a-day in the same manner till it

* Dr. Tissot, in his *Advice to the People*, gives the following directions for gathering, preparing, and applying the agaric:—"Gather in autumn," says he, "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. The part immediately under this rind, which is the best of all. This 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 bleeding, 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."—Where the agaric cannot be had, sponge may be used in its stead. It must be applied in the same manner, and has nearly the same effects.

be quite healed. Those who are fond of salves or ointments may, after the wound is become very superficial, dress it with the yellow *basilicum*; and if fungous, or what is called *proud flesh*, should rise in the wound, it may be checked, by mixing with the ointment a little burnt alum, or red precipitate of mercury; or it may be kept down by a compress.

When a wound is greatly inflamed, the most proper application is a poultice of bread and milk, softened with a little sweet oil or fresh butter. This must be applied instead of a plaster, and should be changed twice a-day.

If the wound be large, and there is reason to fear an inflammation, the patient should be kept on a very low diet. He must abstain from animal food, strong liquors, and every thing that is of a heating nature. If he be of a full habit, and has lost but little blood from the wound, he must be bled; and, if the symptoms be urgent, the operation may be repeated. But when the patient has been greatly weakened by loss of blood from the wound, it will be dangerous to bleed him, even though a fever should ensue. Nature should never be too far exhausted. It is always more safe to allow her to struggle with the disease in her own way, than to sink the patient's strength by excessive evacuations.

Wounded persons ought to be kept perfectly quiet and easy. Every thing that ruffles the mind, or moves the passions, as love, anger, fear, excessive joy, &c. are very hurtful. They ought, above all things, to abstain from venery. The body should be kept gently open, either by laxative clysters, or by a cool vegetable diet, as roasted apples, stewed prunes, boiled spinach, and such like.

BURNS.

In slight burns, which do not break the skin, it is customary to hold the part near the fire for a competent time, to rub it with salt, or to lay a compress upon it, dipped in spirits of wine or brandy. It is, however, a preferable practice to plunge immediately the burnt or scalded part into cold water, and keeping it for some time immersed. Strong brandy or alcohol is particularly praised. At first the pain is increased by this remedy, but an agreeable soothing sensation soon follows. The parts should be immersed in the spirit, and, when this cannot be done, soft old linen, soaked in the application, should be constantly kept on the part. A strong solution of alum and water is also useful. These applications are frequently made to prevent small blisters from arising, and should be continued as long as the pain remains; and in extensive burns, creating great irritation, opium should be prescribed, as the stupor with which patients so circumstanced are attacked, receives more relief from opium than any thing else. But when the burn has penetrated so deep as to blister or break the skin, it must be dressed with some of the liniments for burns mentioned in the Appendix, or with the emollient and gently-drying ointment, commonly called *Turner's cerate*.* This may be mixed with an equal quantity of fresh olive-oil, and spread upon a soft rag, and applied

* See Appendix, *Turner's Cerate*.

to the part affected. When this ointment cannot be had, an egg may be beat up with an equal quantity of the sweetest salad-oil. This will serve very well, till a proper ointment can be prepared. When the burning is very deep, after the first two or three days, it should be dressed with equal parts of yellow *basilicum* and *Turner's cerate*, mixed together.

When the burn is violent, or has occasioned a high degree of inflammation, and there is reason to fear a gangrene or mortification, the same means must be used to prevent, as are recommended in other violent inflammations. The patient, in this case, must live low, and drink freely of weak diluting liquors. He must likewise be bled and have his body kept open. But if the burnt parts should become livid or black, with other symptoms of mortification, it will be necessary to bathe them frequently with warm camphorated spirits of wine, tincture of myrrh, or other antiseptics, mixed with a decoction of the bark. In this case the bark must likewise be taken internally, and the patient's diet must be more generous, with wine, &c.

As example teaches better than precept, I shall relate the treatment of the most dreadful case of this kind that has occurred in my practice. A middle-aged man, of a good constitution, fell into a large vessel full of boiling water, and miserably scalded about one half of his body. As his clothes were on, the burning in some parts was very deep before they could be got off. For the first two days the scalded parts had been frequently anointed with a mixture of lime-water and oil, which is a very proper application for recent burnings. On the third day when I first saw him, his fever was high, and his body costive, for which he was bled, and had an emollient clyster administered. Poultices of bread and milk, softened with fresh butter, were likewise applied to the affected parts, to abate the heat and inflammation. His fever still continuing high, he was bled a second time, was kept strictly on the cooling regimen, took the saline mixture with small doses of nitre, and had an emollient clyster administered once a-day. When the inflammation began to abate, the parts were dressed with a digestive composed of brown cerate and yellow basilicum. Where any black spots appeared, they were slightly scarified, and touched with the tincture of myrrh; and to prevent their spreading, the Peruvian bark was administered. By this course, the man was so well in three weeks as to be able to attend his business.*

Equal parts of linseed-oil and lime-water form an excellent cooling emollient application to burns produced by gunpowder, or those that are less destroyed. In some cases Goulard's cerate, and a weak solution of the superacetate of lead, more quickly procure ease.

* This practice answers very well in scalds; but in severe burns, such as are occasioned by the explosion of gunpowder, or of inflammable air in coal mines, the method recommended by Mr. Kentish, of applying to the burned part spirit of turpentine, by means of a feather, till the suppuration is fairly established, and afterwards covering the surface with pure chalk, finely powdered, is preferable practice. The patient's strength must be supported by cordial medicines, and a generous diet. In slight burns and scalds, immersing the part in iced water, or wrapping it in cloths kept constantly moist with spirit of wine or ether, which by its evaporation occasions cold, relieves pain, and prevents vesication.

Mr. Cleghorn's Plan of treating Burns and Scalds.

Mr. Cleghorn, a brewer in Edinburgh, was inclined to pay great attention to the effects of various modes of treating burns, on account of the frequency of these accidents among his own workmen. His observations led him to prefer the immediate application of vinegar, which was to be continued for some hours, by any of the most convenient means, until the pain abated, and when this returned the vinegar was renewed. If the burn had been so severe as to have produced a destruction of parts, these, as soon as the pain had ceased, were covered with a poultice, the application of which was continued about six, or, at most, eight hours, and after its removal the parts were entirely covered with finely powdered chalk, so as to take away every appearance of moisture on the surface of the sore. This being done, the whole burnt surface was again covered with poultice. The same mode was pursued every night and morning until the cure was complete. If the use of poultices relaxed the ulcers too much, a plaster or ointment, containing subcarbonate of lead, was applied; but the chalk was still sprinkled on the sore.

Diluted sulphuric acid was found to answer as well as vinegar. In cold weather Mr. Cleghorn sometimes warmed the vinegar a little, placed the patients near the fire, gave them something warm internally, and kept them in every respect in a comfortable situation. His object in so doing was to prevent the occurrence of tremblings and chillness, which, in two instances, after the employment of cold vinegar, took place in an alarming degree.

Sir James Earle's Plan.

This gentleman was an advocate for the use of cold water, or rather ice; and published several cases of extensive burns, in which this method was employed with the best success. The burnt parts may either be plunged in cold water, or they may be covered with linen dipped in the same, and renewed as often as it acquires warmth from the part. The application should be continued as long as the heat and pain remain, which they will often do for a great many hours.

Some caution, however, becomes necessary, in the application of cold, when the scald is of very large size, or situated upon the trunk of the body. In extensive burns, superficial as they may be, the patient is liable to be affected with cold shiverings; and these shiverings may be greatly aggravated by exposure, and by the application of cold. Perhaps, therefore, in these examples warm applications ought to be preferred.

The sores resulting from burns are perhaps more disposed than any other ulcer, to form large granulations, which rise considerably above the level of the surrounding skin. At this stage no poultices should be used. The sores should be dressed with Turner's cerate, or basilicum mixed with a little red precipitate, and if the part will allow of the application of a roller, the pressure will be of great service in keeping down the granulations, (commonly called proud flesh,) and rendering them more healthy.

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BRUISES.

BRUISES are generally productive of worse consequences than wounds. The danger from them does not appear immediately, by which means it often happens that they are neglected. It is needless to give any definition of a disease so universally known; we shall therefore proceed to point out the method of treating it.

In slight bruises it will be sufficient to bathe the part with warm vinegar, to which a little brandy or rum may occasionally be added, and to keep cloths wet with this mixture constantly applied to it. This is more proper than rubbing it with brandy, spirits of wine, or other ardent spirits, which are commonly used in such cases.

In some parts of the country the peasants apply to a recent bruise a cataplasm of fresh cow-dung. I have often seen this cataplasm applied to violent contusions, occasioned by blows, falls, bruises, and such like, and never knew it fail to have a good effect.

When a bruise is very violent, the patient ought immediately to be bled, and put upon a proper regimen; a sufficient number of leeches ought likewise to be applied to the part. His food should be light and cool, and his drink weak, and of an opening nature; as whey sweetened with honey, decoctions of tamarinds, barley, cream-tartar-whey, and such like. The bruised part must be bathed with vinegar and water, as directed above; and a poultice made by boiling crumb of bread, elder-flowers, and camomile-flowers, in equal quantities of vinegar and water, applied to it. This poultice is peculiarly proper when a wound is joined to the bruise. It may be renewed two or three times a-day.

As the structure of the vessels is totally destroyed by a violent bruise, there often ensues a great loss of substance, which produces an ulcerous sore very difficult to cure. If the bone be affected, the sore will not heal before an exfoliation takes place; that is, before the diseased part of the bone separates, and comes out through the wound. This is often a very slow operation, and may even require several years to be completed. Hence it happens, that these sores are frequently mistaken for the king's evil, and treated as such, though in fact they proceed solely from the injury which the solid parts received from the blow.

Patients in this situation are pestered with different advices. Every one who sees them proposes a new remedy, till the sore is so much irritated with various and opposite applications, that it is often at length rendered absolutely incurable. The best method of managing such sores is, to take care that the patient's constitution does not suffer by confinement or improper medicine, and to apply nothing to them besides simple ointment spread upon soft lint, over which a poultice of bread and milk, with boiled camomile flowers, or the like, may be put, to nourish the part, and keep it soft and warm. Nature, thus assisted, will generally in time operate a cure, by throwing off the diseased parts of the bone, after which the sore soon heals.

ULCERS.

ULCERS are divided into local or constitutional; it is only, however, within certain limits that this distinction is well founded; for

an ulcer which is at first completely local, may in time affect the system so as to become constitutional; and ulcers which derive their origin from some general affection of the system, may remain after the removal of the constitutional disorder, by which they were originally produced.

Ulcers may be the consequence of wounds, bruises, or imposthumes properly treated; they may likewise proceed from an ill state of the humours, or what may be called a bad habit of body.

In the latter case they ought not to be hastily dried up, otherwise it may prove fatal to the patient. Ulcers happen most commonly in the decline of life; and persons who neglect exercise, and live grossly, are most liable to them. They might often be prevented by retrenching some part of the solid food, or by opening artificial drains, as issues, setons, or the like.

An ulcer may be distinguished from a wound by its discharging a thin watery humour, which is often so acrid as to inflame and corrode the skin; by the hardness and perpendicular situation of its sides or edges; by the time of its duration, &c.

It requires considerable skill to be able to judge whether or not an ulcer ought to be dried up. In general, all ulcers which proceed from a bad habit of body, should be suffered to continue open, at least till the constitution has been so far changed by proper regimen, or the use of medicine, that they seem disposed to heal of their own accord. Ulcers which are the effect of malignant fevers or other acute diseases, may generally be healed with safety after the health has been restored for some time. The cure ought not, however, to be attempted too soon, nor at any time without the use of purging medicines and a proper regimen. When wounds or bruises have, by wrong treatment, degenerated into ulcers, if the constitution be good, they may generally be used with safety. When ulcers either accompany chronical diseases, or come in their stead, they must be cautiously healed. If an ulcer conduces to the patient's health, from whatever cause it proceeds, it ought not to be healed; but if, on the contrary, it wastes the strength, and consumes the patient by a slow fever, it should be healed as soon as possible.

We would earnestly recommend a strict attention to these particulars to all who have the misfortune to labour under this disorder, particularly persons in the decline of life; as we have frequently known people throw away their lives by the want of it, while they were extolling and generously rewarding those whom they ought to have looked upon as their executioners.

Cure of Ulcers by Roller and Compresses, &c. on Mr. Whately's Plan.

Bandages are of the most essential service in healing many kinds of ulcers; but their efficacy is so great in curing numerous indolent sores, that they are sometimes considered the principal means of cure. Mr. Whately, who is one of the most zealous modern advocates for this mode of treating ulcers, offers the following remarks for the application of the roller and compresses.

"The best width for a flannel roller, designed for those who

have slender legs, is three inches; but for those whose legs are of a larger size, they should always be three inches and a half in width. They must therefore, at first, be torn a little wider, that they may be of their proper width when repeatedly washed. It will likewise be found, that rollers made of fine, soft, and open flannel will answer much better than those made of coarse or hard flannel. The rollers should be often washed, as they become much softer, and of course sit easier when quite clean than when soiled.

"In applying a roller (says this gentleman) the first circle should be made *round* the *lowest* part of the ankle, as near as possible to the heel; the second should be formed from thence round the foot; the third, to be passed again round the foot quite to the toes. The roller should then be passed from the foot round the ankle and instep a second time, to make the fourth circle. In doing this it should be brought nearer (but not over) the point of the heel than it was at the *first time* of going round the part. The fifth circle should pass over the ankle again, and not more than half an inch higher up the leg than the fourth circle. The sixth, seventh, eighth, and ninth circles should ascend spirally along the small of the leg, at the *exact distance* of three-fourths of an inch from each other. Having proceeded thus far up the leg, we may begin to increase the distance of the circles from each other, which may now succeed each other upward to the knee, at the distance of from one to two inches, according to the size and shape of the leg. At that part where the calf of the leg commences it is generally necessary to let the upper edge of the roller be once, twice, or thrice turned downwards, for about half the circumference of the leg, in order to make the roller lay smooth between the middle of the calf and the small of the leg. When the roller has been thus applied as far as the knee there will be a portion of it to spare, of perhaps a yard in length; this remainder should be brought down by spiral windings, at greater distances from each other than those which were made in the ascent of the roller. The windings should in general be completed in the small of the leg, where the roller should be pinned.

"In applying the compresses, it is necessary in every instance, to put them on one by one, and not all in a mass, though they be of a proper size and number. They should be crossed in different directions; the largest of them should in no case be longer than just to meet on the opposite side of the leg to which they are applied. If the same compresses in any case be applied two days together, they should always be turned on the contrary side at each re-application, in order to prevent wrinkles on the skin."

As Mr. Whately objects to pressure being made with adhesive plaster, the following is the calamine cerate he has usually employed

Take Prepared Hog's Lard,	3 lb.
Lead Plaster,	1½ lb.
Prepared Calamine,	1 lb.

To this formula Mr. Whately adds another for making a cerate, which nearly resembles the unguentum tripharmacum of the old dispensatory; but being less oily, it makes a much more adhesive

plaster. It should be spread on rag or silk, as an external covering to the dressing on lint, where a tow-plaster cannot be conveniently used; as in wounds of the face or hands, a bubo, or any other sore, where an external plaster cannot readily be retained in its situation by a bandage. This plaster is likewise so mild that it never irritates the skin. It has also been found very useful in fractures. The following is the formula:

Take Lead Plaster,	1 lb.
Hog's Lard, Prepared,	6 ounces.
Vinegar,	4 ounces.
Mix.	

Mr. Baynton's Plan of curing old Ulcers of the Leg by Means of Adhesive Plaster, without Rest.

Mr. Baynton says that the means proposed by him will be found, in most instances, sufficient to accomplish cures in the worst cases, without pain or confinement. After having been repeatedly disappointed in the cure of old ulcers, Mr. Baynton determined on bringing their edges nearer together by means of slips of adhesive plaster. To this he was chiefly led, from having frequently observed, that the probability of an ulcer continuing sound depended much on the size of the cicatrix which remained after the cure appeared to be accomplished; and from knowing well, that the true skin was a much more substantial support and defence, as well as a better covering, than the frail one, which is obtained by the assistance of art. But, when he had recourse to the adhesive plaster with a view to lessen the probability of those ulcers breaking out again, he little expected, that an application so simple would prove the easiest, most efficacious, and most agreeable means of treating ulcers. His method is as follows:

"The parts should be first cleared of the hair, sometimes found in considerable quantities on the legs, by means of a razor, that none of the discharges, by being retained, may become acrid and inflame the skin, and that the dressings may be removed with ease at each time of their renewal, which, in some cases, where the discharges are profuse, and the ulcers very irritable, may, perhaps, be necessary twice in the twenty-four hours, but which I have in every instance been only under the necessity of performing once in that space of time.

"The plaster should be prepared by slowly melting, in an iron ladle, a sufficient quantity of litharge plaster, or diacylon, which, if too brittle when cold to adhere, may be rendered adhesive by melting half a drachm of resin with every ounce of the plaster: when melted it should be stirred till it begins to cool, and then spread thinly upon slips of smooth porous calico, of a convenient length and breadth, by sweeping it quickly from the end held by the left hand of the person who spreads it, to the other, held firmly by another person, with the common elastic spatula used by apothecaries: the uneven edges must be taken off, the pieces cut into slips, about two inches in breadth, and of a length that will, after being passed round the limb, leave an end of about four or five inches. The middle of the piece so prepared is to be applied to the sound part of the limb, opposite to the inferior part of the ulcer,

so that the lower edge of the plaster may be placed about an inch below the the lower edge of the sore, and the ends drawn over the ulcer with as much gradual extension as the patient can well bear; other slips are to be secured in the same way, each above and in contact with the other, until the whole surface of the sore and the limb are completely covered, at least one inch below, and two or three above the diseased part. The whole of the leg should then be equally defended with pieces of soft calico, three or four times doubled, and a bandage of the same, about three inches in breadth, and four or five yards in length, or rather as much as will be sufficient to support the limb from the toes to the knee, should be applied as smoothly as can possibly be performed, and with as much firmness as can be borne by the patient, being first passed round the leg at the ankle-joint, then as many times round the foot as will cover and support every part of it, except the toes, and afterwards up the limb till it reaches the knee, observing that each turn of the bandage should have its lower edge so placed as to be about an inch above the lower edge of the fold next below. If the parts be much inflamed, or the discharge very profuse, they should be well moistened, and kept cool with cold spring water, poured upon them as often as the heat may indicate to be necessary, or, perhaps, at least, every hour. The patient may take what exercise he pleases, and it will always be found, that an alleviation of his pain and the promotion of his cure will follow as its consequence, though, under other modes of treating the disease, it aggravates the pain, and prevents the cure.

"These means, when circumstances render it convenient, should be applied soon after rising in the morning, as the legs of persons affected with this disease are then found most free from tumefaction, and the advantages will be greater than when they are applied to limbs in a swollen state. The first applications will sometimes occasion pain, which, however, subsides in a short time, and is less sensibly felt at each succeeding dressing. The force with which the ends are drawn over the limb must then be gradually increased, and when the parts are restored to their natural state of ease and sensibility, which will soon happen, as much may be applied as the calico will bear, or the surgeon can exert; especially if the limb be in that enlarged and compressible state, which has been denominated the scorbutic, or if the edges of the wound be widely separated from each other."

"Cures," adds Mr. B., "will be generally obtained without difficulty by the mere application of the slips and bandage; but, when the parts are much inflamed, and the secretions great, or the season hot, the frequent application of cold water will be found a valuable auxiliary, and may be always safely had recourse to, where the heat of the part is greater than is natural, and the body free from perspiration.

The most proper regimen for promoting the cure of ulcers is to avoid all spices, salted and high-seasoned food, all strong liquors, and to lessen the usual quantity of flesh meat. The body ought to be kept gently open by a diet consisting chiefly of cooling laxative vegetables, and by drinking butter-milk, whey sweetened with honey, or the like. The patient ought to be kept cheerful, and should take as much exercise as he can easily bear

When the bottom and sides of an ulcer seem hard and callous, they may be sprinkled twice a-day with a little red precipitate of mercury, and afterwards dressed with the ointment of yellow *basilicon*, or cerate of resin. Sometimes it will be necessary to have the edges of the ulcer scarified with the lancet.

Limewater has frequently been known to have very happy effects in the cure of obstinate ulcers. It may be used in the same manner as directed for the stone and gravel. For indolent ulcers, Sir Everard Home recommends the application of diluted nitrous acid, in the proportion of a scruple to eight ounces of water. It promotes, in an uncommon manner, the progress of the cure; and, although painful at first, this sensation soon ceases, and produces the best effects.

My late learned and ingenious friend Dr. White strongly recommends the use of the solution of corrosive sublimate of mercury in brandy, for the cure of obstinate ill-conditioned ulcers. I have frequently found this medicine, when given according to the Doctor's directions, prove very successful. The dose is a table-spoonful night and morning; at the same time washing the sore twice or thrice a-day with it. In a letter which I had from the Doctor a little before his death, he informed me, "that he observed washing the sore thrice a-day with the solution of a triple strength was very beneficial."*

The carrot poultice is found to agree with a great many irritable sores; and the decoction of poppy-heads is also found to be a good liquor for making poultices. The great objection to poultices in these cases being their weight, the limb should always, if possible, rest upon the poultice, and not the poultice, upon the limb. When the weight cannot be avoided and is hurtful, a lighter application should be chosen. When poultices are employed, their use should be continued as long as the granulations are small, and the ulcer rapidly diminishing in size; and this, even until the cicatrization be complete. When the granulations become large and loose in their texture, poultices should be left off, when a slight or necessary degree of pressure may be adopted.

OF THE FISTULA IN ANO.

ULCERS in the neighbourhood of the anus are peculiarly liable to become fistulous, and when in that state are very difficult to cure. A fistula, is frequently the consequence of neglected or ill-treated piles. The presence of this complaint is discovered by the sensation of a pricking pain on going to stool, which is also perceived during the exertion of coughing or sneezing. On examination, a stain of a pale colour, occasionally accompanied with a little blood, will be found upon the linen; the feces are also slightly streaked with matter. This matter issues from a small ulcer with one or more orifices, in the neighbourhood of the anus, the other extremity of which generally communicates with the internal cavity of the rectum.

* In ulcers of the lower limbs great benefit is often received from wearing a laced stocking, as this prevents the flux of humours to the sores, and disposes them to heal.

When this disease is ascertained to be present, costiveness should be guarded against chiefly by means of diet, which ought to be cooling, and consist of ripe figs, roasted apples, and articles of a similar nature. Oatmeal porridge eaten with milk or beer, for breakfast or supper, rarely fails to keep the body regular. The radical cure of this complaint must depend on the proper application of topical remedies. Much may be done by strict attention to personal cleanliness. The parts should be carefully washed with a sponge and water several times a-day, and regularly after going to stool. Stimulant injections, as for example a solution of corrosive sublimate, or of common culinary salt, tincture of cantharides, or port wine thrown into the fistula by means of a small syringe, or elastic gum-bottle, furnished with a conical point, have, when duly persisted in, effected a cure. Or, the orifice of the fistula may be kept open, and a free passage given to the contained matter, by means of a tent or bougie shaped like a cone, and the ulcer be thus disposed to heal. This disease has also been attempted to be cured by introducing a bougie, or flexible leaden probe into the fistula, passing it through the orifice that communicates with the rectum, and bringing it out at the anus, then twisting the two opposite extremities together, and occasionally tightening them, till they destroy the interposed substance, when the fistula, being reduced to the state of a simple ulcer, heals.

Drinking any sulphureous mineral water, such as that of Harrogate, improves the constitution in general, and by that means tends to promote the healing of the ulcer. In cold, languid, and what are termed phlegmatic habits, tar-water may be taken with considerable advantage. I knew an instance of a fistulous sore, seated near the rectum, being almost healed up by taking regularly half a pint of sea-water morning and evening for six weeks together, and believe it might have been completely cured, had the person persisted in this course for a sufficient length of time. It is certainly worth while to give any of these remedies a fair trial previous to having recourse to the operation, as even that does not always succeed.

Ulcerations about the rectum are frequently symptomatic of affections of the liver. When that is known to be the case, or when they occur about the decline of life, or in persons who have resided long in warm climates, we should not be too busy with our efforts to heal them up. In such persons they seem frequently to operate as salutary drains to the constitution, and to prevent the access of other diseases. Many examples have occurred of persons somewhat advanced in life being attacked by asthma, spitting of blood, paralysis, and even insanity, within a short period of time after undergoing the operation for the radical cure of a fistula; while others, of apparently similar constitutions, who have submitted to the inconvenience of a discharge, and been attentive to keep the parts clean and warm, have lived to an advanced period of life. Individuals past the meridian of life, who determine to undergo the operation for fistula, should never omit to have an issue opened in some other part of the body, which may serve as a succedaneum for the natural drain they are about to obliterate.

A. P. B.

* * * The medical treatment of fistulæ in ano will depend on their cause. If they arise from costiveness, the remedies are obvious; if from disease of the liver, calomel and saline purges; if from disease of the chest, as dropsy, it is difficult to say what medicine ought to be recommended. It is of great importance, however, to give such medicines as will bring the fistula into a healthy state. With this view the balsam of copaiba may be given with advantage. If there be much irritation, give soda, which has great efficacy in diminishing the irritability of the rectum. Aromatic medicines should be given, especially that which used to go by the name of Wards's Paste, having been found by experience to produce excellent effects in this disease:

Take of Pepper 2 drachms,
Ellecampane and
Fennel seeds, of each half an ounce.

These are to be mixed up with honey, in the form of an electuary; of which a tea-spoonful is to be taken two or three times a-day. This soon brings the fistula into a healing state; healthy granulations shoot up from the surface, and the discharge instead of being serous or bloody, consists of good pus. Calomel and saline purges should be occasionally given during the use of these aromatic medicines, with a view of promoting the secretions of the liver and intestines. Ed.

CHAP. II.

OF DISLOCATIONS.

WHEN a bone is moved out of its place or articulation, so as to impede its proper functions, it is said to be *luxated* or *dislocated*. As this often happens to persons in situations where no medical assistance can be obtained, by which means limbs, and even lives are frequently lost, we shall endeavour to point out the method of reducing the most common luxations, and those which require immediate assistance. Any person of common sense and resolution, who is present when a dislocation happens, may often be of more service to the patient than the most expert surgeon can after the swelling and inflammation have come on. When these are present, it is difficult to know the state of the joint, and dangerous to attempt a reduction; and by waiting till they are gone off, the muscles become so relaxed, and the cavity filled up, that the bone can never afterwards be retained in its place.

A recent dislocation may generally be reduced by extension alone, which must always be greater or less according to the strength of the muscles which move the joint, the age, robustness, and other circumstances of the patient. When the bone has been out of its place for any considerable time, and a swelling or inflammation has come on, it will be necessary to bleed the patient, and, after fomenting the part, to apply soft poultices with vinegar to it for some time before the reduction is attempted.

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All that is necessary after the reduction, is to apply cloths dipt in vinegar or camphorated spirits of wine to the part, and to keep it perfectly easy. Many had consequences proceed from the neglect of this rule. A dislocation seldom happens without the tendons and ligaments of the joint being stretched, and sometimes torn. When these are kept easy till they recover their strength and tone, all goes on very well; but if the injury be increased by too frequent an exertion of the parts, no wonder if they be found weak and diseased ever after.

DISLOCATION OF THE JAW.

THE lower jaw may be luxated by yawning, blows, falls, chewing hard substances, or the like. It is easily known from the patient's being unable to shut his mouth or to eat any thing, as the teeth of the under jaw do not correspond with those of the upper; besides, the chin either hangs down or is thrown towards one side, and the patient is neither able to speak distinctly, nor to swallow without considerable difficulty.

The usual method of reducing a dislocated jaw, is to set the patient upon a low stool, so as an assistant may hold the head firm by pressing it against his breast. The operator is then to thrust his two thumbs, being first wrapt up with linen cloths that they may not slip, as far back into the patient's mouth as he can, while his fingers are applied to the jaw externally. After he has got firm hold of the jaw, he is to press it strongly downwards and backwards, by which means the elapsed heads of the jaw may be easily pushed into their former cavities.

The peasants in some parts of the country have a peculiar way of performing this operation. One of them puts a handkerchief under the patient's chin, then turning his back to that of the patient, pulls him up by the chin, so as to suspend him from the ground. This method often succeeds, but we think it a dangerous one, therefore recommend the former.

DISLOCATION OF THE NECK.

THE neck may be dislocated by falls, violent blows, or the like.* In this case, if the patient receives no assistance, he soon dies, which makes people imagine the neck was broken; it is, however, for the most part, only partially dislocated, and may be reduced by almost any person who has resolution enough to attempt it. A complete dislocation of the neck is instantaneous death.

When the neck is dislocated, the patient is immediately deprived of all sense and motion; his neck swells, his countenance appears

* The os occipitis, and first cervical vertebra, are so firmly connected by ligaments, that there is no instance of their being luxated from an external cause, and were the accident to happen, it would immediately prove fatal by the unavoidable compression and injury of the spinal marrow; and in dislocations of the first cervical vertebra from the second, patients can hardly be expected to survive a mischief of this kind in so high a situation; when the transverse ligament is broken, and the *dentated process* is thrown directly backward against the medulla oblongata, the effect must be instant death, as happened in a case lately related by Mr. C. Bell. All dislocations of the neck in which the *processus dentatus* is displaced are immediately fatal, although luxations of the oblique cervical processes lower down may be reduced. Ed.

bloated, his chin lies upon his breast, and his face is generally turned towards one side.

To reduce this dislocation, the unhappy person should immediately be laid upon his back on the ground, and the operator must place himself behind him, so as to be able to lay hold of his head with both hands, while he makes a resistance by placing his knees against the patient's shoulder. In this posture he must pull the head with considerable force, gently twisting it at the same time, if the face be turned to one side, till he perceives that the joint is replaced, which may be known from the noise which the bones generally make when going in, the patient's beginning to breathe, and the head continuing in its natural posture.

This is one of those operations which it is more easy to perform than describe. I have known instances of its being happily performed even by women, and often by men of no medical education. After the neck is reduced, the patient ought to be bled, and should be suffered to rest for some days, till the parts recover their proper tone.

DISLOCATION OF THE RIBS.

As the articulation of the ribs with the back-bone is very strong, they are not often dislocated. It does, however, sometimes happen, which is a sufficient reason for our taking notice of it. When a rib is dislocated, either upwards or downwards, in order to replace it, the patient should be laid upon his belly on a table, and the operator must endeavour to push the head of the bone into its proper place. Should this method not succeed, the arm of the disordered side may be suspended over a gate or ladder, and while the ribs are thus stretched asunder, the heads of such as are out of place may be thrust into their former situation.

Those dislocations wherein the heads of the ribs are forced inwards, are both more dangerous and the most difficult to reduce, as neither the hand nor any instrument can be applied internally to direct the luxated heads of the ribs. Almost the only thing that can be done is, to lay the patient upon his belly over a cask, or some gibbous body, and to move the fore-part of the rib inward towards the back, sometimes shaking it; by this means the heads of the luxated ribs may slip into their former place.

In a modern work* may be read the particulars of a case, where all the ribs are said to have been dislocated from the cartilages. The accident arose from the chest being violently compressed between the beam of a mill and the wall. In such a case, there is no means of reduction, except the effect produced by forcible inspiration; nor are there any modes of relief but bleeding, and the application of a roller round the chest.

DISLOCATION OF THE SHOULDER.

The humerus or upper-bone of the arm may be dislocated in various directions: it happens, however, most frequently downwards, but very seldom directly upwards. From the nature of its

* C. Bell's Surg. Observations, p. 171.

articulation, as well as from its exposure to external injuries, this bone is the most subject to dislocation of any in the body. A dislocation of the humerus may be known by a depression or cavity on the top of the shoulder, and an inability to move the arm. When the dislocation is downward or forward, the arm is elongated, and a ball or lump is perceived under the arm-pit; but when it is backward, there appears a protuberance behind the shoulder, and the arm is thrown forwards towards the breast.

The usual method of reducing dislocations of the shoulder is to seat the patient upon a low stool, and to cause an assistant to hold his body so that it may not give way to the extension, while another lays hold of the arm a little above the elbow, and gradually extends it. The operator then puts a napkin under the patient's arm, and causes it to be tied behind his own neck: by this, while a sufficient extension is made, he lifts up the head of the bone, and with his hands directs it into its proper place. There are various machines invented for facilitating this operation, but the hand of an expert surgeon is always more safe. In young and delicate patients, I have generally found it a very easy matter to reduce the shoulder, by extending the arm with one hand, and thrusting in the head of the bone with the other. In making the extension, the arm ought always to be a little bent.

DISLOCATION OF THE ELBOW.

THE bones of the fore-arm may be dislocated in any direction. When this is the case, a protuberance may be observed on that side of the arm towards which the bone is pushed, from which, and the patient's inability to bend his arm, a dislocation of this joint may easily be known.

Two assistants are generally necessary for reducing a dislocation of the elbow; one of them must lay hold of the arm above, and the other below the joint, and make a pretty strong extension, while the operator returns the bones into their proper place. Afterwards the arm must be bent, and suspended for some time with a sling about the neck.

Luxations of the wrist and fingers are to be reduced in the same manner as those of the elbow, viz. by making an extension in different directions, and thrusting the head of the bone into its place.

DISLOCATION OF THE CLAVICLE OR COLLAR-BONE.

THE clavicle may be luxated at its sternal extremity,* forwards, backwards, and upwards, but never downwards, on account of the situation of the cartilage of the first rib. The luxation forward is most frequent, and almost the only one ever met with.

In reducing these dislocations of the sternal end of the clavicle, a lever is to be made of the arm, by means of which the shoulder is to be brought outwards; and when thus brought outwards, it is to be pushed forwards, if the dislocation be in that direction; backward, if the dislocation be behind; and upward, if it be above.

* The end nearest the breast-bone.

It is as difficult to keep the bone reduced, as it is easy to reduce it, so smooth and oblique are the articular surfaces. Dislocations of the capsular end of the clavicle, or that nearest the shoulder-joint, are much less common. The luxation upwards is the only one that ever occurs; and this is reduced by carrying the shoulder outwards, putting a cushion in the axilla, and applying a proper bandage, as in fractures of this bone, making the turns ascend from the elbow to the shoulder, so as to press the luxated end of the bone downward, and keep it in its due situation, at the same time that the elbow is confined close to the side, and supported in a sling, by which means the shoulder will be kept raised and inclined outwards.

DISLOCATION OF THE PATELLA OR KNEE-PAN.

This bone may be luxated outwards, or even inwards, when violently pushed in this direction. The dislocation outwards is the most frequent.

The generality of cases of this description are easily reduced by pressure, when the extensor muscles of the leg have been completely relaxed; but owing to a lax state of the ligament of the patella, or other predisposing causes, the bone is sometimes with difficulty retained in its proper position, unless a roller be applied.

The inflammatory affection of the joint is to be opposed by topical bleeding, purging, and the use of evaporating lotions. The joint must be kept quiet a few days, and then gently moved, to prevent stiffness.

DISLOCATION OF THE THIGH.

The head of the thigh-bone may be dislocated upwards (on the dorsum of the ilium,) upwards and forwards (on the body of the os pubis,) downwards and forwards (on the foramen ovale,) and backwards (on the ischiatic notch). The dislocation upward and backward, and that downward and forward, are the most frequent.

When the thigh-bone is dislocated forward and downward, the knee and foot are turned out, and the leg is longer than the other; but when it is displaced backward, it is usually pushed upwards at the same time, by which means the limb is shortened, and the foot is turned inwards.

When the thigh-bone is displaced forward and downward, the patient, in order to have it reduced, must be laid upon his back, and made fast by bandages, or held by assistants, while by others a gradual and unremitting extension is made by means of slings, or a pulley fixed about the bottom of the thigh a little above the knee; a sheet, folded longitudinally, being first placed under the perinæum or fork, and one end carried behind the patient, the other before him: they are to be fastened to one of the legs or posts of the bed, or other more secure part. While the extension is making, the operator must push the head of the bone outward, or as the circumstances of the case may require, till it gets into the socket. If the dislocation be outward, the patient must be laid

upon his face, and during the extension the head of the bone must be pushed inward.

Dislocations of the *knees, ancles, and toes*, are reduced much in the same manner as those of the upper extremities, viz. by making an extension in opposite directions, while the operator replaces the bones. In many cases, however, the extension alone is sufficient, and the bone will slip into its place merely by pulling the limb with sufficient force. It is not hereby meant, that force alone is sufficient for the reduction of dislocation. Skill and address will often succeed better than force. I have known a dislocation of the thigh reduced by one man, after all the force that could be used by six had proved ineffectual.

When the force of the muscles in very robust persons resists every effort to reduce a dislocated limb, a grain or two of emetic tartar dissolved in water may be administered, and taking advantage of the general languor and debility that precedes the act of vomiting, the limb may be reduced with facility. I have known this plan successfully practised; to which may be added bleeding and the warm bath.

CHAP. III.

OF BROKEN BONES, &c.

THERE is, in most country-villages, some person who pretends to the art of reducing fractures. Though in general such persons are very ignorant, yet some of them are very successful; which evidently proves, that a small degree of learning, with a sufficient share of common sense and a mechanical head, will enable a man to be useful in this way. We would, however, advise people never to employ such operators, when an expert and skilful surgeon can be had; but when that is impracticable, they must be employed: we shall therefore recommend the following hints to their consideration:—

When a large bone is broken, the patient's diet ought in all respects to be the same as in an inflammatory fever. He should likewise be kept quiet and cool, and his body open by emollient clysters; or, if these cannot be conveniently administered, by food that is of an opening quality; as stewed prunes, apples boiled in milk, boiled spinage, and the like. It ought, however, to be here remarked, that persons who have been accustomed to live high are not all of a sudden to be reduced to a very low diet. This might have fatal effects. There is often a necessity for indulging even bad habits in some measure, where the nature of the disease might require a different treatment.

It will generally be necessary to bleed the patient immediately after a fracture, especially if he be young, of a full habit, or has at the same time received any bruise or contusion. This operation should not only be performed soon after the accident happens, but, if the patient be very feverish, it may be repeated next day. When several of the ribs are broken, bleeding is peculiarly necessary.

"The most unequivocal symptoms of fractures are, the *crepitus* or grating noise distinguished on moving the limb, occasioned by the fractured ends; the separation and inequalities of the ends of the fracture, when the bone is superficial; the change in the form of the limb, and the shortening of it.

The treatment of fractures in general embraces three principal indications. 1. To reduce the pieces of the bones into their natural situation. 2. To secure and keep them in their place by proper bandages and splints. 3. To prevent unpleasant symptoms, and to relieve them, when, in spite of every effort to the contrary, they do arise."

If any of the large bones which support the body are broken, the patient must keep his bed for several weeks. It is by no means necessary, however, that he should lie all that time, as is customary, upon his back. This situation sinks the spirits, galls and frets the patient's skin, and renders him very uneasy. After the second week, he may be gently raised up, and may sit several hours, supported by a bed-chair, or the like, which will greatly relieve him. Great care, however, must be taken in raising him up and laying him down, that he make no exertions himself, otherwise the action of the muscles may pull the bone out of its place.*

It is of great importance to keep the patient dry and clean while in this situation. By neglecting this, he is often so galled and excoriated, that he is forced to keep shifting places for ease. I have known a fractured thigh-bone, after it had been kept straight for above a fortnight, displaced by this means, and continue bent for life, in spite of all that could be done.

It has been customary when a bone was broken, to keep the limb for five or six weeks continually upon the stretch. But this is a bad posture. It is both uneasy to the patient, and unfavourable to the cure. The best situation is to keep the joint a little bent. This is the posture into which every animal puts its limbs when it goes to rest, and in which fewest muscles are upon the stretch. It is easily effected, by either laying the patient upon his side, or making the bed so as to favour this position of the limb.

Bone-setters ought carefully to examine whether the bone be not shattered or broken into several pieces. In this case it will sometimes be necessary to have the limb immediately taken off, otherwise a gangrene or mortification may ensue. The horror which attends the very idea of an amputation often occasions its being delayed in such cases till too late. I have known this principle operate so strongly, that a limb, where the bones were shattered into more than twenty pieces, was not amputated before the third day after the accident, when the gangrene had proceeded so far as to render the operation useless.

* Various pieces of machinery have been contrived for counteracting the force of the muscles, and retaining the fragments of broken bones; but as descriptions of these without drawings would be of little use, I shall refer the reader to a cheap and useful performance, *On the Nature and Cure of Fractures*, lately published by my ingenious friend Mr. Aitkin, surgeon, in Edinburgh; wherein that gentleman has not only given an account of the machines recommended in fractures by former authors, but has likewise added several improvements of his own, which are peculiarly useful in compound fractures, and in cases where patients with broken bones are obliged to be transported from one place to another.

When a fracture is accompanied with a wound, it must be dressed in all respects as a wound.

All that art can do towards the cure of a broken bone is to lay it perfectly straight, and to keep it quite easy. All tight bandages do hurt. They had much better be omitted altogether. A great many of the bad consequences which succeed to fractured bones are owing to tight bandages. This is one of the ways in which the excess of art, or rather the abuse of it, does more mischief than would be occasioned by the want of it. Some of the most sudden cures of broken bones which were ever known happened where no bandages were applied at all. Some method, however, must be taken to keep the member steady; but this may be done many ways, without bracing it with a tight bandage.

The best method of retention is by two or more splints made of leather or pasteboard. These, if moistened before they are applied, soon assume the shape of the included member, and are sufficient, by the assistance of a very slight bandage, for all the purposes of retention. The bandage which we would recommend is that made with twelve or eighteen tails. It is much easier applied and taken off than rollers, and answers all the purposes of retention equally well. The splints should always be as long as the limb, with holes cut for the ancles when the fracture is in the leg.

In fractures of the ribs, where a bandage cannot be properly used, an adhesive plaster may be applied over the part. The patient in this case ought to be bled, to keep himself quite easy, avoiding every thing that may occasion sneezing, laughing, coughing, or the like. He ought to keep his body in a straight posture, and should take care that his stomach be constantly distended, by taking frequently some light food, and drinking freely of weak watery liquors.

When the ribs are fractured on both sides bandages are not admissible, as the patient would be in extreme danger of being suffocated, from impeded action of the chest.

The most proper external application for a fracture is *oxycrate*, or a mixture of vinegar and water, to which some spirits of wine may be added. The bandages should be wet with this at every dressing, if the inflammation runs high.

CHAP. IV.

OF STRAINS.

STRAINS are often attended with worse consequences than broken bones. The reason is obvious: they are generally neglected. When a bone is broken, the patient is obliged to keep the member easy, because he cannot make use of it; but when a joint is only strained, the person finding he can still make a shift to move it, is sorry to lose his time for so trifling an ailment. In this way he deceives himself, and converts into an incurable malady what might have been removed by only keeping the part easy for a few days.

Country-people generally immerse a strained limb in cold water.

This is very proper, provided it be done immediately, and not kept in too long. But the custom of keeping the part immersed in cold water for a long time is certainly dangerous. It relaxes instead of bracing the part, and is more likely to produce a disease than remove one.

Wrapping a garter, or some other bandage, pretty tight about the strained part, is likewise of use. It helps to restore the proper tone of the vessels, and prevents the action of the parts from increasing the disease. It should not, however, be applied too tight. I have frequently known bleeding near the affected part have a very good effect; but what we would recommend above all, is *ease*. It is more to be depended on than any medicine, and seldom fails to remove the complaint.*

RUPTURES.

CHILDREN and old people are most liable to this disease. In the former it is generally occasioned by excessive crying, coughing, vomiting, or the like. In the latter, it is commonly the effect of blows or violent exertions of the strength, as leaping, carrying great weights, &c. In both, a relaxed habit, indolence, and an oily or very moist diet, dispose the body to this disease.

A rupture sometimes proves fatal before it is discovered. Whenever sickness, vomiting, and obstinate costiveness give reason to suspect an obstruction of the bowels, all those places where ruptures usually happen ought carefully to be examined. The protrusion of a very small part of the gut will occasion all these symptoms; and, if not returned in due time, will prove fatal. On the first appearance of a rupture in an infant, it ought to be laid upon its back with its head very low. While in this posture, if the gut does not return of itself it may easily be put up by gentle pressure. After it is returned, a piece of sticking-plaster may be applied over the part, and a proper truss or bandage must be constantly worn for a considerable time. The method of making and applying rupture-bandages for children is pretty well known. The child must, as far as possible, be kept from crying, and from all violent exertions, till the rupture is quite cured.

In adults, when the gut has been forced down with great violence, or happens from any cause to be inflamed, there is often great difficulty in returning it, and sometimes the thing is quite impracticable without an operation; a description of which is foreign to our purpose. As I have been fortunate enough, however, always to succeed in my attempts to return the gut, without having recourse to any other means than what are in the power of every man, I shall briefly mention the method which I generally pursue.

After the patient has been bled, he must be laid upon his back, with his head very low, and his breech raised high with pillows.

* A great many external applications are recommended for strains, some of which do good, and others hurt. The following are such as may be used with the greatest safety, viz. poultices made of stale beer or vinegar and oatmeal, camphorated spirits of wine, Mindererus's spirit, volatile liniment, volatile aromatic spirit diluted with a double quantity of water, and the common fomentation, with the addition of brandy or spirit of wine.

In this situation flannel-cloths wrung out of a decoction of mallows and camomile-flowers, or, if these are not at hand, warm water, must be applied for a considerable time. A clyster made of this decoction, with a large spoonful of butter, and an ounce or two of salt, may be afterwards thrown up. If these should not prove successful, recourse must be had to pressure. If the tumour be very hard, considerable force will be necessary; but it is not force alone which succeeds here. The operator, at the same time that he makes a pressure with the palms of his hands, must with his fingers artfully conduct the gut in by the same aperture through which it came out. The manner of doing this can be much easier conceived than described. Should these endeavours prove ineffectual, clysters of the smoke of tobacco may be tried. These have been often known to succeed where every other method failed.

There is reason to believe that, by persisting in the use of these, and such other means as the circumstances of the case may suggest, most *hernias* might be reduced without an operation. Operating for the *hernia* is a nice and difficult matter. I would therefore advise surgeons to try every method of returning the gut before they have recourse to the knife. I have once and again succeeded by persevering in my endeavours, after eminent surgeons had declared the reduction of the gut impracticable without an operation.*

An adult, after the gut has been returned, must wear a proper truss. It is needless to describe this, as it may always be had ready-made from the artists. Such bandages are generally uneasy to the wearer for some time, but by custom they become quite easy. No person who has had a rupture after he arrived at man's estate should ever be without one of these bandages.

Persons who have a rupture ought carefully to avoid all violent exercise, carrying great weights, leaping, running, and the like. They should likewise avoid windy aliment and strong liquors; and should carefully guard against catching cold.

CHAP. V.

CASUALTIES.

It is certain that life, when to all appearance lost, may often, by due care, be restored. Accidents frequently prove fatal, merely because proper means are not used to counteract their effects. No person ought to be looked upon as dead from any accident, unless where the structure of the heart, brain, or some organ necessary to life, is evidently destroyed. The functions of these organs may be so far impaired, as even to be for some time imperceptible, when life is by no means extinct. In this case, however, if the fluids be suffered to grow cold, it will be impossible to put them again in motion, even though the solids should recover their power

* I would here beg leave to recommend it to every practitioner, when his patient complains of pain in the belly with obstinate costiveness, to examine the groins, and every place where a rupture may happen, in order that it may be immediately reduced. By neglecting this, many perish who were not suspected to have had ruptures till after they were dead. I have known this happen where half a dozen of the faculty where in attendance.

of acting. Thus, when the motion of the lungs has been stopped by unwholesome vapour; the action of the heart by a stroke on the breast; or the functions of the brain by a blow on the head, if the person be suffered to grow cold, he will in all probability continue so; but, if the body be kept warm, as soon as the injured part has recovered its power of acting, the fluids will again begin to move, and all the vital functions will be restored.

It is a horrid custom immediately to consign over to death every person who has the misfortune, by a fall, a blow, or the like, to be deprived of the appearance of life. The unhappy person, instead of being carried into a warm house, and laid by the fire, or put to a warm bed, is generally hurried away to a church or a barn, or some other cold damp house, where, after a fruitless attempt has been made to bleed him, perhaps by one who knew nothing of the matter, he is given over for dead, and no farther notice taken of him. This conduct seems to be the result of ignorance, supported by an ancient superstitious notion, which forbids the body of any person killed by accident to be laid in a house that is inhabited. What the ground of this superstition may be, we shall not pretend to enquire; but surely the conduct founded upon it is contrary to all the principles of reason, humanity, and common sense.

When a person seems to be suddenly deprived of life, our first business is to enquire into the cause. We ought carefully to observe whether any substance be lodged in the wind-pipe or gullet; and, if that is the case, attempts must be made to remove it. When unwholesome air is the cause, the patient ought immediately to be removed out of it. If the circulation be suddenly stopped, from any cause whatever, except mere weakness, the patient should be bled. If the blood does not flow, he may be immersed in warm water, or rubbed with warm cloths, &c. to promote the circulation. When the cause cannot be suddenly removed, our great aim must be to keep up the vital warmth, by rubbing the patient with hot cloths, or salt, and covering his body with warm sand, ashes, or the like.

I should now proceed to treat more fully of those accidents, which, without immediate assistance, would often prove fatal, and to point out the most likely means for relieving the unhappy sufferers; but as I have been happily anticipated in this part of my subject by the learned and humane Dr. Tissot, I shall content myself with collecting such of his observations as seem to be the most important, and adding such of my own as have occurred in the course of practice.

OF SUBSTANCES STOPPED BETWEEN THE MOUTH AND STOMACH.

THOUGH accidents of this kind are very common, and extremely dangerous, yet they are generally the effect of carelessness. Children should be taught to chew their food well, and to put nothing into their mouths which it would be dangerous for them to swallow. But children are not the only persons guilty of this piece of imprudence. I know many adults who put pins, nails, and other sharp-pointed substances in their mouths upon every occasion, and some who even sleep with the former there all night. This con-

duct is exceedingly injudicious, as a fit of coughing, or twenty other accidents, may force over the substance before the person is aware.*

When any substance is detained in the gullet there are two ways of removing it; viz. either by extracting it or pushing it down. The safest and most certain way is to extract it; but this is not always the easiest: it may, therefore, be more eligible sometimes to thrust it down, especially when the obstructing body is of such a nature that there is no danger from its reception into the stomach. The substances, which may be pushed down without danger, are, all common nourishing ones, as bread, flesh, fruits, and the like. All indigestible bodies, as cork, wood, bones, pieces of metal, and such like, ought, if possible, to be extracted, especially if these bodies be sharp-pointed, as pins, needles, fish-bones, bits of glass, &c.

When such substances have not passed in too deep, we should endeavour to extract them with our fingers; which method often succeeds. When they are lower we must make use of nippers, or a small pair of forceps, such as surgeons use. But this attempt to extract rarely succeeds, if the substance be of a flexible nature, and has descended far into the gullet.

If the fingers and pincers fail, or cannot be duly applied, crotchets, a kind of hooks, must be employed. These may be made at once, by bending a piece of pretty strong iron wire at one end. It must be introduced in the flat way; and, for the better conducting it, there should likewise be a curve or bending at the end it is held by, to serve as a kind of handle to it; which has this farther 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 hand. After the crotchet has passed below the substance that obstructs the passage, it is drawn up again, and hooks up the body along with it. The crotchet is also very convenient when a substance somewhat flexible, as a pin or fish-bone, sticks across the gullet, the hook, in such cases, seizing them about their middle part, crooks and thus disengages them; or, if they are very brittle substances, serves to break them.

When the obstructing bodies are small, and only stop up a part of the passage, and which may either easily elude the hook, or straighten it by their resistance, a kind of rings, made either of wire, wool, or silk, may be used. A piece of fine wire of a proper length may be bent into a circle, about the middle, of about an inch diameter, and the long unbent sides brought parallel, and near each other: these are to be held in the hand, and the circular part or ring introduced into the gullet, in order to be conducted about the obstructing body, and so to extract it. More flexible rings may be made of wool, thread, silk, or small pack-thread, which may be waxed for their greater strength and consistence. One of these is to be tied fast to a handle of iron wire, whalebone, or any kind of flexible wood, and by this means introduced, in order to surround

* A woman in one of the hospitals of this city lately discharged a great number of pins, which she had swallowed in the course of her business, through an ulcer in her side.

the obstructing substance, and to draw it out. Several of these rings passed through one another may be used, the more certainly to lay hold of the obstructing body, which may be involved by one, if another should miss it. These rings have 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 in many cases be a considerable advantage.

Another material employed on these unhappy occasions is the sponge. Its property of swelling considerably on being wet is the principal foundation of its usefulness here. If any substance is stopped in the gullet, but without filling up the whole passage, a bit of sponge may be introduced into that part which is unstopped, 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. Afterwards it is to be drawn back by the handle to which it is fastened; and as it is now too large to return through the small cavity by which it was conveyed in, it draws out the obstructing body along with it.

The compressibility of sponge is another foundation of its usefulness in such cases. A pretty large piece of sponge may be compressed or squeezed into a small size, by winding a string of tape closely about it, which may be easily unwound and withdrawn, after the sponge has been introduced. A bit of sponge may likewise be compressed by a piece of whalebone split at one end; but this can hardly be introduced in such a manner as not to hurt the patient.

I have often known pins and other sharp bodies, which had stuck in the throat, brought up by causing the person to swallow a bit of tough meat tied to a thread, and drawing it quickly up again. This is safer than swallowing sponge, and will often answer the purpose equally well.

When all these methods prove unsuccessful, there remains one more, which is, to make the patient vomit: but this can scarcely be of any service, unless when such obstructing bodies are simply engaged in, and not hooked or stuck into the sides of the gullet, as in this case vomiting might sometimes occasion farther mischief. If the patient can swallow, vomiting may be excited by taking half a drachm or two scruples of ipecacuanha in powder made into a draught. If he is not able to swallow, an attempt may be made to excite vomiting, by tickling his throat with a feather; and, if that should not succeed, a clyster of tobacco may be administered. It is made by boiling a drachm of tobacco in twelve ounces of water. This has often been found to succeed, when other attempts to excite vomiting had failed.

When the obstructing body is of such a nature that it may with safety be pushed downwards, this may be attempted by means of a wax-candle oiled, and a little heated, so as to make it flexible; or a piece of whalebone, wire, or flexible wood, with a sponge fastened to one end.

Should it be impossible to extract even those bodies which it is 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 in a few minutes; and we ought to scruple the resolution the less, as a great many instances have happened, where the swallowing of such hurtful and indigestible substances has been followed by no disorder.

Whenever it is manifest that all endeavours either to extract or push down the substance must prove ineffectual, they should be discontinued: because the inflammation occasioned by persisting in them might be as dangerous as the obstruction itself. Some have died in consequence of the inflammation, even after the body which caused the obstruction had been entirely removed.

While the means recommended above 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 down to the gullet, some emollient liquor, as warm milk and water, barley-water, or a decoction of mallows. Injections of this kind not only soften and soothe the irritated parts, but, when thrown in with force, are often more successful in loosening the obstruction than all attempts with instruments.

When, after all our endeavours, we are obliged to leave the obstructing body in the part, the patient must be treated as if he had an inflammatory disease. He should be bled, kept upon a low diet, and have his whole neck surrounded with emollient poultices. The like treatment must also be used, if there be any reason to suspect an inflammation of the passages, though the obstructing body be removed.

A proper degree of agitation has sometimes loosened the inhering body more effectually than instruments. Thus a blow on the back has often forced up a substance which stuck in the gullet; but this is still more proper and efficacious when the substance gets into the windpipe. In this case, vomiting and sneezing are likewise to be excited. Pins, which stuck in the gullet, have been frequently discharged by riding on horseback, or in a carriage.

When any indigestible substance has been forced down into the stomach, the patient should use a very mild and smooth diet, consisting chiefly of fruits and farinaceous substances, as puddings, pottage, and soups. He should avoid all heating and irritating things, as wine, punch, pepper, and such like; and his drink should be milk and water, barley-water, or whey.

When the gullet is so strongly and fully closed, that the patient can receive no food by the mouth, he must be nourished by clysters of soup, jelly, and the like.

When the patient is in danger of being immediately suffocated, and all hope of freeing the passage is vanished, so that death seems at hand, if respiration be not restored, the operation of *bronchotomy*, or opening of the windpipe, must be directly performed. As this operation is neither difficult to an expert surgeon, nor very painful to the patient, and is often the only method which can be taken to preserve life in these emergencies, we thought proper to mention it, though it should only be attempted by surgeons skilled in anatomy.

SUSPENDED ANIMATION AND RESUSCITATION.

Drowned Persons.—When a person has remained above a quarter of an hour under water, there can be no considerable hopes of his recovery. But as several circumstances may happen to have continued life, in such an unfortunate situation, beyond the ordinary term, we should never too soon resign the unhappy object to his fate, but try every method for his relief, as there are many well-attested proofs of the recovery of persons to life and health who had been taken out of the water apparently dead, and who remained a considerable time without exhibiting any signs of life.

The first thing to be done, after the body is taken out of the water, is to convey it as soon as possible to some convenient place where the necessary operations for its recovery may be performed. In doing this, care must be taken not to bruise or injure the body by carrying it in any unnatural posture, with the head downwards, or the like. If an adult body, it ought to be laid on a bed, or on straw, with the head a little raised, and carried on a cart or on men's shoulders, and kept in as natural and easy a position as possible. A small body may be carried in the arms.

In attempting to recover persons apparently drowned, the principal intention to be pursued is, *to restore, by gradual means, the natural warmth*, upon which all the vital functions depend, and to excite these functions by the application of stimulants, not only to the skin, but likewise to the lungs, intestines, &c.

A high degree of heat will not be necessary; a moderate degree will be sufficient. If the weather be under the freezing point, and the body, when stripped, feel cold, and nearly in the same condition with the water that is frozen, it will be necessary at first to rub it well with snow, or wash it with cold water; the sudden application of heat in such cases having been found very pernicious. In a short time, however, warmth must be gradually applied.

Though cold was by no means the cause of the person's death, yet it will prove an effectual obstacle to his recovery. For this reason, after stripping him of his wet clothes, his body must be strongly rubbed for a considerable time with coarse linen cloths, as warm as they can be made; and as soon as a well-heated bed can be got ready, he may be laid in it, and the rubbing should be continued. Warm clothes ought likewise to be frequently applied to the stomach and bowels, and hot bricks, or bottles of warm water, to the soles of his feet, and to the palms of his hands.

After the restoration of heat, volatile spirits should be frequently applied to the nose; and the spine of the back and pit of the stomach may be rubbed with warm brandy or spirit of wine. The temples ought also to be chafed with volatile spirits; and stimulating powders, as that of tobacco or marjoram, may be blown up the nostrils.

To renew the breathing, in the absence of a better apparatus, a strong person may blow his own breath into the patient's mouth with all the force he can, holding his nostrils at the same time. When it can be perceived by the rising of the chest or belly that the lungs are filled with air, the person ought to desist from blowing, and should press the breast and belly so as to expel the air

again; and this operation may be repeated for some time, alternately inflating and depressing the lungs, so as to imitate natural respiration.

If the lungs cannot be inflated in this manner, it may be attempted by blowing through one of the nostrils, and at the same time keeping the other close. Dr. Monro, for this purpose, recommends a wooden pipe fitted at one end for filling the nostrils, and at the other for being blown into by a person's mouth, or for receiving the pipe of a pair of bellows, to be employed for the same purpose, if necessary.

When air cannot be forced into the chest by the mouth or nose, it may be necessary to make an opening into the windpipe for this purpose. It is needless, however, to spend time in describing this operation, as it should not be attempted unless by persons skilled in surgery.

It was the practice, some time ago, to employ the smoke of tobacco; but this, instead of answering any good purpose, has proved injurious, by further depressing the vital principle. Instead of this, therefore, a clyster is recommended, consisting of a pint or more of water, moderately warmed, to which may be added a little volatile spirit, essence of peppermint, or rectified spirit.

While these things are doing, some of the attendants ought to be preparing a warm-bath, into which the person should be put, if the above endeavours prove ineffectual. Where there are no conveniences for using the warm-bath, the body may be covered with warm sand, ashes, grains, or such like. Tissot mentions an instance of a girl who was restored to life, after she had been taken out of the water, swelled, bloated, and to all appearance dead, by laying her naked body upon hot ashes, covering her with others equally hot, putting a bonnet upon her head, and a stocking round her neck, stuffed with the same, and heaping coverings over all. After she had remained half an hour in this situation, her pulse returned, she recovered speech, and cried out, *I freeze, I freeze*: a little cherry brandy was given her, and she remained buried, as it were, under the ashes for eight hours: afterwards she was taken out, without any other complaint, except that of lassitude or weariness, which went off in a few days. The Doctor mentions likewise an instance of a man who was restored to life, after he had remained six hours under water, by the heat of a dunghill.*

When there is reason to suppose that the skin has, in some degree, recovered its sensibility, the wrists, ancles, temples, and parts over the stomach and heart may be rubbed with a little volatile liniment, which will evaporate but slowly, and produce no cold on being rubbed in. In cases of suspended animation, it has likewise been usual to stimulate the stomach and intestines; the former by means of some moderately warm liquor, such as negus highly spiced, introduced into the organ through a flexible tube, and the latter by means of injections.

* From some late experiments made by Professor Aldini, of the university of Bologna, on the body of a malefactor, it would appear that galvanism, as an auxiliary, promises great advantages to the interests of humanity, in cases of drowning and other instances of suspended animation. With this view, also, electricity is sometimes resorted to; unless, however, employed by insulation alone, it will be more likely to do harm than good. Ed.

Till the patient show some signs of life, and is able to swallow, it would be useless and even dangerous to pour liquors into his mouth. His lips, however, and tongue, may be frequently wet with a feather, dipped in warm brandy or other strong spirits; and, as soon as he has recovered the power of swallowing, a little warm wine, or some other cordial, ought every now and then to be administered.

Some recommend a vomit after the patient is a little reanimated; but if he can be made to puke without the sickening draught, it will be more safe: this may generally be done by tickling the throat and fauces with an oiled feather, or some other soft substance, which will not injure the parts. Tissot, in this case, recommends the oxymel of squills, a table-spoonful of which, diluted with water, may be given every quarter of an hour, till the patient has taken five or six doses. Where that medicine is not at hand, a strong infusion of sage, camomile-flowers, or *carduus benedictus*, sweetened with honey, or some warm water, with the addition of a little salt, may, he says, supply its place. The Doctor does not intend that any of these things should be given in such quantity as to occasion vomiting. He thinks emetics, in this situation are not expedient.

We are by no means to discontinue our assistance as soon as the patients discover some tokens of life, since they sometimes expire after these first appearances of recovering. The warm and stimulating applications are still to be continued, and small quantities of some cordial liquor ought frequently to be administered. Lastly, though the person should be manifestly reanimated, there sometimes remains an oppression, a cough, and feverishness, which effectually constitute a disease. In this case, it will be necessary to bleed the patient in the arm, and to cause him to drink plentifully of barley-water, elder-flower tea, or any other soft pectoral infusion.

Such persons as have the misfortune to be deprived of the appearance of life by a fall, a blow, suffocation, or the like, must be treated nearly in the same manner as those who have been for some time under water. I once attended a patient who was so stunned by a fall from a horse, that for above six hours he scarcely exhibited any signs of life; yet this man, by being bled, and proper methods taken to keep up the vital warmth, recovered, and in a few days was perfectly well. Dr. Alexander gives an instance to the same purpose, in the *Edinburgh Physical and Literary Essays*, of a man who was to all appearance killed by a blow on the breast, but recovered upon being immersed for some time in warm water. These and other instances of a similar nature, which might be adduced, amount to a full proof of this fact, that many of those unhappy persons who lose their lives by falls, blows, and other accidents, might be saved by the use of proper means duly persisted in.

OF NOXIOUS VAPOURS. (*Aerial Poisons.*)

Air may be many ways rendered noxious, or even destructive to animals. This may either happen from its vivifying principle being destroyed, or from subtle exhalations with which it is impreg-

R

nated. Thus air that has passed through burning fuel is neither capable of supporting fire nor the life of animals. Hence the danger of sleeping in close chambers with coal fires. Some, indeed, suppose the danger here proceeds from the sulphureous oil contained in the coal, which is set at liberty and diffused all over the chamber; while others imagine it is owing to the air of the room being charged with phlogiston. Be this as it may, it is a situation carefully to be avoided. Indeed, it is dangerous to sleep in a small apartment with a fire of any kind. I lately saw four persons who had been suffocated by sleeping in an apartment where a small fire of coal had been left burning.

The vapour which exhales from wine, cider, beer, or other liquors, in the state of fermentation, contains something poisonous, which kills in the same manner as the vapour of coal. Hence there is always danger in going into cellars where a large quantity of these liquors is in a state of fermentation, especially if they have been close shut up for some time. There have been many instances of persons struck dead on entering such places, and of others who have with difficulty escaped.

When subterranean caves, that have been very long shut, are opened, or when deep wells are cleaned, which have not been emptied for several years, the vapours arising from them produce the same effects as those mentioned above. For this reason, no person ought to venture into a well, pit, cellar, or any place that is damp, and has been long shut up, till the air has been sufficiently purified, by burning gunpowder in it. It is easy to know, as has been observed in a former part of this work, when the air of such places is unwholesome, by letting down a lighted candle, throwing in burning fuel, or the like. If these continue to burn, people may safely venture in; but where they are suddenly extinguished, no one ought to enter till the air has been first purified by fire.

The offensive smell of lamps and of candles, especially when their flames are extinguished, operate like other vapours, though with less violence, and less suddenly. There have, however, been instances of people killed by the fumes of lamps which had been extinguished in a close chamber; and persons of weak, delicate breasts, generally find themselves quickly oppressed in apartments illuminated with many candles.

Such as are sensible of their danger in these situations, 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 relief. But when they are so far poisoned, as to have lost their feeling, and understanding, the following means must be used for their recovery:—

The patient should be exposed to a very pure, fresh, and open air; and volatile salts, or other stimulating substances, held to his nose. He should next be bled in the arm, or, if that does not succeed, in the neck. His legs ought to be put into warm water, and well rubbed. As soon as he can swallow, some lemonade, or water and vinegar, with the addition of a little nitre, may be given him.

Nor are sharp clysters by any means to be neglected; these may

be made, by adding to the common clyster, syrup of buckthorn and tincture of senna, of each two ounces; or, in their stead, half an ounce of Venice turpentine dissolved in the yolk of an egg. Should these things not be at hand, two or three large spoonsful of common salt may be put into the clyster. The same means, if necessary, which were recommended in the former part of this chapter, may be used to restore the circulation, warmth, &c.

Mr. Tossach, surgeon, at Alloa, relates the case of a man suffocated by the steam of burning coal, whom he recovered by blowing his breath into the patient's mouth, bleeding him in the arm, and causing him to be well rubbed and tossed about. And Dr. Frewen, of Sussex, mentions the case of a young man who was stupified by the smoke of sea-coal, but was recovered by being plunged into cold water, and afterwards laid in a warm bed.

The practice of plunging persons suffocated by noxious vapours in cold water would seem to be supported by the common experiment of suffocating dogs in the *Grotto del Cani*, and afterwards recovering them by throwing them into the neighbouring lake.

When a person dies from suffocation, the symptoms are nearly the same in apoplexy.

EFFECTS OF EXTREME COLD.

WHEN cold is extremely severe, and a person is exposed to it for a long time, it proves mortal, in consequence of its stopping the circulation in the extremities, and forcing too great a proportion of blood towards the brain; so that the patient dies of a kind of apoplexy, preceded by great sleepiness. The traveller, in this situation, who finds himself begin to grow 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, would, if indulged, prove his last.

Such violent effects of cold are happily not very common in this country: it frequently happens, however, that the hands or feet of travellers are so benumbed or frozen, as to be in danger of a mortification, if proper means are not used to prevent it. The chief danger in this situation arises from the sudden application of heat. It is very common, when the hands or feet are pinched with cold, to hold them to the fire; yet reason and observation show, that this is a most dangerous and imprudent practice.

Every peasant knows, if frozen meat, fruits, or roots of any kind, be brought near the fire, or put into warm water, they will be destroyed by rotteness, or a kind of mortification; and that the only way to recover them, is to immerse them for some time in very cold water. The same observation holds with regard to animals in this condition.

When the hands or feet are greatly benumbed with cold, they ought either to be immersed in cold water, or rubbed with snow, till they recover their natural warmth and sensibility: after which, the person may be removed into an apartment a little warmer, and may drink some cups of tea, or an infusion of elder-flowers sweetened with honey. Every person must have observed, when his hands were even but slightly affected with cold, that the best way

to warm them was by washing them in cold water, and continuing to rub them well for some time.

When, therefore, the hands, feet, or nose, or any other part of the body have been exposed to violent cold, so as to be frost-bitten, they ought at first either to be well rubbed with snow, or be put into cold water, and afterwards be subjected to warmth in the most gentle and gradual manner.

When a person has been so long exposed to the cold, that all appearances of life are gone, it will be necessary to rub him all over with snow or cold water; or, what will answer better, if it can be obtained, to immerse him in a bath of the very coldest water. There is the greatest encouragement to persist in the use of these means, as we are assured that persons who had remained in the snow, or had been exposed to the freezing air during five or six successive days, and who had discovered no marks of life for several hours, have nevertheless been revived.

If the power of swallowing be restored, some warm and gently stimulating drink should be given, such as thin broth, with a little brandy in it, or water with some wine, administered by a spoonful at a time. While the body is cold, and the circulation and respiration are languid, blood-letting might be improper. If, however, after these functions, and the natural temperature are restored, the patient should remain any time in a comatose state, with a strong full pulse, the propriety and necessity of venesection can hardly be doubted.

I have always thought, that the whitloes, kibes, chilblains, and other inflammations of the extremities, which are so common among the peasants in the cold season, were chiefly occasioned by their sudden transitions from cold to heat. After they have been exposed to an extreme degree of cold, they immediately apply their hands and feet to the fire, or, if they have occasion, plunge them into warm water, by which means, if a mortification does not happen, an inflammation seldom fails to ensue. Most of the ill consequences from this quarter might be easily avoided, by only observing the precautions mentioned above.

EFFECTS OF EXTREME HEAT.

The effects of extreme heat, though not so common in this country, are no less fatal, and much more sudden than those of cold. In hot countries people frequently drop down dead in the streets, exhausted with heat and fatigue. In this case, if any warm cordial can be poured into the mouth, it ought to be done. If this cannot be effected, they may be thrown up in form of a clyster. Volatile spirits, and other things of a stimulating nature, may be applied to the skin, which should be well rubbed with coarse cloths, whipped with nettles, or other stimulating things. Some of the ancient physicians are said to have restored to life persons apparently dead, by beating them with rods.

Head-aches are often occasioned by exposure to intense heat; and in warm climates, where people are very liable to what they call *coups de soleil*, or strokes of the sun, it is a common custom to lay linen cloths, several times doubled, on the head, and to keep

them moistened with very cold water for half an hour; or till the stupor is diminished. This they term *drawing the fire out of the head*.

OF FAINTING FITS. (*Syncope*.)

STRONG and healthy persons, who abound with blood, are often seized with sudden fainting fits, after violent exercise, drinking freely of warm or strong liquors, exposure to great heat, intense application to study, or the like.

In such cases the patient ought to be made to smell to some vinegar. His temples, forehead, and wrists, ought at the same time to be bathed with vinegar mixed with an equal quantity of warm water; and two or three spoonsful of vinegar, with four or five times as much water, may, if he can swallow, be poured into his mouth.

If the fainting proves obstinate, or degenerates into a *syncope*, that is, an abolition of feeling and understanding, the patient must be bled. After the bleeding, a clyster will be proper, and then he should be kept easy and quiet, only giving him every half-hour a cup or two of an infusion of any mild vegetable, with the addition of a little sugar and vinegar.

When swoonings, which arise from this cause, occur frequently in the same person, he should, in order to escape them, confine himself to a light diet, consisting chiefly of bread, fruits, and other vegetables. His drink ought to be water or small beer, and he should sleep but moderately, and take much exercise.

But fainting fits proceed much oftener from a defect than an excess of blood. Hence they are very ready to happen after great evacuations of any kind, obstinate watching, want of appetite, or such like. In these, an almost directly opposite course to that mentioned above must be pursued.

The patient should be laid in bed, with his head low, and being covered, should have his legs, thighs, arms, and his whole body rubbed strongly with hot flannels. Hungary-water, volatile salts, or strong smelling herbs, as rue, mint, or rosemary, may be held to his nose. His mouth may be wet with a little rum or brandy; and, if he can swallow, some hot wine mixed with sugar and cinnamon, which is an excellent cordial, may be poured into his mouth. A compress of flannel dipt in hot wine or brandy must be applied to the pit of his stomach, and warm bricks, or bottles filled with hot water, laid to his feet.

As soon as the patient is recovered a little, he should take some strong soup or broth, or a little bread or biscuit soaked in hot-spiced wine. To prevent the return of the fits, he ought to take often, but in small quantities, some light yet strengthening nourishment, as panada made with soup instead of water, newlaid eggs lightly poached, chocolate, light roast meats, jellies, and such like.

Those fainting fits, which are the effect of bleeding, or of the violent operation of purges, belong to this class. Such as happen after artificial bleeding are seldom dangerous, generally terminating as soon as the patient is laid upon the bed; indeed, persons subject to this kind should always be bled lying, in order to prevent it. Should the fainting, however, continue longer than usual, vol-

atile spirits may be held to the nose, and rubbed on the temples, &c.

When fainting is the effect of too strong or acrid purges or vomits, the patient must be treated in all respects as if he had taken poison. He should be made to drink plentifully of milk, warm water, and oil, barley-water; or such like; emollient clysters will likewise be proper, and the patient's strength should afterwards be recruited, by giving him generous cordials, and anodyne medicine.

Faintings are often occasioned by indigestion. This may either proceed from the quantity or quality of the food. When the former of these is the cause, the cure will be best performed by vomiting, which may be promoted by causing the patient to drink a weak infusion of camomile flowers, *carduus benedictus*, or the like. When the disorder proceeds from the nature of the food, the patient, as in the case of weakness, must be revived by strong smells, &c.; after which he should be made to swallow a large quantity of light warm fluid, which may serve to drown, as it were, the offending matter, to soften its acrimony, and either to effect a discharge of it by vomiting, or force it down into the intestines.

Even disagreeable smells will sometimes occasion swoonings, especially in people of weak nerves. When this happens, the patient should be carried into the open air, have stimulating things held to his nose, and those substances which are disagreeable to him ought immediately to be removed. But we have already taken notice of swoonings which arise from nervous disorders, and shall therefore say no more upon that head.

Fainting fits often happen in the progress of diseases. In the beginning of putrid diseases, they generally denote an oppression at the stomach, or a mass of corrupted humours, and they cease after evacuations either by vomit or stool. When they occur at the beginning of malignant fevers, they indicate great danger. In each of these cases, vinegar used both externally and internally is the best remedy during the paroxysm, and plenty of lemon-juice and water after it. Swoonings which happen in diseases accompanied with great evacuations must be treated like those which are owing to weakness, and the evacuations ought to be restrained. When they happen towards the end of a violent fit of an intermitting fever, or at that of each exacerbation of a continual fever, the patient must be supported by small draughts of wine and water.

Delicate and hysteric women are very liable to swooning or fainting fits after delivery. These might be often prevented by generous cordials, and the admission of fresh air. When they are occasioned by excessive flooding, it ought by all means to be restrained. They are generally the effect of mere weakness or exhaustion. Dr. Engleman relates the case of a woman "in childbed, who, after being happily delivered, suddenly fainted, and lay upwards of a quarter of an hour apparently dead. A physician was sent for; her own maid, in the meanwhile, being out of patience at his delay, attempted to assist her herself, and extending herself upon her mistress, applied her mouth to hers, blew in as much breath as she possibly could, and in a very short time the exhausted woman awaked as out of a profound

*sleep; when, proper things being given her, she soon recovered.

"The maid being asked how she came to think of this expedient, said, she had seen it practised at Altenburgh, by midwives, upon children, with the happiest effect."

We mention this case chiefly that other midwives may be induced to follow so laudable an example. Many children are born without any signs of life, and others expire soon after the birth, who might, beyond all doubt, by proper care, have been restored to life.

From whatever cause fainting fits proceed, fresh air is always of the greatest importance to the patient. By not attending to this circumstance, people often kill their friends while they are endeavouring to save them. Alarmed at the patient's situation, they call in a crowd of people to his assistance, or perhaps to witness his exit, whose breathing exhausts the air, and increases the danger. There is not the least doubt but this practice, which is very common among the lower sort of people, often proves fatal, especially to the delicate, and such persons as fall into fainting fits from mere exhaustion, or the violence of some disease. No more persons ought ever to be admitted into the room where a patient lies in a swoon than are absolutely necessary for his assistance, and the windows of the apartment should always be opened, at least as far as to admit a stream of fresh air.

Persons subject to frequent swoonings, or fainting fits, should neglect no means to remove the cause of them, as their consequences are always injurious to the constitution. Every fainting fit leaves the person in dejection and weakness; the secretions are thereby suspended, the humours disposed to stagnation, coagulations and obstructions are formed, and, if the motion of the blood be totally intercepted, or very considerably checked, *polypuses* are sometimes formed in the heart or larger vessels. The only kind of swoonings not to be dreaded are those which sometimes mark the *crisis* in fevers; yet even these ought, as soon as possible, to be removed.

I have before remarked, but I deem it of importance to repeat the observation, that it is only when the fainting fit evidently arises from a fulness of the habit, and is accompanied with a total abolition of feeling and understanding, that bleeding is advisable. The use of the lancet might otherwise have the most deadly effect. Many persons, even of robust constitutions, are very apt to faint upon having a vein opened and losing a little blood. How dangerous, then, must the operation be, when a patient has already fainted, and most probably from extreme weakness and a defect of blood! I have no doubt but many a murder has been rashly committed in such cases.

OF INTOXICATION.

THE effects of intoxication are often fatal. No kind of poison kills more certainly than an overdose of ardent spirits. Sometimes, by destroying the nervous energy, they put an end to life at once; but in general their effects are more slow, and in many respects similar to those of opium. Other kinds of intoxicating liquors

may prove fatal when taken to excess, as well as ardent spirits; but they may generally be discharged by vomiting, which ought always to be excited when the stomach is overcharged with liquor.

More of those unhappy persons who die intoxicated, lose their lives from an inability to conduct themselves, than from the destructive quality of the liquor. Unable to walk, they tumble down, and lie in some awkward posture, which obstructs the circulation or breathing, and often continue in this situation till they die. No person, when drunk, should be left by himself, till his clothes have been loosened, and his body laid in such a posture as is most favourable for continuing the vital motions and discharging the contents of the stomach. The best posture for discharging the contents of the stomach is to lay the person upon his belly; when asleep, he may be laid on his side, with his head a little raised, and particular care must be taken that his neck be no way bent, twisted, or have any thing too tight about it.

The excessive degree of thirst occasioned by drinking strong liquors often induces people to quench it by taking what is hurtful. I have known fatal consequences even from drinking freely of milk after a debauch of wine or sour punch; these acid liquors, together with the heat of the stomach, having coagulated the milk in such a manner that it could never be digested. The safest drink after a debauch is water with a toast, tea, infusions of balm, sage, barley-water and such like. If the person wants to vomit, he may drink a weak infusion of camomile flowers or luke-warm water and oil; but in this condition, vomiting may generally be excited by only tickling the throat with the finger or a feather.

Instead of giving a detail of all the different symptoms of intoxication which indicate danger, and proposing a general plan of treatment for persons in this situation, I shall briefly relate the history of a case which lately fell under my own observation, wherein most of those symptoms usually reckoned dangerous concurred, and where the treatment was successful.

A young man, about fifteen years of age, had, for a hire, drank ten glasses of strong brandy. He soon after fell fast asleep, and continued in that situation for several hours, till at length his uneasy manner of breathing, the coldness of the extremities, and other threatening symptoms, alarmed his friends, and made them send for me. I found him still sleeping, his countenance ghastly, and his skin covered with a cold clammy sweat. Almost the only signs of life remaining were, a deep laborious breathing, and a convulsive motion or agitation of his bowels.

I tried to rouse him, but in vain, by pinching, shaking, applying volatile spirits, and other stimulating things to his nose, &c. A few ounces of blood were likewise taken from his arm, and a mixture of vinegar and water was poured into his mouth; but as he could not swallow, very little of this got into the stomach. None of these things having the least effect, and the danger seeming to increase, I ordered his legs to be put into warm water, and a sharp clyster to be immediately administered. This gave him a stool, and was the first thing that relieved him. It was afterwards repeated with the same happy effect, and seemed to be the chief cause of his recovery. He then began to show some signs of life,

took drink when it was offered him, and came gradually to his senses. He continued, however, for several days weak and feverish, and complained much of a soreness in his bowels, which gradually went off, by means of a slender diet, and cool mucilaginous liquors.

This young man would probably have been suffered to die, without any assistance being called, had not a neighbour, a few days before, who had been advised to drink a bottle of spirits to cure him of an ague, expired under very similar circumstances.*

OF SUFFOCATION AND STRANGLING; FROM HANGING, DROWNING,
AND OTHER CAUSES.

IN cases where life is suspended from hanging, the same means as recommended for drowned people are to be adopted, with the addition of opening the jugular veins, or applying cupping-glasses to the neck, which will tend considerably to facilitate the restoration of life, by lessening the quantity of blood contained in the vessels of the head, and thereby taking off the pressure from the brain. Except in persons of a full plethoric habit, the quantity drawn off need seldom exceed an ordinary tea-cupful, which in general will be sufficient to unload the vessels of the head, without weakening the powers of life.

Suffocation may sometimes proceed from an infarction of the lungs, produced by viscid clammy humours, or a spasmodic affection of the nerves of that organ. Persons who feed grossly, and abound in rich blood, are very liable to suffocating fits from the former of these causes. Such ought, as soon as they are attacked, to be bled, to receive an emollient clyster, and to take frequently a cup of diluting liquor with a little nitre in it. They should likewise receive the steams of hot vinegar into their lungs by breathing.

Nervous and asthmatic persons are most subject to spasmodic affection of the lungs. In this case the patient's legs should be immersed in warm water, and the steams of vinegar applied as above. Warm diluting liquors should likewise be drunk; to a cup of which a tea-spoonful of the paregoric elixir may occasionally be added. Burnt paper, feathers, or leather, may be held to the patient's nose, and fresh air should be freely admitted to him.

Infants are often suffocated by the carelessness or inattention of their nurses.† An infant when in bed should always be laid so, that it cannot tumble down with its head under the bed clothes; and when in a cradle, its face ought never to be covered. A small degree of attention to these two simple rules would save the lives

* I have seen repeated instances of persons being restored to perfect sobriety, and the complete use of their senses, from a state of most alarming intoxication, by taking away eight or ten ounces of blood from the nape of the neck, as near the head as possible, by means of cupping-glasses. The same effect is produced by taking blood from the arm, but the practice is not perhaps quite so safe; cupping certainly deserves the preference.

A. P. B.

† These accidents are not always the effects of carelessness. I have known an infant overlaid by its mother being seized in the night with a hysteric fit. This ought to serve as a caution against employing hysteric women as nurses; and should likewise teach such women never to lay an infant in the same bed with themselves, but in a small adjacent one.

of many infants, and prevent others from being rendered weak and sickly all their days by the injuries done to their lungs.

Instead of laying down a plan for the recovery of infants who are suffocated, or overlaid, as it is termed by their nurses, I shall give the history of a case related by Monsieur Janin, of the Royal College of Surgery at Paris, as it was attended with success, and contains almost every thing that can be done on such occasions.

A nurse having had the misfortune to overlay a child, he was called in, and found the infant without any signs of life; no pulsation in the arteries, no respiration, the face livid, the eyes open, dull, and tarnished, the nose full of snivel, the mouth gaping, in short it was almost cold. Whilst some linen clothes and a parcel of ashes were warming, he had the boy unswathed, and laid him in a warm bed, and on the right side. He then was rubbed all over with fine linen, for fear of fretting his tender and delicate skin. As soon as the ashes had received their due degree of heat, Mr. Janin buried him in them, except the face, placed him on the side opposite to that on which he had been at first laid, and covered him with a blanket. He had a bottle of *eau de luce* in his pocket, which he presented to his nose from time to time; and between whiles some puffs of tobacco were blown up his nostrils; to these succeeded the blowing into his mouth, and squeezing tight his nose. Animal heat began thus to be excited gradually: the pulsations of the temporal artery were soon felt, the breathing became more frequent and free, and the eyes closed and opened alternately. At length the child fetched some cries expressive of his want of the breast, which being applied to his mouth, he caught it with avidity, and sucked as if nothing had happened to him. Though the pulsations of the arteries were by this time very well re-established, and it was hot weather, yet Mr. Janin thought it advisable to leave his little patient three quarters of an hour longer under the ashes. He was afterwards taken out, cleaned and dressed as usual; to which a gentle sleep succeeded, and he continued perfectly well.

Mr. Janin mentions likewise an example of a young man, who had hanged himself through despair, to whom he administered help as effectually as in the preceding case.

Mr. Glover, surgeon in Doctors' Commons, London, relates the case of a person who was restored to life after twenty-nine minutes hanging, and continued in good health for many years after.

The principal means used to restore this man to life were, opening the temporal artery and the external jugular; rubbing the back, mouth, and neck, with a quantity of volatile spirits and oil; administering the tobacco-clyster by means of lighted pipes, and strong frictions of the legs and arms. This course had been continued for about four hours, when an incision was made into the windpipe, and air blown strongly through a canula into the lungs. About twenty minutes after this, the blood at the artery began to run down the face, and a slow pulse was just perceptible at the wrist. The frictions were continued for sometime longer; his pulse became more frequent, and his mouth and nose being irritated with spirit of sal ammoniac, he opened his eyes. Warm cordials were then administered to him, and in two days he was so well as to be able to walk eight miles.

These cases are sufficient to show what may be done for the recovery of those unhappy persons who strangle themselves in a fit of despair.

OF PERSONS WHO EXPIRE IN CONVULSION-FITS.

CONVULSION-FITS often constitute the last scene of acute or chronic disorders. When this is the case, there can remain but small hopes of the patient's recovery after expiring in a fit. But when a person who appears to be in perfect health is suddenly seized with a convulsion-fit, and seems to expire, some attempts ought always to be made to restore him to life. Infants are most liable to convulsions, and are often carried off very suddenly by one or more fits about the time of teething. There are many well-authenticated accounts of infants having been restored to life, after they had to all appearance expired in convulsions; but we shall only relate the following instance mentioned by Dr. Johnson, in his pamphlet *On the Practicability of recovering Persons visibly dead*.

In the parish of *St. Clements* in *Colchester*, a child of six months old, lying upon its mother's lap, having had the breast, was seized with a strong convulsion-fit, which lasted so long, and ended with so total a privation of motion in the body, lungs, and pulse, that it was deemed absolutely dead. It was accordingly stripped, laid out, the passing bell ordered to be tolled, and a coffin to be made; but a neighbouring gentlewoman, who used to admire the child, hearing of its sudden death, hastened to the house, and upon examining the child, found it not cold, its joints limber, and fancied that a glass she held to its mouth and nose was a little damped with the breath; upon which she took the child in her lap, sat down before the fire, rubbed it, and kept it in gentle agitation. In a quarter of an hour she felt the heart begin to beat faintly; she then put a little of the mother's milk into its mouth, continued to rub its palms and soles, found the child begin to move, and the milk was swallowed; and in another quarter of an hour she had the satisfaction of restoring to its disconsolate mother the babe quite recovered, eager to lay hold of the breast, and able to suck again. The child throve, had no more fits, is grown up, and at present alive.

These means, which are certainly in the power of every person, were sufficient to restore to life an infant to all appearance dead, and who, in all probability, but for the use of these simple endeavours, would have remained so. There are, however, many other things which might be done in case the above should not succeed; as rubbing the body with strong spirits, covering it with warm ashes or salt, blowing air into the lungs, throwing up warm stimulating clysters or the smoke of tobacco into the intestines, and such like.

When children are dead-born, or expire soon after the birth, the same means ought to be used for their recovery, as if they had expired in circumstances similar to those mentioned above.

These directions may likewise be extended to adults, attention being always paid to the age and other circumstances of the patient.

The foregoing cases and observations afford sufficient proof of

the success which may attend the endeavours of persons totally ignorant of medicine, in assisting those who are suddenly deprived of life by an accident or disease. Many facts of a similar nature might be adduced, were it necessary: but these, it is hoped, will be sufficient to call up the attention of the public, and to excite the humane and benevolent to exert their utmost endeavours for the preservation of their fellow-men.

The Society for the Recovery of drowned Persons, instituted at Amsterdam in the year 1767, had the satisfaction to find that no fewer than 150 persons, in the space of four years, had been saved by the means pointed out by them, many of whom owed their preservation to peasants and people of no medical knowledge. But the means used with so much efficacy in recovering drowned persons are, with equal success, applicable to a number of cases where the powers of life seem in reality to be only suspended, and to remain capable of renewing all their functions, on being put into motion again. It is shocking to reflect, that for want of this consideration, many persons have been committed to the grave in whom the principles of life might have been revived.*

The cases wherein such endeavours are most likely to be attended with success are all those called sudden deaths from an invisible cause, as apoplexies, hysterics, faintings, and many other disorders wherein persons in a moment sink down and expire. The various casualties in which they may be tried are, suffocations from the sulphureous damps of mines, coal-pits, &c.; the unwholesome air of long-unopened wells or caverns; the noxious vapours arising from fermenting liquors; the steams of burning charcoal; sulphureous mineral acids; arsenical effluvia, &c.

The various accidents of drowning, strangling, and apparent deaths, by blows, falls, hunger, cold, &c. likewise furnish opportunities of trying such endeavours. Those, perhaps, who, to appearance, are killed by lightning, or by any violent agitation of the passions, as fear, joy, surprise, and such like, might also be frequently recovered by the use of proper means, as blowing strongly into the lungs, &c.

The means to be used for the recovery of persons suddenly deprived of life are nearly the same in all cases; they are practicable by every one who happens to be present at the accident, and require no great expence, and less skill. The great aim is to restore the warmth and vital motions. This may in general be attempted by means of heat, frictions, bleeding, blowing air into the lungs, administering clysters, and generous cordials. These must be varied according to circumstances. Common sense, and the situation of the patient, will suggest the proper manner of conducting them. Above all, we would recommend *perseverance*. People ought never to despair on account of discouraging circumstances, or to leave off their endeavours as long as there is the least hope of success. Where much good and no hurt can be done, no one ought to grudge his labour.

* The Royal Humane Society for the recovery of drowned persons, in London, is now equal, if not superior to any similar institution in Europe; and the laudable endeavours, persevering efforts, and encouragement given by its members to promote its utility, are at least upon the same scale, as far as the means are adapted to the ends. ED.

CHAP. VI.

DISEASES OF WOMEN.

WOMEN, in all civilized nations, have the management of domestic affairs, and it is very proper they should, as nature has made them less fit for the more active and laborious employments. This indulgence, however, is generally carried too far; and females, instead of being benefitted by it, are greatly injured, from the want of exercise and free air. To be satisfied of this, one need only compare the fresh and ruddy looks of a milk-maid, with the pale complexion of those females whose whole time is spent within doors. Though nature has made an evident distinction between the male and the female with regard to bodily strength and vigour, yet she certainly never meant, either that the one should be always without, or the other always within doors.

The confinement of females, besides hurting their figure and complexion, relaxes their solids, weakens their minds, and disorders all the functions of the body. Hence proceed obstructions, indigestion, flatulence, abortions, and the whole train of nervous disorders. These not only unfit women for being mothers and nurses, but often render them whimsical and ridiculous. A sound mind depends so much upon a healthy body, that where the latter is wanting, the former is rarely to be found.

I have always observed, that women who were chiefly employed without doors, in the different branches of husbandry, gardening, and the like, were almost as hardy as their husbands, and that their children were likewise strong and healthy. But as the bad effects of confinement and inactivity upon both sexes have been already shown, we shall proceed to point out those circumstances in the structure and design of females, which subject them to peculiar diseases, the chief of which are, their *monthly evacuations*, *pregnancy*, and *child-bearing*. These, indeed, cannot properly be called diseases; but, from the delicacy of the sex, and their being often improperly managed in such situations, they become the source of numerous calamities.

THE MENSTRUAL DISCHARGE. (*Catamenia*.)

FEMALES generally begin to menstruate about the age of fifteen, and leave it off about fifty, which renders these two periods the most critical of their lives. About the first appearance of this discharge, the constitution undergoes a very considerable change, generally indeed for the better, though sometimes for the worse. The greatest care is now necessary, as the future health and happiness of the female depend in a great measure upon her conduct at this period.*

* It is the duty of mothers, and those who are intrusted with the education of girls, to instruct them early in the conduct and management of themselves at this critical period of their lives. False modesty, inattention, and ignorance of what is beneficial or hurtful at this time, are the sources of many diseases and misfortunes in life, which a few sensible lessons from an experienced matron might have prevented. Nor is care less necessary in the subsequent return of this discharge. Taking improper food, violent affections of the mind, or catching cold at this period, is often sufficient to ruin the health, or to render the female ever after incapable of procreation.

If a girl about this time of life be confined to the house, kept constantly sitting, and neither allowed to romp about, nor employed in any active business, which gives exercise to the whole body, she becomes weak, relaxed, and puny; her blood not being duly prepared, she looks pale and wan; her health, spirits, and vigour decline, and she sinks into a valetudinarian for life. Such is the state of numbers of those unhappy females, who, either from too much indulgence, or their own narrow circumstances, are at this critical period, denied the benefit of exercise and free air.

A lazy, indolent disposition proves likewise very hurtful to girls at this period. One seldom meets with complaints from obstructions amongst the more active and industrious part of the sex; whereas the indolent and lazy are seldom free from them. These are in a manner eaten up by the *chlorosis*, or green-sickness, and other diseases of this nature. We would, therefore, recommend it to all who wish to escape these calamities, to avoid indolence and inactivity as their greatest enemies, and to be as much abroad in the open air as possible.

Another thing which proves very hurtful to girls about this period of life, is unwholesome food. Fond of all manner of trash, they often indulge in it, till their whole humours are quite vitiated. Hence ensue indigestions, want of appetite, and a numerous train of evils. If the fluids be not duly prepared, it is utterly impossible that the secretions should go properly on. Accordingly we find that such girls as lead an indolent life, and eat great quantities of trash, are not only subject to obstructions of the *menses*, but likewise to glandular obstructions; as the *scrofula*, or king's evil, &c.

A dull disposition is also very hurtful to girls at this period. It is a rare thing to see a sprightly girl who does not enjoy good health, while the grave, moping, melancholy creature proves the very prey of vapours and hysterics. Youth is the season for mirth and cheerfulness; let it therefore be indulged; it is an absolute duty. To lay in a stock of health in time of youth, is as necessary a piece of prudence, as to make provision against the decays of old age. While, therefore, wise nature prompts the happy youth to join in sprightly amusements, let not the severe dictates of hoary age forbid the useful impulse, nor damp with serious gloom the season destined to mirth and innocent festivity.

Another thing very hurtful to females about this period of life, is strait clothes. They are fond of a fine shape, and foolishly imagine that this can be acquired by lacing themselves tight. Hence, by squeezing the stomach and bowels, they hurt the digestion, and occasion many incurable maladies. This error is not indeed so common as it has been, but, as fashions change, it may come about again; we therefore think it not improper to mention it. I know many females who, to this day, feel the dreadful effects of that wretched custom which prevailed some years ago, of squeezing every girl into as small a size in the middle as possible. Human invention could not possibly have devised a practice more destructive to health.

After a female has arrived at that period of life when the *menses* usually begin to flow, and they do not appear, but, on the contrary, her health and spirits begin to decline, we would advise, instead of

shutting the poor girl up in the house, and dosing her with steel, asafoetida, and other nauseous drugs, to place her in a situation where she can enjoy the benefit of free air and agreeable company. There let her eat wholesome food, take sufficient exercise, and amuse herself in the most agreeable manner; and we have little reason to fear, but nature, thus assisted, will do her proper work. Indeed she seldom fails, unless where the fault is on our side.

This discharge in the beginning is seldom so instantaneous as to surprise females unawares. It is generally preceded by symptoms which foretell its approach; as a sense of heat, weight, and dull pain in the loins; distention and hardness of the breasts; headache, loss of appetite, lassitude, paleness of the countenance, and sometimes a slight degree of fever. When these symptoms appear about the age at which the menstrual flux usually begins, every thing should be carefully avoided which may obstruct that necessary and salutary evacuation, and all means used to promote it; as sitting frequently over the steams of warm water, drinking warm diluting liquors, &c.

After the *menses* have once begun to flow, the greatest care should be taken to avoid every thing that may tend to obstruct them. Females ought to be exceedingly cautious of what they eat or drink at the time they are out of order. Every thing that is cold, or apt to sour on the stomach, ought to be avoided; as fruit, butter-milk, and such like. Fish, and all kinds of food that are hard of digestion, are also to be avoided. As it is impossible to mention every thing that may disagree with individuals at this time, we would recommend it to every female to be very attentive to what disagrees with herself, and carefully to avoid it.

Cold is extremely hurtful at this particular period. More of the sex date their diseases from colds caught while they are out of order, than from all other causes. This ought surely to put them upon their guard, and to make them very circumspect in their conduct at such times. A degree of cold that will not in the least hurt them at another time, will at this period be sufficient entirely to ruin their health and constitution.

The greatest attention ought likewise to be paid to the mind, which should be kept as easy and cheerful as possible. Every part of the animal economy is influenced by the passions, but none more so than this. Anger, fear, grief, and other affections of the mind, often occasion obstructions of the menstrual flux, which prove absolutely incurable.

As far as my observation goes, there are no women in the world so inattentive to this discharge as the English; and they suffer accordingly, as a very great number of them are obstructed, and many prove barren in consequence.

From whatever cause this flux is obstructed, except in the state of pregnancy, proper means should be used to restore it. For this purpose we would recommend sufficient exercise in a dry, open, and rather cool air; wholesome diet, and, if the body be weak and languid, generous liquors; also cheerful company and all manner of amusements. If these fail, recourse must be had to medicine.

When obstructions proceed from a weak relaxed state of the solids, such medicines as tend to promote digestion, to brace the

solids, and assist the body in preparing good blood, ought to be used. For this purpose, I have of late made use of pills composed of prepared steel, powdered myrrh,* and the best aloes, equal parts. These must be formed into pills of the common size, and two or three of them given every night at bed-time. The principal medicines, however, are iron, and the Peruvian bark, with other bitters and astringents. Filings of iron may be infused in wine or ale, two or three ounces to an English quart, and after it has stood for two or three weeks, it may be filtered, and about half a wine-glass of it taken twice a-day; or prepared steel may be taken in the dose of half a drachm, mixed with a little honey or treacle, three or four times a-day. The bark and other bitters may either be taken in substance or infusion, as is most agreeable to the patient.

Previous, however, to the use of these medicines, it may be advisable to give a gentle emetic, for the purpose of cleansing the stomach, and freeing it from acidities and inactive fluids.

When obstructions proceed from a viscid state of the blood, or for women of a gross or full habit, evacuations, and such medicines as attenuate the humours, are necessary. The patient in this case ought to be bled, to bathe her feet frequently in warm water, to take now and then a cooling purge, and to live upon a spare thin diet. Her drink should be whey, water, or small beer, and she ought to take sufficient exercise. A teaspoonful of the tincture of black hellebore may also be taken twice a-day in a cup of warm water.

When obstructions proceed from affections of the mind, as grief, fear, anger, &c. every method should be taken to amuse and divert the patient. And that she may the more readily forget the cause of her affliction, she ought, if possible, to be removed from the place where it happened. A change of place, by presenting the mind with a variety of new objects, has often a very happy influence in relieving it from the deepest distress. A soothing, kind, and affable behaviour to females in this situation is also of the last importance.

An obstruction of the *menses* is often the effect of other maladies. When this is the case, instead of giving medicines to force that discharge, which might be dangerous, we ought by all means to endeavour to restore the patient's health and strength. When that is effected, the other will return of course.

IMMODERATE FLOW OF THE MENSES.

The flow of the *menses* is to be considered as immoderate, when it either returns more frequently than what is natural, continues longer than ordinary, or is more abundant than is usual with the

* Take Myrrh,	$\frac{1}{2}$ drachm.	two table-spoonsful of the following
Subcarbonate of Soda,	15 grains.	mixture:
Sulphate of Iron,	1 scruple.	Take Compound Infusion of Gentian,
Extract of Bark,	1 scruple.	6 ounces.
Syrup of Ginger, enough to form the		Tincture of Bark,
mass; to be divided in 24 pills, two of		— of Cardamoms, of each,
which are to be taken twice or three		$\frac{1}{2}$ ounce.
times a-day; washing them down with		Make a mixture.

same person than at other times; usually accompanied with pains in the back and belly, somewhat like those of childbirth.

But the menstrual discharge may be too great as well as too small. When this happens, the patient becomes weak, the colour pale, the appetite and digestion are bad, to which œdematous swellings of the feet, dropsies, and consumptions often ensue. This frequently happens to women about the age of forty-five or fifty, and is very difficult to cure. It may proceed from a sedentary life; a full diet, consisting chiefly of salted, high seasoned, or acrid food; the use of spirituous liquors; excessive fatigue; relaxation; a dissolved state of the blood; violent passions of the mind, &c.

The treatment of this disease must be varied according to its cause. When it is occasioned by any error in the patient's regimen, an opposite course to that which induced the disorder must be pursued, and such medicines taken as have a tendency to restrain the flow, and counteract the morbid affections of the system whence it proceeds.

To restrain the flux, the patient should be kept quiet and easy both in body and mind. If it be very violent, she ought to lie in bed with her head low; to live upon a cool and slender diet, as veal or chicken broths with bread; and to drink decoctions of nettle-roots, or the greater comfrey, cooling aperients,* and refrigerants, as small and frequent doses of nitre;† cool acidulated liquors, as lemonade; light covering, and lying on a mattress instead of a bed. If these be not sufficient to stop the flux, stronger astringents‡ may be used, as Japan earth, alum, elixir of vitriol, the Peruvian bark, &c.: e.g. two drachms of alum and one of Japar earth may be pounded together, and divided into eight or nine doses, one of which may be taken three times a-day. Persons whose stomachs cannot bear the alum, may take two table-spoonful of the tincture of roses three or four times a-day, to each dose of which ten drops of laudanum may be added. If these should fail, half a drachm of the Peruvian bark, in powder, with ten drops of the elixir of vitriol, may be taken, in a glass of red wine, four times a-day, or any of the forms prescribed below.

FLUOR ALBUS.

THE *uterine* discharge may offend in quality as well as in quantity. What is usually called the *fluor albus*, or whites, is a very common disease, and proves extremely hurtful to delicate women. This discharge, however, is not always white, but sometimes pale yellow, green, or of a blackish colour: sometimes it is sharp and

* Take Epsom Salts, 2 ounces.
Warm Water, 6 ounces.
Compound Tincture of Senna, 1 ounce.
Syrup of Roses, 2 drachms.
Mix; and take two table-spoonful for a dose.

Make a draught, to be repeated every third hour.

† Take Gum Kino, 8 grains
Alum, in Powder, 12 grains.
Confection of Roses, enough.

Make a bolus, to be taken every third or fourth hour.

‡ Take Infusion of Roses, 1½ ounce.
Nitre, 10 grains.
Occasionally adding, if necessary,
Tincture of Opium, 15 drops.

or
Take Purified Alum, 10 grains.
Extract of Bark, 12 grains.
Confection of Roses, enough.
Make a bolus to be taken as above.

corrosive, sometimes foul and fœtid, &c. It is attended with a pale complexion, pain in the back, loss of appetite, swelling of the feet, and other signs of debility. It generally proceeds from a relaxed state of the body, arising from indolence, the excessive use of tea, coffee, or other weak and watery diet, frequent childbearing, &c.

To remove this disease, the patient must take as much exercise as she can bear without fatigue. Her food should be solid and nourishing, but of easy digestion; and her drink rather generous, as red port or claret, mixed with Pyrmont, Bristol, or lime-water. Tea and coffee are to be avoided. I have often known strong broths have an exceeding good effect, and sometimes a milk diet alone will perform a cure. The patient ought not to lie too long in bed.

Independent of this regimen, the proper indications of cure to be observed appear to be, to increase the action of the absorbents of the uterus and vagina, by restoring the tone of the system; to correct the acrimony of the discharge; diminish its quantity; to alleviate other urgent and distressing symptoms; and to strengthen the system, when the disease is complicated with general debility and relaxation. With this view, the first of these intentions is to be effected by astringents, administered by the mouth; and likewise thrown up into the vagina and uterus in the form of injections.* Alum, sulphate of zinc (white vitriol,) gum kino, and catechu, are the astringents most employed as internal remedies; and these may be given either separately or combined with some tonic, as the bark, bitters, chalybeates, and the sulphuric acid as advised below,† with partial cold bathing, or spunging the loins and thighs with cold water.

In addition to astringents, it has been usual to employ in fluor albus such stimulating medicines as most commonly determine to the urinary passages, which, from their vicinity to the uterus, have often been found to afford considerable relief. On this occasion, turpentine and other balsams have been used.‡ Gentle emetics are also supposed to be of singular benefit in this complaint. When there are excoriations externally or internally, the solution of the acetate of lead, sufficiently diluted with water, may be employed as a wash.

* Take Decoction of Oak Bark, 1 pint.
Alum, 1 drachm.
Make an injection.

or

Take Sulphate of Zinc, 1 drachm.
Super Acetate of Lead, 10 grains.
Distilled Water, 1 pint.
Make an injection.

or

Take of Bruised Oak Gall, ½ ounce.
Hot Water, 2 pints.
Make an injection.

or

Take Strong Infusion of Green Tea,
Make an injection.

† Take Powdered Alum, 2 drachms.
Nutmeg, ½ drachm.
Catechu, 1 drachm.
Peruvian Bark, ½ oz.

Syrup of Ginger, a sufficiency to form an electuary, of which the bulk of a small walnut may be taken three times a-day.

‡ Take Balsam of Copaiba, or Canada Turpentine, 2 drachms.
The Yolk of an Egg.

Let them be well mixed together in a marble mortar, and gradually add, Water, 7 ounces.
Clarified Honey, ½ ounce.
Tincture of Spanish Fly, 1 drm.
Mix, and take two dessert-spoonsful thrice a-day.

DIFFICULT MENSTRUATION. (*Dysmenorrhœa.*)

BESIDES the other deviations from the usual course of nature, alluded to under this head, a third sometimes occurs, wherein menstruation, although not entirely suppressed, is nevertheless somewhat difficult, and accompanied with severe pains in the back, loins, and bottom of the belly. This disease is supposed to be owing to a weak action of the vessels of the uterus, or spasm of its extreme vessels; and is to be removed by chalybeates, warm bathing, both topical and general, with the use of opiates, which should be employed as soon as the symptoms that denote its approach are apparent. The extract of stramonium, in half grain doses, will often prove serviceable when other anodynes fail.

CESSATION OF THE MENSES. (*Commonly called the "Turn of Life."*)

THAT period of life at which the *menses* cease to flow is likewise very critical to the sex. The stoppage of any customary evacuation, however small, is sufficient to disorder the whole frame, and often to destroy life itself. Hence it comes to pass, that so many women either fall into chronic disorders, or die about this time. Such of them, however, as survive it, without contracting any chronic disease, often become more healthy and hardy than they were before, and enjoy strength and vigour to a very great age.

If the *menses* cease all of a sudden, which is seldom the case, in women of a full habit, they ought to abate somewhat of their usual quantity of food, especially of the more nourishing kind, as flesh, eggs, &c. They ought likewise to take sufficient exercise, and to keep the body open. This may be done by taking, once or twice a week, a little rhubarb, or an infusion of *hiera picra* in wine or brandy.

Should any scirrhus or cancerous affection of the uterus take place on a stoppage of the menstrual flux, as sometimes happens, all that can be done in such cases is to have recourse to palliatives, such as opium, henbane, and hemlock, in the manner pointed out in the diseases wherein these medicines are indicated.

It often happens that women of a gross habit, at this period of life, have ulcerous sores break out about their ankles, or in other parts of the body. Such ulcers ought to be considered as critical, and should either be suffered to continue open or have artificial drains substituted in their stead. Women who will have such sores dried up are often soon after carried off by acute diseases, or fall into those of a chronic nature.

CHAP. VII.

DISEASES OF PREGNANCY.

THOUGH pregnancy is not a disease, yet it is a state often attended with a variety of complaints which merit attention, and which sometimes require the assistance of medicine. Some women, indeed, are more healthy during their pregnancy than at any

other time ; but this is by no means generally the case ; most of them being frequently indisposed during the whole or greater part of the time of their gestation. Few fatal diseases, however, happen, during this period ; and hardly any except abortion that can be called dangerous.

During a state of pregnancy, three different stages evidently exist, each of which has a distinct set of symptoms ; nor need we be surprised, when we come to consider the alteration the constitution suffers as a consequence of impregnation, at the many complaints and irregularities which then arise. The first state of pregnancy is usually attended with a suppression of the menses, accompanied with frequent nausea and vomiting, particularly in the morning, heartburn, indigestion, peculiar longing, head-ache, giddiness, tooth-ache, and sometimes a slight cough : the breasts become enlarged, shooting pains extend through them, and the circle round the nipple alters to a dark brown colour. A feverish tendency, with debility, emaciation, irritability, and peevishness of temper, and a total alteration of the countenance, every feature of which becomes much sharpened, also frequently occur. During the whole or greater part of the second stage of gestation, as well as the first, the vomiting will continue with some women ; this, however, does not usually happen.

Partial suppressions of urine, with a frequent inclination to void it ; itching about the external parts of generation, costiveness, inclination without ability to go to stool, and the piles, are what pregnant women are chiefly incommoded by during the second stage.

Quickening.—Most women quicken about the sixteenth week after conception, at which time the mother becomes sensible of the slightest efforts of the child ; and besides the complaints just enumerated, she will then be liable to sudden faintings, and slight hysteric affections.* During the last three months, or third stage of pregnancy, general uneasiness, restlessness (particularly by night,) costiveness, puffy swellings of the feet, ancles, and private parts, cramps in the legs and thighs, difficulty of retaining the urine for any length of time, varicose swellings of the veins of the belly and lower extremities, and the piles, are the affections which usually prove most troublesome. In delicate and weak women, of an irritable habit, convulsive fits sometimes arise, which are ever to be regarded in a dangerous point of view.

NAUSEA AND VOMITING.—These symptoms most frequently arise immediately on first getting out of bed in the morning ; under such circumstances, therefore, it is advisable for the patient never to rise until she has taken a dish of tea or coffee, or whatever else she may have been accustomed to substitute for her breakfast.

* According to the opinion most commonly received, quickening, thus termed, has been generally understood to commence at the time when particular sensations are perceived by the mother, supposed to be occasioned by the first motion of the child. The most usual time of feeling any such symptoms is about the latter end of the fourth or beginning of the fifth month of pregnancy : at this period the uterus filling up the pelvis slips out and rises above the rim ; and from that sudden transition, women of a delicate constitution and irritable fibre are apt to faint, more particularly so if in an erect position. Ed.

Should the vomiting at any time become so severe as to threaten abortion from the violence of the straining, it may then be advisable to direct two or three table-spoonsful of the saline medicine to be taken every now and then in such a manner as the effervescence shall ensue after it is swallowed. The patient also should keep the body open with some gentle laxative. Should these means not succeed, about six ounces of blood may be drawn from the arm, and, if necessary, repeated in a week's time. The sickness in such cases depends on irritation, and is only to be removed with certainty by bleeding.

To abate excessive vomiting local applications have been recommended. For example, a piece of folded linen cloth, moistened with the tincture of opium, may be kept constantly applied to the stomach; to which, probably, the addition of a small portion of ether might increase its effect. It sometimes happens that vomiting continues incessantly for many days, accompanied with great prostration of strength, and constant thirst, with, at the same time, an utter impossibility of retaining any thing on the stomach. Under these circumstances the application of leeches to the pit of the stomach, and a constant attention to swallow nothing that can irritate, allowing the patient asses' milk, and that by a single spoonful at a time, have afforded relief. If much nausea should prevail without the possibility of throwing up, fourteen or fifteen grains of the powder of ipecacuanha may then be given, experience having proved that gentle emetics may be safely administered to pregnant women.

HEARTBURN.—When a pregnant woman is incommoded by heartburn, (which commonly arises from acidity in the stomach,) half a drachm of magnesia may be taken morning and evening; and, if this fail to obviate it, the absorbent mixture advised below* may be used, which Dr. Sims says he has found the most efficacious of all remedies for the removal of this distressing complaint.

HEAD-ACHE WITH PLETHORA.—When either drowsiness, a sense of fulness of the vessels of the head, or head-ache, prove troublesome to pregnant women, taking away a few ounces of blood from the arm in robust women will most likely prove serviceable. In women of a weak irritable habit the application of a leech or two to each temple will be more advisable than bleeding from the arm, where the head-ache proves obstinate, and resists the other means employed.

COSTIVENESS, PILES, &c.—Costiveness, partial suppressions of urine, and the piles, which attend on the second stage of pregnancy, are occasioned by the great pressure of the uterus on the rectum and bladder. The first and last of these symptoms are to be obviated by a daily use of some gentle laxative; such as a solution of manna, or the subjoined electuary.† Pills com-

* Take Magnesia, 1 drachm.
Pure Water, 5 ounces.
Spirit of Cinnamon, 3 drachms.
Solution of Ammonia, 1 drachm.

Make a mixture, of which two or three

table-spoonsful may be taken occasionally.

† Take Confection of Senna, 1½ ounce.
Cream of Tartar, ½ ounce.
The size of a nutmeg to be taken occasionally.

posed of aloes are highly improper, as being of a nature too stimulating, and very apt to occasion hemorrhages, and bring on the piles. When the piles are troublesome, the best applications, when they can be applied, are leeches and cold saturnine lotions, as a solution of the superacetate of lead. To allay the irritation, ten grains of the superacetate of lead, dissolved in four ounces of rose-water, to which, if necessary, a little of the vinous tincture of opium may be added, form a good lotion.

TOOTH-ACHE.—To relieve the tooth-ache a few drops of the oil of cloves, cajeput, juniper, or any other essential oil, applied to the affected tooth, will often remove it for the time.

LONGINGS.—It is always desirable to gratify the peculiar longings of pregnant women, otherwise they are apt to miscarry from the anxiety these occasion, when not indulged in them. But that the child in the womb can be marked by any depraved appetite of the mother, or be mutilated by any disagreeable sight that may be presented to her, cannot readily be admitted.

HYSTERIC.—Should sudden fainting, or any other hysterical affection, arise, little more will be necessary than to expose the patient to a free open air, to place her in a horizontal position, and to give her a glass of cold water, with a few drops of hartshorn, or a little wine sufficiently diluted.

DIARRHŒA.—Diarrhœa during pregnancy should be treated just as at any other time; and after the stomach and intestines are cleared astringents may be used, if there be no great degree of fever present; but should there be fever, that must be attended to and first removed.

SUPPRESSION OF URINE.—To relieve the suppression of urine that frequently takes place in the advanced state of pregnancy, besides making use of emollient fomentations, clysters, and gentle purgatives, such as castor-oil, &c., the patient, at the same time, drinking plentifully of diluent liquors, surgical aid will be necessary to draw it off morning and evening by means of a catheter.

TROUBLESOME ITCHINGS.—When these sensations arise about the parts of generation during the pregnant state, it will be proper to keep the body perfectly free with some cooling laxative, and to wash the parts three or four times a day with a solution of lead, or the diluted solution of the acetate of lead. If much irritation accompany this itching, leeches may be applied to the place.

PUFFY SWELLINGS of the feet, ankles, and private parts, which are apt to arise towards the end of pregnancy, are occasioned by the pressure of the womb on the returning vessels, which prevents the blood being carried back to the heart. Gravid women are usually free from these complaints in the morning, but towards night they frequently suffer much from them. Slight scarifications from the edge of a lancet, to discharge the stagnated fluid, with the af-

ter-application of flannels wrung out in a warm effusion of emollient herbs, have been employed in cases of great distention. In general, however, it will only be necessary that the patient does not keep her feet in a pendent position for any length of time.

CRAMPS OF THE LEGS AND THIGHS are to be relieved by rubbing the parts with cold vinegar; camphor dissolved in oil, or other liniments, the person wearing stockings in bed. At an advanced period of pregnancy they are only to be relieved by labour removing the cause. Proper doses of ether and tincture of opium, with the means advised in hysterical affections, will afford the greatest benefit where the stomach is affected with spasms. In such cases the patient will do well to avoid all kinds of food that are apt to prove flatulent and hard of digestion, and keep the body perfectly open.

RESTLESSNESS AND WANT OF SLEEP prove troublesome complaints towards the latter end of pregnancy, obliging the patient to rise frequently throughout the course of the night, in order to expose herself to the influence of cool air. In cases of this nature nothing affords relief so effectually as small bleedings, with the occasional use of some cooling laxative medicine. Opiates, in such conditions, are never attended with any advantage.

VARICOSE VEINS.—Considerable enlargement and distention of the veins of the legs, thighs, and abdomen often take place to an alarming extent in the last state of pregnancy. But, as no bad consequences have been observed to attend this state, the only thing necessary to be done is to empty the vascular system by moderate bleeding, gentle purging, and a spare diet. Should, however, the vein of any particular part become so distended as to prove troublesome, it may be advisable to apply a bandage of a moderate tightness, so as to give the necessary support to it.

JAUNDICE.—Pregnant women, in some instances, are afflicted with a pain in the side, excessive sickness at the stomach, and retchings, the skin assuming a deep yellow tint; under which circumstances alone the complaint proves distressing; and it is usually occasioned by the formation of one or more gall-stones, and the obstructions they oppose to the usual and regular passage of the bile. The most efficient means to relieve the patient from this degree of the complaint are, bleeding, fomentations of the painful part, and large doses of opium, with such laxatives as shall counteract the constipating effects of the latter. When jaundice or any other bilious effects prevail during pregnancy, in consequence of the pressure kept up by the womb on the gall-bladder or ducts, it is to be obviated by keeping the body open with some gentle laxatives, as pills composed of jalap and rhubarb.

INCONTINENCY OF URINE is to be removed only by delivery, but may admit of being partially relieved by the horizontal posture. The bad effects of this very disagreeable complaint, may be prevented by a scrupulous attention to cleanliness, and the use of a

thick compress of linen, or a sponge of considerable size, properly fastened.

OVER-DISTENTION OF THE SKIN.—The skin of the abdomen, in the latter months of pregnancy, will sometimes become cracked and sore. In this case nothing is more effectual than the frequent use of warm oil by friction; to which a little camphor may be added to give it somewhat of a medicated appearance.

FALSE PAINS, resembling those attendant on actual labour, are apt to come on at a late period of pregnancy, often occasioning unnecessary alarm. Confinement in a horizontal position; bleeding, if of a full habit; laxative medicines if costive, and giving small and frequent doses of some opiate until the patient finds ease, will, in such cases, be necessary.

CHAP. VIII.

CONVULSIONS.

CONVULSIONS may take place either during pregnancy or labour. These are of different kinds, requiring opposite treatment. One species is a consequence of great exhaustion from a tedious labour, excessive fatigue, and profuse hemorrhage; which makes its attack without much previous warning, and generally alternates with faintings, or great depression of strength, and debility: the muscles about the face and chest are chiefly affected, and the pulse is small, frequent, and compressible, the face pale, the eyes sunk, the extremities cold. The fits succeed each other rapidly, and very soon terminate in a fatal syncope.* In all cases of this nature, the first object should be directed towards restraining the hemorrhage if present, or preventing any kind of exertion, thus husbanding the remaining strength, or recruiting it by cordials. In conjunction with ether and camphor, opiates will be of considerable service. Delivery is usually necessary.

The other species of convulsions, which are those of an hysterical nature, are more common during gestation than during parturition. In this case it may only be necessary to add to what has been already said relative to hysterics (p. 390.), that if they do not speedily yield to antispasmodics, bleeding had better be resorted to: should this fail, the woman, if possible, should be delivered.

Puerperal convulsions seldom happen before the sixth month, but may occur at any time between this period and the completion of labour. They may arise as the first symptom of labour, or after delivery. This species of convulsion depends on the state of the uterus, and has been remarked to occur more frequently during the first pregnancy than in any subsequent one, particularly where the woman is unmarried.

To prevent the occurrence of puerperal convulsions, as they are

* It was this species of convulsion, apparently, that destroyed Her Royal Highness the Princess Charlotte of Wales.

in every instance to be considered highly dangerous, particularly at an advanced period of pregnancy, it is advisable in women of robust and plethoric habits to bleed frequently during the progress of pregnancy, by abstracting a sufficient quantity of blood at different periods; taking care, at the same time, and particularly near the termination of pregnancy, to keep the body open by cooling purgatives. In women of an unstable constitution, all exciting causes should be carefully avoided, and the habit be strengthened as much as possible, and by that means rendered less susceptible of disagreeable impressions.

CHAP. IX.

ABORTION, &c.

EVERY pregnant woman is more or less in danger of abortion. This should be guarded against with the greatest care, as it not only weakens the constitution but renders the woman liable to the same misfortune afterwards.* Abortion may happen at any period of pregnancy, but it is most common in the second or third month. Sometimes, however, it happens in the fourth or fifth. If it happens within the first month, it is usually called a false conception; if after the seventh month, the child may often be kept alive by proper care.

The common causes of abortion are, the death of the child; weakness or relaxation of the mother; great evacuations; violent exercise; raising great weights; reaching too high; jumping, or stepping from an eminence; vomiting; coughing; convulsions; fits; blows on the belly; falls; fevers; disagreeable smells; excess of blood; indolence; high living, or the contrary; violent passions or affections of the mind, as fear, grief, &c.

The signs of approaching abortion are, pain in the loins, or about the bottom of the belly; a dull heavy pain in the inside of the thighs; a slight degree of coldness, or shivering; sickness; palpitation of the heart; the breasts become flat and soft; the belly falls; and there is a discharge of blood or watery humours from the womb.

To prevent abortion, we would advise women of a weak or relaxed habit to use solid food, avoiding great quantities of tea, and other weak and watery liquors; to rise early and go soon to bed; to shun damp houses; to take frequent exercise in the open air, but to avoid fatigue; and never to go abroad in damp foggy weather, if they can help it. Women of a full habit ought to use a spare diet, avoiding strong liquors, and every thing that may tend to heat the body, or increase the quantity of blood. Their diet should be of an opening nature, consisting principally of vegetable substances. Every woman with child ought to be kept cheerful and

* Every mother who procures an abortion does it at the hazard of her life; yet there are not a few who run this risk merely to prevent the trouble of bearing and bringing up children. It is surely a most unnatural crime, and cannot, even in the most abandoned, be viewed without horror; but in the decent matron, it is still more unpardonable.

easy in her mind. Her appetites, even though depraved, ought to be indulged as far as prudence will permit.

When any signs of abortion appear, the woman ought to be laid in bed on a mattress, with her head low. She should be kept quiet, and her mind soothed and comforted. She ought not to be kept too hot, nor to take any thing of a heating nature. Her food should consist of broths, rice and milk, jellies, gruels made of oatmeal, and the like, all of which ought to be taken cold.

If she be able to bear it, she should lose at least half a pound of blood from the arm. Her drink ought to be barley-water sharpened with the juice of lemon; or, she may take half a drachm of powdered nitre, in a cup of water-gruel, every five or six hours. If the woman be seized with a violent looseness, she ought to drink the decoction of calcined hartshorn prepared. If she be affected with vomiting, let her take frequently two table-spoonsful of the saline mixture. In general, opiates are of service; but they should always be given with caution.

Sanguine robust women, who are liable to miscarry at a certain time of pregnancy, ought always to be bled a few days before that period arrives. By this means, and observing the regimen above prescribed, they might often escape that misfortune.

Though we recommend due care for preventing abortion, we would not be understood as restraining pregnant women from their usual exercise. This would generally operate the quite contrary way. Want of exercise not only relaxes the body, but induces a plethora, or too great a fulness of the vessels, which are the two principal causes of abortion. There are, however, some women of so delicate a texture, that it is necessary for them to avoid almost every kind of exercise during the whole period of pregnancy.

Where abortion cannot be prevented, the next indication is to conduct the patient safely through the process, by directing our immediate attention to the hemorrhage; to check which, bleeding is resorted to by some practitioners; but, unless the vessels be above their natural force and strength of action, it is not likely to be of any service. Astringent injections, composed of alum, oak bark, or sulphate of zinc, and cold applications to the loins, &c., are often employed in floodings; and where the hemorrhage is slight, these immediately will prove beneficial; but in floodings without any remission, they do not appear calculated to afford much relief. In such cases it will be best to trust to the formation of a coagulum; enjoining rest, giving an anodyne at bed-time, and keeping the bowels open by some gentle aperient. But, where these means have been pursued without effect, and the woman becomes exposed to imminent danger from great loss of strength, the most powerful astringents must be employed; such as the sulphate of zinc* and superacetate of lead†; of the last, one, two, or three grains may be given, repeating the dose every three or four hours according to the urgency of the case. As soon, however,

* Take Sulphate of Zinc, 2 to 5 grains.
 Confect. of Roses, $\frac{1}{2}$ scruple.
 Opium, $\frac{1}{4}$ grain.
 Make a bolus, to be taken every fourth hour.

† Take Superacetate of Lead, 2 grains.
 Opium, $\frac{1}{4}$ grain.
 Make a pill, to be given every hour, should it be required, until six pills are given.

as the hemorrhage has stopped, give a dose of castor-oil in order to prevent any bad effects from the action of these remedies on the coats of the stomach and intestines. The application of cloths dipped in cold water to the back and external parts will have a much better effect than internal astringents, consequently ought never to be neglected. The introduction of a piece of smooth ice into the vagina has often a very speedy effect in arresting the hemorrhage. A snow-ball wrapt in a bit of soft linen will have the same effect; but neither of these should be continued so long as to cause pain.

The most effectual means, then, to be resorted to for relieving the hemorrhage attendant on abortions are: if the pulse be full, hard, and frequent, bleeding is to be resorted to; if not, the fox-glove is to be trusted to, either in the form of pill, tincture, or infusion: the application of cold to the thighs and pubes; admitting a free circulation of cool air in the patient's bed-chamber; keeping the heat of the body at a low temperature; absolute rest in a horizontal position, and which must be continued during the whole process, however long it may be; cold acidulated liquors for ordinary drink; light food taken in small quantities at a time; carefully abstaining from every thing stimulant, and plugging up the vagina, &c. &c.

Sometimes the hemorrhage is kept up by some portion of the ovum remaining partly within and partly without the uterus; when, should circumstances demand it, this should be removed by careful manual interference with a pair of armed forceps.

For some days after abortion the patient should be confined to bed, as getting up too soon is apt to produce a debilitating discharge. Women disposed to abort should the more sedulously avoid the exciting causes of abortion at those dates of utero-gestation when it is most apt to take place.

CHAP. X.

MANAGEMENT OF CHILDBED-WOMEN.

MANY diseases proceed from the want of due care in child-bed; and the more hardy part of the sex are most apt to despise the necessary precautions in this state. This is peculiarly the case with young wives. They think, when the labour-pains are ended, the danger is over; but in truth it may only then be said to be begun. Nature, if left to herself, will seldom fail to expel the *fœtus*; but proper care and management are certainly necessary for the recovery of the mother. No doubt, mischief may be done by too much as well as by too little care. Hence females who have the greatest number of attendants in child-bed generally recover worst. But this is not peculiar to the state of child-bed. Excessive care always defeats its own intention, and is generally more dangerous than none at all.*

* Though the management of women in child-bed has been practised as an employment since the earliest accounts of time, yet it is still in most countries on a very bad

During actual labour, nothing of a heating nature ought to be given. The woman may now and then take a little panado, and her drink ought to be toast and water, or thin groat-gruel. Spirits, wines, cordial-waters, and other things which are given with a view to strengthen the mother, and promote the birth, for the most part tend only to increase the fever, inflame the womb, and retard the labour. Besides, they endanger the woman afterwards, as they occasion violent and mortal hemorrhages, or dispose her to eruptive and other fevers.

PARTURITION.

Is that natural process which, at the expiration of forty weeks from conception, is matured, and by which the womb detaches and expels its contents, and returns nearly to the same condition in which it was previous to its impregnation.

CLASSIFICATION OF LABOURS, &c.

THE division of labours, originally made by Hippocrates into *natural* and *preternatural*, is sufficiently comprehensive, whilst it forcibly recommends itself by its simplicity and perspicuity.

Natural labour, of which we shall only treat here, supposes four things: 1. That the vertex presents. 2. That there be sufficient room in the pelvis to admit of the ready descent of the child in that direction which permits the occiput or back part of the head to emerge under the arch of the pubis. 3. That there be parturient energy adequate to the expulsion of the contents of the uterus, without manual interference; and without danger, either to the mother or child: and, 4. That the process of parturition be completed within a moderate time.

STAGES OF LABOUR.

CERTAIN occurrences take place during the progress of parturition which may be managed under three divisions or stages; the *first* comprehends all that may occur before the complete dilatation of the os uteri; the *second* includes all that takes place between the developement of the os uteri and the expulsion of the child; the *third* embraces every thing connected with the detachment and extension of the placenta and its adherent membranes.

Symptoms preceding Labour.

For several days before the actual existence of labour arrives,

footing. Few women think of following this employment till they are reduced to the necessity of doing it for bread. Hence not one in a hundred of them have any education, or proper knowledge of their business. It is true, that nature, if left to herself, will generally expel the *fœtus*; but it is equally true, that most women, in child-bed, require to be managed with skill and attention, and that they are often hurt by the superstitious prejudices of ignorant and officious midwives. The mischief done in this way is much greater than is generally imagined; most of which might be prevented by allowing no women to practise midwifery but such as are properly qualified. Were due attention paid to this, it would not only be the means of saving many lives, but would prevent the necessity of employing men in this indelicate and disagreeable branch of medicine, which is, on many accounts, more proper for the other sex.

there are often certain premonitory symptoms, which, by women who have borne children, are viewed as precursors of that eventful hour which many of them so much dread. Among these are:

1. *Restlessness*, particularly at night, very frequently precedes parturition for days and weeks, and is rarely to be considered as bearing unfavourably in labour.

2. *Subsidence of the womb and abdomen* is not an unusual monitor of the approach of suffering. It may be viewed in a favourable light, inasmuch as it indicates room in the pelvis.

3. *Glairy mucuous secretion* from the os uteri and vagina, popularly termed *show*, sometimes occurs for days before the more active symptoms of labour. It is often streaked with blood, and tends to lubricate the parts concerned in parturition.

4. *Irritability of the bladder and rectum*, demanding their frequent relief, is another occasional precursor of labour.

Symptoms accompanying Labour.

Owing to the resistance which the womb encounters during its contractile efforts, *pain* follows every such contraction; but the pain attendant on parturition differs very materially in its nature, and in its influence in the uterus. These paroxysms of pain are either *intestinal* or *uterine*.

Paroxysms of intestinal pain, or such as are termed false or spurious, may be distinguished from genuine labour-pains by being unconnected with uterine contraction; by attacking different parts of the abdomen; and by recurring irregularly. These pains usually originate in some source of intestinal irritation, and may almost always be removed by emptying the bowels, and subsequently exhibiting an opiate. By the observant practitioner, should one be present, they cannot be confounded with pain in the bowels.

The true or uterine pains are either dilating or expulsive.

Dilating Pains, or, as they are popularly termed, *grinding* pains, result from contraction of the womb. They are principally confined to the back, and occur in the earliest stage of labour, and are often peculiarly distressing to the patient, who expresses herself by restlessness, despondency, and moaning. They often continue a long time without the intermissions being free from uneasiness, and appear almost exclusively to dilate the mouth of the womb, having little influence over the fundus of the uterus. It is during the existence of these dilating pains that cold shiverings most commonly come on, and may be relieved by avoiding spiced or fermented fluid, and by administering any simple warm diluents.

When the mouth of the womb is considerably dilated, expulsive pains, sometimes termed *forcing* or bearing down pains, commence in the loins, and gradually proceed round the abdomen, till they meet at the region of the pubes, and dart down the *labia pudendi* and thighs. If the accoucheur's hand be placed on the flaccid sides of the abdomen, previous to the accession of a paroxysm of expulsive pain, before the woman is aware of it, the womb may be felt contracting to a hard, tense, incompressible tumour. These pains observe regular intervals of ease, which become shorter, whilst the pains, in an inverse ratio, increase in their duration and

severity; and now it is that the abdominal muscles and diaphragm afford their assistance.

During each propulsive effort a larger portion of the membranes, distended with the liquor of the amnion, is forced through the mouth of the womb, performing to it, and all the parts through which the child is to pass, the office of an easy but powerful wedge. With these pains there is often a frequent disposition to empty the rectum; and sometimes this inclination is so harassing as to justify the administration of a small clyster, with half a drachm of the tincture of opium.

Vomiting is a common attendant on uterine pain, and is beneficial by rejecting food, which, from its quality or quantity, may be a source of irritation to the stomach. It principally occurs during the dilating pains, and unquestionably assists in the relaxation and dilatation of the mouth of the womb.

In a protracted labour, when vomiting continues or returns, after the mouth of the womb is fully dilated, with abdominal tension and pain, without uterine contractions, and with ejection from the stomach of fluid like dark coffee-grounds, with foul tongue, and rapid and hard pulse, it generally must be taken as indicative of inflammatory action, and as requiring immediate and most efficient interference. Besides these attendants on parturition, the pulse usually becomes quickened and full; the countenance florid; the whole surface of the body covered with profuse perspiration; and the lower extremities cramped.

The Process of Natural Labour.

The process of natural labour, to use the words of a modern writer, is at once so simple and beautiful, that it cannot fail to excite the admiration of those who look beneath the surface of the operations of nature. Without repeating what has already been advanced respecting the precursory and accompanying symptoms of delivery, we shall merely recall to the mind those statements, as constituting a part of the history of this process. The symptoms which announce the commencement of natural labour have continued for an indefinite time; pains in the loins, darting through the pelvis, with an appearance of *shew*, indicate the approach of unequivocal evidences of this stage of parturition. From time to time these pains are of the *dilating* kind and on an examination *per vaginam*, will be found to be diminishing the thickness of the cervix uteri more than to be opening the mouth of the womb. When the neck of the womb becomes reduced to the thickness of the other parts of that organ, it begins to open, and as soon as it can admit the extension of any part of the membranes distended with the liquor of the amnion, the pains rather assume the *expulsive* character, and there will be a sensible bearing down of the whole uterine tumour. Successive paroxysms of pain dilate the mouth of the womb more and more, whilst the protruded membranes, distended like a tense bladder, fill up the opening, and perform the office of an inimitable wedge, till the womb and the entrance to it form one continuous passage. Soon after this the membranes generally burst during a strong pain, having previously

contributed to the dilatation of the vagina; and with the escape of the *waters*, or liquor of the amnion, there is sometimes a temporary suspension of pain, and the head of the child falls into the superior aperture or brim of the pelvis, or descends into the cavity; but more frequently this advance is not made until several pains have followed this occurrence.

The contractions of the womb recurring with augmented frequency and force, gradually propel the fetus along the passages, until the head presses on the perinæum or fork, which is put on the full stretch; and also against the soft parts which it protrudes. These by degrees dilate, and permit the back part of the head to emerge under the arch of the pubes, and with the complete extrusion of the head, the other parts of the body are expelled, sometimes by the same pain, but more frequently by one which speedily follows.

The same paroxysm of pain that expels the child now and then detaches and expels the placenta, or after-burden, commonly so called; but more frequently the womb remains at rest for about a quarter of an hour, when it resumes its contractions, and throws it off with the adherent membranes. This constitutes the interesting process of natural labour, in which the uterus requires no officious interference, but which, when forced to submit to any, she often resents, by harassing the busy meddler with some untoward occurrence.

All that it becomes necessary for the accoucheur to do during this interesting process of natural labour, is to support the perinæum by his hand, covered smoothly with a soft napkin, and so applied as to give equable support, without in the slightest degree resisting the exit of the head. No other interference, in natural labour, is justifiable, and too strong terms cannot be employed to reprobate the practice of hastening the birth of the body, dragging it forcibly by the head into the world. It should be left to be expelled by the unaided contraction of the uterus.

As soon as the child is thus brought into the world, and manifests unequivocal signs of life, the funis or navel-string must be tied, by passing a ligature, consisting of a few threads, or a thin piece of tape, round it, at about the distance of two inches from the navel, and a second at the distance of three inches from the first. The funis may then be divided by a round-pointed pair of scissors, at a point equidistant from each ligature, taking care to cut nothing but the funis. All this should be done in the most delicate manner under the bed-clothes, without exposing either the mother or child.

The navel-string being thus secured, and the child separated from the mother, it is to be transferred to the nurse, whilst the bandage, previously passed round the body of the mother, should be moderately tightened, or the womb supported by gentle pressure made by an assistant, which will be found very materially to aid its efforts to detach and expel the placenta.

Management of the After-burden.

The management of the placenta constitutes a very important part of natural labour; and if the womb be not permitted to

empty itself gradually, some untoward and alarming circumstance may occur in this stage of parturition. Generally from twenty to thirty minutes elapse between the birth and the expulsion of the placenta. The woman then complains of a slight pain in her back or abdomen, and this secondary contraction of the uterus detaches the placenta, although it but rarely expels it from the passages; whence, however, it may usually be easily removed by coiling the funis round two of the fingers of the right hand, whilst guided by the cord, the thumb and index finger of the left hand should be passed up to its insertion into the placenta, which, if it can be felt, is a pretty certain indication of the detachment of the whole mass from the sides of the womb. By this means, also, the navel-string is prevented from breaking off, and a firmer hold of the placenta is obtained.

To prevent the possibility of inverting the womb, or from its occurrence without knowing it, the placenta should be permitted to slip by the fingers of the left hand into the vagina; and the withdrawing of the placental mass should always be in the axis of the brim, cavity, and outlet of the pelvis, as it passes those parts. The hand of the accoucheur should afterwards be laid on the abdomen, to ascertain that the uterus is well contracted: and the pulse should be felt, lest internal hemorrhage redistending the uterus may be going on to the endangering of the patient's life.

It is of great importance that a bandage be passed over the region of the womb: this being done, and a well-aired napkin applied to the labia pudendi, or external parts, some mild and cool nourishment may be given to the woman, who, after having been suffered to remain quiet for about half an hour, should have her soiled linen withdrawn, and, without being raised from her horizontal posture on any pretence, may be drawn up to the head of the bed; whilst she herself remains perfectly passive, without taking any part in this operation, lest hemorrhage or prolapsus of the womb should follow.

TEDIOUS LABOURS.—When the labour proves tedious and difficult, to prevent inflammations, it will be proper to bleed. An emollient clyster ought likewise frequently to be administered, and the patient should sit over the steams of warm water. The passage ought to be gently rubbed with a little soft pomatum, or fresh butter, and cloths wrung out of warm water applied over the belly. If nature seems to sink, and the woman is greatly exhausted with fatigue, a draught of generous wine, or some other cordial, may be given, but not otherwise. These directions are sufficient in natural labours; and in all preternatural cases, a skilful surgeon, or man-midwife, ought to be called as soon as possible.

TREATMENT AFTER DELIVERY.—After delivery, the woman ought to be kept as quiet and easy as possible.* Her food should be

* We cannot help taking notice of that ridiculous custom which still prevails in some parts of the country, of collecting a number of women together upon such occasions. These, instead of being useful, serve only to crowd the house, and obstruct the necessary attendants. Besides, they hurt the patient with their noise; and often, by their untimely and impertinent advice, do much mischief.

light and thin, as gruel, panado, &c. and her drink weak and diluting. To this rule, however, there are many exceptions. I have known several women, whose spirits could not be supported in child-bed without solid food and generous liquors; to such, a glass of wine and a bit of chicken must be allowed.

Sometimes an excessive hemorrhage or flooding happens after delivery. In this case the patient should be laid with her head low, kept cool, and be in all respects treated as for an excessive flow of the *menses*. If the flooding prove violent, linen cloths, which have been wrung out of a mixture of equal parts of vinegar and water, or red wine, should be applied to the belly, the loins, and the thigh: these must be changed as they grow dry, and may be discontinued as soon as the flooding abates.

In a violent flooding after delivery, I have seen very good effects from the following mixture:—Take of penny-royal water, simple cinnamon-water, and syrup of poppies, each two ounces, elixir of vitriol, a drachm. Mix, and take two table-spoonsful every two hours, or oftener if necessary.

AFTER-PAINS.—If there be violent pains after delivery, the patient ought to drink plentifully of warm diluting liquors, as groat-gruel, or tea with a little saffron in it; and to take small broths, with caraway-seeds, or a bit of orange-peel in them; an ounce of the oil of sweet almonds may likewise be frequently taken in a cup of any of the above liquors; and if the patient be restless, a spoonful of the syrup of poppies may now and then be mixed with a cup of her drink.* If she be hot or feverish, one of the following powders may be taken in a cup of her usual drink every five or six hours.

Take of crabs' claws prepared, half an ounce, purified nitre two drachms, saffron powdered, half a drachm; rub them together in a mortar, and divide the whole into eight or nine doses. And if she be low-spirited, or troubled with hysterical complaints, she ought to take frequently twelve or fifteen drops of the tincture of asafœtida in a cup of penny-royal tea.

COSTIVENESS.—Costiveness is apt to prevail after delivery, and should always be removed by a laxative clyster, or some gentle purgative, such as neutral salt and manna, or about an ounce of castor oil.

INFLAMMATION OF THE WOMB.—An inflammation of the womb is a dangerous and not unfrequent disease after delivery. It is known by pains in the lower part of the belly, which are greatly increased upon touching; by the tension or tightness of the parts; great weakness; change of countenance, a constant fever, with a weak and hard pulse; a slight *delirium*, or raving; sometimes incessant vomiting; a hiccup; a discharge of reddish, stinking, sharp water from the wound; an inclination to go frequently to stool; a heat, and sometimes total suppression of urine.

* Take Cinnamon Water, 1 ounce.

Tincture of Opium,

30 to 40 drops.

Tincture of Castor, $\frac{1}{2}$ drachm.

Syrup of Violets, 2 drachms.

Make a draught, to be taken at bed-time.

This must be treated like other inflammatory disorders, by bleeding and plentiful dilution. The drink may be thin gruel or barley-water; in a cup of which half a drachm of nitre may be dissolved and taken three or four times a-day. Clysters of warm milk and water must be frequently administered; and the belly should be fomented by cloths wrung out of warm water, or by applying bladders filled with warm milk and water to it.

SUPPRESSION OF THE LOCHIA.—A suppression of the *lochia* or usual discharges after delivery, and the milk-fever, must be treated nearly in the same manner as an inflammation of the womb. In all these cases, the safest course is plentiful dilution, gentle evacuations, and fomentations of the parts affected. In the milk-fever, the breasts may be embrocated with a little warm linseed-oil, or the leaves of red cabbage may be applied to them. The child should be often put to the breast, or it should be drawn by some other person.

Nothing would tend more to prevent the milk-fever than putting the child early to the breast. The custom of not allowing children to suck for the first two or three days, is contrary to Nature and common sense, and is very hurtful both to the mother and child. Every mother who has milk in her breasts ought either to suckle her own child or to have her breasts frequently drawn, at least for the first month. This would prevent many of the diseases which prove fatal to women in child-bed.

INFLAMMATION OF THE BREAST.—When an inflammation happens in the breast, attended with redness, hardness, and other symptoms of suppuration, the safest application is a poultice of bread and milk, softened with oil or fresh butter. This may be renewed twice a-day, till the tumour be either discussed or brought to suppuration. The use of repellents, in this case, is very dangerous; they often occasion fevers, and sometimes cancers; whereas a suppuration is seldom attended with any danger, and has often the most salutary effects.

FRETTED OR CHAPPED NIPPLES.—When the nipples are fretted or chapped, they may be anointed with a mixture of oil and bees' wax, or a little powdered gum-arabic may be sprinkled on them. I have seen Hungary-water applied to the nipples have a very good effect. Should the complaint prove obstinate, a cooling purge may be given, which generally removes it.

MILIARY FEVER.—The miliary fever is a disease incident to women in child-bed; but as it has been treated of already, we shall take no farther notice of it. The celebrated Hoffman observes, that this fever of child-bed women might generally be prevented, if they, during their pregnancy, were regular in their diet, used moderate exercise, took now and then a gentle laxative of manna, rhubarb, or cream of tartar; not forgetting to bleed in the first months, and to avoid all sharp air. When the labour is coming on it is not to be hastened with forcing medicines, which inflame the blood and humours, or put them into unnatural commotions. Care should be taken, after the birth, that the natural excretions pro-

ceed regularly; and if the pulse be quick, a little nitrous powder, or some other cooling medicines, should be administered.

PUERPERAL FEVER.—The most fatal disorder consequent upon delivery is the *puerperal*, or child-bed fever. It generally makes its attack upon the second or third day after delivery. Sometimes, indeed, it comes on sooner, and at other times, though rarely, it does not appear before the fifth or sixth day.

It begins, like most other fevers, with a cold or shivering fit, which is succeeded by restlessness, pain of the head, great sickness at the stomach, and bilious vomiting. The pulse is generally quick, the tongue dry, and there is a remarkable depression of spirits and loss of strength. A great pain is usually felt in the back, hips, and region of the womb; a sudden change in the quantity or quality of the *lochia* also takes place; and the patient is frequently troubled with a *tenesmus*, or constant inclination to go to stool. The urine, which is very high coloured, is discharged in small quantity, and generally with pain. The belly sometimes swells to a considerable bulk, and becomes susceptible of pain from the slightest touch. When the fever has continued for a few days, the symptoms of inflammation usually subside, and the disease acquires a more putrid form. At this period, if not sooner, a bilious or putrid looseness, of an obstinate and dangerous nature, comes on, and accompanies the disease through all its future progress.

There is not any disease that requires to be treated with more skill and attention than this; consequently the best assistance ought always to be obtained as soon as possible. In women of plethoric constitutions, bleeding will generally be proper at the beginning; it ought, however, to be used with caution, and not to be repeated, unless where the signs of inflammation rise high; in which case it will also be necessary to apply a blistering-plaster to the region of the womb.

During the rigour, or cold fit, proper means should be used to abate its violence and shorten its duration. For this purpose, the patient may drink freely of warm diluting liquors, and, if low, may take now and then a cup of wine-whey; warm applications to the extremities, as heated bricks, bottles or bladders filled with warm water, and such like, may also be used with advantage.

Emollient clysters of milk and water, or of chicken water, ought to be frequently administered through the course of the disease. These prove beneficial, by promoting a discharge from the intestines, and also by acting as a kindly fomentation to the womb and parts adjacent. Great care, however, is requisite in giving them, on account of the tenderness of the parts in the *pelvis* at this time.

To evacuate the offending bile from the stomach, a vomit is generally given. But as this is apt to increase the irritability of the stomach, already too great, it will be safer to omit it, and to give in its stead a gentle laxative, which will both tend to cool the body, and to procure a free discharge of the bile.*

* Midwives ought to be very cautious in administering vomits or purges to women in child-bed. I have known a woman who was recovering extremely well, thrown into the most imminent danger by a strong purge which was given her by an officious midwife.

The medicine which I have always found to succeed best in this disease, is the saline draught. This, if frequently repeated, will often put a stop to the vomiting, and at the same time lessen the violence of the fever. If it runs off by stool, or if the patient be restless, a few drops of laudanum, or some syrup of poppies, may occasionally be added.

If the stools should prove so frequent as to weaken and exhaust the patient, a starch clyster, with thirty or forty drops of laudanum in it, may be administered as occasion shall require; and the drink may be rice-water, in every English pint of which half an ounce of gum-arabic has been dissolved. Should these fail, recourse must be had to Columbo-root, or the powder of bole combined with opium.

Though in general the food ought to be light, and the drink diluting, yet, when the disease has been long protracted, and the patient is greatly spent by evacuations, it will be necessary to support her with nourishing diet, and generous cordials.

It was observed, that this fever, after continuing for some time, often acquires a putrid form. In this case the Peruvian bark must be given, either by itself, or joined with cordials, as circumstances may require. As the bark in substance will be apt to purge, it may be given in decoction or infusion mixed with the tincture of roses, or other gentle astringents; or a scruple of the extract of bark with half an ounce of spirituous cinnamon-water, two ounces of common water, and ten drops of laudanum, may be made into a draught, and given every second, third, or fourth hour, as shall be found necessary.

When the stomach will not bear any kind of nourishment, the patient may be supported for some time by clysters of beef-tea or chicken-broth.

To avoid this fever, every woman in child-bed ought to be kept perfectly easy; her food should be light and simple, and her bed-chamber cool and properly ventilated. There is not any thing more hurtful to a woman in this situation than being kept too warm. She ought not to have her body bound too tight, nor to rise too soon from bed after delivery; catching cold is also to be avoided; and a proper attention should be paid to cleanliness.

MILK FEVER.—To prevent the milk fever, the breasts ought to be frequently drawn; and if they are filled previous to the onset of a fever, they should, upon its first appearance, be drawn, to prevent the milk from becoming acrid, and its being absorbed in this state. Costiveness is likewise to be avoided. This will be best effected by the use of mild clysters and a laxative diet.

We shall conclude our observations on child-bed women, by recommending it to them, above all things, to beware of cold. Poor women, whose circumstances oblige them to quit their bed too soon, often contract diseases from cold of which they never recover. It is a pity the poor are not better taken care of in this situation. But the better sort of women run the greatest hazard from too much heat. They are generally kept in a sort of bagnio for the first eight or ten days, and then dressed out to see company. The danger of this conduct must be obvious to every one. The

superstitious custom of obliging women to keep the house till they go to church is likewise a very common cause of catching cold. All churches are damp, and most of them cold; consequently they are the very worst places to which a woman can go to make her first visit, after having been confined in a warm room for a month.

CHAP. XI.

OF BARRENNESS.

BARRENNESS may be very properly reckoned among the diseases of females, as few married women, who have not children, enjoy a good state of health. It may proceed from various causes, as high living, grief, relaxation, &c.; but it is chiefly owing to an obstruction or irregularity of the menstrual flux.

It is very certain that high living vitiates the humours, and prevents fecundity. We seldom find a barren woman among the labouring poor, while nothing is more common among the rich and affluent. The inhabitants of every country are prolific in proportion to their poverty; and it would be an easy matter to adduce many instances of women, who, by being reduced to live entirely upon milk and vegetable diet, have conceived and brought forth children, though they never had any before. Would the rich use the same sort of food and exercise as the better sort of peasants, they would seldom have cause to envy their poor vassals and dependants the blessing of a numerous and healthy offspring, while they pine in sorrow for the want of even a single heir to their extensive domains.

Affluence begets indolence, which not only vitiates the humours, but induces a general relaxation of the solids; a state highly unfavourable to procreation. To remove this, we would recommend the following course:—First, sufficient exercise in the open air; secondly, a diet consisting chiefly of milk and vegetables*; thirdly, the use of astringent medicines, as steel, alum, dragon's blood, elixir of vitriol, the Spa or Tunbridge waters, Peruvian bark, &c.; and, lastly, above all, the cold bath.

Barrenness is often the consequence of grief, sudden fear, anxiety, or any of the passions which tend to obstruct the menstrual flux. When barrenness is suspected to proceed from affections of the mind, the person ought to be kept as easy and cheerful as possible; all disagreeable objects are to be avoided, and every method taken to amuse and entertain the fancy.

I believe I have never written, and I hope I never shall write, any thing offensive to real modesty. Yet I have not suppressed, from motives of false delicacy, what I thought might be of import-

* Dr. Cheyne avers, that want of children is oftener the fault of the male than of the female; in this the Doctor and I do not agree; and strongly recommends a milk and vegetable diet to the former as well as the latter; adding, that his friend Dr. Taylor, whom he called the Milk-doctor of Croyden, had brought sundry opulent families in his neighbourhood, who had continued some years after marriage without progeny, to have several fine children, by keeping both parents, for a considerable time, to a milk and vegetable diet.

ance on a subject so closely connected with conjugal happiness. The remarks here made, though few and apparently simple, contain all that is really known, in medical practice, of the causes and remedies of barrenness. I therefore wish to put married ladies on their guard against the fallacy of private suggestions, and of public advertisements on this head. The things commonly advised by silly nurses, as well as the *grand restoratives* of quack impostors, are all of them dangerous stimulants, that provoke desire, but *enfeeble*, instead of strengthening, the powers of nature, and render a weakness, which proper treatment might have removed, absolutely incurable.

CHAP. XII.

DISEASES OF INFANTS.

MISERABLE indeed is the lot of man in the state of infancy! He comes into the world more helpless than any other animal, and stands much longer in need of the protection and care of his parents: but, alas! this care is not always bestowed upon him; and when it is, he often suffers as much from improper management as he would have done from neglect. Hence the officious care of parents, nurses, and midwives, becomes one of the most fruitful sources of the disorders of infants.*

It must be obvious to every attentive person, that the first diseases of infants arise chiefly from their bowels. Nor is this in the least to be wondered at, as they are in a manner poisoned with indigestible drugs and improper diet as soon as they come into the world. Every thing that the stomach cannot digest may be considered as a poison; and unless it can be thrown up, or voided by stool, it must occasion sickness, gripes, spasmodic affections of the bowels, or what the good women call inward fits, and at last convulsions and death.

As these symptoms evidently arise from somewhat that irritates the intestines, doubtless the proper method of cure must be to remove it as soon as possible. The most safe and effectual method of doing this is by gentle vomits. Five or six grains of the powder of ipecacuanha may be mixed in two table-spoonsful of water, and sweetened with a little sugar. A tea-spoonful of this may be given to the infant every quarter of an hour till it operates; or, what will more certainly answer the purpose, a grain of emetic tartar, may be dissolved in three ounces of water, sweetened with a little syrup, and given as above. Those who are unwilling to use

* Of the officious and ill-judged care of midwives, we shall adduce only one instance, viz. the common practice of torturing infants, by squeezing their breasts, to draw off the milk, as they call it. Though a small quantity of moisture is generally found in the breasts of infants, yet, as they are certainly not intended to give suck, this ought never to be drawn off. I have seen this cruel operation bring on hardness, inflammation, and suppuration of the breasts; but never knew any ill consequences from its being omitted. When the breasts are hard, the only application that we would recommend is a soft poultice, or a little of the diachylon plaster, spread thin upon a bit of soft leather, about the size of half a crown, and applied over each nipple. These may be suffered to continue till the hardness disappears.

the emetic tartar, may give six or seven drops of the antimonial wine, in a tea-spoonful of water or thin gruel. Small doses of the ipecacuanha wine will be found more gentle than any of the above, and ought to be preferred.

These medicines will not only cleanse the stomach, but will generally likewise open the body. Should this, however, not happen, and if the child be costive, some gentle purge will be necessary: for this purpose, some manna and pulp of cassia may be dissolved in boiling water, and given in small quantities till it operates; or, what will answer rather better, a few grains of *magnesia alba* may be mixed in any kind of food that is given to the child, and continued till it has the desired effect. If these medicines be properly administered, and the child's belly and limbs frequently rubbed with a warm hand before the fire, they will seldom fail to relieve those affections of the stomach and bowels from which infants suffer so much.

These general directions include most of what can be done for relieving the internal disorders of infants. They will likewise go a considerable way in alleviating those which appear externally, as the rash, *gum*, or *fellon*, &c. These, as was formerly observed, are principally owing to too hot a regimen, and consequently will be most effectually relieved by gentle evacuations. Indeed, evacuations of one kind or other constitute a principal part of the medicine of infants, and will seldom, if administered with prudence, in any of their diseases, fail to give relief.

OF THE MECONIUM.

THE stomach and bowels of a new-born infant are filled with a blackish-coloured matter of the consistence of syrup, commonly called the *meconium*. This is generally passed soon after the birth, by the mere effort of nature; in which case it is not necessary to give the infant any kind of medicine. But if it should be retained, or not sufficiently carried off, a little manna, or *magnesia alba*, may be given, as mentioned above; or, if these should not be at hand, a common spoonful of whey, sweetened with a little honey, or moist sugar, will answer the purpose.

The most proper medicine for expelling the *meconium* is the mother's milk, which is always at first of a purgative quality. Were children allowed to suck as soon as they show an inclination for the breast, they would seldom have occasion for medicines to discharge the *meconium*; but even where this is not allowed, they ought never to have daubs of syrup, oils, and other indigestible stuff, crammed down their throats.

THE APHTHÆ, OR THRUSH.

THE aphthæ are little whitish ulcers affecting the whole inside of the mouth, tongue, throat, and stomach of infants. Sometimes they reach through the whole intestinal canal; in which case they are very dangerous, and often put an end to the infant's life.

If the aphthæ are of a pale colour, pellucid, few in number, soft, superficial, and fall easily off, they are not dangerous; but if opaque, yellow, brown, black, thick, or running together, they ought to be dreaded,

It is generally thought that the aphthæ owe their origin to acrid humours; we have reason, however, to believe, they are more frequently owing to too hot a regimen both of the mother and child. It is a rare thing to find a child who is not dosed with wine, punch, cinnamon-waters, or some other hot and inflaming liquors, almost as soon as it is born. It is well known that these will occasion inflammatory disorders, even in adults; is it any wonder then that they should heat and inflame the tender bodies of infants, and set, as it were, the whole constitution on a blaze?

The most proper medicines for the aphthæ are vomits, such as have been already recommended, and gentle laxatives. Five grains of rhubarb, and half a drachm of *magnesia alba*, may be rubbed together, and divided into six doses, one of which may be given to the infant every four or five hours till they operate. These powders may either be given in the child's food, or a little of the syrup of pale roses, and may be repeated as often as is found necessary to keep the body open. It is common in this case to administer calomel; but as that medicine sometimes occasions gripes, it ought always to be given to infants with caution.

Many things have been recommended for gargling the mouth and throat in this disease; but it is not easy to apply these in very young children; we would therefore recommend it to the nurse to rub the child's mouth frequently with a little borax and honey; or with the following mixture:—Take fine honey an ounce, borax a drachm, burnt alum half a drachm, rose-water two drachms; mix them together. A very proper application in this case is a solution of ten or twelve grains of white vitriol in eight ounces of barley-water. These may be applied with the finger, or by means of a bit of soft rag tied to the end of a probe.

HICCUPS.

SOME infants are much incommoded by hiccups, arising probably, either from acidity in the stomach, or from some nervous irritation. In the former case, a powder composed of a little prepared chalk and rhubarb (about eight grains of the former with two or three of the latter) may prove beneficial. In the latter, it may be proper to give a few drops of the aromatic spirit of ammonia, or the compound tincture of camphor (paregoric.) In some cases, a little plain vinegar has proved an effectual remedy. Where the complaint is severe, or returns frequently, it may be advisable to rub the stomach with soap liniment, to which a little tincture of opium has been added.

OF ACIDITIES.

THE food of children being for the most part of an acescent nature, it readily turns sour upon the stomach, especially if the body be any way disordered. Hence most diseases of children are accompanied with evident signs of acidity, as green stools, gripes, &c. These appearances have induced many to believe, that all the diseases of children were owing to an acid abounding in the stomach and bowels; but whoever considers the matter attentively, will find that these symptoms of acidity are oftener the effect than the cause of their diseases,

Nature evidently intended that the food of children should be acescent; and unless the body be disordered, or the digestion hurt, from some other cause, we will venture to say, that the acescent quality of their food is seldom injurious to them. Acidity, however, is often a symptom of disorders in children; and, as it is sometimes a troublesome one, we shall point out the method of relieving it.

When green stools, gripes, purgings, sour smells, &c., show that the bowels abound with an acid, the child should have a little small broth, with light white bread in it; and should have sufficient exercise, in order to promote the digestion. It has been customary in this case to give the pearl-julep, chalk, crabs' eyes, and other testaceous powders. These, indeed, by their absorbent quality, may correct the acidity; but they are attended with this inconvenience, that they are apt to lodge in the bowels, and occasion costiveness, which may prove very hurtful to the infant. For this reason they should never be given unless mixed with purgative medicines; as rhubarb, manna, or such like.

The best medicine which we know, in all cases of acidity, is that fine insipid powder, called *magnesia alba*. It purges, and at the same time corrects the acidity: by which means it not only removes the disease, but carries off its cause. It may be given in any kind of food, or in a mixture, as recommended in the Appendix.*

When an infant is troubled with gripes, it ought not at first to be dosed with brandy, spiceries, and other hot things; but should have its body opened with an emollient clyster, or the medicine mentioned above; and, at the same time, a little brandy may be rubbed on its belly with a warm hand before the fire. I have seldom seen this fail to ease the gripes of infants. If it should happen, however, not to succeed, a little brandy or other spirits may be mixed with thrice the quantity of warm water, and a tea-spoonful of it given frequently, till the infant be easier. Sometimes a little peppermint-water will answer this purpose as well.†

GALLING AND EXCORIATION.

THESE are very troublesome to children. They happen chiefly about the groin and wrinkles of the neck, under the arms, behind the ears, and in other parts that are moistened by the sweat or urine.

As these complaints are, in a great measure, owing to want of cleanliness, the most effectual means of preventing them are, to wash the parts frequently with cold water, to change the linen often, and, in a word, to keep the child in all respects thoroughly clean. When this is not sufficient, the excoriated parts may be sprinkled with absorbent or drying powders; as burnt hartshorn, tutty, chalk, crabs' claws prepared, and the like. When the parts

* See Appendix, *Laxative absorbent Mixture*.

† Twenty drops of the spirits of hartshorn given in a little linseed-tea immediately relieves children affected by that acidity of the bowels which frequently attends teething. Much of the acidity of the stomachs of children arises from the too free use of fermented bread.

affected are very sore, and tend to a real ulceration, it will be proper to add a little sugar of lead to the powders; or to anoint the place with the camphorated ointment. If the parts be washed with spring-water, in which a little white vitriol has been dissolved, it will dry and heal them very powerfully. One of the best applications for this purpose is to dissolve some fuller's earth in a sufficient quantity of hot water; and after it has stood till it is cold, to rub it gently upon the galled parts once or twice a-day. Or to wash them gently now and then with a mixture of equal parts of rose-water and spirits of wine.

STOPPAGE OF THE NOSE.

THE nostrils of infants are often plugged up with a gross *mucus*, which prevents their breathing freely, and likewise renders it difficult for them to suck or swallow.

Some in this case order, after a suitable purge, two or three grains of white vitriol, dissolved in half an ounce of marjoram water, and filtered, to be applied now and then to the nostrils with a linen-rag. Wedellus says, if two grains of white vitriol, and the same quantity of *elaterium*, be dissolved in half an ounce of marjoram-water, and applied to the nose, as above directed, that it brings away the *mucus* without sneezing.

In obstinate cases these medicines may be tried; but I have never found any thing necessary, besides rubbing the nose at bed-time with a little sweet oil, or fresh butter. This resolves the filth, and renders the breathing more free.*

OF VOMITING.

From the delicate state of children, and the great sensibility of their organs, a vomiting or looseness may be induced by any thing that irritates the nerves of the stomach or intestines. Hence these disorders are much more common in childhood than in the more advanced periods of life. They are seldom, however, dangerous, and ought never to be considered as diseases, unless when they are violent, or continue so long as to exhaust the strength of the patient.

Vomiting may be excited by an over-quantity of food; by food that is of such a nature as to irritate the nerves of the stomach too much; or by the sensibility of the nerves being so much increased as to render them unable to bear the stimulus of even the mildest aliment.

When vomiting is occasioned by too much food, it ought to be promoted, as the cure will depend upon cleansing the stomach. This may be done either by a few grains of ipecacuanha, or a weak solution of emetic tartar, as mentioned before. When it is owing to food of an acrid or irritating quality, the diet ought to be changed, and aliment of a milder nature substituted in its stead.

When vomiting proceeds from an increased degree of sensibility,

* Some nurses remove this complaint by sucking the child's nose. This is by no means a cleanly operation; but when nurses have the resolution to do it, I am far from discouraging the practice.

or too great an irritability of the nerves of the stomach, such medicines as have a tendency to brace and strengthen that organ, and to abate its sensibility, must be used. The first of these intentions may be answered by a slight infusion of the Peruvian bark, with the addition of a little rhubarb and orange-peel; and the second by the saline draughts, to which a few drops of liquid laudanum may occasionally be added.

In obstinate vomitings the operation of internal medicines may be assisted by aromatic fomentations made with wine, applied warm to the pit of the stomach; or the use of the stomach-plaster, with the addition of a little *t'urriaca*.

LOOSENESS. (*Diarrhœa*.)

A LOOSENESS may generally be reckoned salutary, when the stools are sour, slimy, green, or curdled. It is not the discharge, but the production of such stools, which ought to be remedied. Even where the purging is thin and watery, it ought not to be checked too suddenly, as it often proves critical, especially when the child has caught cold, or an eruption on the skin has disappeared. Sometimes an evacuation of this kind succeeds a humid state of the atmosphere, in which case it may also prove of advantage, by carrying off a quantity of watery humours which would otherwise tend to relax the habit.

Diarrhœa may be injurious in different ways. The increased peristaltic motion of so great a tract of sensible muscular substance as the intestinal canal must, like other muscular exertion, weaken the bowels; and thus the whole body sympathises with it. Great debility is often rapidly excited by affections of the intestinal fibres, though there have been few evacuations. Diarrhœa likewise injures the system by the irritation and great secretion which often accompanies it, whether in children or adults; add to this the diminution of the powers of digestion, and the obstacle afforded to the absorption of the due quantity of chyle, together with the derangement which other parts of the system may suffer, and the diseases thus excited, such as convulsions, anasarca, &c.

As the principal intention in the cure of a looseness is to evacuate the offending matter, it is customary to give the patient a gentle vomit of ipecacuanha, and afterwards to exhibit small and frequent doses of rhubarb; interposing absorbent medicines to mitigate the acrimony of the humours. The best purge, however, in this case, is *magnesia alba*. It is at the same time absorbent and laxative, and operates without exciting gripes.

The antimomial wine, which acts both as an emetic and purge, is also an excellent medicine in this case. By being diluted with water, it may be proportioned to the weakest constitution; and, not being disagreeable to the palate, it may be repeated as often as occasion requires. Even one dose will frequently mitigate the disease, and pave the way for the use of absorbents. If, however, the patient's strength will permit, the medicine ought to be repeated every six or eight hours, till the stools begin to assume a more natural appearance; afterwards a longer space may be allowed to intervene between the doses. When it is necessary to repeat the

medicine frequently, the dose ought always to be a little increased, as its efficacy is generally diminished by use.

Some, upon the first appearance of a looseness, fly immediately to the use of absorbent medicines and astringents. If these be administered before the offending humours are discharged, though the disease may appear to be mitigated for a little time, it soon afterwards breaks forth with greater violence, and often proves fatal. After proper evacuations, however, these medicines may be administered with considerable advantage.

Should any gripings or restlessness remain after the stomach and bowels have been cleansed, a tea-spoonful of the syrup of poppies may be given in a little simple cinnamon-water three or four times a-day, till these symptoms have ceased.

CUTANEOUS ERUPTIONS.

CHILDREN, while on the breast, are seldom free from eruptions of one kind or other. These, however, are not often dangerous, and ought never to be dried up but with the greatest caution. They tend to free the bodies of infants from hurtful humours, which, if retained, might produce fatal disorders.

The eruptions of children are chiefly owing to improper food and neglect of cleanliness. If a child be stuffed at all hours with food that its stomach is not able to digest, such food, not being properly assimilated, instead of nourishing the body, fills it with gross humours. These must either break out in form of eruptions upon the skin, or remain in the body, and occasion fevers and other internal disorders. That neglect of cleanliness is a very general cause of eruptive disorders, must be obvious to every one. The children of the poor, and of all who despise cleanliness, are almost constantly found to swarm with vermin, and are generally covered with the scab, itch, and other eruptions.

When eruptions are the effect of improper food, or want of cleanliness, a proper attention to these alone will generally be sufficient to remove them. If this should not be the case, some drying medicines will be necessary. When they are applied, the body ought at the same time to be kept open, and cold is carefully to be avoided. We know no medicine that is more safe for drying up cutaneous eruptions than sulphur, provided it be prudently used. A little of the flowers of sulphur may be mixed with fresh butter, oil, or hog's lard, and the parts affected frequently touched with it.

The most obstinate of all the eruptions incident to children are, the *tinea capitis*, or scabbed head, and chilblains. The scabbed head is often exceedingly difficult to cure, and sometimes, indeed, the cure proves worse than the disease. I have frequently known children seized with internal disorders, of which they died soon after their scabbed heads had been healed by the application of drying medicines.* The cure ought always first to be attempted by

* I some time ago saw a very striking instance of the danger of substituting drying medicines in the place of cleanliness and wholesome food, in the Foundling Hospital at Ackworth, where the children were grievously afflicted with scabbed heads, and other cutaneous disorders. Upon inquiry it was found, that very little attention was paid either to the propriety or soundness of their provisions, and that cleanliness was totally neglected; accordingly it was advised that they should have more wholesome

keeping the head very clean, cutting off the hair, combing and brushing away the scabs, &c. If this is not sufficient, let the head be shaved once a-week, washed daily with yellow soap, and gently anointed with a liniment made of train-oil eight ounces, red precipitate, in fine powder, one drachm. And if there be proud flesh, it should be touched with a bit of blue vitriol, or sprinkled with a little burnt alum. While these things are doing, the patient must be confined to a regular light diet, the body should be kept gently open; and cold, as far as possible, ought to be avoided. To prevent any bad consequences from stopping this discharge, it will be proper, especially in children of a gross habit, to make an issue in the neck or arm, which may be kept open till the patient becomes more strong, and the constitution be somewhat mended.

Chilblains commonly attack children in cold weather. They are generally occasioned by the feet or hands being kept long wet or cold, and afterwards suddenly heated. When children are cold, instead of taking exercise to warm themselves gradually, they run to the fire. This occasions a sudden rarefaction of the humours, and an infarction of the vessels; which being often repeated, the vessels are at last over-distended, and forced to give way.

To prevent it, violent cold and sudden heat must be equally avoided. When the parts begin to look red and swell, the patient ought to be purged, and to have the affected parts frequently rubbed with mustard and brandy, or something of a warming nature. They ought likewise to be covered with flannel, and kept warm and dry. Some apply warm ashes between cloths to the swelled parts, which frequently help to reduce them. When there is a sore, it must be dressed with Turner's cerate, the ointment of tutty, the plaster of cerus, or some other drying ointment. These sores are, indeed, troublesome, but seldom dangerous. They generally heal as soon as the warm weather sets in.

OF THE CROUP.

CHILDREN are often seized very suddenly with this disease, which, if not quickly relieved, proves mortal. It is known by various names in different parts of Britain. On the east coast of Scotland, it is called the *croup*. On the west they call it the *chock* or *stuffing*. In some parts of England, where I have observed it, the good women call it the *rising of the lights*. It seems to be a species of *asthma*, attended with very acute and violent catarrhal symptoms.

This disease generally prevails in cold and wet seasons. It is most common upon the sea-coast, and in low marshy countries. Children of a gross and lax habit are most liable to it. I have sometimes known it hereditary. It generally attacks children in the night, after having been much exposed to damp cold easterly winds through the day. Damp houses, wet feet, thin shoes, wet

food, and be kept thoroughly clean. This advice, however, was not followed. It was too troublesome to the servants and superintendents. The business was to be done by medicine; which was accordingly attempted, but had nearly proved fatal to the whole house. Fevers and other internal disorders, immediately appeared, and at length a putrid dysentery, which proved so infectious, that it carried off a great many of the children and spread over a considerable part of the neighbouring country.

clothes, or any thing that obstructs the perspiration, may occasion the croup.

It is attended with a frequent pulse, quick and laborious breathing, which is performed with a peculiar kind of croaking noise, that may be heard at a considerable distance. The voice is sharp and shrill, and the face is generally much flushed, though sometimes it is of a livid colour.

When a child is seized with the above symptoms, his feet should immediately be put into warm water. He ought likewise to be bled,* and to have a laxative clyster administered as soon as possible. He should be made to breathe over the steams of warm water and vinegar; or an emollient decoction, and emollient cataplasms or fomentations may be applied round his neck. If the symptoms do not abate, a blistering plaster must be applied round the neck, or between the shoulders, and the child may take frequently a table-spoonful of the following julep:—Take penny-royal water, three ounces, syrup of althea and of poppies, each one ounce; mix them together.

Assafoetida† is found to have a good effect in this case. It may be both given in form of clyster, and taken by the mouth. Two drachms of assafoetida may be dissolved in one ounce of Mindererus's spirit, and three ounces of penny-royal water. A table-spoonful of this mixture may be given every hour, or oftener, if the patient's stomach be able to bear it.‡ If the child cannot be brought to take this medicine, two drachms of the assafoetida may be dissolved in a common clyster, and administered every six or eight hours, till the violence of the disease abates.§

Emetics|| have been strongly recommended in croup, whilst others have little faith in their utility. Much benefit may be derived, nevertheless, from their early use. Even in the advanced stage of the disease, emetics do much service, appearing mechanically to remove the lymphatic membrane. Decoctions of senega and preparations of squills have been used to assist the expectoration of the membrane; but, for this purpose, they do not equal emetics.

Calomel would appear to be a powerful remedy in croup, and,

* In this disease bleeding is not always proper; but in very full habits it must certainly be of use.

† Antispasmodics have been trusted to almost exclusively by many; but their exhibition, it would appear, ought to be confined to a different disease, namely, dentition.

‡ We find this formula copied into other works, under the name of Dr. Miller's formula, though we verily believe it to belong originally to this work! Ed.

§ I was lately favoured with a letter from Dr. William Turnbull, in London, a physician of great experience, and who, from his former situation on the north-east coast of England, had many opportunities of observing the symptoms and progress of this dangerous disease. The Doctor's sentiments differ very little from my own: he observes, that he never found blistering of any service; and recommends cataplasms of garlic, camphor, and Venice treacle to be applied both to the throat and soles of the feet. He likewise recommends boluses of camphor, castor, valerian-root, salt of hartshorn, and musk, adapted to the age, strength, &c. of the patient; after which he advises two spoonful of the following decoction:—Take of garlic and distilled vinegar each an ounce, hyssop-water eight ounces; beat up the ingredients together, gradually mixing the water, and adding three ounces of honey. Let the whole be simmered over a gentle fire, and afterwards strained for use.

¶ Take Tartarized Antimony,	2 grains,	Mix them together, and give two tea-
Pure Water,	2 ounces,	spoonful from time to time until vom-
Oxymel of Squill,	½ ounce,	iting is promoted.

if given early, it will frequently save the child. The early detraction of blood, followed by an emetic, and the subsequent use of calomel,* will afford the greatest hope of removing the disease. To an infant of six months, a grain and a half of calomel may be given every hour, until it purge freely; to a child a year old two grains; and to one of two years old, sometimes even four grains are given every hour, until the bowels are acted on, and the child purges freely, or vomits repeatedly. The stools are generally green in colour, and their discharge is usually accompanied with an alleviation of the symptoms. When this is observed, the dose must be repeated less frequently, perhaps only once in two hours for some time, then still seldomer, and finally abandoned. Should the child be greatly weakened, either by the disease or the medicine, the strength must be afterwards carefully supported by nourishment and cordials. Notwithstanding the great quantity of calomel given in this way, salivation is not produced in children.

Dr. James Hamilton, junior, to whom we are chiefly indebted for the introduction of the use of calomel in croup in this country, from the practice of Dr. Rush, is extremely unwilling to bleed children freely in this disease, from its subsequent debilitating effects; and in croup, begins at once with the calomel, after having used the warm bath.

Some children are subject to slight wheezing, continuing for a day or two, with intermissions, and accompanied with a hoarseness, but without fever. Emetics, laxatives, and a large Burgundy-pitch plaster applied to the back, remove the disease.

To prevent a return of the disorder, all those things which occasion it must be carefully avoided; as wet feet, cold, damp, easterly winds, &c. Children who have had frequent returns of this disease, or whose constitutions seem to dispose them to it, ought to have their diet properly regulated; all food that is viscid or hard of digestion, and all crude, raw, trashy fruits are to be avoided. They ought likewise to have a drain constantly kept open in some part of their body, by means of a seton or issue. I have sometimes known a Burgundy-pitch plaster, worn continually between the shoulders for several years, have a very happy effect in preventing the return of this dreadful disorder.

OF TEETHING.

DR. ARBUTHNOT observes, that above a tenth part of infants die in teething, by symptoms proceeding from the irritation of the tender nervous parts of the jaws, occasioning inflammations, fevers, convulsions, gangrenes, &c. These symptoms are in a great measure owing to the great delicacy and exquisite sensibility of the nervous system at this time of life, which is too often increased by an effeminate education. Hence it comes to pass, that children who are delicately brought up always suffer most in teething, and often fall by convulsive disorders.

About the sixth or seventh month the teeth generally begin to make their appearance; first, the *incisores*, or fore-teeth; next, the *canini*, or dog-teeth; and, lastly, the *molars*, or grinders. About

* Take Rhubarb in Powder, 6 grains, Calomel, 2 grains. Make a powder.

the seventh year there comes a new set; and about the twentieth, the two inner grinders, called *dentes sapientiae*, the teeth of wisdom.

Children about the time of cutting their teeth, slaver much, and have generally a looseness. When the teething is difficult, especially when the dog-teeth begin to make their way through the gums, the child has startings in his sleep, tumours of the gums, watchings, gripes, green stools, the thrush, fever, difficult breathing, and convulsions.

Difficult teething requires nearly the same treatment as an inflammatory disease. If the body be bound, it must be opened either by emollient clysters or gentle purgatives; as manna, *magnesia alba*, rhubarb, senna, or the like. The food should be light, and in small quantity; the drink plentiful, but weak and diluting, as infusions of balm, or of the lime-tree flowers; to which about a third or fourth part of milk may be added.

If the fever be high, bleeding will be necessary; but this in very young children ought always to be sparingly performed. It is an evacuation which they bear the worst of any. Purging, vomiting, or sweating, agree much better with them, and are generally more beneficial. Harris, however, observes, that when an inflammation appears, the physician will labour in vain, if the cure be not begun with applying a leech under each ear. If the child be seized with convulsion-fits, a blistering plaster may be applied between the shoulders, or one behind each ear.

Sydenham says, that in fevers occasioned by teething he never found any remedy so effectual as two, three, or four drops of spirits of hartshorn in a spoonful of simple water, or other convenient vehicle, given every four hours. The number of doses may be four, five, or six. I have often prescribed this medicine with success, but always found a larger dose necessary. It may be given from five drops to fifteen or twenty, according to the age of the child, and when costiveness does not forbid it, three or four drops of laudanum may be added to each dose.

In Scotland, it is very common, when children are cutting their teeth, to put a small Burgundy-pitch plaster between their shoulders. This generally eases the tickling cough which attends teething, and is by no means a useless application. When the teeth are cut with difficulty, it ought to be kept on during the whole time of teething. It may be enlarged as occasion requires, and ought to be renewed at least once a fortnight.

Several things have been recommended for rubbing the gums, as oils, mucilages, &c.; but from these much is not to be expected. If any thing of this kind is to be used, we would recommend a little fine honey, which may be rubbed on with the finger three or four times a-day. Children are generally at this time disposed to chew whatever they get into their hands. For this reason they ought never to be without somewhat that will yield a little to the pressure of their gums, as a crust of bread, a wax-candle, a bit of liquorice-root, or such like.

With regard to cutting the gums, we have seldom known it of any great benefit. In obstinate cases, however, it ought to be tried. It may be performed by the finger-nail, the edge of a six-

penny piece* that is worn thin, or any sharp body which can be with safety introduced into the mouth; but the lancet, in a skilful hand, is certainly the most proper.

In order to render the teething less difficult, parents ought to take care that their children's food be light and wholesome, and that their nerves be braced by sufficient exercise without doors, the use of the cold bath, &c. Were these things duly regarded, they would have a much better effect than *teething* (*anodyne*) necklaces, or other nonsensical relics of superstition, worn for that purpose.

Infants, during dentition, are subject to sudden attacks of spasm about the wind-pipe, producing a temporary feeling of suffocation, with a crowing sound; but there is no hoarse cough. It is apt to take place suddenly at night, or when crying. It is cured by giving a combination of tincture of *assafœtida*, and of *hyoscyamus* (henbane,) and using laxatives. The tepid bath is also useful. The gum should be cut; and if there be any tendency to a return, particularly if the child be hot, and the pulse quick, the eye heavy, and the face unusually pale, or flushed, leeches should be applied, and then a blister to the back of the head.

OF THE RICKETS.

This disease generally attacks children between the age of nine months and two years. It appeared first in England about the time when manufactures began to flourish, and still prevails most in towns where the inhabitants follow sedentary employments, by which means they neglect either to take proper exercise themselves, or to give it to their children.

CAUSES.—One cause of the rickets is diseased parents. Mothers of a weak relaxed habit, who neglect exercise, and live upon weak watery diet, can neither be expected to bring forth strong and healthy children, or to be able to nurse them after they are brought forth. Accordingly we find that the children of such women generally die of the rickets, the scrofula, consumptions, or such like diseases. Children begotten by men in the decline of life, who are subject to the gout, the gravel, or other chronic diseases, or who have been often afflicted with the venereal disease in their youth, are likewise very liable to the rickets.

Any disorder that weakens the constitution or relaxes the habit of children, as the small-pox, measles, teething, the whooping-cough, &c. disposes them to this disease. It may likewise be occasioned by improper diet, as food that is either too weak and watery, or so viscid that the stomach cannot digest it.

But nursing is the chief cause of this disease. When the nurse is either diseased, or has not enough milk to nourish the child, it

* Whatever exception may have been taken by Dr. Underwood at the edge of a six-penny piece, (see his *Treatise on the Diseases of children*, vol. i. p. 325.) or others who have quoted him, in performing this operation, it could never be understood that the regular surgeon would have recourse to it instead of his lancet; then, what could be better adapted, in an unskillful hand, than one of the old thin sixpences, or attended with less danger. A lancet, certainly, would accomplish the object better could it be trusted in the hands of every one; this, however, is not the case. ED.

cannot thrive. But children suffer oftener by want of care in nurses than want of food. Allowing an infant to lie or sit too much, or not keeping it thoroughly clean in its clothes, has the most pernicious effects.

The want of free air is likewise very hurtful to children in this respect. When a nurse lives in a close small house, where the air is damp and confined, and is too indolent to carry her child abroad into the open air, it will hardly escape this disease. A healthy child should always be in motion, unless when asleep; if it be suffered to lie or sit, instead of being tossed and dandled about, it will not thrive.

SYMPTOMS.—At the beginning of this disease the child's flesh grows soft and flabby; its strength is diminished; it loses its wonted cheerfulness, looks more grave and composed than is natural for its age, and does not choose to be moved. The head and belly become too large in proportion to the other parts; the face appears full, and the complexion florid. Afterwards the bones begin to be affected, especially in the more soft and spongy parts. Hence the wrists and ankles become thicker than usual; the spine or backbone puts on an unnatural shape; the breast is likewise often deformed, and the bones of the arms and legs grow crooked. All these symptoms vary according to the violence of the disease. The pulse is generally quick, but feeble; the appetite and digestion for the most part bad; the teeth come slowly and with difficulty, and they often rot and fall out afterwards. Ricketty children generally have great acuteness of mind, and an understanding above their years. Whether this is owing to their being more in the company of adults than other children, or to the preternatural enlargement of the brain, is not material.

REGIMEN.—As this disease is always attended with evident signs of weakness and relaxation, our chief aim in the cure must be to brace and strengthen the solids, and to promote digestion and the due preparation of the fluids. These important ends will be best answered by wholesome nourishing diet, suited to the age and strength of the patient, open dry air, and sufficient exercise. If the child has a bad nurse, who either neglects her duty, or does not understand it, she should be changed. If the season be cold, the child ought to be kept warm; and when the weather is hot, it ought to be kept cool; as sweating is apt to weaken it, and too great a degree of cold has the same effect. The limbs should be rubbed frequently with a warm hand, and the child kept as cheerful as possible.

The diet ought to be dry and nourishing, as good bread, roasted flesh, &c. Biscuit is generally reckoned the best bread; and pigeons, pullets, veal, rabbits, or mutton roasted or minced, are the most proper meat. If the child be too young for animal food, he may have rice, millet, or pearl-barley, boiled with raisins, to which may be added a little wine or spice. His drink may be good claret mixed with an equal quantity of water. Those who cannot afford claret, may give the child now and then a wine-glass of mild ale, or good porter.

MEDICINE.—Medicines are here of little avail. The disease may often be cured by the nurse, but seldom by the physician. In children of a gross habit, gentle vomits and repeated purges of rhubarb may sometimes be of use, but they will seldom carry off the disease; that must depend chiefly upon such things as brace and strengthen the system; for which purpose, besides the regimen mentioned above, we would recommend the cold bath, especially in the warm season. It must, however, be used with prudence, as some rickety children cannot bear it. The best time for using the cold bath is in the morning, and the child should be well rubbed with a dry cloth immediately after he comes out of it. If the child should be weakened by the cold bath it must be discontinued.

Sometimes issues have been found beneficial in this disease. They are peculiarly necessary for children who abound with gross humours. An infusion of the Peruvian bark in wine or ale would be of service, were it possible to bring children to take it. We might here mention many other medicines which have been recommended for the rickets; but as there is far more danger in trusting to these than in neglecting them altogether, we choose rather to pass them over, and to recommend a proper regimen as the thing chiefly to be depended on.

OF CONVULSIONS.

THOUGH more children are said to die of convulsions than of any other disease, yet they are for the most part only a symptom of some other malady. Whatever greatly irritates or stimulates the nerves may occasion convulsions. Hence infants, whose nerves are easily affected, are often thrown into convulsions by any thing that irritates the alimentary canal; likewise by teething, strait clothes, the approach of the small-pox, measles, or other eruptive diseases.

When convulsions proceed from an irritation of the stomach or bowels, whatever clears them of their acrid contents, or renders these mild and inoffensive, will generally perform a cure; wherefore, if the child be costive, the best way will be to begin with a clyster, and afterwards to give a gentle vomit, which may be repeated occasionally, and the body in the mean time kept open by gentle doses of *magnesia alba*, or small quantities of rhubarb mixed with the powder of crabs' claws.

Convulsions which precede the eruption of the small-pox or measles generally go off upon these making their appearance. The principal danger in this case arises from the fear and apprehension of those who have the care of the patient. Convulsions are very alarming, and something must be done to appease the affrighted parents, nurses, &c. Hence the unhappy infant often undergoes bleeding, blistering, and several other operations, to the great danger of its life, when a little time, bathing the feet in warm water, and throwing in a mild clyster, would have set all to rights.

When convulsion-fits arise from the cutting of teeth, besides gentle evacuations we would recommend blistering, and the use of antispasmodic medicines, as the tincture of soot, assafœtida, or cas-

tor. A few drops of any of these may be mixed in a cup of white-wine whey, and given occasionally.

When convulsions proceed from any external cause, as the pressure occasioned by strait clothes or bandages, &c. these ought immediately to be removed; though in this case taking away the cause will not always remove the effect, yet it ought to be done. It is not likely that the patient will recover as long as the cause which first gave rise to the disorder continues to act.

When a child is seized with convulsions without having any complaint in the bowels, or symptoms of teething, or any rash or other discharge which has been suddenly dried up, we have reason to conclude that it is a primary disease, and proceeds immediately from the brain. Cases of this kind, however, happen but seldom, which is very fortunate, as little can be done to relieve the unhappy patient. When a disease proceeds from an original fault in the formation or structure of the brain itself we cannot expect that it should yield to medicine. But as this is not always the cause even of convulsions which proceed immediately from the brain, some attempts should be made to remove them. The chief intention to be pursued for this purpose is to make some derivation from the head, by blistering, purging, and the like. Should these fail, issues or setons may be put in the neck, or between the shoulders.

OF WATER IN THE HEAD.

THOUGH water in the head, or a dropsy of the brain, may affect adults as well as children, yet, as the latter are more peculiarly liable to it, we thought it would be most proper to place it among the diseases of infants.

CAUSES.—A dropsy of the brain may proceed from injuries done to the brain itself by falls, blows, or the like; it may likewise proceed from an original laxity or weakness of the brain; from scirrhous tumours or excrescences within the skull; a thin watery state of the blood; a diminished secretion of urine; a sudden check of the perspiration; and, lastly, from tedious and lingering diseases, which waste and consume the patient.

SYMPTOMS.—This disease has at first the appearance of a slow fever; the patient complains of a pain in the crown of his head, or over his eyes; he shuns the light, is sick, and sometimes vomits; his pulse is irregular and generally low; though he seems heavy and dull, yet he does not sleep; he is sometimes delirious, and frequently sees objects double; towards the end of this commonly fatal disease the pulse becomes more frequent, the pupils are generally dilated, the cheeks flushed, the patient becomes comatose, and convulsions ensue.*

MEDICINE.—No medicine has hitherto been found sufficient to carry off a dropsy of the brain. It is laudable, however, to make

*I have lately lost a patient in this disease where a curious *metastasis* seemed to take place. The water at first appeared to be in the abdomen, afterwards in the breast, and last of all it mounted up to the brain, where it soon proved fatal.

some attempts, as time or chance may bring many things to light of which at present we have no idea. The medicines generally used are, purges of rhubarb or jalap, with calomel, and blistering-plasters applied to the neck or back part of the head. To which we would beg leave to add diuretics, or medicines which promote the secretion of urine, such as are recommended in the common dropsy. A discharge from the nose ought likewise to be promoted by causing the patient to snuff the powder of asarum, white hellebore, or the like.*

Some practitioners have of late pretended to cure this disease by the use of mercury. I have not been so happy as to see any instance of a cure being performed in a confirmed dropsy of the brain; but in so desperate a malady every thing deserves a trial.†

To look over the long catalogue of infantile diseases in some medical books, one would be inclined to think that the real design of the authors, though concealed under the show of precision, was to spread alarm through every family. I have had a very different object in view, to quiet the fears of parents, to direct their attention to the proper treatment of their children, and thus to render the use of any medicines almost unnecessary. I have shown the folly of having recourse to physic to bring away the black, viscid, syrup-like substance contained in the intestines of a new-born infant, when the purgative quality of its mother's milk is so admirably suited to that very purpose. The new milk is thin and watery, but acquires every day greater consistence, and thus affords a more solid aliment to the child, as he becomes more capable of digesting it. If the mother does not vitiate by her own improper diet the pure fountains of nourishment and health which nature has kindly given her, the child will neither be troubled with costiveness nor gripes. He will escape those complaints of the stomach which are occasioned by swallowing crude, inflammatory trash, or still more pernicious drugs. The daily use of the cold bath and frequent exercise in the open air will not only preserve him from colds and defluxions, but from all the disorders which are the consequences of relaxation and of nervous irritability. A child brought up in the manner I have recommended will have little to fear even from external contagion.

The firm texture of his skin, like a shield, will almost resist its approach, and the purity of his habit will correct its malignity. The small-pox is the only infectious disease for which I would have him prepare by any particular process, because that process

* When the presence of this disease can be ascertained at a sufficiently early period, I believe much benefit may be derived by taking away blood pretty freely by means of leeches applied near the temples. I lately saw an instance where a child was attacked with every symptom of this disease, by which its parents had previously lost children. Leeches were applied. The puncture made by one of them continued to discharge blood during the whole night; on discovering this accident next morning the parents were much alarmed for the consequences. From that period, however, the child began to recover, and is at present in good health. A. P. B.

† One reason why this disease is seldom or never cured may be, that it is seldom known till too far advanced to admit of remedy. Did parents watch the first symptoms, and call a physician in due time, I am inclined to think that something might be done. But these symptoms are not yet sufficiently known, and are often mistaken even by physicians themselves. Of this I lately saw a striking instance in a patient attended by an eminent practitioner of this city, who had all along mistaken the disease for teething.

is so easy and certain, besides affording a perfect command both of time and circumstances.

(HOOPING COUGH.* See p. 207.)

CHAP. XI.

OBSERVATIONS ON THE MORAL AND PHYSICAL MANAGEMENT OF CHILDREN, DISEASES, &c.

It is during infancy that the foundation of a good or bad constitution is generally laid; it is therefore of importance that parents should be well acquainted with the various causes which may injure the health of their offspring.

It appears from the annual registers of the dead, that almost one half of the children born in Great Britain die under twelve years of age. To many, indeed, this may appear a natural evil; but on due examination it will be found to be one of our own creating. Were the death of infants a natural evil, other animals would be as liable to die young as man; but this we find is by no means the case.

It may seem strange that man, notwithstanding his superior reason, should fall so far short of other animals in the management of his young; but our surprise will soon cease, if we consider that brutes, guided by instinct, never err in this respect; while man, trusting solely to art, is seldom right. Were a catalogue of those infants who perish annually by art alone exhibited to public view, it would astonish most people.

If parents are above taking care of their children, others must be employed for that purpose; these will always endeavour to recommend themselves by the appearance of extraordinary skill and address. By this means such a number of unnecessary and destructive articles have been introduced into the diet, clothing, &c. of infants, that it is no wonder so many of them perish.

Nothing can be more preposterous than a mother who thinks it below her to take care of her own child, or who is so ignorant as not to know what is proper to be done for it. If we search nature throughout, we cannot find a parallel to this. Every other animal is the nurse of its own offspring, and they thrive accordingly. Were the brutes to bring up their young by proxy they would share the same fate with those of the human species.

We mean not, however, to impose it as a task upon every mother to suckle her own child. This, whatever speculative writers may allege, is in some cases impracticable, and would inevitably prove destructive both to the mother and child. Women of delicate constitutions, subject to hysteric fits, or other nervous affections, make very bad nurses;† and these complaints are now so common, that it is rare to find a woman of fashion free from them; such women, therefore, supposing them willing, are often unable to suckle their own children.

* SMALL-POX, MEASLES, WORMS, &c. in the body of the work.

† I have known an hysteric woman kill her child by being seized with a fit in the night

Almost every mother would be in a condition to give suck, did mankind live agreeably to nature; but whoever considers how far many mothers deviate from her dictates, will not be surprised to find some of them unable to perform that necessary office. Mothers who do not eat a sufficient quantity of solid food, nor enjoy the benefit of free air and exercise, can neither have wholesome juices themselves, nor afford proper nourishment to an infant. Hence children who are suckled by delicate women either die young, or continue weak and sickly all their lives.

When we say that mothers are not always in a condition to suckle their own children, we would not be understood as discouraging that practice. Every mother who can, ought certainly to perform so tender and agreeable an office.* But suppose it to be out of her power, she may, nevertheless, be of great service to her child. *The business of nursing is by no means confined to giving suck.* To a woman who abounds with milk, this is the easiest part of it. Numberless other offices are necessary for a child, which the mother ought at least to see done.

A mother who abandons the fruit of her womb as soon as it is born to the sole care of an hireling hardly deserves that name. A child, by being brought up under the mother's eye, not only secures her affection, but may reap all the advantages of a parent's care though it be suckled by another. How can a mother be better employed than in superintending the nursery? This is at once the most delightful and important office; yet the most trivial business or insipid amusements are often preferred to it! A strong proof both of the bad taste and wrong education of modern females.

It is indeed to be regretted that more care is not bestowed in teaching the proper management of children to those whom nature has designed for mothers. This, instead of being made the principal, is seldom considered as any part of female education. Is it any wonder, when females so educated come to be mothers, that they should be quite ignorant of the duties belonging to that character? However strange it may appear, it is certainly true, that many mothers, and those of fashion too, are as ignorant, when they have brought a child into the world, of what is to be done for it, as the infant itself. Indeed the most ignorant of the sex are generally reckoned most knowing in the business of nursing. Hence, sensible people become the dupes of ignorance and superstition; and the nursing of children, instead of being conducted by reason, is the result of whim and caprice.†

* Many advantages would arise to society, as well as to individuals, from mothers suckling their own children. It would prevent the temptation which poor women are laid under of abandoning their children to suckle those of the rich for the sake of gain; by which means society loses many of its most useful members, and mothers become in some sense the murderers of their own offspring. I am sure I speak within the truth when I say, that not one in twenty of those children live who are thus abandoned by their mothers. For this reason no mother should be allowed to suckle another's child till her own is either dead or fit to be weaned. A regulation of this kind would save many lives among the poorer sort, and could do no hurt to the rich, as most women who make good nurses are able to suckle two children in succession upon the same milk.

† Tacitus, the celebrated Roman historian, complains greatly of the degeneracy of the Roman ladies in his time with regard to the care of their offspring. He says, that in former times the greatest women in Rome used to account it their chief glory to keep the house and attend their children; but that now the young infant was com-

Were the time that is generally spent by females in the acquisition of trifling accomplishments employed in learning how to bring up their children; how to dress them so as not to hurt, cramp, or confine their motions; how to feed them with wholesome and nourishing food; how to exercise their tender bodies, so as best to promote their growth and strength: were these made the objects of female instruction, mankind would derive the greatest advantages from it. But while the education of females implies little more than what relates to dress and public show, we have nothing to expect from them but ignorance even in the most important concerns.

Did mothers reflect on their own importance and lay it to heart, they would embrace every opportunity of informing themselves of the duties which they owe to their infant offspring. It is their province, not only to form the body, but also to give the mind its most early bias. They have it very much in their power to make men healthy or valetudinary, useful in life or the pests of society.

But the mother is not the only person concerned in the management of children. The father has an equal interest in their welfare, and ought to assist in every thing that respects either the improvement of the body or mind.

It is a pity that the men should be so inattentive to this matter. Their negligence is one reason why females know so little of it. Women will ever be desirous to excel in such accomplishments as recommend them to the other sex. But men generally keep at such a distance from even the smallest acquaintance with the affairs of the nursery, that many would reckon it an affront were they supposed to know any thing of them. Not so, however, with the kennel or the stables! A gentleman of the first rank is not ashamed to give directions concerning the management of his dogs or horses, yet would blush were he surprised in performing the same office for that being who derived its existence from himself, who is the heir of his fortunes, and the future hope of his country!

Nor have physicians themselves been sufficiently attentive to the management of children. This has been generally considered as the sole province of old women, while men of the first character in physic have refused to visit infants even when sick. Such conduct in the faculty has not only caused this branch of medicine to be neglected, but has also encouraged the other sex to assume an absolute title to prescribe for children in the most dangerous diseases. The consequence is, that a physician is seldom called till the good women have exhausted all their skill; when his attendance can only serve to divide the blame, and appease the disconsolate parents.

Nurses should do all in their power to prevent diseases; but when a child is taken ill, some person of skill ought immediately to be consulted. The diseases of children are generally acute, and the least delay is dangerous.

Were physicians more attentive to the diseases of infants, they

mitted to the sole care of some poor Grecian wench, or other menial servant.—We are afraid, wherever luxury and effeminacy prevail, there will be too much ground for this complaint.

would not only be better qualified to treat them properly when sick, but likewise to give useful directions for their management when well. The diseases of children are by no means so difficult to be understood as many imagine. It is true, children cannot tell their complaints; but the causes of them may be pretty certainly discovered by observing the symptoms, and putting proper questions to the nurses. Besides, the diseases of infants, being less complicated, are easier cured than those of adults.*

It is really astonishing that so little attention should in general be paid to the preservation of infants. What labour and expense are daily bestowed to prop an old tottering carcass for a few years, while thousands of those who might be useful in life perish without being regarded! Mankind are too apt to value things according to their present, not their future usefulness. Though this is of all others the most erroneous method of estimation, yet upon no other principle is it possible to account for the general indifference with respect to the death of infants.

Of Diseased Parents.

ONE great source of the diseases of children is the UNHEALTHINESS OF PARENTS. It would be as reasonable to expect a rich crop from a barren soil, as that strong and healthy children should be born of parents whose constitutions have been worn out with intemperance or disease.

An ingenious writer† observes, that on the constitution of mothers depends originally that of their offspring. No one who believes this will be surprised, on a view of the female world, to find diseases and death so frequent among children. A delicate female, brought up within doors, an utter stranger to exercise and open air, who lives on tea and other slops, may bring a child into the world, but it will hardly be fit to live. The first blast of disease will nip the tender plant in the bud; or should it struggle through a few years' existence, its feeble frame, shaken with convulsions from every trivial cause, will be unable to perform the common functions of life, and prove a burden to society.

If to the delicacy of mothers we add the irregular lives of fathers, we shall see farther cause to believe that children are often hurt by the constitution of their parents. A sickly frame may be originally induced by hardships or intemperance, but chiefly by the latter. It is impossible that a course of vice shall not spoil the best constitution; and, did the evil terminate here, it would be a just punishment for the folly of the sufferer: but when once a disease is contracted and riveted in the habit, it is entailed on posterity. What a dreadful inheritance is the gout, the scurvy, or the king's evil, to transmit to our offspring! How happy had it been for the heir of many a great estate had he been born a beggar, rather than

* The common opinion, that the diseases of infants are hard to discover and difficult to cure, has deterred many physicians, from paying that attention to them which they deserve. I can, however, from experience declare, that this opinion is without foundation; and that the diseases of infants are neither so difficult to discover nor so ill to cure as those of adults.

† Rousseau.

to inherit his father's fortunes at the expense of inheriting his diseases!

A person labouring under any incurable malady ought not to marry. He thereby not only shortens his own life but transmits misery to others; but when both parties are deeply tainted with the scrofula, the scurvy, or the like, the effects must be still worse. If such have any issue they must be miserable indeed. Want of attention to these things in forming connections for life has rooted out more families than plague, famine, or the sword; and as long as these connections are formed from mercenary views the evil will be continued.*

In our matrimonial contracts, it is amazing so little regard is had to the health and form of the object. Our sportsmen know that the generous courser cannot be bred out of the foundered jade, nor the sagacious spaniel out of the snarling cur. This is settled upon immutable laws. The man who marries a woman of a sickly constitution, and descended of unhealthy parents, whatever his views may be, cannot be said to act a prudent part. A diseased woman may prove fertile; should this be the case, the family must become an infirmary: what prospect of happiness the father of such a family has, we shall leave any one to judge.†

Such children as have the misfortune to be born of diseased parents will require to be nursed with greater care than others. This is the only way to make amends for the defects of constitution; and it will often go a great length. A healthy nurse, wholesome air, and sufficient exercise, will do wonders. But when these are neglected, little is to be expected from any other quarter. The defects of constitution cannot be supplied by medicine.

Those who inherit any family-disease ought to be very circumspect in their manner of living. They should consider well the nature of such disease, and guard against it by a proper regimen. It is certain, that family diseases have often, by proper care, been kept off for one generation; and there is reason to believe, that, by persisting in the same course, such diseases might at length be wholly eradicated. This is a subject very little regarded, though of the greatest importance. Family-constitutions are as capable of improvement as family-estates; and the libertine who impairs the one does greater injury to his posterity than the prodigal who squanders the other.

Clothing of Children.

THE clothing of an infant is so simple a matter, that it is surprising how any person should err in it; yet many children lose their lives, and others are deformed by inattention to this article.

Nature knows of no use of clothes to an infant, but to keep it warm. All that is necessary for this purpose is to wrap it in a

* The Lacedemonians condemned their king, Archidamus, for having married a weak, puny woman; because, said they, instead of propagating a race of heroes, you will fill the throne with a progeny of changelings.

† The Jews, by their laws, were, in certain cases, forbid to have any manner of commerce with the diseased; and, to this all wise legislators ought to have a special regard. In some countries diseased persons have actually been forbid to marry. This is an evil of a complicated kind, a natural deformity, and a political mischief; and therefore requires a public consideration.

soft loose covering. Were a mother left to the dictates of nature alone, she would certainly pursue this course. But the business of dressing an infant has long been out of the hands of mothers, and has at last become a secret which none but adepts pretend to understand.

From the most early ages it has been thought necessary, that a woman in labour should have some person to attend her. This in time became a business; and, as in all others, those who were employed in it strove to outdo one another in the different branches of their profession. The dressing of a child came of course to be considered as the midwife's province; who, no doubt, imagined, that the more dexterity she could show in this article the more her skill should be admired. Her attempts were seconded by the vanity of parents, who, too often desirous of making a show of the infant as soon as it was born, were ambitious to have as much finery heaped upon it as possible. Thus it came to be thought as necessary for a midwife to excel in bracing and dressing an infant as for a surgeon to be expert in applying bandages to a broken limb; and the poor child, as soon as it came into the world, had as many rollers and wrappers applied to its body as if every bone had been fractured in the birth; while these were often so tight, as not only to gall and wound its tender frame, but even to obstruct the motion of the heart, lungs, and other organs necessary to life.

In most parts of Britain, the practice of rolling children with so many bandages is now, in some measure, laid aside; but it would still be a difficult task to persuade the generality of mankind that the shape of an infant does not entirely depend on the care of the midwife. So far, however, are all her endeavours to mend the shape from being successful, that they constantly operate the contrary way, and mankind become deformed in proportion to the means used to prevent it. How little deformity of body is to be found among uncivilized nations! So little, indeed, that it is vulgarly believed they put all their deformed children to death. The truth is, they hardly know such a thing as a deformed child. Neither should we, if we followed their example. Savage nations never think of managing their children. They allow them the full use of every organ, carry them abroad in the open air, wash their bodies daily in cold water, &c. By this management their children become so strong and hardy, that by the time our puny infants get out of the nurse's arms, theirs are able to shift for themselves.*

Among brute animals, no art is necessary to procure a fine shape. Though many of them are extremely delicate when they come into the world, yet we never find them grow crooked for want of swaddling-bands. Is nature less generous to the human kind? No: but we take the business out of nature's hands.

Not only the analogy of other animals, but the very feelings of infants tell us, they ought to be kept easy and free from pressure. They cannot, indeed, tell their complaints, but they can show signs of pain; and this they never fail to do by crying when hurt by

* A friend of mine, who was several years on the coast of Africa, tells me, that the natives neither put any clothes upon their children, nor apply to their bodies bandages of any kind, but lay them on a pallet, and suffer them to tumble about at pleasure; yet they are all straight, and seldom have any disease.

their clothes. No sooner are they freed from their bracings than they seem pleased and happy; yet, strange infatuation! the moment they hold their peace they are again committed to their chains.

If we consider the body of an infant as a bundle of soft pipes, replenished with fluids in continual motion, the danger of pressure will appear in the strongest light. Nature, in order to make way for the growth of the children, has formed their bodies soft and flexible; and lest they should receive any injury from pressure in the womb, has surrounded the *fœtus* everywhere with fluids. This shows the care which nature takes to prevent all unequal pressure on the bodies of infants, and to defend them against every thing that might in the least cramp or confine their motions.

Even the bones of an infant are so soft and cartilaginous that they readily yield to the slightest pressure, and easily assume a bad shape, which can never after be remedied. Hence it is that so many people appear with high shoulders, crooked spines, and flat breasts, who were as well-proportioned at their births as others, but who had the misfortune to be squeezed out of shape by the application of stays and bandages.

Pressure, by obstructing the circulation, likewise prevents the equal distribution of nourishment to the different parts of the body, by which means the growth becomes unequal. One part grows too large, while another remains too small; and thus in time the whole frame becomes disproportioned and misshapen. To this we must add, that when a child is cramped in its clothes it naturally shrinks from the part that is hurt; and by putting its body into unnatural postures, it becomes deformed by habit.

Deformity of body may, indeed, proceed from weakness or disease; but, in general, it is the effect of improper clothing. Nineteenths, at least, of the deformity among mankind must be imputed to this cause. A deformed body is not only disagreeable to the eye, but by a bad figure both the animal and vital functions must be impeded, and of course health impaired. Hence few people remarkably misshapen are strong or healthy.

The new motions which commence at the birth, as the circulation of the whole mass of blood through the lungs, respiration, the peristaltic motion, &c. afford another strong argument for keeping the body of an infant free from all pressure. These organs, not having been accustomed to move, are easily stopped; but when this happens, death must ensue. Hardly any method could be devised more effectually to stop these motions than bracing the body too tight with rollers* and bandages. Were these to be applied in the same manner to the body of an adult for an equal length of time, they would hardly fail to hurt the digestion and make him sick. How much more hurtful they must prove to the tender bodies of infants, we shall leave any one to judge.

Whoever considers these things will not be surprised that so many children die of convulsions soon after the birth. These fits are generally attributed to some inward cause; but in fact they

* This is by no means inveighing against a thing that does not happen. In many parts of Britain at this day, a roller, eight or ten feet in length, is applied tightly round the child's body as soon as it is born.

oftener proceed from our own imprudent conduct. I have known a child seized with convulsion-fits soon after the midwife had done swaddling it, who, upon taking off the rollers and bandages, was immediately relieved, and never had the disease afterwards. Numerous examples of this might be given were they necessary.

It would be safer to fasten the clothes of an infant with strings than pins, as they often gall and irritate their tender skins, and occasion disorders. Pins have been found sticking above half an inch into the body of a child after it had died of convulsion-fits, which in all probability proceeded from that cause.

Children are not only hurt by the tightness of their clothes, but also by the quantity. Every child has some degree of fever after the birth; and if it be loaded with too many clothes the fever must be increased. But this is not all; the child is generally laid in bed with the mother, who is often likewise feverish; to which we may add the heat of the bed-chamber, the wines and other heating things too frequently given to children immediately after birth. When all these are combined, which does not seldom happen, they must increase the fever to such a degree as will endanger the life of the infant.

The danger of keeping infants too hot will further appear, if we consider that, after they have been for some time in the situation mentioned above, they are often sent into the country to be nursed in a cold house. Is it any wonder if a child, from such a transition, catches a mortal cold, or contracts some other fatal disease? When an infant is kept too hot, its lungs, not being sufficiently expanded, are apt to remain weak and flaccid for life; hence proceed coughs, consumptions, and other diseases of the breast.

It would answer little purpose to specify the particular species of dress proper for an infant. These will always vary in different countries, according to custom and the humour of parents. The great rule to be observed is, *That a child have no more clothes than are necessary to keep it warm, and that they be quite easy for its body.*

Stays are the very bane of infants. A volume would not suffice to point out all the bad effects of this ridiculous piece of dress, both on children and adults. The madness in favour of stays, seems, however, to be somewhat abated; and it is to be hoped the world will, in time, become wise enough to know, that the human shape does not solely depend upon whalebone and bend leather.*

I shall only add with respect to the clothes of children, that they ought to be kept thoroughly clean. Children perspire more than adults, and if their clothes be not frequently changed, they become very hurtful. Dirty clothes not only gall and fret the tender skins of infants, but likewise occasion ill smells, and, what is worse, tend to produce vermin and cutaneous diseases.

Cleanliness is not only agreeable to the eye, but tends greatly to

* Stays, made of bend leather, are worn by all the women of lower station in many parts of England.

I am sorry to understand, that there are still mothers mad enough to lace their daughters very tight in order to improve their shape. As reasoning would be totally lost upon such people, I shall beg leave just to ask them, Why there are ten deformed women for one man? and likewise to recommend to their perusal a short moral precept, which forbids us to deform the human body.

preserve the health of children. It promotes the perspiration, and, by that means, frees the body from superfluous humours, which, if retained, could not fail to occasion diseases. No mother or nurse can have any excuse for allowing a child to be dirty. Poverty may oblige her to give it coarse clothes; but if she does not keep them clean, it must be her own fault.

Of the Food of Children.

Nature not only points out the food proper for an infant, but actually prepares it. This, however, is not sufficient to prevent some who think themselves wiser than nature from attempting to bring up their children without her provision. Nothing can show the disposition which mankind have to depart from nature more than their endeavouring to bring up children without the breast. The mother's milk, or that of a healthy nurse, is unquestionably the best food for an infant. Neither art nor nature can afford a proper substitute for it. Children may seem to thrive for a few months without the breast; but when teething, the small-pox, and other diseases incident to childhood come on, they generally perish.

A child, soon after the birth, shows an inclination to suck; and there is no reason why it should not be gratified. It is true, the mother's milk does not always come immediately after the birth; but this is the way to bring it; besides, the first milk that the child can squeeze out of the breast answers the purpose of cleansing better than all the drugs in the apothecary's shop, and at the same time prevents inflammations of the breast, fevers, and other diseases incident to mothers.

It is strange how people came to think that the first thing given to a child should be drugs. This is beginning with medicine betimes, and no wonder if they generally end with it. It sometimes happens, indeed, that a child does not discharge the *meconium* so soon as could be wished; this has induced physicians, in such cases, to give something of an opening nature to cleanse the first passages. Midwives have improved upon this hint, and never fail to give syrups, oils, &c. whether they be necessary or not. Cramping an infant with such indigestible stuff as soon as it is born can hardly fail to make it sick, and is more likely to occasion diseases than to prevent them. Children are seldom long after the birth without having passage both by stool and urine; though these evacuations may be wanting for some time without any danger. But if children must have something before they be allowed the breast, let it be a little thin water pap, to which may be added an equal quantity of new milk, or rather water alone, with the addition of a little moist sugar. If this be given without any wine or spices it will neither heat the blood, load the stomach, nor occasion gripes.

Upon the first sight of an infant, almost every person is struck with the idea of its being weak, feeble, and wanting support. This naturally suggests the need of cordials. Accordingly wines are universally mixed with the first food of children. Nothing can be more fallacious than this way of reasoning, or more hurtful to infants than the conduct founded upon it. Children require very lit-

the food for some time after the birth, and what they receive should be thin, weak, light, and of a cooling quality. A very small quantity of wine is sufficient to heat and inflame the blood of an infant; but every person conversant in these matters must know, that most of the diseases of infants proceed from the heat of their humours.

If the mother or nurse has enough of milk, the child will need little or no other food for the third or fourth month. It will then be proper to give it, once or twice a-day, a little of some food that is easy of digestion, as water-pap, milk-pottage, weak broth with bread in it, and such like. This will ease the mother, will accustom the child by degrees to take food, and will render the weaning both less difficult and less dangerous. All great and sudden transitions are to be avoided in nursing. For this purpose the food of children ought not only to be simple, but to resemble, as nearly as possible, the properties of milk. Indeed, milk itself should make a principal part of their food, not only before they are weaned but for some time after.

Next to milk, we would recommend good light bread. Bread may be given to a child as soon as it shows an inclination to chew; and it may at all times be allowed as much plain bread as it will eat. The very chewing of bread will promote the cutting of the teeth, and the discharge of saliva, while, by mixing with the nurse's milk in the stomach, it will afford an excellent nourishment. Children discover an early inclination to chew whatever is put into their hands. Parents observe the inclination, but generally mistake the object. Instead of giving the child something which may at once exercise its gums and afford it nourishment, they commonly put into its hands a piece of hard metal, or impenetrable coral. A crust of bread is the best gum-stick. It not only answers the purpose better than any thing else, but has the additional properties of nourishing the child, and carrying the saliva down into the stomach, which is too valuable a liquor to be lost.

Bread, besides being used dry, may be many ways prepared into food for children. One of the best methods is to boil it in water, afterwards pouring the water off, and mixing with the bread a proper quantity of new milk unboiled. Milk is both more wholesome and nourishing this way than boiled, and is less apt to occasion costiveness. For a child farther advanced, bread may be mixed in veal or chicken broth, made into puddings, or the like. Bread is a proper food for children at all times, provided it be plain, made of wholesome grain, and well fermented; but when enriched with fruits, sugars, or such things, it becomes very unwholesome.

It is soon enough to allow children animal food when they have got teeth to eat it. They should never taste it till after they are weaned, and even then they ought to use it sparingly. Indeed, when children live wholly on vegetable food, it is apt to sour on their stomachs; but, on the other hand, too much flesh heats the body, and occasions fevers and other inflammatory diseases. This plainly points out a due mixture of animal and vegetable food as most proper for children.

Few things prove more hurtful to infants than the common

method of sweetening their food. It entices them to take more than they ought to do, which makes them grow fat and bloated. It is pretty certain, if the food of children were quite plain, that they would never take more than enough. Their excesses are entirely owing to nurses. If a child be gorged with food at all hours, and enticed to take it, by making it sweet and agreeable to the palate, is it any wonder that such a child should in time be induced to crave more food than it ought to have?

Children may be hurt by too little as well as by too much food. After a child is weaned it ought to be fed four or five times a-day; but should never be accustomed to eat in the night; neither should it have too much at a time. Children thrive best with small quantities of food frequently given. This neither overloads the stomach nor hurts the digestion, and is certainly most agreeable to nature.

Writers on nursing have inveighed with such vehemence against giving children too much food, that many parents, by endeavouring to shun that error, have run into the opposite extreme, and ruined the constitutions of their children. But the error of pinching children in their food is more hurtful than the other extreme. Nature has many ways of relieving herself when overcharged; but a child who is pinched with hunger will never become a strong or a healthy man. That errors are frequently committed on both sides we are ready to acknowledge; but where one child is hurt by the quantity of its food, ten suffer from the quality. This is the principal evil, and claims our strictest attention.

Many people imagine, that the food which they themselves love cannot be bad for their children; but this notion is very absurd. In the more advanced periods of life we often acquire an inclination for food which when children we could not endure. Besides, there are many things that by habit may agree very well with the stomach of a grown person, which would be hurtful to a child; as high-seasoned, salted, and smoke-dried provisions, &c. It would also be improper to feed children with fat meat, strong broths, rich soups, or the like.

All strong liquors are hurtful to children. Some parents teach their children to guzzle ale, and other fermented liquors, at every meal. Such a practice cannot fail to do mischief. These children seldom escape the violence of the small-pox, measles, whooping-cough, or some inflammatory disorder. Milk, water, butter-milk, or whey, are the most proper for children to drink. If they have any thing stronger, it may be fine small beer, or a little wine mixed with water. The stomachs of children can digest well enough without the assistance of warm stimulants; besides, being naturally hot, they are easily hurt by every thing of a heating quality.

Few things are more hurtful to children than unripe fruits. They weaken the powers of digestion, and sour and relax the stomach, by which means it becomes a proper nest for insects. Children, indeed, show a great inclination for fruit, and I am apt to believe, that if good ripe fruit were allowed them in proper quantity it would have no bad effects. We never find a natural inclination wrong if properly regulated. Fruits are generally of a cooling nature, and correct the heat and acrimony of the humours. This is what most children require; only care should be

taken lest they exceed. Indeed the best way to prevent children from going to excess in the use of fruit, or eating that which is bad, is to allow them a proper quantity of what is good.*

Roots which contain a crude viscid juice should be sparingly given to children. They fill the body with gross humours, and tend to produce eruptive diseases; this caution is peculiarly necessary for the poor. Glad to obtain, at a small price, what will fill the bellies of their children, they stuff them too or three times a day with crude vegetables. Children had better eat a smaller quantity of food which yields a wholesome nourishment, than be crammed with what their digestive powers are unable properly to assimilate.

Butter ought likewise to be sparingly given to children. It both relaxes the stomach, and produces gross humours. Indeed, most things that are fat or oily have this effect. Butter when salted becomes still more hurtful. Instead of butter, so liberally given to children in most parts of Britain, we would recommend honey. Children who eat honey are seldom troubled with worms; they are also less subject to cutaneous diseases, as itch, scabbed head, &c.

Many people err in thinking that the diet of children ought to be altogether moist. When children live entirely upon slops, it relaxes their solids, renders them weak, and disposes them to the rickets, the scrofula, and other glandular disorders. Relaxation is one of the most general causes of the diseases of children. Every thing, therefore, which tends to unbrace their solids ought to be carefully avoided.

We would not be understood by these observations as confining children to any particular kind of food. Their diet may be frequently varied, provided always that sufficient regard be had to simplicity.

Exercise of Children.

Of all the causes which conspire to render the life of man short and miserable, none has greater influence than the want of proper EXERCISE: healthy parents, wholesome food, and proper clothing, will avail little, where exercise is neglected. Sufficient exercise will make up for several defects in nursing: but nothing can supply the want of it. It is absolutely necessary to the health, the growth, and the strength of children.

The desire of exercise is coeval with life itself. Were this principle attended to, many diseases might be prevented. But, while indolence and sedentary employments prevent two-thirds of mankind from either taking sufficient exercise themselves, or giving it to their children, what have we to expect but diseases and deformity among their offspring? The rickets, so destructive to children,

* Children are always sickly in the fruit season, which may be thus accounted for:—Two-thirds of the fruit which comes to market in this country is really unripe; and children, not being in a condition to judge for themselves, eat whatever they can lay their hands upon, which often proves little better than a poison to their tender bowels. Servants, and others who have the care of children, should be strictly forbidden to give them any fruit without the knowledge of their parents.

never appeared in Britain till manufactures began to flourish, and people, attracted by the love of gain, left the country to follow sedentary employments in great towns. It is amongst these people that this disease chiefly prevails, and not only deforms but kills many of their offspring.

The conduct of other young animals shows the propriety of giving exercise to children. Every other animal makes use of its organs of motion as soon as it can; and many of them, even when under no necessity of moving in quest of food, cannot be restrained without force. This is evidently the case with the calf, the lamb, and most other young animals. If these creatures were not permitted to frisk about and take exercise, they would soon die or become diseased. The same inclination appears very early in the human species; but as they are not able to take exercise themselves, it is the business of their parents and nurses to assist them.

Children may be exercised various ways. The best method, while they are light, is to carry them about in the nurse's arms.* This gives the nurse an opportunity of talking to the child, and of pointing out every thing that may please and delight its fancy. Besides, it is much safer than swinging an infant in a machine, or leaving it to the care of such as are not fit to take care of themselves. Nothing can be more absurd than to set one child to keep another; this conduct has proved fatal to many infants, and has rendered others miserable for life.

When children begin to walk, the safest and best method of leading them about is by the hands. The common way, of swinging them in leading-strings fixed to their backs, has several bad consequences. It makes them throw their bodies forward, and press with their whole weight upon their stomach and breast; by this means the breathing is obstructed, the breast flattened, and the bowels compressed; which must hurt the digestion, and occasion consumptions of the lungs, and other diseases.

It is a common notion, that if children are set upon their feet too soon, their legs will become crooked. There is reason to believe that the very reverse of this is true. Every member acquires strength in proportion as it is exercised. The limbs of children are weak indeed, but their bodies are proportionably light; and had they skill to direct themselves, they would soon be able to support their own weight. Who ever heard of any other animal that became crooked by using its legs too soon? Indeed, if a child be not permitted to make any use of its legs till a considerable time after its birth, and be then set upon them with its whole weight at once, there may be some danger; but this proceeds entirely from the child's not having been accustomed to use its legs from the beginning.

Mothers of the poorer sort think they are great gainers by making their children lie or sit while they themselves work. In this they are greatly mistaken. By neglecting to give their children exercise, they are obliged to keep them a long time before they

* The nurse ought to be careful to keep the child in a proper position; as deformity is often the consequence of inattention to this circumstance. Its situation ought also to be frequently changed. I have known a child's legs bent all on one side, by the nurse carrying it constantly on one arm.

can do any thing for themselves, and to spend more on medicine than would have paid for proper care.

To take care of their children is the most useful business in which even the poor can be employed: but, alas! it is not always in their power. Poverty often obliges them to neglect their offspring in order to procure the necessaries of life. When this is the case, it becomes the interest as well as the duty of the public to assist them. Ten thousand times more benefit would accrue to the state by enabling the poor to bring up their own children, than from all the hospitals* that ever can be erected for that purpose.

Whoever considers the structure of the human body will soon be convinced of the necessity of exercise for the health of children. The body is composed of an infinite number of tubes, whose fluids cannot be pushed on without the action and pressure of the muscles. But, if the fluids remain inactive, obstructions must happen, and the humours will of course be vitiated, which cannot fail to occasion diseases. Nature has furnished both the vessels which carry the blood and lymph with numerous valves, in order that the action of every muscle might push forward their contents; but without action, this admirable contrivance can have no effect. This part of the animal economy proves to a demonstration the necessity of exercise for the preservation of health.

Arguments to show the importance of exercise might be drawn from every part of the animal economy; without exercise the circulation of the blood cannot be properly carried on, nor the different secretions duly performed; without exercise, the fluids cannot be properly prepared, nor the solids rendered strong or firm. The action of the heart, the motion of the lungs, and all the vital functions, are greatly assisted by exercise. But to point out the manner in which these effects are produced would lead us farther into the economy of the human body than most of those for whom this treatise is intended would be able to follow. We shall therefore only add, that when exercise is neglected, none of the animal functions can be duly performed; and when this is the case, the whole constitution must go to wreck.

A good constitution ought certainly to be our first object in the management of children. It lays a foundation for their being useful and happy in life; and whoever neglects it, not only fails in his duty to his offspring, but to society.

One very common error of parents, by which they hurt the constitutions of their children, is the sending them too young to school. This is often done solely to prevent trouble. When the child is at school, he needs no keeper. Thus the school-master is made the nurse; and the poor child is fixed to a seat seven or eight hours a-day, which time ought to be spent in exercise and diversions. Sitting so long cannot fail to produce the worst effects up-

* If it were made the interest of the poor to keep their children alive, we should lose very few of them. A small premium given annually to each poor family, for every child they have alive at the year's end, would save more infant lives than if the whole revenue of the crown were expended on hospitals for this purpose. This would make the poor esteem fertility a blessing; whereas many of them think it the greatest curse that can befall them; and in place of wishing their children to live, so far does poverty get the better of natural affection, that they are often very happy when they die.

on the body; nor is the mind less injured. Early application weakens the faculties, and often fixes in the mind an aversion to books which continues for life.*

But suppose this were the way to make children scholars, it certainly ought not to be done at the expense of their constitutions. Our ancestors, who seldom went to school very young, were not less learned than we. But we imagine the boy's education will be quite marred, unless he be carried to school in his nurse's arms. No wonder that such hot-bed plants seldom become either scholars or men!

Not only the confinement of children in public schools, but their number often proves hurtful. Children are much injured by being kept in crowds within doors; their breathing not only renders the place unwholesome, but if any one of them happen to be diseased, the rest catch the infection. A single child has been often known to communicate the bloody flux, the whooping-cough, the itch, or other diseases, to almost every individual in a numerous school.

But, if fashion must prevail, and infants are to be sent to school, we would recommend it to teachers, as they value the interests of society, not to confine them too long at a time, but allow them to run about and play at such active diversions as may promote their growth, and strengthen their constitutions. Were boys, instead of being whipped for stealing an hour to run, ride, swim, or the like, encouraged to employ a proper part of their time in these manly and useful exercises, it would have many excellent effects.

It would be of great service to boys, if, at a proper age, they were taught the military exercise. This would increase their strength, inspire them with courage, and when their country called for their assistance, would enable them to act in her defence, without being obliged to undergo a tedious and troublesome course of instructions, at a time when they are less fit to learn new motions, gestures, &c.†

An effeminate education will infallibly spoil the best natural constitution; and if boys are brought up in a more delicate manner than even girls ought to be, they will never be men.

Nor is the common education of girls less hurtful to the constitution than that of boys. Miss is set down to her frame before she can put on her own clothes; and is taught to believe, that to excel at the needle is the only thing that can entitle her to general esteem. It is unnecessary here to insist upon the dangerous consequences of obliging girls to sit too much. They are pretty well known, and are too often felt at a certain time of life. But supposing this critical period to be got over, greater dangers still wait

* It is undoubtedly the duty of parents to instruct their children, at least till they are of an age proper to take some care of themselves. This would tend much to confirm the ties of paternal tenderness and filial affection, of the want of which there are at present so many deplorable instances. Though few fathers have time to instruct their children, yet most mothers have; and surely they cannot be better employed.

† I am happy to find that the masters of academies now begin to put in practice this advice. Each of them ought to keep a drill-serjeant for teaching the boys the military exercise. This, besides contributing to their health and vigour of body, would have many other happy effects.

[Gymnastic exercises are becoming justly popular, and their superiority over the warlike needs not to be told to Americans. Am. Ed.]

them when they come to be mothers. Women who have been early accustomed to a sedentary life, generally run great hazard in child-bed; while those who have been used to romp about, and take sufficient exercise, are seldom in any danger.

One hardly meets with a girl who can at the same time boast of early performances by the needle, and a good constitution. Close and early confinement generally occasions indigestions, headaches, pale complexions, pain of the stomach, loss of appetite, coughs, consumptions of the lungs, and deformity of body. The last of these, indeed, is not to be wondered at, considering the awkward postures in which girls sit at many kinds of needlework, and the delicate flexible state of their bodies in the early periods of life.

Would mothers, instead of having their daughters instructed in many trifling accomplishments, employ them in plain work and housewifery, and allow them sufficient exercise in the open air, they would both make them more healthy mothers, and more useful members of society. I am no enemy to genteel accomplishments, but would have them only considered as secondary, and always disregarded when they impair health.

Many people imagine it a great advantage for children to be early taught to earn their bread. This opinion is certainly right, provided they were so employed as not to hurt their health or growth; but, when these suffer, society, instead of being benefited, is a real loser by their labour. There are few employments, except sedentary ones, by which children can earn a livelihood; and if they be set to these too soon, it ruins their constitutions. Thus, by gaining a few years from childhood, we generally lose twice as many in the latter period of life, and even render the person less useful while he does live.

In order to be satisfied of the truth of this observation, we need only look into the great manufacturing towns, where we shall find a puny degenerate race of people, weak and sickly all their lives, seldom exceeding the middle period of life; or if they do, being unfit for business, they become a burden to society. Thus arts and manufactures, though they may increase the riches of a country, are by no means favourable to the health of its inhabitants. Good policy would therefore require, that such people as labour during life should not be set too early to work. Every person conversant in the breed of horses, or other working animals, knows, that if they be set to hard labour too soon, they will never turn out to advantage. This is equally true with respect to the human species.

There are, nevertheless, various ways of employing young people, without hurting their health. The easier parts of gardening, husbandry, or any business carried on without doors, are most proper. These are employments which most young people are fond of, and some parts of them may be always adapted to their age, taste, and strength.*

Such parents, however, as are under the necessity of employing their children within doors, ought to allow them sufficient time for

* I have been told that in China, where the police is the best in the world, all the children are employed in the easier part of gardening and husbandry; as weeding, gathering stones off the land, and such like.

active diversions without. This would both encourage them to do more work, and prevent their constitutions from being hurt.

Some imagine that exercise within doors is sufficient; but they are generally mistaken. One hour spent in running, or any other exercise without doors, is worth ten within. When children cannot go abroad, they may indeed be exercised at home. The best method of doing this, is to make them run about in a large room, or dance. This last kind of exercise, if not carried to excess, is of excellent service to young people. It cheers the spirits, promotes perspiration, strengthens the limbs, &c. I knew an eminent physician who used to say, that he made his children dance, instead of giving them physic. It were well if more people followed his example.

The cold bath may be considered as an aid to exercise. By it the body is braced and strengthened, the circulation and secretions promoted, and, were it conducted with prudence, many diseases, as rickets, scrofula, &c. might thereby be prevented. The ancients, who took every method to render children hardy and robust, were no strangers to the use of the cold bath; and, if we may credit report, the practice of immersing children daily in cold water must have been very common among our ancestors.

The greatest objection to the use of the cold bath arises from the superstitious prejudices of nurses. These are often so strong, that it is impossible to bring them to make a proper use of it. I have known some of them who would not dry a child's skin after bathing it, lest it should destroy the effect of the water. Others will even put cloths dipt in the water upon the child, and either put it to bed, or suffer it to go about in that condition. Some believe, that the whole virtue of the water depends upon its being dedicated to a particular saint; while others place their confidence in a certain number of dips, as three, seven, nine, or the like; and the world could not persuade them, if these do not succeed, to try it a little longer. Thus by the whims of nurses, children lose the benefit of the cold bath, and the hopes of the physician from that remedy are often frustrated.

We ought not, however, entirely to set aside the cold bath, because some nurses make a wrong use of it. Every child, when in health, should at least have its extremities daily washed in cold water. This is a partial use of the cold bath, and is better than none. In winter this may suffice; but in the warm season, if a child be relaxed, or seem to have a tendency to the rickets or scrofula, its whole body ought to be frequently immersed in cold water. Care, however, must be taken not to do this when the body is hot, or the stomach full. The child should be dipped only once at a time, should be taken out immediately, and have its skin well rubbed with a dry cloth.

The bad Effects of unwholesome Air upon Children.

FEW things prove more destructive to children than confined or unwholesome air. This is one reason why so few of those infants who are put into hospitals, or parish-workhouses, live. These places are generally crowded with old, sickly, and infirm people;

by which means the air is rendered so extremely pernicious, that it becomes a poison to infants.

Want of wholesome air is likewise destructive to many of the children born in great towns. There the poorer sort of inhabitants live in low, dirty, confined houses, to which the fresh air has scarcely any access. Though grown people, who are hardy and robust, may live in such situations, yet they generally prove fatal to their offspring, few of whom arrive at maturity, and those who do are weak and deformed. As such people are not in a condition to carry their children abroad into the open air, we must lay our account with losing the greater part of them. But the rich have not this excuse. It is their business to see that their children be daily carried abroad, and that they be kept in the open air for a sufficient time. This will always succeed better if the mother goes along with them. Servants are often negligent in these matters, and allow a child to sit or lie on the damp ground, instead of leading or carrying it about. The mother surely needs air as well as her children; and how can she be better employed than in attending them?

A very bad custom prevails, of making children sleep in small apartments, or crowding two or three beds into one chamber. Instead of this, the nursery ought always to be the largest and best aired room in the house. When children are confined in small apartments, the air not only becomes unwholesome, but the heat relaxes their solids, renders them delicate, and disposes them to colds and many other disorders. Nor is the custom of wrapping them too close in cradles less pernicious. One would think that nurses were afraid lest children should suffer by breathing free air, as many of them actually cover the child's face while asleep, and others wrap a covering over the whole cradle, by which means the child is forced to breathe the same air over and over all the time it sleeps. Cradles, indeed, are on many accounts hurtful to children, and it would be better if the use of them were totally laid aside.*

A child is generally laid to sleep with all its clothes on; and if a number of others are heaped above them it must be overheated: by which means it cannot fail to catch cold on being taken out of the cradle, and exposed to the open air with only its usual clothing, which is too frequently the case.

Children who are kept within doors all day, and sleep all night in warm close apartments, may, with great propriety, be compared to plants nursed in a hot-house, instead of the open air. Though such plants may by this means be kept alive for some time, they will never arrive at that degree of strength, vigour, and magnitude,

* It is amazing how children escape suffocation, considering the manner in which they are often rolled up in flannels, &c. I lately attended an infant, whom I found muffled up over head and ears in many folds of flannel, though it was in the middle of June. I begged for a little free air to the poor babe; but though this indulgence was granted during my stay, I found it always on my return in the same situation. Death, as might be expected, soon freed the infant from all its miseries: but it was not in my power to free the minds of its parents from those prejudices which proved fatal to their child.

I was very lately called to see an infant which was said to be expiring in convulsion fits. I desired the mother to strip the child, and wrap it in a loose covering. It had no more convulsion fits.

which they would have acquired in the open air, nor would they be able to bear it afterwards should they be exposed to it.

Children brought up in the country, who have been accustomed to open air, should not be too early sent to great towns, where it is confined and unwholesome. This is frequently done with a view to forward their education, but proves very hurtful to their health. All schools and seminaries of learning ought, if possible, to be so situated as to have fresh, dry, wholesome air, and should never be too much crowded.

Without entering into a detail of the particular advantages of wholesome air to children, or of the bad consequences which proceed from the want of it, I shall only observe that of several thousands of children which have been under my care, I do not remember one instance of a single child who continued healthy in a close confined situation; but have often known the most obstinate diseases cured by removing them from such a situation to an open free air.

Of Nurses.

It is not here intended to lay down rules for the choice of nurses. This would be wasting time. Common sense will direct every one to choose a woman who is healthy, and has plenty of milk.* If she be at the same time cleanly, careful, and good-natured, she can hardly fail to make a proper nurse. After all, however, the only certain proof of a good nurse, is a healthy child upon her breast. But, as the misconduct of nurses often proves fatal to children, it will be of importance to point out a few of their most baneful errors, in order to rouse the attention of parents, and to make them look more strictly into the conduct of those to whom they commit the care of their infant offspring.

Though it admits of some exceptions, yet we may lay it down as a general rule, *That every woman who nurses for hire should be carefully looked after, otherwise she will not do her duty.* For this reason parents ought always to have their children nursed under their own eye, if possible; and where this cannot be done, they should be extremely circumspect in the choice of those persons to whom they intrust them. It is folly to imagine that any woman who abandons her own child to suckle another for the sake of gain, should feel all the affections of a parent towards her nursling; yet so necessary are these affections in a nurse, that but for them the human race would soon be extinct.

One of the most common faults of those who nurse for hire, is dosing children with stupefactive, or such things as lull them asleep. An indolent nurse, who does not give a child sufficient exercise in the open air to make it sleep, and does not choose to be disturbed by it in the night, will seldom fail to procure for it a dose of laudanum, diacodium, saffron, or what answers the same purpose, a dose of spirits or other strong liquors. These, though

* I have often known people so imposed upon, as to give an infant to a nurse to be suckled who had not one drop of milk in her breast.

they be certain poison to infants, are every day administered by many who bear the character of very good nurses.*

A nurse who has not milk enough is apt to imagine that this defect may be supplied by giving the child wines, cordial waters, or other strong liquors. This is an egregious mistake. The only thing that has any chance to supply the place of the nurse's milk, must be somewhat nearly of the same quality, as cow's milk, ass's milk, or beef tea, with a little bread. It never can be done by the use of strong liquors. These, instead of nourishing an infant, never fail to produce the contrary effect.

Children are often hurt by nurses suffering them to cry long and vehemently. This strains their tender bodies, and frequently occasions ruptures, inflammations of the throat, lungs, &c. A child never continues to cry long without some cause, which might always be discovered by proper attention; and the nurse who can hear an infant cry till it has almost spent itself, without endeavouring to please it, must be cruel indeed, and is unworthy to be intrusted with the care of a human creature.

Nurses who deal much in medicine are always to be suspected. They trust to it and neglect their duty. I never knew a good nurse who had her *Godfrey's Cordial*, *Daffey's Elixir*, *Dalby's Carminative*, &c. at hand.† Such nurses generally imagine that a dose of medicine will make up for all defects in food, air, exercise and cleanliness. By errors of this kind, I will venture to say, that one half the children who die annually in London lose their lives.

Allowing children to continue long wet, is another very pernicious custom of indolent nurses. This is not only disagreeable, but it galls and frets the infant, and, by relaxing the solids, occasions scrophula, rickets, and other diseases. A dirty nurse is always to be suspected.

Nature often attempts to free the bodies of children from bad humours, by throwing them upon the skin; by this means fevers and other diseases are prevented. Nurses are apt to mistake such critical eruptions for an itch, or some other infectious disorder. Accordingly they take every method to drive them in. In this way many children lose their lives; and no wonder, as Nature is opposed in the very method she takes to relieve them. It ought to be a rule, which every nurse should observe, never to stop any eruption without proper advice, or being well assured that it is not of a critical nature. At any rate, it is never to be done without previous evacuations.

Loose stools is another method by which Nature often prevents or carries off the diseases of infants. If these proceed too far, no doubt they ought to be checked; but this is never to be done without the greatest caution. Nurses, upon the first appearance of loose stools, frequently fly to the use of astringents, or such things as bind the body. Hence inflammatory fevers, and other fatal diseases, are occasioned. A dose of rhubarb, a gentle vomit, or some

* If a mother on visiting her child at nurse finds it always asleep, I would advise her to remove it immediately; otherwise it will soon sleep its last.

† See *Mother's Medical Pocket*, p. 70, 71.

other evacuation, should always precede the use of astringent medicines.

One of the greatest faults of nurses is, concealing the diseases of children from their parents. This they are extremely ready to do, especially when the disease is the effect of their own negligence. Many instances might be given of persons who have been rendered lame for life by a fall from their nurse's arms, which she, through fear, concealed till the misfortune was past cure. Every parent who intrusts a nurse with the care of a child, ought to give her the strictest charge not to conceal the most trifling disorder or misfortune that may befall it.

We can see no reason, why a nurse who conceals any misfortune which happens to a child under her care, till it loses its life or limb, should not be punished. A few examples of this would save the lives of many infants; but as there is little reason to expect that it ever will be the case, we would earnestly recommend it to all parents to look carefully after their children, and not to trust so valuable a treasure entirely in the hands of a hireling.

No person ought to imagine these things unworthy of his attention. On the proper management of children depend not only their health and usefulness in life, but likewise the safety and prosperity of the state to which they belong. Effeminacy ever will prove the ruin of any state where it prevails; and, when its foundations are laid in infancy, it can never afterwards be wholly eradicated. Parents who love their offspring, and wish well to their country, ought, therefore, in the management of their children, to avoid every thing that may have a tendency to make them weak or effeminate, and to take every method in their power to render their constitutions strong and hardy—

——— By arts like these
Laconia nurs'd of old her hardy sons;
And Rome's unconquer'd legions urg'd their way,
Unhurt, thro' every toil in every clime.
[Armstrong.]

Few things tend more to the destruction of children than drenching them with drugs. That medicine may be sometimes necessary for children, I do not deny; but that it hurts them ten times for once it does them good, I will venture to assert. A London mother, the moment her child seems to ail any thing, runs immediately to the apothecary, who throws in his powders, pills, and potions, till the poor infant is poisoned; when the child might have been restored to perfect health by a change of diet, air, exercise, clothing, or some very easy and simple regulation.

But misguided fondness is not satisfied with drugging children from the apothecary's shop, many of them are fed from the same quarter. A starch from the West Indies, called Flour of Arrow-root, is the food of those infants whose parents can afford to pay for it. I lately offended a mother very much by saying, it was not half so good as oatmeal, though more than ten times the price. Of this, however, she had sufficient proof by a child in her arms, who had been fed on that root, and, though a year and a half old, could scarcely put a foot to the ground, while her neighbour's child, only nine months old, but nursed in the north country manner, could,

by a hold of the finger, run all over the house. I have taken notice of this powder, to show the influence of fashion even in the feeding of an infant. I wish it were the only instance I could give of the fatal effects of the same cause. Ten thousand infants in this island, before they are out of the nurse's arms, sip tea twice a-day, which to be sure is the true way to propagate heroes.

CHAP. XII.

OF COLD-BATHING, IN FRESH AND SALT WATER, WITH REMARKS ON THE CASES IN WHICH THE WARM BATH IS MORE ADVISABLE.

THE cold bath, at the temperature of sixty-five degrees, is that, which, in this country, is most generally employed.

Immersion in cold water is a custom which lays claim to the most remote antiquity. Indeed, it must have been coeval with man himself. The necessity of water for the purpose of cleanliness, and the pleasure arising from its application of the body in hot countries, must very early have recommended it to the human species. Even the example of other animals was sufficient to give the hint to man. By instinct, many of them are led to apply cold water in this manner; and some, when deprived of its use, have been known to languish, and even to die. But whether the practice of cold-bathing arose from necessity, reasoning, or imitation, is an enquiry of little consequence: our business is to point out the advantages which may be derived from it, when judiciously resorted to, and the danger attending its improper use.

People are apt to imagine that the simple element of water can do no hurt, and that they may plunge into it at any time with impunity. In this, however, they are much mistaken. I have known apoplexies occasioned by going into the cold bath,—fevers excited by staying too long in it,—and other maladies so much aggravated by its continued use as to become absolutely incurable. Without a proper discrimination with regard to the disease and the constitution of the patient, the most powerful medicine is more likely to do harm than good. The physician, who cured Augustus by cold-bathing, killed his heir by the very same prescription. This induced the Roman senate to make laws for regulating the baths, and preventing the numerous evils which arose from an imprudent and promiscuous use of those elegant and fashionable pieces of luxury. But as no such laws exist in this country, *every one does that which is right in his own eyes*, and of course many must do wrong. I hope, however, that when better informed, they will learn to correct errors of so fatal a tendency.

Absurd prejudices against cold-bathing are not less blameable on the other hand. Though it should never be prescribed for *the cure of diseases*, without well considering the nature of each case, it cannot be too earnestly or too generally recommended as *a preservative of health*. I am, therefore, sorry to see some modern writers attempting to revive the whimsical and long exploded doctrine of GALEN, who said, that immersion in cold water was fit only for the

young of lions and bears; and that warm-bathing was conducive to the growth and strength of infants. How egregiously do the greatest men err, whenever they lose sight of facts, and substitute sallies of wit or specious arguments in physic for observations and experience! By these superior excellence of the cold-bath is placed beyond the possibility of a doubt. Its tonic powers are found to be peculiarly proper for the lax fibres of young people, rendering them firm and elastic, and enabling the vital organs to perform their respective functions with ease and regularity.

In other parts of this work I had occasion to describe, with greater minuteness than is now necessary, the many good effects of washing children; and I gave a few directions as to the manner of employing this very salutary operation, from the moment of their birth. I showed how the use of the cold bath might be gradually brought about with the utmost safety; and I am persuaded that those who give it a fair trial will readily comply with my farther advice to continue it ever after, except in such cases of indisposition or infirmity as I shall presently notice. Nothing contributes more to the growth, vigour, and firmness of youth, or to the activity and permanent health of manhood, than daily immersion in cold water. It steels the frame against changes of weather, against the impressions of cold or moisture, and many other external injuries. It is of course the best preventive of all those diseases which arise from a relaxed skin, obstructed or profuse perspiration, and nervous weakness.

When the cold bath is used merely as a means of preserving health, in which point of view I am now considering it, a single plunge or dip of the whole body will be sufficient, though active swimmers may continue their favourite amusement for five or six minutes without injury. Any longer stay might prove dangerous, by not only occasioning a strong determination of blood to the head, but chilling the vital fluid, cramping the muscles, relaxing the nerves, and wholly defeating the intention of bathing. For want of a due regard to these circumstances, young men have often endangered, and sometimes lost their lives. In all cases, it is highly necessary to be rubbed dry at the instant of coming out of the water, and to take exercise for at least half an hour after. A little exercise is also advisable before bathing, so as to excite a gentle glow or temperate degree of warmth, and thus guard against the bad consequences of a too sudden shock, when the body is either chilly or overheated.

The like caution should be given against plunging into cold water after dinner, or after much fatigue. For these and many other reasons, the morning is very properly recommended to persons in health as the best time for bathing. It is the least likely to interfere with their other pursuits or concerns: it washes away any particles of the perspirable matter that may have remained on the surface of the skin, before they can be re-absorbed; it affords fresh supplies of vigour and alacrity, to enter upon the duties of the day; and, as I have already hinted, it fortifies the body against any changes of weather to which it may be afterwards exposed in a far lighter element.

In a state of perfect health, it may be further observed, that peo-

ple need not give themselves much trouble to enjoy the advantages of sea-bathing in preference to river-water, as the grand effect of both is nearly the same, though some considerations of less moment may concur to render the former more inviting. Among these we must reckon the usual resort of gay company to different parts of the coast in summer, the refreshing coolness of the sea-air in that season, and the agreeable stimulus which many persons experience from the action of saline particles, not only in the water, but when they are floating in the atmosphere. It should also be considered, that the temperature of the sea is more uniform than that of rivers, never rising so high, or sinking so low, in any change of weather. But such points of difference are chiefly interesting to valetudinarians.

What I have said of the cold-bath, when used as the means of preventing disease, will throw some light on the propriety of occasionally resorting to it as an important remedy. In cases of peculiar delicacy and danger, it is an instrument which can only be entrusted to the most skilful hands; but in many other less critical situations, a few plain rules may be of considerable service.

The first object to be attended to in the use of the cold-bath, as a remedy, is, whether the patient is not too much enfeebled to bear the shock. This cannot always be determined by appearances; but a single experiment will remove all doubt. If the immersion be followed by a pleasant glow, and a sense of increasing alacrity, it is the best proof of its agreeing with the constitution, and of its being likely to have a happy influence on the whole frame. Hence the cold-bath is found to be an excellent bracer and restorative in cases of languor, of habitual lassitude, and of muscular or nervous weakness, when arising from much confinement, a sedentary life, intense study, or any of the usual causes of relaxation. But it is always understood, that, in every instance of this sort, a sufficient strength of original stamina still remains to produce a proper reaction of the heart and arteries, upon which all the salutary effects of bathing depend.

The great efficacy of the cold bath, and particularly of sea-bathing, has often been experienced in scrofulous complaints, which are always attended with a relaxation of the fibres, and a strong disposition to languor and indolence. In such cases, sea-bathing is not only recommended as a tonic, or bracer, but as a powerful detergent and purifier also, especially if the sea-water be used internally at the same time. No difference of opinion prevails on this head, as far as it relates to the scrofula, but it has been alleged, that sea-bathing, though a good preventive of the scrofula, could not remove the local effects of the disease when once formed. My own practice in the treatment of scrofulous affections has not been extensive enough to enable me to speak to this point with a tone of confidence; but the contrary doctrine appears to me supported by the fairest reasoning, and, what is more, by indisputable facts.

In the first place, a weak flaccid habit, and a thin skin, very susceptible of impressions from cold moist air, are the principal, if not the only predisposing causes of the scrofula. Now the cold-bath is the best remedy for both, as it renders the texture of the skin firm, and invigorates the system. By being therefore so well adapted

to obviate causes, it must, according to one of the surest *maxims* of medical practice, be very fit to remove effects.

The justness of such an inference has been placed beyond a doubt, by the reports of men of professional eminence and veracity, under whose direction, and immediate inspection also, sea-bathing has been known to resolve swellings of the glands, as well as to correct the discharge of scrofulous ulcers, and to dispose them to heal. I am therefore very willing to believe, that a regular course of sea-bathing, and the internal use of sea-water, with the aid of good air, proper exercise, and a light, yet nourishing diet, are the best means hitherto discovered for checking the progress of the evil, or counteracting its morbid effects.

But, in order to prevent any possible misconception of my meaning, it may be necessary to add, that my opinion of the efficacy of sea-water in scrofulous complaints, is confined to its probable removal of the *outward symptoms* of the malady, *before these have arrived at a certain pitch, or have reduced the patient to a state of extreme debility*; in which case, as well as in all *internal affections* of the scrofula, when it has once fastened upon the lungs, or any other vital part, bathing in the sea, or drinking its waters, would be not only useless, but extremely injurious.

It would also imply too great a confidence in the salutary virtues of sea-bathing, to prescribe it as a remedy for cutaneous disorders in general. To many of them the warm-bath is much better adapted; and the proper choice of the one or the other can only be determined by a skilful physician, after a due consideration of the patient's ease. Some eruptions, if imprudently repelled by the action of cold on the skin, may carry back into the habit the seeds of disease, to be deposited, perhaps, on some vital part, in spite of Nature's kind efforts to throw them off. But a medical man will not prescribe sea-bathing in any case where pimples or blotches appear on the surface, without recommending the internal use of the sea-water at the same time, to determine regularly and moderately to the bowels, so as to carry off all impurities, without the least injury to the general health, spirits, or appetite. I shall have occasion to repeat this caution, when I come to speak of some mineral waters, which are frequently resorted to for the cure of similar complaints.

Though, as before observed, there may be very little difference between the effects of sea-water and of river-water of the same temperature, when applied to a sound skin and healthy body, yet the gently stimulant, detergent, and healing properties of the saline impregnation of the former must give it a decisive superiority in many diseases of the surface and habit. It cleanses sores, and forwards the progress of granulation. It often disperses tumours that have resisted the most powerful discutient medicines. Even deeply-seated ulcers, though beyond the reach of other applications, sometimes yield to the penetrating action of sea-water. We must not forget, however, that its internal use is a necessary auxiliary in all these cases, and others of a similar nature. About half a pint of it, which contains somewhat more than a quarter of an ounce of salts, taken in the morning, immediately on coming out of the sea, and the like dose in half an hour after, will com-

monly answer the purpose of a mild purgative. The quantity may be augmented, or the dose repeated, if requisite, with perfect safety, and little inconvenience. It excites thirst, but seldom nausea, unless the stomach is very irritable, or the patient very squeamish.

In chronic diseases, where a cure cannot be expected but from the long-continued use of any remedy, it is a great recommendation of the sea-water, that it may be persevered in for a considerable time, without weakening the stomach, the intestines, or the constitution in general. Instances frequently occur of persons who keep the body moderately open by its daily use for months together, and yet enjoy during the whole time a good appetite, and excellent powers of digestion, with increased vigour both of body and mind. It is always most advisable to make use of the sea-water externally and internally, in the manner here directed, only twice or three times a-week, till the patient is encouraged by degrees to employ the salutary process every day. It should also be gradually discontinued in the same manner, after the desired end is obtained.

There are several disorders, besides those already mentioned, particularly ardent fevers, and various cases of local inflammation and muscular rigidity, in which the external application of cold water may produce good effects. But many of them require great accuracy of distinction, as well as the utmost judgment and caution in the use of a remedy, which a small mistake, or a small change of circumstances, may render hazardous. In a work like this, designed for popular instruction, it would be improper to encourage rash experiments, by pointing out such niceties in medical practice as are safe only when under the guidance of medical skill. I do not know any thing in its own nature so salutary, and yet so liable to be abused, as the cold-bath. I shall therefore proceed to touch upon the cases, where the inconsiderate or improper application of such a remedy may prove injurious, and sometimes fatal.

It is not merely in the critical cases just alluded to, but in many slighter indispositions, that injudicious immersion in cold water may be attended with very serious consequences. Fevers are much oftener produced than cured by cold-bathing, if rashly resorted to. Disorders of the intellectual functions, palsies, apoplexies, and death, may be, and are frequently occasioned by a single dip, in cases either of *extreme nervous debility* or of *extreme fulness*. When I reflect on the frantic precipitancy with which I have seen many persons of very weak, and others of very plethoric habit, after a rapid journey from London to some watering-place, plunge instantly into the sea, without the least preparation, so far from being surprised at the numbers who suffer, I am rather astonished that any should escape. In order to prevent the ignorant and the thoughtless from falling victims to their indiscretion, and to guard persons afflicted with particular complaints against the use of an improper medicine, I shall point out the principal indispositions, in which the cold-bath would be likely to aggravate the symptoms, and even to endanger the life of the patient.

Effects of Cold-Bathing, &c.

When a person in the ordinary state of health is immersed in a

cold-bath, he first experiences a general sensation of cold, which is almost immediately succeeded by a general sensation of warmth, the latter rapidly increasing, so as to cause the surrounding water to feel of an agreeable temperature. If the immersion has been sudden and momentary, and the body be immediately dried and covered from the air, the agreeable sensation of warmth continues, the whole body feels refreshed and invigorated, and, under favourable circumstances, the natural perspiration is increased. If, however, the immersion be continued for a considerable time, and the water be not at the highest range of the temperature assigned to the cold-bath, the sensation of warmth goes off, and is followed by numbness and shivering, the skin becomes pale and contracted, the vessels near the surface of the body are evidently diminished in diameter, and the blood which flows through them is drawn towards the internal parts; the person feels drowsy and inactive, his joints become rigid and inflexible, his limbs are affected with pain and cramps, his respiration becomes quick and irregular, his pulse low and small, and his perspiration suppressed. If the immersion be still continued, or if the water be very cold, the pulse gradually ceases, the action of the heart becomes weak and languid, a sensation of faintness and coldness of the stomach is experienced, followed by a rapid diminution of the whole animal heat; the vital energy at length becomes exhausted, and death ultimately ensues.

In the preceding description, it is supposed that the body has been suddenly plunged into the water; if, as it often happens with weak or timid people, the bather enters the bath slowly, or if the water is much below sixty degrees, the sensation of cold is more striking, a shivering is produced, and as the person advances so as to make the water rise towards the belly and chest, a shuddering and convulsive sobbing takes place, sometimes attended with sickness and head-ache.

Cautions to be Observed, &c.

When, therefore, cold-bathing occasions chillness, loss of appetite, listlessness, pain of the breast or bowels, a prostration of strength, or violent head-achs, it ought to be discontinued. These unpleasant sensations are the surest proofs, that the actual state of the patient's habit is unfit to bear the shock; and that either the re-action of the heart and arteries is too weak to overcome the cold pressure on the surface, or that the determination to the head, or to some other vital part, is too rapidly increased. Every body's feelings, after immersion in cold water, are the best criterion by which we can decide on the probability of its good or its bad effects. We might otherwise be deceived by appearances, and be induced to recommend the cold-bath in all cases that might seem to require a tonic and stimulant plan of cure.

But it may sometimes be dangerous, or at least very detrimental, to make even a single experiment. In particular affections of the stomach and bowels, as well as in diseases of the lungs or of the brain, and all obstinate obstructions, the effect may be fatal. The late Dr. SMOLLET, indeed, said, that if he were persuaded he

had an ulcer in the lungs, he would jump into the cold bath. In doing so, however, the Doctor would certainly show more courage than discretion; and that he was more a man of wit than a physician, every one will allow. A nervous asthma, or an atrophy, may be mistaken for a pulmonary consumption: yet, in the two former, the cold bath proves often beneficial, though I never knew it so in the latter. Indeed, all the phthisical patients I ever saw, who had tried the cold bath, were evidently hurt by it.

Persons of very full habits, as I have already hinted, run a great risk of bursting a blood vessel, or of causing an inflammation of some important organ, by rushing into the cold bath, without due preparation. People of this description ought by no means to bathe, unless the body has been previously prepared by suitable evacuations. They will then derive the utmost benefit from what might be otherwise attended with irreparable injury to many of them.

Though I recommend the cold-bath in cases of nervous weakness, yet the degree of that weakness should be considered, lest the shock might prove too powerful for extreme debility. Not only women of very weakly and delicate habits, but men also in the same predicament, as well as puny children, should begin with the warm-bath, at the same degree nearly as that of animal heat, about 96° of Fahrenheit's thermometer; and reduce it gradually in proportion to the increase of the patient's strength and internal powers of re-action. The cold-bath is often very necessary to complete a cure, though not always advisable to begin with. This requires particular illustration.

In hysteric and hypochondriac cases, cold-bathing at first has done the greatest mischief, though it may be finally resorted to with good effect, after a preparatory and long continued use of the tepid or lukewarm bath. Its warmth must be diminished very slowly, and almost imperceptibly. Nature revolts against all great transitions; and those who do violence to her dictates, have often cause to repent of their temerity.

The like gradual diminution of the temperature of the water is no less proper in rheumatic complaints, and in those muscular contractions and convulsive motions which are called *St. Vitus's Dance*.

Indeed, it may be laid down as a pretty general rule in that branch of nervous disorders which includes spasms, convulsions, epilepsies, and similar consequences of the debility or irritability of the system, that we should always begin with the warm-bath, and proceed to the cold by the most pleasing and gentle gradations.

The chief exceptions to this rule occur in the treatment of spasmodic affections of the intestines, hooping coughs, and convulsive asthmas, in which, though classed under the general head of spasms, the cold-bath would at any time be extremely improper. But this prohibition is also implied in my remark on complaints of the bowels and chest in general, the latter including coughs of every description. When these are the mere consequences of slight irritation, or cold, bathing the lower extremities in warm water affords great relief; but immersing the whole body in either the

warm or the cold bath, would only aggravate the symptoms, when the breathing is difficult.

As palsies are often occasioned by the inconsiderate use of the cold-bath, it cannot be too strictly prohibited, where any paralytic symptoms are discoverable. There is no complaint that bears and requires a greater degree of external heat than the palsy, and there is none in which the shock of cold water is more directly opposite to every curative indication. The hot-baths, therefore, whether natural or artificial, and particularly if impregnated with salt, which increases their stimulus, are employed as a sovereign remedy for paralytic affections. Friction, which should never be neglected after bathing, is in these cases of eminent service.

In affections of the nervous coat of the stomach, and in cases of indigestion, especially when occasioned by intemperance, cold-bathing is as improper as in complaints of the bowels, before taken notice of. But it is the excess of folly, after immoderate drinking, to use the cold-bath with a view of alleviating its painful effects next day. It must increase the disorder of the stomach, the violence of the head-ach, and the derangement of the circulation. It may be productive of still worse consequences. The cooling operation may prove far more powerful and more lasting than was expected, and may extinguish forever the remains of animal heat; or, should nature, by extraordinary efforts, be able to resist the shock, it would probably be attended with symptoms of fever, or with very troublesome eruptions. Many painful affections of the head, as well as those which arise from intoxication, are, indeed, often relieved by what is called the *shower-bath*, or by the affusion of cold water on the part affected, but never by the rash experiment of swimming, or of total immersion.

I must take this opportunity to add, that the *shower-bath* is in many other respects a valuable contrivance. It may be easily procured: its actions can be regulated at pleasure; and as the water descends like rain, it gently impels the blood towards the lower extremities, and prevents the danger which would arise from its sudden or too rapid determination to the lungs and head in some of the cases already mentioned.

In uterine hæmorrhages, and other fluxes of blood, when so considerable as to endanger the patient's life or constitution, cold water may be applied with good effect. It also forms a part of the tonic plan to be pursued in an immoderate flow of the *menses*; nor is any thing more likely to prevent the return of this complaint than cold-bathing or drinking chalybeate waters in the intervals of menstruation. But when the discharge of blood is critical, as in some affections of the brain, lungs, &c. or is become habitual, as in the piles, to check so salutary an evacuation by the use of the cold-bath would be the height of madness. This is no less true of many critical inflammations, those of the gout for instance, in which cold water or any other repellent would evidently counteract the purposes of nature, and very probably throw the disorder upon some vital part. What is called the *retrocedent* gout frequently arises from some mismanagement of this sort, as well as from some particular weakness or atony of the system. Cold-bathing is a very hazardous experiment to be made by persons subject to the gout, except

in the absence of the symptoms, when no indisposition is felt in either the head or stomach, when the extremities are not threatened with pain; and then only in concurrence with the best medical advice.

Bathing the lower extremities in warm water is generally and very properly recommended both in the retention and suppression of the *menses*, to excite the action of the uterine vessels, and, in the latter case, to remove any stricture of those vessels which may be induced by cold or fear. A skilful physician, however, will sometimes meet with cases of a retention of the *menses* after the usual age, in which the cold-bath, if seasonably used at the beginning of the disease, may contribute to restore the tone of the system.

The delicacy and general irritability of the habit in a state of pregnancy, as well as the danger of too great a determination of the blood to the womb, clearly forbid the use of the cold-bath, unless it should be rendered advisable by some circumstances of a peculiar nature, of which a medical man of skill and experience is the only proper judge.

It is a great and often a fatal mistake to rely on the tonic powers of the cold-bath as the best means of repairing the injury done to the constitution by the relaxing influence of hot climates. People, on their return to England, after having resided in the East or West Indies, would find the warm-bath not only safer, but far more conducive to the recovery of their former strength. I would not have them venture into a bath of a temperature under 90° for a considerable time, after which they may gradually diminish its warmth, as before recommended in cases of *extreme debility*.

I might here go into farther details, and show how much more salutary the warm-bath is than the cold in diseases of the liver and kidneys, and in numerous other cases of internal derangement; but the principles, which I have laid down, may be easily extended to them all; and I hope that the cautions I have given will operate as some check on the abuse of the most powerful means of preserving and restoring health, with which we are acquainted.

Some years ago a foreign quack made a great deal of noise in this country with his medicated baths, but, like other follies of the day, they are now almost sunk into oblivion. A few writers have also been very lavish of their panegyrics on the wonderful effects of vapour-baths as used in Russia: but I do not think that the inhabitants of these milder regions will ever have occasion to envy the rigid fibres of the north the enjoyment of such fanciful luxuries. The strength of steam is, perhaps, better known and more usefully employed in England than in any quarter of the globe; but we meet with very few cases, where its intense action on the surface of the human body can be deemed essentially necessary either for the prevention or the cure of diseases. Surely the skin of an Englishman may be rendered perspirable by a much gentler stimulus, and without the aid of so troublesome and suffocating a process.

CHAP. XIII.

OF MINERAL WATERS.

WATERS holding minerals in solution are called mineral waters. But as all water, in a mineral state, is, either more or less impregnated with some mineral substances, the name *mineral waters* should be confined to those that are sufficiently impregnated with mineral matter to produce some sensible effects on the animal economy, and either to cure or prevent some of the diseases to which the human body is liable. On which account, these waters with much more propriety might be called *medicinal waters*, were not the name by which they are commonly known too firmly established by long use.

The mineral waters most esteemed, consequently those most frequently resorted to for the cure of diseases, are those of

Aix, in Provence,	Harrowgate,	Spa,
Barege,	Hartfell,	Sedlitz,
Bath,	Holywell,	Sea-water,
Bristol,	Leamington,	Seltzer,
Buxton,	Malvern,	Tunbridge,
Borset,	Matlock,	Vechy, and others
Cheltenham,	Moffat,	of less note.
Carlsbad,	Pymont,	
Epsom,	Scarborough,	

It is scarcely possible to read without a smile the numberless books, essays, and pamphlets, which have been written on this subject. It seems to be the favourite region for the exercise of fiction and fancy. The traditionary tales of ancient miracles, said to be wrought by holy wells and consecrated springs, do not much surpass in extravagance the modern cures ascribed to those favourite haunts of valetudinarians by fraud, ignorance, and credulity. In printed *Guides*, as they are called, or *Pocket Companions*, to any of those fountains of health, it may be excusable to amuse us with a little romance; but we are sorry to find the same spirit pervading many medical treatises which should be distinguished by the most sacred regard for truth, and a just contempt of puerile embellishments.

Some allowance indeed should be made for the influence of local prejudices, and for the strong bias of interest and ambition on the mind of a professional man, who, residing near one of those springs, has, perhaps, no other means of acquiring popularity and reputation, but by an encomium on its virtues, and a description, quite in the poetical style, of the beauties of the surrounding scenery. The latter is, indeed, a harmless puff; it seldom deceives any body; but is viewed in the same light as an auctioneer's advertisement of an estate, where frightful chasms are often described as curious grottos, a few furze-bushes as a shrubbery laid out by the finger of Nature, and a gallows as a hanging-wood. There is another particular, in which those highly-coloured landscapes that form the

introductory part of almost every treatise on a medicinal spring, may defeat the proposed end, and that is, by exciting a reasonable suspicion that those waters are chiefly indebted for the high reputation of their efficacy to local circumstances, to the pleasant walks and rides, or the delightful prospects round them.

A display of all the attractions of the favourite spot is commonly followed by very minute details of chemical analysis, which are just of as little use to the generality of readers as the description of the scenery. A knowledge of the contents of any mineral water by no means implies a knowledge of its medical properties. These are to be learned by repeated experiments. Were it not for the evidence of facts, the late discoveries in chemistry, as far as they respect the analysis of mineral waters, would only tend to lessen their credit, by showing the little difference between them and any common water of the same purity and temperature. For instance, if we confined ourselves to mere speculation on the subject, how could we suppose that a quarter of a grain of the oxyd of iron suspended by a little fixed air in a whole quart of Tunbridge water, the largest quantity usually taken in the course of a day, could produce any remarkable or peculiar effects? The same thing might be said of the most celebrated springs in the kingdom; and many physicians of great professional eminence, arguing from this principle, have not hesitated to assert, that the cures performed by those springs were not owing to the ingredients with which they were impregnated, but to the simple elementary part, or what may be called pure water. It would not be easy therefore to determine, whether chemical analysis has furnished more arguments in favour of, or against, the boasted superiority of mineral waters.

Dr. Falconer, the author of one of the very few books relative to this subject, that contain something more than the gratification of idle curiosity, candidly confesses, that "chemical analysis, as far as it has been hitherto prosecuted, seems to give us a very imperfect view of the methods by which these effects (*i. e.* the medicinal effects of the Bath-waters) have been produced; and this circumstance has induced several persons to deny the truth of the facts altogether, or to represent them as highly exaggerated, and that such advantages (if any) as might be in truth received, were owing to collateral circumstances of uncertain and indeterminate efficacy, as change of air, diet, manner of life, and the like."

It is not therefore to the landscape-painter, or to the chemist, that we must look for any useful information on those points, but to the modest and judicious practitioner, who, like the author now quoted, watches with care, and reports with fidelity, the bad as well as the good effects of the waters he describes, the instances of their failure, as well as of their success, in various disorders. I am sorry to add, that the fund of such truly valuable materials is as yet very scanty, and that I must confine myself to general remarks on the most frequented of our medical springs, so as to direct invalids to the fountain, from the use of which they may form some reasonable hopes of relief. As more particular instructions will often be necessary when they get to the spot, I feel it my duty to caution them against choosing for their medical guide any man, however high his reputation may be, who has distinguished himself

as the loudest or most eloquent trumpeter in the indiscriminate praise of the waters near which he resides.

The like caution may prove still more serviceable to such of our countrymen as resort to foreign springs for medicinal purposes. A popular advocate for the use of any remedy is seldom to be relied on as a good physician; and we have always strong reason to suspect the skill or the integrity of a man, who speaks in a tone of confidence of the infallible efficacy of the waters which he prescribes. Some of those foreign waters being also frequently imported into this kingdom, and used here medicinally, I shall give a short account of a few of them, which are found to possess virtues superior to any of our own in the cure of certain disorders.

Classification of Mineral Waters.

Mineral waters are usually classed according to their sensible qualities, as perceived by the touch, sight, taste and smell, or according to some well-known ingredient, which may predominate in this or that particular spring. The most obvious division is into cold and hot fountains; but both these, being too comprehensive, are again subdivided into *chalybeate*, *saline*, *sulphureous*, and *calcareous*, from their being impregnated with *iron*, *salts*, *sulphur*, or *lime*. There are many still minuter distinctions, where two or more of those ingredients may be found united in the same spring, or combined with different sorts of *air*, which must have a very powerful effect in the internal use of the waters.

The first class of mineral waters, which I shall notice, are those called *chalybeates*, from a Greek word that signifies *iron*, the taste of which is very perceptible in them when fresh from the spring, though they lose it on being exposed for some time to the atmosphere. The reason is, that the small quantity of iron which they contain, being kept in solution by *fixed air*, when this evaporates, the iron sinks to the bottom, forming the fine ochre that lines the channel or water-course. As iron abounds in almost every part of the earth, it is no wonder that so many springs should be impregnated with it, in a greater or less degree, according to the quantity of fixed air they contain, by which the iron is held in a state of solution. Some of those waters have, in conjunction with the iron and fixed air, a pretty strong mixture of purgative salt, and are very different from the others in their effects as well as their taste. In order to distinguish each by a specific name, the former may be called *simple chalybeates*, and the latter *saline* or *purging chalybeates*. Tunbridge-Wells standing in point of reputation, or of fashionable resort, at the head of the one, and Cheltenham at the head of the other; they may be very properly chosen as examples or illustrations of the various medicinal effects of this numerous class of waters.

TUNBRIDGE-WELLS. MEDICINAL PROPERTIES, &c.

It has been already intimated, that the water of Tunbridge-Wells is found, upon being analyzed, to differ from that of common springs only by containing in every gallon a grain of iron sus-

pended by about three table-spoonsful in bulk of fixed air.* Yet its medicinal effects are very considerable. It gives a gentle stimulus to the relaxed nerves, and contributes to restore their proper tone. It affords great relief in many complaints of the stomach, in flatulencies, bilious vomitings, irregular or imperfect digestion, and other consequences of either debility or intemperance. It promotes the circulation of the blood, and the various secretions; but more particularly that of urine: and this latter circumstance is one of the best proofs of its agreeing with the habit of the patient. In short, its natural tendency in the cases to which its stimulant and tonic powers are adapted, is to raise the spirits, and increase the general vigour of all the functions.

The Tunbridge-waters are eminently serviceable in what may be called the sexual disorders of females, arising from a great weakness or derangement of the uterine system; such as an immoderate flow of the *menses*, green sickness, *fluor albus*, and other similar indispositions, which are not only relaxing and painful in themselves, but are often the cause of abortion, or of sterility. If the profuse flow of the *menses* should be accompanied, as it often is, by feverish symptoms, by pain in the back, and local irritation, the stimulus of the waters might then prove injurious. Indeed, they are improper in all inflammatory cases, except the feverish irritation which attends the green sickness, and which is more frequently abated than increased by the use of chalybeates.

In all obstructions of the urinary passages, and other complaints of that region, those waters are found of singular efficacy; for though, as before observed, they in some degree promote every secretion, yet their chief and most regular determination is to the kidneys; and experience has fully proved the good effects of their gently stimulant and diuretic properties.

We may proceed still farther in our recommendation of the Tunbridge-waters, and prescribe them with great probability of success in such chronic disorders as arise from slow beginnings, and are attended with great laxity and weakness of the solids, but without much organic disease. It is necessary to attend to this material exception; because a general weakness may be often brought on by morbid affections of the mesentery, of the lungs, or of some other important organ, to the cure or relief of which they would be very inadequate. Even in complaints where they have commonly proved efficacious, cases must often occur that require the exercise of the nicest judgment and discrimination.

* A recent analysis of the Tunbridge-Wells says: "A single dose of half a pint will contain, according to the analysis which has been given, and the statement made agreeable to Dr. Murray's views, of solid ingredients, about 14-100ths of a grain of oxide of iron; 9-100ths of muriate of lime; 8-100ths of a grain of muriate of magnesia; 9-100ths of a grain of the sulphate of soda; 2-100ths of a grain of carbonate of lime, and a minute portion of manganese; and of gaseous ingredients, half a cubic inch (or a $\frac{1}{2}$ oz. in bulk) of carbonic acid; 11-100ths of a cubic inch of azote, and about the same quantity of atmospherical air." These minutiae, be they ever so correct, are of no use in practice; and we merely give this as a specimen of that species of chymical ear-wiggling which the author of the "Domestic Medicine" so justly and so humorously disclaims, while he goes at once into the more solid utility to be derived from frequenting mineral springs for the cure of disease and the improvement of the general health. Dr. Scudamore's book has neither index nor table of contents, consequently it was never intended to be referred to. (For a general survey, analysis, properties, &c. of the mineral waters, see "NATURAL and MEDICAL DIETETICON, &c.") Ed. 3

But it is not enough to consider well the propriety of having recourse to those waters in any particular instance; some caution is also necessary in using them. Persons of a full habit should not begin to drink them, without losing a little blood, or without some other evacuation. When the stomach is foul, a purgative is commonly preferable to emetics. What the immediate effect of the waters may be, can only be known by trial. They often purge very briskly at first, but this effect soon ceases; and as their continued use has some tendency to occasion costiveness, gently-opening medicines from time to time are necessary. The water itself may be easily converted into a purging chalybeate, by the addition of a little magnesia or Glauber's salts, when necessary. In the removal of other obstructions, those more especially to which females are subject, the occasional use of the warm-bath will be found an excellent auxiliary.

Directions and Cautions to be observed in the Use of these Waters.

In entering upon a course of the Tunbridge-waters, it is always best to begin with a small dose, not exceeding a quarter of a pint, about half an hour before breakfast, to be repeated, at regular intervals, once or twice in the forenoon, according to the pleasantness of the sensations it excites. The quantity may be soon augmented to half a pint or even more at each dose, if agreeable, or necessary, as the waters lose much of their medicinal effect by continued use, the stimulus wearing off in about six or eight weeks, and making no peculiar impression on the stomach or habit. The usual hours for the three doses are eight o'clock, ten o'clock, and twelve. A light breakfast at nine will not impede the proper action of the waters; and as one of their effects is to improve the appetite, its indulgence should be under the control of moderation. But I have elsewhere enlarged so fully on the advantages of temperance, as well as of early hours and exercise, that I need not stop here to point out their importance in promoting the salutary operation of any course of medicines either natural or artificial.

As some persons may be too soon prejudiced against the use of chalybeates by any unpleasant or unexpected sensations at first, it is proper to inform them, that giddiness and sometimes a heaviness of the head, nausea, vomiting, a slight pain about the heart, and a sense of fulness over the whole body, though by no means uncommon symptoms on beginning a course of these waters, will disappear after a little use. It is only when they stubbornly continue, that they should be regarded as a proof that the waters are not suited to the nature of the complaint or to the patient's constitution. The nausea or sickness being often occasioned by the coldness of the fresh-drawn water, acting on an empty or a very weak and irritable stomach, it is advisable, in the first instance, not to drink the waters fasting, till the stomach becomes gradually reconciled to them; and, in case of extreme irritability, it is a common and judicious practice at Tunbridge to immerse in hot water a bottle filled with the chalybeate, and well corked, that the chillness may be diminished, with as little evaporation of the fixed air as possible. Where this abounds, as in the waters of the Ger-

man Spa, or still more in those of Pyrmont, it need not be preserved with so much caution; but a sufficient quantity of boiling water may be added to that which is taken from the spring, to bring the whole to a moderate temperature.

Remarks.—There are many springs of *simple chalybeate* water in different parts of Great Britain, and even in the neighbourhood of London, which probably are little inferior in medicinal virtue or intrinsic strength to Tunbridge-Wells, though these have acquired a higher reputation. Pure air, temperate living, regular and early hours, active diversions, agreeable company, and a total exemption from all concern, except a rational desire to promote health, are the only circumstances that cause any real difference in the use of waters so similar in quality. This difference, however, is considerable; and the want of some of those co-operating circumstances will always prevent the springs of Islington or Hampstead from being set in competition with those of Tunbridge, for the certainty of their effects. The remarks, which I have made on the proper method of drinking the latter, as well as on the disorders and particular habits of body to which they are adapted, are equally applicable to all waters of the same description in our island. But there are a few *chalybeates* on the continent, particularly those of the German Spa and of Pyrmont, which, being more active and powerful in their operation, require to be used with greater caution and delicacy.

PYRMONT AND GERMAN SPA, &c., compared with the *Tunbridge Waters, &c.*

ON drinking a glass of the Spa water, the taste immediately perceives a strong infusion of iron blended with an agreeable acidity. The latter is owing to the abundance of fixed air, which amounts to near half the bulk of the water, and holds in solution more than four times as much iron as we find in the like quantity of Tunbridge water. The effects are not less perceptible than the taste. A full draught of the Spa water, especially in hot weather, or upon an empty stomach, will produce a swimming in the head, and a sort of intoxication, which sometimes continues for half an hour, and is very like that which arises from spirituous liquors, though it does not leave the same debility after going off. A patient, therefore, should not drink more than a gill at first about an hour after breakfast, and another gill after an interval of two hours more. In three or four days the quantity may be increased, and the dose more frequently repeated; but in these particulars every body's experience will be the best guide. I before suggested the propriety of mixing as much boiling water with the *chalybeate* as will bring it to a degree of tepid warmth, and thereby prevent any unpleasant sensations, which its natural coldness might excite in a very weak or a very irritable stomach.

If some evacuation was recommended to persons of a plethoric habit, before drinking the Tunbridge water, how much more necessary must it be to prepare in the same manner for the use of a far stronger stimulant? This very active property of the Spa waters must also render them still more improper than those of Tunbridge in inflammatory complaints, attended with determination to the

head, flushing of the face, or any other strong indications of feverish heat. But if the febrile symptoms are very slight, the Spa waters, used cautiously and moderately, may prove beneficial. They quench thirst more than common water; and they have been frequently known to afford relief in ulcerated sore throats.

What has been said of the efficacy of our own simple chalybeates in cases of nervous relaxation, or of general weakness, many affections of the stomach and bowels, in disorders of the kidneys and bladder, or obstructions in the urinary passages, and in various complaints peculiarly incident to females, may be asserted with still greater confidence of the waters of the German Spa, because of their superior strength. Yet they do not equal the activity of the Pyrmont waters, which contain as much iron and twice as much fixed air as those of the Spa, besides a larger proportion of earthy salts. The directions already given, will apply to them both, under similar circumstances. Where the stimulus is evidently stronger, more caution is at first necessary; but every patient must learn from experience what quantity of either of those chalybeates the stomach or general habit will conveniently bear; and this quantity, when ascertained, whatever it may be, whether one, two, or three pints in the course of a day, must be continued without farther increase.

It may be thought worthy of remark, that the waters of Pyrmont and Spa, though in their own nature somewhat intoxicating, afford the most refreshing and wholesome draught, to relieve in the morning a weakness of the stomach occasioned by the too free use of the bowl or the bottle the night before.

The only peculiarity in the virtues or medicinal effects of the Pyrmont waters is, that, when diluted with new milk, they are found very serviceable in gouty cases, and may therefore be safely prescribed in this form, during the intervals of the fits and the absence of inflammatory symptoms.

It is fortunate for a patient who cannot go to drink either of those waters at the fountain head, that they may be conveyed to any distance, and will retain their medicinal properties, with little or no diminution, for two years, if they are inclosed in bottles well corked and covered with cement. They contain so much fixed air that it is usual, after filling the bottles, to leave them uncorked for a while, in order to let the excess of the fixed air escape, as its expansion might burst the bottles, if they were to be instantly corked and removed to a warm place.

The other species of this class of waters, which come next to be noticed, are the saline or purging chalybeates, so called partly from their contents, and partly from their mode of operation. Besides iron and fixed air, which they have in common with the simple chalybeates, they hold in solution such a quantity of purgative salt as gives them a regular and strongly marked determination to the bowels. Any chalybeate, whether of the milder sort, as the Tunbridge-water, or of the rougher, as those of the German Spa and of Pyrmont, will often purge briskly at first; but this is not their certain or constant effect. It seems to depend on the previous habit, or the actual state of the patient's stomach and bowels. It also goes off very soon, and is followed by a tendency to costive-

ness. But the *purging chalybeates* commonly operate in the same regular, constant, and uniform manner, as long as they are continued. The chief springs of this description in England are those of Cheltenham and Scarborough, upon the medical properties of which I shall now make a few remarks.

CHELTENHAM WATERS.

THE Cheltenham-waters require no preparation; but the quantity sufficient to produce the desired effect on the bowels, can only be known by experience. Half a pint is as much as any patient can well drink at a time, and this may be repeated three or four times, at proper intervals, in the course of the day, according to its operation, or to the intention with which it is taken. Four doses of half a pint each contain about a quarter of an ounce of purging salts, with somewhat more than a grain of iron held in solution by four ounces in bulk of fixed air. As purgatives act very differently in different habits, the quantity here mentioned will operate briskly upon some patients, but so weakly upon others, as to render the occasional addition to the crystallized salts necessary, when a powerful and speedy effect is desired. On the other hand, the quantity of the water, or the number of doses, may be lessened, when it is used merely as an alterative. But even persons of very delicate habits may divest themselves of their usual prejudices against cathartics, as those saline chalybeates do not occasion griping or languor. The only unpleasant sensation, which they sometimes excite on first drinking them, is a sort of giddiness, or slight head-ach, which soon goes off; but their agreeable and salutary effects are not so transient. They improve the appetite, strengthen the stomach, and promote general alertness, while they correct and carry off the impurities of the whole system. Hence it is that they may be persevered in for a considerable length of time, and the body kept *moderately* open by their uninterrupted use, without the least debility or inconvenience. These remarks, however, admit of some exceptions, particularly when the constitution is either naturally very weak, or much enfeebled by disease, without any marks of obstruction, or of acrimony in the fluids. A constant operation on the bowels would in such cases prove very injurious.

Cheltenham-water has often been found of the greatest service in glandular and visceral obstructions, in a variety of bilious and scrofulous complaints, in the first symptoms of a dropsical disposition, and in many of the most distressing scorbutic eruptions and ulcerations on the skin. But the obstinacy of some of these can only be overcome by perseverance. In our endeavours to obtain a cure of any disease of the chronic kind, we should not forget that complaints, slow in their progress, go off also very slowly; and that, according to the judicious remark of CELSUS, time is necessary to remove the deep-rooted evils which time has occasioned.

The proper season for drinking the waters of Cheltenham is the summer; and as the warm-bath may also be advisable in some of the cases to which the waters are suited, the town is well supplied with accommodations for that purpose.

SCARBOROUGH WATERS.

THE saline chalybeate at Scarborough does not contain above a third part of the purging salts which are found in a like quantity of the Cheltenham-water. Of course, it cannot be supposed to operate with the same force and activity, unless larger doses are taken than most stomachs will bear, or unless the powers of the water are increased by the addition of some opening salts of the like kind as those which it already holds in solution. In its natural state, it is chiefly employed as an alterative, but may, by the artificial means just mentioned, be adapted to all the complaints in which the Cheltenham-water is found efficacious. Neither of them will keep well even in close bottles, or bear to be carried to any great distance, as the iron is deposited in a few days, though the saline impregnation continues. By evaporating the water the purgative salts are procured, for the purpose of being again dissolved in some more water from the same spring, to increase its operation on the bowels.

The inferiority, in point of strength, of the Scarborough-water, is more than counterbalanced by other advantages which Cheltenham does not possess. In the first place, near the *saline chalybeate* spring there is another spring of *simple chalybeate* water, like that of Tunbridge-Wells, which is very convenient for patients in cases where a determination to the kidneys may be desirable. But the situation of Scarborough on the coast is an object of still greater importance, as it affords an opportunity of bathing in the sea, so conducive to the cure of many of the disorders for which those springs are resorted to. The elevation of the ground, and the uncommon purity of the air, deserve also peculiar notice in a medical survey of the local advantages of Scarborough.

It is remarkable, that all the saline chalybeates in our island are cold, while many of those on the continent are hot, and are used as baths, as well as internally, in a number of diseases very difficult of cure. I shall therefore reserve my account of one or two of the most celebrated of them, till I come to describe our own hot baths, though the foreign ones, on account of their principal ingredients, may be said more strictly to belong to the class of waters which I have just been considering.

The details before entered into respecting the external and internal use of the sea-water, and its admirable effects not only as a grand preservative of health, but as an efficacious restorative of that blessing in various complaints, preclude the necessity of saying much of the second class of mineral waters, denominated the *simply saline*, and differing from common water only in being impregnated with some purging salts. We have several of these springs near the metropolis; but they are little used, as it is so easy to procure the sea-water, which is much superior to all others of this description, in the strength of its saline ingredients, and the certainty of its effects. Epsom-water, though one of the first of the salt springs that was brought into use, is now seldom or never prescribed. Bagnigge-Wells, those at the Dog and Duck in St. George's Fields,* as well as at Kilburn and Acton, have also had

* The waters of the "Dog and Duck" have long ago been disturbed by the less

their day of medicinal reputation; but even recommendatory essays and pamphlets can no longer prop up their fame. The portion of salts which they contain is not sufficient to act with certainty on the bowels, unless they are taken in such large quantities as delicate stomachs cannot bear, and as very few people can swallow without difficulty and disgust. Two or three pints must be taken one after the other, in a short space of time, to ensure the full purgative effect. On this account, when they were in vogue, it was a common practice to administer more convenient doses, smaller in quantity, but strengthened by an additional solution of some of the same salt as that which they already contained. But this differs so little from an artificial dose of physic, as almost to destroy the idea of a remedy prepared by nature. Besides, the facility which our insular situation affords, of procuring salt-water of the greatest efficacy from its grand reservoir, must lessen the value of those substitutes. Local convenience has certainly contributed its share to the high repute of a spring of the like kind at Sedlitz, a village in Bohemia, which, being much more strongly impregnated with *bitter purging salt* than the Epsom-water, can be more relied upon for its medicinal effects, and is therefore very justly esteemed in a part of the continent far removed from the sea.

SELTZER WATER.

BUT there is another saline spring in Germany, a more particular account of which must be interesting to the English reader, not only from the peculiarity of its nature and virtues, but because large quantities of it are imported into this country for medicinal purposes. Few mineral waters have acquired a greater degree of celebrity than those which are brought from Seltzer, and which may be said to form a peculiar species, being *saline* and slightly *alkaline*, with a strong impregnation of *fixed air*. This quickly evaporates on being exposed to the atmosphere, so that the water designed for exportation must be instantly bottled, and kept closely corked, with the mouths of the bottles well covered with cement, or it will soon become not only vapid but putrescent. If well preserved, when poured into a glass, it is perfectly clear and sparkling, and has a gentle saline, and somewhat pungent or acidulous taste: but if the fixed air be suffered to escape, through the least neglect, the water appears turbid, is offensive to the smell, and entirely loses its pungency. The stone-bottles, in which it is brought to England, contain about three pints each, a sufficient quantity for a day, to be taken in half-pint glasses at convenient intervals. Its natural flavour is rather agreeable, and its effects on the spirits are in general exhilarating. Persons of very irritable stomachs may dilute it with milk; in which mixed state it is particularly recommended in cases of hectic fever with expectoration. It corrects and diminishes the discharge from the lungs, checks the violence of the sweats, and contributes very much to the patient's repose.

The Seltzer-water is also used with considerable benefit in nervous affections of the stomach and bowels, in cases of indigestion,

medicinal but more inebriating and destructive substitution of those of Hodges; and Barclay, Perkins, &c.; a public-house having been erected on the spot. Ed.

foulness, bilious vomiting, acidity, heart-burn, spasmodic pains in the alimentary canal, and various diseases of the urinary organs. Its rapid determination to the kidneys, the action of its stimulus, and perhaps some considerable power as a solvent, may concur to produce the very agreeable effects that are experienced from it, in the latter complaints especially. In any of the former, it is advisable to take some gently-opening medicine every two or three days; and the easiest method of doing this is to add to the dose of Seltzer-water such a quantity of vitriolated magnesia as will keep the bowels in a regular state.

Though this water cannot be prescribed with so much confidence, it may be very safely tried in miliary pustules, and the like sudden eruptions on the skin, attended with general irritation. I consider it merely as a good diet-drink in these disorders; for the relief of which, greater reliance is justly placed on regimen than on medicine.

HARROWGATE WATERS.

In a few of the waters already described, we can discover a slight impregnation of sulphur; but where this principle abounds or predominates, the waters are distinguished by the name of *sulphureous*, from their chief ingredient. The springs of Harrowgate take the lead in this class, and are certainly deserving of the reputation they have acquired, though they are also very frequently used with great indiscretion: and as the same error is very common in drinking the other strong purgative mineral waters, I shall take this opportunity of enlarging upon it.

A very hurtful prejudice prevails in this country, that all diseases must be cured by medicines taken into the stomach, and that the more violently these medicines operate, they are the more likely to have the desired effect. This opinion has proved fatal to thousands, and will, in all probability, destroy many more, before it can be wholly eradicated. Purgings is often useful in acute diseases, and in chronical cases may pave the way for the operation of other medicines: but it will seldom perform a cure; and, by exhausting the strength of the patient, will often leave him in a worse condition than it found him. That this is frequently the case with regard to the more active mineral waters, every person conversant in these matters will readily allow.

Strong stimulants applied to the stomach and bowels for a length of time must tend to weaken and destroy their energy; and what stimulants are more active than salt and sulphur, especially when these substances are intimately combined, and carried through the system by the penetrating medium of water? Those bowels must be strong indeed which can withstand the daily operation of such active principles for months together, and not be injured. This, however, is the plan too generally pursued by those who drink the purging mineral waters, and whose circumstances permit them to continue long enough at Harrowgate, and the like places of fashionable resort.

Many people imagine that every thing depends on the quantity of water taken, and that the more they drink, they will the sooner

get well. This is an egregious error; for, while the unhappy patient thinks he is by this means eradicating his disorder, he is often, in fact, undermining the powers of life, and ruining his constitution. Indeed, nothing can do this so effectually as weakening the powers of digestion by the improper application of strong stimulants. The very essence of health depends on the digestive organs performing their due functions, and the most tedious maladies are all connected with indigestion.

Drinking the water in too great quantity not only injures the bowels, and occasions indigestion, but generally defeats the intention for which it is taken. The diseases, for the cure of which mineral waters are chiefly celebrated, are mostly of the chronic kind; and it is well known that such diseases can only be cured by the slow operation of alteratives, or such medicines as act by inducing a gradual change in the habit. This requires length of time, and can never be effected by medicines which run off by stool, and operate chiefly on the first passages.

Those who wish for the cure of any obstinate malady from the Harrowgate-waters, or others of the sulphureous or saline class, ought to take them in such a manner as hardly to produce any effect whatever on the bowels. With this view, a half-pint glass may be drank at bed-time,* and the same quantity an hour before breakfast, dinner, and supper. The dose, however, must vary according to circumstances. Even the quantity mentioned above will purge some persons while others will drink twice as much without being in the least moved by it. Its operation on the bowels is the only standard for using the water as an alterative. No more ought to be taken than barely to move the body; nor is it always necessary to carry it even this length, provided the water goes off by the other emunctories, and does not occasion a chillness or flatulency in the stomach or bowels. When the water is intended to purge, in cases where the nature of the patient's complaint requires a strong determination to the bowels, it may be necessary to drink a pint or two before breakfast.

I would not only caution patients who drink those waters over-night, to avoid hearty suppers, but also against eating heavy meals at any time. The stimulus of water, impregnated with sulphur and salts, seems to create a false appetite. I have seen a delicate person, after drinking the Harrowgate-waters of a morning, eat a breakfast sufficient to have served two ploughmen, devour a plentiful dinner of flesh and fish, and, to crown all, eat such a supper as might have satisfied a hungry porter. All this, indeed, the stomach seemed to crave; but this craving had better remain not quite satisfied, than that the stomach should be loaded with what exceeds its powers. To starve patients was never my plan; but I am clearly of opinion, that, in the use of all the strongly purging mineral waters, a light and rather diluting diet is the most proper;

* When I speak of drinking a glass of the water over-night, I must beg leave to caution those who follow this plan against eating hearty suppers. The late Dr. DAULTREY of York, who was the first that brought the Harrowgate-waters into repute, used to advise his patients to drink a glass before they went to bed; the consequence of which was, that having eat a meat-supper, and the water operating in the night, they were often tormented with gripes, and obliged to call for medical assistance.

and that no person, during such a course, ought to eat to the full extent of what his appetite craves.

Exercise is not less conducive to the salutary end in view than temperance. It promotes the operation of the waters, and carries them through the system. It may be taken in any manner that is most agreeable to the patient; but he ought never to carry it to excess. I scarcely need repeat a remark often made in other parts of this work, that the best kinds of exercise are those connected with amusement. Every thing that tends to exhilarate the spirits, not only increases the efficacy of the waters, but acts as a medicine. All those who repair to the fountains of health ought therefore to leave every care behind, to mix with the company, and to make themselves as cheerful and happy as possible. From this conduct, assisted by the free and wholesome air of those fashionable places of resort, and also the regular and early hours which are usually kept, the patient often receives more benefit than from using the waters.

During my residence at Harrowgate, I met with many instances of the most mischievous effects produced by drinking the waters in cases where they were absolutely improper, and adverse to the nature of the disease. When people hear of a wonderful cure having been performed by some mineral water, they immediately conclude that it will cure every thing, and accordingly swallow it down, when they might as well take poison. Before patients begin to drink the more active kinds of mineral waters, they ought to be well informed of the propriety of the course, and should never persist in using them, when they are found to aggravate the disorder.

On the other hand, I often witnessed the happy issue of experiment made with judgment and caution at Harrowgate, when the greatest benefit was derived from the proper use of the waters in various eruptions on the skin, of the most distressing nature; in rheumatism complicated with scorbutic complaints; in obstructions of the glandular and lymphatic system; and in diseases of the first passages, accompanied with, or proceeding from, inactivity of the stomach and bowels, acidity, indigestion, vitiated bile, worms, putrid sores, the piles, and jaundice. They answer two very important purposes; first, when taken in small quantities, acting as an alterative, and inducing, by their mild operation, a gradual change in the habit; and, secondly, when employed in larger doses where purging is indicated, fulfilling that intention in the most desirable manner, without irritating the nerves, or weakening the patient so much as other purgatives. After a little use, almost every body can drink them without any great disgust, though they are at first no less nauseous to the taste, than offensive to the smell.

I shall only add, that the external use of the Harrowgate-waters being justly deemed a very powerful auxiliary in many of the disorders for which they are resorted to, particularly those of the cutaneous class, there are proper baths for this purpose, to the supply of which three springs out of four are devoted, that which is reserved for drinking being more strongly impregnated with salt and sulphur than the rest.

MOFFAT WATERS.

THE sulphureous and saline waters of Moffat in North Britain are almost as much resorted to as those of Harrowgate. The impregnation of the former, indeed, is not so strong as that of the latter, and their effects are of course somewhat different. Two or three quarts of the Moffat water may be drank in a morning, without any sensible effect but that of increasing the flow of urine. It now and then purges; but this is so far from being its constant or regular mode of operation, that opening medicines are almost always necessary during a course of it. Its evident determination to the kidneys renders it of essential service to persons afflicted with the stone and gravel, particularly the latter. It has likewise afforded great relief in many bilious complaints, and in the early symptoms of a scrofulous habit. But its chief point of celebrity, and that in which it may be said to rival the springs of Harrowgate, is the cure of cutaneous eruptions of every kind. In these cases, the external application of the water, warmed to a considerable temperature, is very judiciously made a material part of the plan of treatment. One disadvantage, however, attends this process both at Moffat and Harrowgate. The waters, while heating, unavoidably lose in vapour some of their sulphureous impregnation, on which part of their efficacy, even when externally applied, must depend. So far, therefore, a preference is justly due to the natural hot sulphureous springs of Aix-la-Chapelle and Baresges, of which I shall take some farther notice, after I describe the thermal springs in our own island, which constitute the next and last class in my arrangement of mineral waters.

In the introductory part of this section, the waters which now remain to be considered are specifically distinguished by the title of *calcareous*, because they contain more lime or calcareous salts than they do of any other solid substance. I adopted this title, however, in compliance with custom, and merely as a nominal distinction, rather than from considering it as an important characteristic, or by any means expressive of the grand cause of the efficacy of such waters. It is not to chemical analysis, but to experience that we are indebted for a knowledge of their virtues; and, instead of giving them a name taken from a part of their contents, which conveys no useful information, we had better simply call them hot springs, as every body will then have a clear idea of the most perceptible difference between them and all the other mineral waters in our island.

BATH-HOT SPRINGS.

IN this part of our description, the hot springs of Bath have the most indisputable claims to precedence. The fame of their medical virtues is more widely diffused and more firmly established than that of any other springs in the known world. It is no wonder, therefore, that the pen of industry, of genius, or of ambition, should have been often exercised upon so popular a topic. Amidst such a multitude of books, Dr. Falconer's "Practical Dissertation on the Medicinal Effects of the Bath Waters," is acknowledged to be

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the best account which has yet appeared of what he justly calls a "powerful, but (in many instances) nice remedy." His situation as physician to the Bath Hospital must have afforded him the best opportunities of observing the effects of those waters; and he has given the most satisfactory proofs of his being well qualified to profit by those opportunities. One of his remarks is really of more consequence than a whole volume of chymical investigations, which have thrown just as little light upon the efficacy of the waters as the fables concerning Bladud, or the frequently-discovered fragments of Roman antiquities. Chemistry, indeed, makes us acquainted with the component parts of those waters, and tells us they contain a good deal of calcareous salts, but little, if any, neutral alkaline salts; and that they are impregnated with about a sixtieth part in bulk of fixed air, which holds in solution so very small a quantity of iron as to be scarcely appreciable, though it gives a slight chalybeate taste to the water when hot from the spring. But what inference could we deduce from these and the like amusing details, in the treatment of any particular disease? It is, then, to the enlightened practitioner, as I said before, that we must look for useful information; and, in this view of the subject, we cannot wish for more respectable authority than that of Dr. Falconer.

According to this writer, the Bath-water, when drank fresh from the spring, has in most persons the effect of raising and rather accelerating the pulse, increasing the heat, and exciting the secretions. The action on the nervous system is felt at the same time, so that the stimulating properties of the water must be very diffusive; and, what is farther remarkable, though these symptoms come on suddenly, yet they often continue much longer than we can suppose them to be excited by the actual presence of the water in the body.

Medicinal Properties.—The Bath-waters not only promote urine and perspiration, but also increase the salivary discharge; and quench thirst better than other fluid, in cases where there is no tendency to fever. If any disposition of this kind should appear, a hot stimulant would be evidently improper.

It has been generally imagined, that those waters were somewhat astringent, on account of the costiveness which frequently accompanies the use of them. But this effect is more reasonably ascribed to their heating qualities, and to their power of exciting the other secretions. As a proof of this, when perspiration is checked in cold weather, they sometimes prove slightly purgative.

The relief which the Bath-waters afford in the colic, in convulsive retchings which often attend the gout in the stomach, and in many other similar affections, is a sufficient evidence of their antispasmodic powers.

This account of the primary and immediate effects of the water used internally will enable any patient to judge, from his own feelings, whether it agrees with his constitution or not. If it excites, on being first taken, a pleasing glow in the stomach, followed by an increase of spirits, and of appetite, particularly for breakfast, and, above all, a rapid determination to the kidneys, there is the greatest probability of its proving serviceable. But if it occasions head-ach, thirst, and dryness of the tongue;—if it sits heavy on the

stomach, or produces sickness, and does not pass off by urine or perspiration;—it may be fairly concluded, that its continuance would do injury, unless these symptoms can be removed.

If we come next to consider the external application of those waters, we shall find, in the first place, that they unite all the medicinal advantages of warm-baths, from about a hundred and six degrees of heat to any inferior degree that may be desired. The extent also of the baths, which affords room to move about in them freely, and the permanence and uniformity of their warmth, are not unimportant recommendations. But Dr. FALCONER is of opinion, that the Bath-waters possess some farther powers or specific qualities superior to those of common water of the same temperature. He thinks that their action on the nervous system is more stimulating than a common warm-bath;—that they raise the pulse and heat of the body to a higher degree, yet are much less apt to produce a violent perspiration;—that they remarkably increase the urinary discharge;—and that, so far from causing any relaxation or weakness, the bathers are observed to be in general more alert and vigorous, and to have a better appetite on the days of bathing than in the interval. As far as my own opportunities of observation extended during a few short visits at Bath, they are in perfect concurrence with the Doctor's opinion.

The diseases, in which this eminent practitioner very accurately describes the good effects of the Bath-waters, are the green sickness, particularly before any considerable affection of the stomach takes place, or any feverish symptoms appear; visceral obstructions, when the consequences of intermittent fever, or of long residence in hot climates, if the disorder in these cases has not advanced too far; the palsy, from a great variety of causes; the gout, in that stage of the complaint, when the inflammatory symptoms, if any have preceded, have in a good measure abated, and a degree of weakness and want of tone in the system begins to take place; the chronic rheumatism, and the acute also, provided the feverish disposition be previously allayed by proper evacuations; white swellings on the knee; hip cases; weakness of the organs of digestion; the colic, accompanied with hysteric symptoms, or produced by the poison of lead; the jaundice, when arising from simple obstruction of the biliary ducts; hypochondriac and hysterical complaints; St. Vitus's Dance; spasmodic affections of the womb and painful menstruation; and, lastly, in many cutaneous, but more especially leprous eruptions.

I have confined myself here to a bare outline, which may be sufficient for the general direction of valetudinarians, who must avail themselves of more particular advice at the fountain-head. Almost every case will require a peculiar mode of treatment; and great caution will be found necessary to prevent fatal mistakes. I cannot too often repeat, that the more powerful any remedy is, the more liable it is to abuse; and though the efficacy of the Bath-waters has been fully established in a variety of the most stubborn and afflicting disorders, yet their misapplication has also been often attended with very serious consequences.

Even when the use of the Bath-waters may be deemed safe or proper, consideration must be had, as Dr. FALCONER justly ob-

serves, to the quantity taken in, when they are drank; and to the time of stay in the bath, heat of the water, &c. when they are externally used.

The safest method is to begin with drinking a glass, containing about a quarter of a pint, before breakfast; and to judge from its effects how often it may be repeated, or the quantity enlarged. If it feel easy, warm, and cordial, to the stomach and spirits, and excites no pain or sense of fulness in the head or eyes, a second glass of the same size may be taken the same day at noon, and this quantity gradually increased to a pint in the day, taken at two or three times, as convenience may suit. This is deemed a proper medium for the generality of people, though in some cases, where the habit is not very irritable, the daily allowance may be augmented to a pint and a half, with safety and benefit. The Cross Bath-water, the temperature of which, when fresh from the spring, is 112° , is usually recommended at the commencement of a course, especially when there is any affection of the head, or when any tendency to plethora appears in the system. After some time, the more powerful water of the King's or the Hot Bath, which is four degrees higher in temperature, may be used; and this change will prevent, in some measure, the disgust which is apt to come on after a long trial of the Bath-waters.

No less regard should be paid to the proper use of the Bath. A short stay of five or six minutes is most advisable at first; and if this trial produces no symptoms that are disagreeable, but, on the contrary, seems to improve the health, spirits, and strength, a longer stay may be gradually indulged, till it comes to half an hour, but never to cause lassitude, faintness, or disgust. The choice of the baths is often a matter of importance, as there is a still greater variation in the temperature of the waters when in the baths than at the pumps, the waters in the King's, or the Hot Bath, being from eight to twelve degrees warmer than those of the Cross Bath. There are also private baths of any temperature to suit the peculiarities of every patient's habit or complaint. The best time in general for bathing is the morning; and it may be repeated twice, or at most thrice a-week. As the public baths are emptied soon after nine o'clock, a much earlier hour is usually chosen for bathing; but the private baths may be prepared at any hour of the day. Where a greater stimulus than mere immersion is thought necessary, or where a partial application of the water is deemed preferable to a general one, the part may be pumped upon, so as to increase the forcible action of the water on that part, and yet prove less heating to the system at large.

BUXTON WATERS, &c.

THERE are no springs in our island besides those at Bath, which can be strictly called hot, though a few others have got the name, and are referred to this class of thermal waters, from being, invariably in every season, and independently of the state of the atmosphere, warmer than the general average of the heat of common springs. The temperature of Buxton-waters is only 82° , yet approaches nearest to that of the hot springs at Bath, which, in their coolest state, are never lower than 90° . In other sensible proper-

ties the Buxton-water differs very little from common pump-water.

The medicinal effects of the Buxton-waters, however, are far from being inconsiderable. Taken internally in small doses at different intervals, amounting to near a pint before breakfast, and the like quantity before dinner, they afford very great relief in heart burn, flatulency, sickness at the stomach, and other distressing symptoms of defective digestion and derangement of the alimentary organs, the sure attendants of indolence and luxury. In such cases, the body must be kept regularly open by means of medicine during the use of the waters, if these do not, as they sometimes will, produce a laxative effect which is always salutary.* They are no less serviceable in alleviating painful affections of the kidneys and bladder; and here also the external use of the waters is often found to promote their internal operation.

But the employment of the Buxton-waters as a bath is not confined to the relief of gravelly complaints. They contribute far more effectually to restore the healthy action of particular limbs, that may have lost their moving powers in consequence of long or violent inflammation, occasioned either by external injury, or preceding acute rheumatism. But if the rigidity, weakness, or impaired functions of the parts affected be the consequence of a paralytic stroke or of gouty inflammation, more benefit will be experienced from the warmer temperature of the Bath waters.

In general, the Buxton bath is well suited to such a languid, enfeebled, or very irritable state of the habit, as cannot bear absolutely cold water, but may be excited to easy and salutary re-action by a milder stimulus. The slight shock, which people feel at the instant of immersion in the Buxton waters, is almost immediately followed by a pleasant glow all over the body; and this is precisely the effect aimed at. But I have expressed myself so fully on the nature of the particular infirmities to which the lukewarm bath is adapted, as to render any farther observations on this head unnecessary.

MATLOCK, &c.

The tepid springs at Matlock approach still nearer to cold water than those at Buxton, being sixteen degrees lower in point of temperature. The shock, which they give on immersion, is consequently stronger, and requires greater powers of re-action in the habit; but they form a good intermediate bath between Buxton and the sea. They are, therefore, very properly employed in preparing invalids for the latter, when this is necessary to complete a cure, as is often the case in the chronic rheumatism. They are used internally as a pure diluting drink, but are not known to possess any other remarkable medicinal properties.

BRISTOL HOT WELL, &c.

THE Hot-well, as it is improperly called, near Bristol, is not,

* A dose or two of some aperient medicine is advised to be taken preliminary to the use of these waters; and gouty patients, to whom also they are recommended, ought not to begin a course unless they are well prepared, and rendered free from every discoverable sign of an acute state of the disposition to an attack of their complaint.

indeed, so cold as the springs at Matlock, but does not rise to the temperature of those at Buxton, being only 74° , or twenty-two degrees below the ordinary warmth of the blood in a state of health. The Hot-well water is not made use of to bathe in; but, taken internally, it has acquired very high reputation for curing the incipient symptoms of consumption, and affording considerable relief in the more advanced stages of this disease. As the effects it produces are very gradual, its agreeableness to the palate is a fortunate circumstance for a class of patients, who can only hope, by long and steady perseverance, to check the progress of one of the most insidious destroyers of the human species. There is no doubt but they are also indebted for a part of the relief they experience to the mild, sheltered, yet sufficiently ventilated situation of the Hot-wells, and to the judicious plan of diet, exercise, and amusement pursued there.

The other complaints, in which the purity and temperature of the Hot-well water render it very grateful and of no small efficacy, are relaxations of the stomach and bowels, brought on by long residence in hot climates; bilious diarrhœa; slight dysentery; and a disorder still more difficult of cure than any of these, I mean the diabetes. I do not know any natural remedy better adapted to relieve its various symptoms; such as the constant thirst, the impeded perspiration, the dryness and frequent desquamation of the skin, the feverish quickness of the pulse, and the preternatural discharge of urine. A regular course of the Hot-well water has been found to moderate this almost unquenchable thirst; to keep the skin moist and perspirable; to allay the fever; and to render the urinary organs fitter to receive benefit from the medicines usually prescribed to remove their debility and that of the system in general. It may be farther necessary to observe, that, as this water contains but a very small quantity of purgative salts, which are also counteracted by a larger solution of calcareous salts, it must have a stronger determination to the kidneys than to the bowels, so that the use of a gentle aperient medicine becomes in several cases advisable.

Particular habits and complaints require variations in the quantity to be taken of this, as well as of any other mineral water. The full dose is half a pint, to be drank early in the morning, and repeated before breakfast, at the interval of at least half an hour spent in gentle exercise. Two more doses of the like quantity, and with the like interposition of active amusement, are to be taken between breakfast and dinner, at the longest distance from each of those meals. As this water is also used at table and for domestic purposes, every invalid unavoidably takes more than the above quantity every day; but in consequence of its altered temperature, and of the loss of the fixed air it contained, it cannot be in so high a state of medicinal perfection as when drank fresh from the spring. The same remark must of course apply to the immense quantities that are bottled for exportation, though the almost proverbial purity and softness of the water, as well as its excellent property of keeping untainted for a great length of time in hot climates, must render it a very valuable water for long voyages.

CONTINENTAL HOT SPRINGS, &c.

I SHALL subjoin to these observations on the medicinal virtues of our own thermal waters, a short account of the most celebrated hot springs on the continent.

There is none of the foreign watering places more resorted to than the German Spa, of which I already took notice among the cold chalybeates, and Aix-la-Chapelle, about twenty-four miles distant from the former, and equally famous for waters of a very different quality and temperature. Their celebrity is traced back even to the days of CHARLEMAGNE, who resided for a long time at Aix, and took so much delight in the use of the waters, as frequently to hold his levee in the bath, with all his attendants.

The exact degree of the heat of these waters is given differently by different observers; but, taking the average of their accounts, it may be reckoned in the well of the hottest bath at 140°, and at the fountain where it is drank, about 120°. It requires to stand several hours in the large baths, before it is sufficiently cooled for tepid bathing, without the addition of cold water. It contains an uncommon quantity of sulphur, and emits a smell like that of Harrowgate water, but far more penetrating. From its heat, and its stronger impregnation of the sulphureous principle, it is also more powerful in all the diseases of the skin, for which Harrowgate is resorted to. The baths at Aix-la-Chapelle are looked upon as a cure for almost every cutaneous eruption; but the water should be used internally at the same time, to carry off impurities, and keep up the full perspiration promoted by the bathing. These baths are equally serviceable in stiffness of the joints and ligaments, which is left by the inflammation of gout and rheumatism, and in the debility of palsy, where the highest degree of heat which the skin can bear is required. In obstinate cases, the vapour-bath, formed by the steam of those very hot waters, is recommended by the German physicians.

Numberless instances serve to establish the efficacy of the waters of Aix as an internal medicine in painful affections of the kidneys and bladder, as well as in disorders of the stomach and biliary organs occasioned by luxurious indulgence and intemperance. The common dose is half a pint, to be repeated more or less often, according to its sensible effects, and to the intention with which it is prescribed, either as a purgative or a diuretic. It is a striking proof of the power of habit, that the palate and stomach are soon reconciled to the use of such waters, though at first extremely disgusting and nauseous.

The hot sulphureous springs at Bareges, two little hamlets on the French side of the Pyrenean mountains, are, indeed, inferior in the degrees of heat and strength of impregnation to the waters of Aix-la-Chapelle, yet are found very beneficial in the like complaints. Their highly detergent powers, owing perhaps to a small portion of oily or bituminous matter, added to the other medicinal properties which they possess in common with those of Aix, render them peculiarly efficacious in deep-seated ulcers, and those morbid affections of the womb, which French ladies call, though not with medical correctness, *depots de lait*. In such cases the waters are

injected. They are also very frequently used in the form of *douche*, or by way of pumping on the part affected, as well as for general bathing.

In the interior parts of France, particularly in the central provinces of Auvergne and the Bourbonnois, now included in the Department of the Loire, there are several hot springs, but of the *saline chalybeate* class, the efficacy of which, as an internal medicine, is greatly increased by their higher degree of temperature, in the disorders for which Cheltenham is resorted to in our own country. Those French springs derive another very important advantage from their heat, that of being used as a bath in all cases which may require that salutary stimulus on the surface. In many of these, the internal and external use of the waters co-operate with wonderful effect; and particularly in the sexual complaints of women, arising from any defect or irregularity in the functions of the uterine organs. Catherine de Medicis, the mother of several French princes, is said to have been much indebted for her fertility to the waters of Bourbon Lancy, not far from the town of Moulins, a place consigned to immortal fame by Sterne's affecting story of "Maria."

There is a village on the confines of Bohemia, where the waters may be said, in the strictest sense of the word, to boil up with vehemence from the spring, and are often used for scalding hogs and fowls, to loosen the hair and feathers, the heat being quite sufficient for these purposes. The temperature of the *Prudel*, or *furious* fountain, as it first issues forth, is as high at 165°, and keeps invariably to the same point. Of course it requires to be very much cooled before it can be used as a bath, or even drank. Those waters are said to have been resorted to, and first brought into considerable notice, by the Emperor Charles IV. in 1370; to which circumstance the village owes its name of Carlsbad, or Charles's bath. The natural history of its waters would afford a great variety of curious and interesting particulars; but the limits of my present plan confine me to a short medical notice of their extraordinary virtues in all the diseases for the cure of which *saline chalybeates* are internally or externally employed.

MALVERN WATER.

MALVERN, in Worcestershire, has for many years been celebrated for a spring of such remarkable purity, that it has acquired the name of the Holy Well, from the reputed sanctity of its waters, and the real extensive benefit long derived in various cases from its use.

The great benefit arising from the use of Malvern water as an external remedy in diseases of the skin and surface of the body, has led to its employment in some internal disorders, and often with considerable advantage. Of these the most important are painful affections of the kidneys and bladder, attended with the discharge of bloody, purulent, or fetid urine; the hectic fever produced by scrofulous ulceration of the lungs, or very extensive and irritating sores of the surface of the body, and also fistulæ of long standing that have been neglected, and have become constant and trouble-

some sores. Though unquestionably of benefit in many of these cases, it is in general a safe application, and may be used with the utmost freedom, both as an external dressing for sores, and as a common drink; and this is particularly the case with common people that resort to this spring for diseases of the skin or other sores, who are in the constant habit of dipping their linen into the water, dressing with it quite wet, and renewing this application as often as it dries. The perfect safety of this practice on a preternaturally irritated surface, has been ascertained by long experience; and is in itself an important circumstance in illustrating the effect of moisture on the surface of the body.

The internal use of Malvern water is sometimes, on first beginning to use it, attended with a slight nausea; for the first day or two it occasions some degree of drowsiness, vertigo, or slight pain of the head, which comes on a few minutes after drinking it. These symptoms, however, subside spontaneously in a few days, or may readily be removed by some mild purgative medicine.

The effects of the Malvern water on the bowels are not at all constant; it frequently purges briskly for a few days, nor is it at all uncommon for the body to be rendered costive by its use, especially with those accustomed to malt liquors. In all cases it decidedly increases the flow of urine, and the general health of the patient; his appetite and spirits almost invariably improve during a course of the water, if it agree in the first instance.

In addition to the benefits to be derived from the use of the Malvern water, the pure mountain air, added to the romantic beauty of the situation, which solicit the invalid to active exercise, contribute greatly to the convalescent state; and the temperance generally observed by patients of every rank in these places, assists materially in securing the advantage which has been gained from the use of this mineral spring.

A course of Malvern water must vary very considerably in duration, on account of the different kinds of disease for which this spring is resorted to. Cases of obstinate scrofulous sores, especially with caries in any bone, are always long in healing, and require a residence here for a considerable time. The same may be said of very obstinate herpetic eruptions; but where the cutaneous affection is mild, or where a tendency to it comes on at stated times, which is sometimes the case, this habit may be checked by a short use of this water; and hence some persons who are liable to this disorder, make an annual visit to this salubrious spring.

ALUMINOUS CHALYBEATE SPRING IN THE ISLE OF WIGHT.

This spring, discovered by a Mr. Waterworth, is situated on the south-west coast of the Isle of Wight, about two miles to the westward of Nitron, in one of those romantic spots for which that coast is so remarkable.

From a tabular view of the diseases which preceded a course of this mineral spring, furnished by Dr. Lempriere, who had the opportunity of witnessing the effects of this water upon an extensive scale, it appears that many patients, labouring under continued fever, agues, pulmonic diseases, chronic dysentery, chronic rheu-

matism with emaciation, diseases of the abdominal viscera, dropsy &c. were benefited.

"In giving this water," observes Dr. Lempriere, "I was very forcibly struck with the rapid effect it produced on the appetite and spirits, and the confidence it inspired in the mind of the patient." The improvement of the appetite was soon succeeded by an increase of strength, and a return of the natural complexion. The water did not appear to produce any effect upon the pulse or skin, nor did it act particularly on the kidneys; its tendency to increase the appetite and raise the spirits was the only evident effect to be observed during the early course; and a return of strength, and general appearance of improved health, marked its later progress. In administering the water, it was a rule previously to devote one day to clearing the bowels by some suitable aperient; and Epsom salts were the medicine generally preferred. Under this preparative, the water seldom produced any disagreeable effect on the stomach or bowels, or rendered it necessary, during the course, to take laxative medicines; an advantage which does not attach to other chalybeate waters, unless they hold in solution a considerable portion of some aperient salt.

It is advisable to begin the use of these waters in very small proportions, using it in a diluted state when, from peculiarity of constitution, it appears to excite nausea, increasing it gradually when this may be done with safety, combining with its use a nutritive diet, without excess, paying strict attention to the state of the bowels, so as to avoid costiveness, early hours, particularly early rising, exercise in the open air, more especially on horseback, and sea-bathing, when not otherwise prohibited.

CHAP. XIV.

VEGETABLE POISONS.

ALL vegetable poisons act upon the nervous system. Those of an irritating nature are MONKSHOOD, MEADOW SAFFRON, MEZEREON, BEAR'S FOOT, HEMLOCK DROPWORT, WATER HEMLOCK, WALL-PEPPER, &c. The general symptoms they produce when taken are, an acrid pungent taste, with more or less bitterness, excessive heat, great dryness of the mouth and throat, accompanied with a sense of tightness there; violent vomiting, and the efforts continued even after the stomach is emptied; purging, with great pain in the stomach and bowels; pulse strong, frequent, and regular; breathing often quick and difficult; appearance of intoxication; the pupil of the eye frequently dilated; insensibility, resembling death; the pulse becomes slow and loses its force, until death closes the scene.

Externally applied, many of the vegetable poisons produce violent inflammation of the skin, with vessications, or pustulary eruptions.

TREATMENT.—If vomiting has been occasioned by the poison, and the efforts are still continued, they may be rendered easier by

swallowing copious draughts of warm water, or thin gruel; but should insensibility have come on without vomiting, it ought immediately to be excited by some powerful emetic, as the sulphate of zinc, (twenty grains dissolved in half a tea-cupful of water) or sulphate of copper, from ten to fifteen grains; after the operation of which, a brisk purgative should be given, and emollient or stimulating clysters administered, as the urgency of the case may require.

A preferable and more expeditious mode, provided it can readily be procured, of dislodging the poison, mineral or vegetable, is the stomach-pump; as this, however, requires some anatomical knowledge, a medical practitioner, having one of these valuable machines in his possession, should be instantly sent for, in the meantime either of the preceding, or other emetics, being given.

After as much as possible of the poison is dislodged, either by emetics or other means, a very strong infusion of coffee, or vinegar diluted with water, may be then given with advantage.* Camphor-mixture with ether (two ounces of the former to half a drachm of the latter,) may be taken frequently; and should the insensibility increase, warmth, friction, and blisters may be employed. If inflammation, or other dangerous consequences have arisen, these must be treated accordingly.

NARCOTIC POISONS.—Among the narcotic poisons are enumerated the following: DEADLY NIGHTSHADE, HEMLOCK, FOXGLOVE, HENBANE, TOBACCO, OPIUM, WOODY NIGHTSHADE,† &c. &c. The general symptoms of these, when taken into the stomach, or applied to a wound, produce the following effects: viz. stupor, numbness, heaviness in the head, desire to vomit, at first slight, but afterwards insupportable; a sort of intoxication, stupid air, the pupil of the eye dilated, furious or lively delirium, sometimes pain, convulsions of different parts of the body, or palsy of the limbs. The pulse is variable, but at first generally strong and full; the breathing is quick, and there is great anxiety and dejection, which, if not speedily relieved, soon terminates in death.

TREATMENT.—In the treatment of persons labouring under the influence of narcotic poison, the principal attention should be directed to rouse the sensibility of the system, so as to render the stomach susceptible to the irritation of emetics, and the action of other stimulants. Late experience has proved that the best mode of effecting this is by repeatedly dashing cold water over the head and neck, whilst the other parts of the body are kept warm and dry. Applying the solution of ammonia to the nostrils by means of a feather, introducing a drop or two of the spirit of hartshorn into each eye, sprinkling cowhage over the neck, breast, and hands, and applying a mustard-plaster over the seat of the stomach, have been attended with good effects. The best form of an emetic, in

* The fruit of the *Fewillea cordifolia* has latterly been recommended as a powerful antidote against vegetable poisons; and is directed to be used in as recent a state as possible. ED.

† All plants whose flowers have five stamens, one pistil, one petal, and whose fruit is of the berry kind, may at once be pronounced as poisonous. The umbelliferous plants which grow in water, are mostly poisonous; and such as have the corolla purple and yellow, may be suspected of being so. ED.

these cases, is the subjoined draught.* Should this, however, fail, four or five grains of tartar emetic, or from ten to twenty of the sulphate of zinc, should be introduced into the stomach every quarter of an hour, and vomiting excited and assisted by irritating the fauces with the finger, or the end of a feather. Large and strong clysters of soap, dissolved in water, or of thin gruel, into which a table-spoonful of salt may be put, should be speedily administered, to clear the bowels, and to assist in getting the poison dislodged, giving active purgatives after the poison has ceased; after which the strong coffee and diluted vinegar and water may be given, as above directed. If by these means the stupor and drowsiness, which is sometimes extreme, and the insensibility bordering on apoplexy, be not remedied, blood may be taken from the jugular vein, blisters applied to the neck and legs, and the sensibility roused by every possible means. If the heat of the body decline, warmth and friction must be perseveringly used to restore it. Vegetable acids are on no account to be given before the poison is expelled; and it is even desirable that as little fluid as possible, of any description, should be given. The stomach-pump, if it can be procured and adopted without loss of time, should precede these means, as the most effective in dislodging the poison.

POISONOUS MUSHROOMS.—Among these are the **PEPPER AGARIC**, **DEADLY AGARIC**, **CHAMPIGNON**, which are frequently mistaken for the edible mushroom.† The symptoms they produce are nausea, heat and pain in the stomach and bowels, with vomiting and purging; thirst, convulsions, and faintings; small and frequent pulse; delirium, dilated pupil, stupor, cold sweats, and often death.

TREATMENT.—In the first place, when any of the above symptoms arise, after eating mushrooms, an emetic of tartarized antimony, followed by frequent doses of Glauber or Epsom salts, and large stimulating clysters, are to be speedily administered. After the contents of the stomach are thoroughly evacuated, ether may be given in small quantities of brandy and water; but should inflammatory symptoms supervene, these and other stimuli must be laid aside, and means accordingly adopted to combat them. See **MINERAL POISONS**, &c. p. 342.

CHAP. XV.

POISONOUS FISH, &c.

Of this class are the **YELLOW-BILLED SPRAT**, **SEA LOBSTER**,

* Take Subcarbonate of Ammonia, 1 scr. Peppermint Water, 3 ounces.
Ipecacuanha Powder, $\frac{1}{2}$ drachm. Mix for an emetic; to be taken immediately.
Tincture of Capsicum, 2 drs.

† Poisonous mushrooms may be distinguished from such as are eatable, by attending to their botanical characters; and by the following remarks: Poisonous mushrooms grow in wet shady places; they have a nauseous smell, are softer, more open and porous than the edible ones. They have also a dirty-looking surface, sometimes a gaudy colour, or many very distinct hues, particularly if they have been covered with an envelope. They have soft bulbous stalks, grow rapidly, and very soon corrupt. Ed.

LAND CRAB, CONGER EEL, MUSCLE, ROCK FISH, &c. In an hour or two after eating stale fish, or often in much less time, a sense of weight at the stomach comes on, with slight vertigo and headache, heat about the head and eyes, and considerable thirst; often an eruption of the skin similar to what is called the nettle rash; and, in some instances, death has been the consequence.

TREATMENT.—An emetic should be taken as soon as any of the preceding symptoms, after eating any of the above fish, begin to manifest themselves; and where it cannot readily be procured, vomiting may be excited by tickling the throat with the finger, and taking large draughts of warm water. After full vomiting an active purgative should be given to remove any of the noxious matter that may have found its way into the intestines. Vinegar and water may be drank after the operation of these remedies, with which also the body may be sponged. Water made very sweet with sugar, to which some ether may be added, may be drank freely as a corrective; and a very weak solution of alkali may be given to obviate the effects produced by the poison. If spasms come on after the evacuations, large doses of the tincture of opium are necessary. If inflammation arise, the usual means of removing it must be employed.—See **ANIMAL POISON**, p. 112, &c.*

CHAP. XVI.

VACCINATION.

As a preventive of the small-pox, the vaccine inoculation is now universally practised. This generally produces a very mild and safe disease, consisting of a single vesicle forming on the place where the inoculation was performed. On the third day, the scratch where the vaccine matter was introduced is slightly red, and, if pressed with the finger, feels hard. Next day, the red point is a little increased, and somewhat radiated. On the fifth day, a small vesicle appears, but it is more easily seen on the sixth. This gradually increases, until it acquires the size of a split pea. The colour of the vesicle is dull white, like a pearl. Its shape is circular, or slightly oval when the inoculation has been made with a lengthened scratch, acquiring about the tenth day a diameter equal to about the third or fourth part of an inch. Till the end of the eighth day, the surface is uneven, being depressed in the centre, but on the ninth day it becomes flat, or sometimes higher at the middle than at the edges. The margins are tinged and rounded, projecting a little over the base of the vesicle. The vesicle is not simple, but cellular, and contains a clear limpid fluid, like the purest water.

On the eighth or ninth day, the vesicle is surrounded with an areola or circle of intense red colour, which is hard and tumid. About this time an erythematic efflorescence sometimes takes

* See *New London Medical Pocket Book*, p. 234, to p. 249, for an excellent history of mineral, vegetable, animal, and aerial poisons, &c.

place near the areola, and spreads gradually to a considerable part of the body. It consists of patches, slightly elevated, and is attended with symptoms of fever. On the eleventh or twelfth day, as the areola decreases, the surface of the vesicle becomes brown at the centre, and is not so clean at the margin; the cuticle gives way, and there is found a glassy hard scab, of a reddish brown colour, which is not detached, in general, till the twentieth day. When it falls off, a scar about half an inch in diameter is seen, and having as many pits as there were cells in the vesicles.

During the progress of the vesicle, there is often some disorder of the constitution; and occasionally a papulous eruption, like scrophulus, appears next the vesicle. As security against the small-pox is not secured by spurious vaccine vesicles, it becomes necessary to study carefully the character of the genuine disease, which is here briefly described.

CHAP. XVII.

SEA-SICKNESS.

THE cause of this distressing affection is the well-known motion of a vessel on the surface of the water. Some thousands are annually, nay daily, prevented from going to sea, either upon business, health or pleasure, in consequence of the terror of the waves. The most alarming, nay even fatal, consequences have been known to result from the violent retching and vomiting produced by the motion of the vessel, without it being in the power of any one to stop it; for, if it be true that sea-sickness is only to be cured by habit,* what hope can be held out to the afflicted that they will acquire this habit, without inconvenience, and without risk; such as the bursting of a blood vessel, apoplexy, idiocy, blindness, abortion, &c., which have been known to result from excessive straining and vomiting?

People of delicate constitutions are known to derive considerable benefit from sailing on the sea; though frequently the good they have received has been more than counterbalanced by the in-

* With the exception of Dr. Stevenson's *Imperial Marine Tincture*, which, for the last ten or twelve years, has been privately made and sold, we never before heard of any preparation having a decided effect on this peculiar malady. It is, however, but common justice to confess, that this tincture has, in conjunction with its other virtues, every claim to the appellation of a specific for this affection, as was witnessed by us in no less than twelve passengers, male and female, from London to Leith; and on nearly an equal number, with the same effect, from Leith to London, in the year 1817, and frequently since. It possesses also the no less singular quality of completely arresting the distressing vomiting to which ladies at various stages of pregnancy are liable. In general debilities and relaxation from long residence in hot climates, the abuse of mercury, excessive drinking, and other species of intemperance; excessive and debilitating evacuations in women, and the concomitant nervous affections, indigestion, &c. the *Imperial Marine Tincture* is one of the most valuable remedies that ever the ingenuity or talent of man could possibly devise for the relief of suffering humanity. It is an elegant preparation, purely vegetable; its properties are those of an agreeable tonic, requiring no increase of dose to reproduce or keep up its effects; it promotes the general circulation, and communicates a congenial warmth over the whole system, which its use invigorates and enlivens, &c. Its analysis has frequently been attempted, but without success.

jurious effects that have been caused by the violent sickness thereby occasioned.

Those who intend to travel by sea, and are apprehensive of sickness, should previously use gentle aperients; and afterwards, to alleviate the nausea and vomiting, drink soda-water in a state of effervescence; live sparingly; take up their station as near the middle of the ship as possible; sleep in a hammock or cot, in preference to a cabin, with their head towards the stern of the vessel; and while they are upon deck to look always in the direction the ship is sailing. Persons of a plethoric constitution should purge, and lose a little blood from the arm.

The Imperial Marine Tincture, in doses of one, two, or three tea-spoonsful every quarter of an hour, has the remarkable effect, in the course of a few doses, of completely removing all the symptoms; indeed, this is so valuable a medicine, of the nostrum-kind, for this and other affections, that whether by land or sea, in hot, or cold, or temperate climates, it must always prove a safe and most useful medicine to resort to on emergencies.

Many persons, on the least motion of a vessel, are instantly taken with nausea and vomiting. Whenever the latter occurs, it should be encouraged, until the contents of the stomach are ejected, by copious drafts of tepid water; after which, a tea-spoonful or two of the Imperial Marine Tincture effectually prevents any recurrence of these unpleasant symptoms.

The many flattering encomia that have been lavished upon this valuable preparation in sea-sickness and nervous affections in general, render it, from the smallness of the dose, and the safety with which it may be taken, an object of some consideration, where such a medicine of the kind may be required.

