

fire; yet reason and observation shew that this is the 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 rottenness, 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 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: then continued friction with warm flannel, warm cloths, and hot wines, may be serviceable.

The whitloes, kibes, chilblains, and other inflammations of the extremities, which are so common among the peasants in the cold season, are 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 consequences from this quarter might be easily avoided by only observing the precautions mentioned above.

CHAP. LIV.

OF FAINTING FITS, AND OTHER CASES WHICH REQUIRE IMMEDIATE ASSISTANCE.

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 should 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 spoonfuls 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 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. Spirit of rosemary, may be held to his nose. His mouth may be wet with a little rum or brandy; and, if he can swallow, some warm wine, mixed with sugar and cinnamon, which is an excellent cordial, may be poured into his mouth. A compress of flannel dipped 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 panado made with soup instead of water, new-laid eggs lightly poached, chocolate, arrow-root, 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, volatile spirits, as volatile liquor of hartshorn, water of ammonia, succinated spirit of ammonia (i. e. Eau de Luce), and spirit of rosemary (i. e. Hungary water), 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 medicines.

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 the 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 swooning 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.

From whatever cause fainting fits proceed, exposing the patient to a current of fresh air, and the application of vinegar to the wrists, the palm of the hands, and the nostrils, will generally recover her; and this mode of relief is in general to be preferred to the common practice of pouring down some spiritous tincture or volatile drops. No more persons ought to be admitted into a 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.

OF INTOXICATION.

THE effects of intoxication are often fatal. No kind of poison kill more certainly than an over-dose 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 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 drunken person 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, discharging the contents of the stomach, &c. 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; the acid liquors, together with the heat of the stomach, having coagulated the milk in such a manner that 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 lukewarm water and oil; but in this condition vomiting may generally be excited by only tickling the throat with the finger or a feather.

A young man 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 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. I was afterwards

repeated with the same happy effect, and seemed to be the chief cause of his recovery. He then began to shew 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.

OF SUFFOCATION AND STRANGLING

THESE may sometimes proceed from an infarction of the lungs, produced by viscid clammy humours, or a spasmodic affection of the nerv 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 affections 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 drank; to a cupful of which a teaspoonful of the camphorated tincture of opium 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, and sometimes by the mother being seized with hysteric fits in the night. 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 of many infants, and prevent others from being rendered weak and sickly all their days by the injuries done to their lungs.

The late Mr. Glover, surgeon in London, related 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 some time longer his pulse became more frequent, and his mouth and nose being irritated with water of ammonia, 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.

This case is sufficient to shew what may be done for the recovery

of those unhappy persons who strangle themselves in a fit of despair, or otherwise, with guilty daring, attempt by barbarous hands to "put off this muddy vesture" of mortality.

OF PERSONS WHO EXPIRE IN CONVULSION FITS

CONVULSION fits often constitute the last 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.

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 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 steam 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 their lungs, immersing the person in warm water, &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.

We shall conclude these observations on the suspension of the vital functions, by inserting the Resuscitative Process, directed by that patriotic institution, the

ROYAL HUMANE SOCIETY.

CAUTIONS.—1, The person is never to be held up by the heels. 2, Not to be rolled on casks, or other rough usage. 3, Avoid the use of salt: in all cases of apparent death, warm flannel lightly sprinkled with spirits may be useful.

THE DROWNED.—1, Convey carefully the body, with the head raised, to the nearest convenient house. 2, Strip and dry the body; clean the mouth and nostrils. 3, Young children between two persons in a warm bed. 4, An adult: Lay the body on a blanket or bed, in a warm chamber, in winter: To be exposed to the sun in summer. 5, It is to be gently rubbed with flannel sprinkled with spirits; a heated warming pan, covered, lightly moved over the back and spine. 6, To restore breathing, introduce the pipe of a pair of bellows (when no apparatus) into one nostril, the other with the mouth closed; inflate the lungs till the breast be a little raised; the mouth and nostrils must then be let free: repeat the process till life appears. 7, Tobacco smoke is to be thrown gently into the fundament with a proper instrument, or the bowl of a pipe covered, so as to defend the mouth of the assistant. 8, The breast to be fomented with hot spirits: if no signs of life appear, the warm bath: or hot bricks, &c. applied to the palms of the hand and soles of the feet. 9, Electricity early employed by a medical assistant.

INTENSE COLD.—Rub the body with snow, ice, or cold water. Restore warmth, &c. by slow degrees, and after some time, if necessary, the plans to be employed for the resuscitation of drowned persons.

SUSPENSION BY THE CORD.—1, A few ounces of blood may be taken from the jugular vein, and cupping glasses may be applied to the head and neck; leeches also to the temples. 2, The other methods of treatment, the same as recommended for the apparently drowned.

SUFFOCATION BY NOXIOUS VAPOURS OR LIGHTNING.—Cold water to be repeatedly thrown upon the face, &c. drying the body at intervals. If the body feels cold, employ gradual warmth, and the plans of the drowned.

INTOXICATION.—The body is to be laid on a bed, &c. with the head a little raised: the neckcloth, &c. removed. Obtain immediately medical assistance, as the modes of treatment must be varied according to the state of the patient. The late Dr. Hawe earnestly recommended the perusal of Dr. Trotter's "Essay on Drunkenness," which clearly points out its fatal consequences.

GENERAL OBSERVATION.—1, On signs of returning life, a tea-spoonful of warm water may be given; and, if swallowing be returned, warm wine or diluted brandy. To be put into a warm bed, and if disposed to sleep, will generally awake restored to health. 2, The plans

above recommended are to be used for three or four hours. It is an absurd and vulgar opinion to suppose persons as irrecoverable because life does not soon make its appearance. 3, Electricity and bleeding never to be employed, unless by the direction of the medical assistant.

Dr. Armstrong is descriptive and illustrative on the return of life.

“While the vital fire
 “ Burns feebly, heap not the green fuel on;
 “ But prudently foment the wandering spark,
 “ With what the soonest feels its kindred touch.
 “ Be frugal ev’n of that: a little give
 “ At first; that kindled, add a little more,
 “ Till by deliberate nourishing, the flame
 “ Revived, with all its wonted vigour glows.”

OF RUPTURES.

HERNIAE, or Ruptures, are not, as the term that has long been adopted would lead us to suppose, a rupture of some of the parts which form the contents of the cavity of the abdomen or belly, or of both of them: this disease is, in general, the protrusion of a soft part, which yet remains covered by the common integuments, forming a preternatural tumor in the abdomen; and they are differently named according to the places where they are situated. The situations of this protrusion are, the groin, scrotum, and labia pudenda; the upper and fore-part of the thigh; the umbilicus, or navel; and different parts between the interstices of the abdominal muscles.

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 these 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 healed.

The most frequent species of the affection of which we are now

treating, is the bubonocoele, or inguinal hernia, which may be defined, a soft swelling, somewhat elastic and tense, beginning in the groin, and descending into the scrotum of men, and into the labia pudenda of women. The tumor is most commonly formed by a part of the intestinal canal, or of the omentum, commonly called the caul; or of both.

When the intestine or gut of an adult 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 attempt is impracticable without an operation, a description of which is foreign to our purpose. We shall briefly mention the method which it is generally proper to pursue.

After the patient has been bled, he must be laid upon his back, with his head very low, and his breech laid high with pillows. In this situation flannel-cloths wrung out of a decoction of mallows and camomile-flowers, or, if these are not at hand, of 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 tumor 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 hand, 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. Cutting 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 steel truss, or suitable bandage. Such bandages or supports 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 has attained the years of manhood, should ever be without a proper bandage.

If the following simple method is made use of on the first perception of a protuberance or rupture in the groin, it will prevent the bad consequences that often result from inattention and neglect; but if the patient frequently lifts a great weight, or if he carry heavy burthens, in that case it will be best for him to wear a circular steel spring truss.

Procure a piece of strong broad tape (such as is now used in making the braces or supporters of gentlemen's small-clothes), about two feet nine inches in length; and at one end fix a large iron hook, and at the other end sew five or six iron eyes (such as were formerly used universally by women for their petticoats): let these eyes be placed about half an inch distant from each other, as represented in the Figure (see No. 1.), so that the tape or belt may be made tight around the body or lower

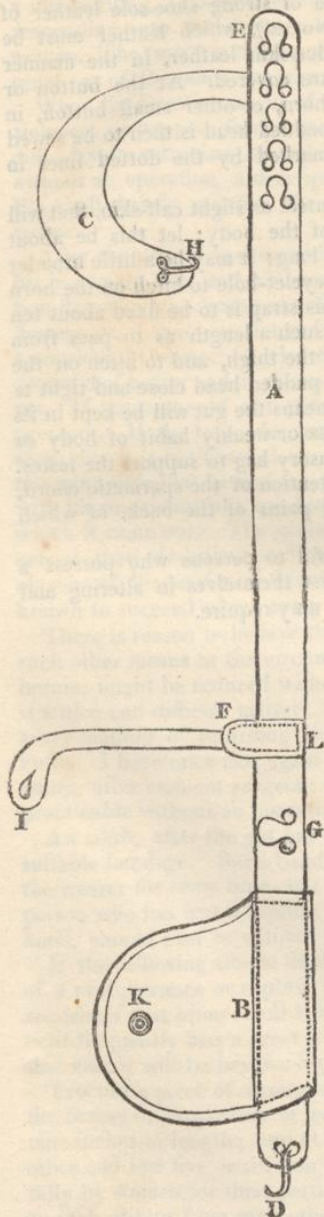
part of the belly. Procure also a piece of strong shoe-sole leather of the size and shape of the Figure (see No. 2.), which leather must be covered and padded with chamois or doe-skin leather, in the manner that the heads of steel spring trusses are covered. At the button or lower part of the padded leather, fix a horn, or other small button, in the place marked in the drawing. This padded head is then to be sewed by its top part to the tape belt, as is marked by the dotted lines in Figure No. 1.

Make also a back strap of soft and genteel or slight calf-skin, that will not be liable to stretch by the moisture of the body; let this be about half an inch broad, and seventeen inches long; it may be a little broader at the ends: at one end it must have an eyelet-hole to hitch on the horn button annexed to the padded head. This strap is to be fixed about ten inches from the end of the belt, and of such a length as to pass from behind, under the hip, or upper part of the thigh, and to hitch on the horn button, so as to draw and keep the padded head close and tight to the afflicted part of the body. By this means the gut will be kept in its place; and whether the patient be of a lax or weakly habit of body or not, we recommend him to wear a suspensory bag to support the testes. The use of a suspensory prevents the distention of the spermatic chord, and likewise those disagreeable dragging pains of the back, of which weakly persons often complain.

These hints, we presume, will be useful to persons who possess a mechanical inventive mind, and can assist themselves in altering and amending their bandage as circumstances may require.



FIG. 1.



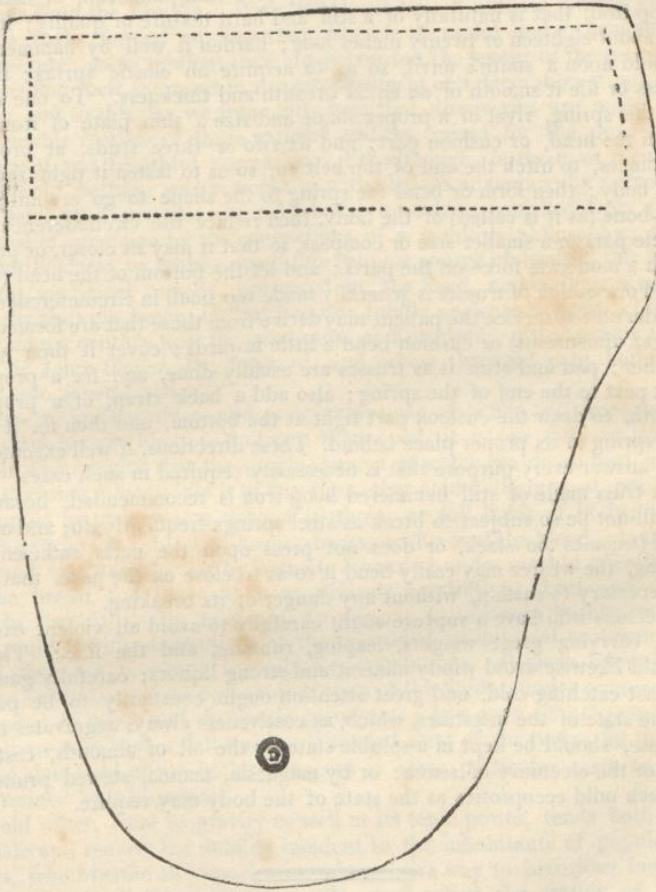
- A, The strong tape belt.
- B, The strong shoe-sole leather head.
- C, A suspensory-bag.
- D, The large hook to fasten to the eyes.
- E, The eyes to receive the hood D.
- F, The back strap, the end of which must go over the belt, and be sewed to it.
- G, An iron eye to receive the hook H, at the end of the suspensory bag.

The eyelet-hole I, at the end of the back strap, to hitch on the horn button K upon the leather head.

NOTE. You must find the proper length of the back strap before you sew or fasten the end at F to the belt, which may soon be done by fastening the belt around the body in its proper place; then hitch the eyelet-hole marked I on the horn button K, and pass the strap under the thigh and up the fold of the hip, and so over the belt to L; and then draw the strap to a proper tightness, and there fasten it.

This apparatus may be made for 2s. 6d, and will answer the purpose of a useful bandage, where a double Hernia has taken place.

FIG. 2.



The shape and size of a strong leather head to be padded and then sewed to a strong tape belt, which must have a back strap fixed about 10 inches from the end of the belt, and so passing in the folds of the hip, and with a eyelet-hole at the end to hitch over the horn button, as represented by the circles in the Figure.

Let this leather be pretty well beaten upon a shoe maker's lap-stone before you cut it into a proper shape.

The following is a cheap and easy method to make an iron spring truss for the poor. Take a piece of the hoop of a rum puncheon, or slender hoop-iron, that is naturally of a stiff and hard texture or quality; let it be about eighteen or twenty inches long; harden it well by hammering it cold upon a smith's anvil, so as to acquire an elastic spring; then dress or file it smooth of an equal breadth and thickness. To one end of this spring, rivet of a proper shape and size a thin plate of iron to form the head, or cushion part; and fix two or three studs, at proper distances, to hitch the end of the belt on, so as to fasten it tight round the body: then form or bend the spring to the shape to go around the hip-bone (as it is called) of the body, then reduce the circumference or circle part to a smaller size or compass, so that it may sit closer, or press with a moderate force on the parts; and let the bottom of the head (the head or cushion of trusses is generally made too small in circumference to render all the service the patient may derive from those that are formed of larger dimensions) or cushion bend a little inwards; cover it then with leather; pad and stuff it as trusses are usually done, and fix a proper belt part to the end of the spring; also add a back strap, of a proper length, to draw the cushion part tight at the bottom, and then fix it to the spring in its proper place behind. These directions, if well executed, will answer every purpose that is necessarily required in such cases.

A truss made of stiff hammered hoop iron is recommended, because it will not be so subject to break as steel springs frequently do; and also if it becomes too slack, or does not press upon the parts sufficiently strong, the wearer may easily bend it so as to close on the parts that it is necessary to sustain, without any danger of its breaking.

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; carefully guard against catching cold, and great attention ought constantly to be paid to the state of the intestines, which, as costiveness always aggravates the disease, should be kept in a soluble state by the oil of almonds, castor oil, or the electuary of senna; or by magnesia, manna, stewed prunes, or such mild eccoprotics as the state of the body may require.

OF COLD AND WARM BATHING.

NEXT to bodily exercise and the enjoyment of the open air, nothing, perhaps, is more conducive to health than cleanliness, which is not only a moral virtue, but has an extensive influence on the preservation of health and the cure of diseases.

The necessity of immersion in cold water for the purpose of cleanliness, and the pleasurable feelings arising from its application to the body in hot countries, lead us to suppose the practice must have been coeval with man himself. We learn from the sacred Scriptures that its adoption under the form of ablution was enjoined on the Jewish

people, as an indispensable duty. The Greeks, according to their own historians, learnt their practice of bathing from the Egyptians, and the Romans from the Greeks. With those celebrated nations, public and private baths formed an important branch of useful and ornamental architecture: many opulent individuals courted the favour of the people, by lavishing their treasures in the establishment and decoration of public baths; and to this day we frequently hear that discoveries are made of the valuable remains of these national edifices, raised for the purposes of elegant and healthful recreation. Yet although, in the most remote times, cold bathing was restored to with obvious advantage by nervous and debilitated persons, yet cold baths were long banished from the practice of medicine by the usurpations of a monkish philosophy; for during the dark, or middle ages, this genuine source of health, this important medicinal remedy, presented by the hand, and as it were supplied by the very bosom of Nature, was totally neglected: until, a little more than a century ago, the good sense of Europeans, instigated by the late Sir John Floyer, Dr. Baynard, and others, brought cold bathing again into general notice.

Since an indiscriminate and promiscuous use of active and important medicines is more likely to do harm than good, it is our duty to warn people who imagine that the simple element of water can do no hurt, and that they may plunge into it at any time, that cold bathing must not be attempted by persons in a state of plethora, or full habit of body; nor by those who are subject to hæmorrhages, or fluxes of the blood, whether external or internal; nor by patients labouring under morbid affections of the breast and lungs, such as difficult respiration, short and dry coughs, &c. It is also dangerous for persons to use cold bathing who are troubled with obstructions of the intestines, or habitual costiveness, until they are prepared by suitable evacuations. Persons labouring under scorbutic and an acrimonious state of the fluids; under cutaneous diseases; in gouty and rheumatic paroxysms; in a state of pregnancy; and those who have a deformed or distorted state of the body; all these are to shun cold or sea bathing, except in some particular cases to be determined by a physician.

Cold water, from its gravity as well as its tonic power, tends both to obviate and remove the debility incident to the inhabitants of populous cities, who breathe an impure atmosphere, give way to luxurious indulgencies, or lead sedentary lives. By accelerating the motion of the blood, and promoting the different secretions, it braces and gives permanent vigour to the system. These important purposes are conceived to be most effectually answered by the application of sea-water, not only on account of its greater specific gravity, but also because it is a more powerful stimulant, promoting the cutaneous discharge, and rendering the patient less liable to catarrhal affections, or what is usually termed "CATCHING COLD."

In chlorosis; an aptitude to abortion; profuse menstrual and other weakening uterine discharges; ophthalmia, or chronic inflammation of the eyes; atrophy, convulsions and rickets of children; in preventing the recurrence of the paroxysms of intermittent fevers; in removing the debility occasioned by febrile diseases, and the long continued use of the preparations of quicksilver; in a great number of those chronic af-

fections termed nervous complaints; in epilepsy, St. Vitas's dance, and phrensy; cold or salt-water bathing may often conduce to the cure, especially when its salutary effects are assisted by the moderate use of wine, or such other medicines as are suitable to the age, sex, temperament and ailments of the patient. Scrophulous affections, and the enlargement of the bones, or tendons, commonly called white swellings of the joints, are relieved by sea-bathing, by taking sea-water internally, and by the partial application either of pumping; or the use of the vapour bath; or by wrapping the part affected in linen cloths moistened in sea-water, wetting them as often as they dry. Exposing the surface of the sore (if any) to the action of the air, as seldom as may be consistent with a due regard to cleanliness, acts powerfully as a discutient, and assists the healing process; while much benefit may be obtained by pumping salt-water on the part enlarged two or three times every day.

Persons who cannot resort to the sea, may make an artificial salt-water bath, by dissolving a pound of salt in every gallon of water required.

The internal use of sea-water is not useful in some cutaneous and scrophulous complaints, but it removes worms from the intestines of children, and prevents their reproduction; it is also useful in gravel, jaundice, fistula in ano, and a good purgative in paralytic complaints. To persons labouring under pulmonary consumption, hectic fever, and hæmoptoe or spitting of blood, the air and water of the sea are injurious.

It is improper to plunge into cold water while the stomach is loaded with food, and it may not always be proper to bathe immediately after rising from bed in the morning. Persons who are much enfeebled ought not to bathe till towards noon, or at least till the digestion of their first meal may be supposed to be nearly completed. The bathing dress may be made of porous flannel, open before like a wrapper with short sleeves, that the water may come in contact with every part of the body as much and as speedily as possible: take one plunge or dip, and dress as expeditiously as may be. Should chilliness ensue on coming out of the water, a little of the compound spirit of lavender, a tea-spoonful or two of the compound tincture of cinchona, a peppermint lozenge or two, a toast dipped in warm spiced wine, or ginger tea, with moderate exercise if they can bear it, may restore the body to its due degree of warmth. Should these prove sufficient, the individual out to be put into a warm bed; and bladders of hot water, applied to the pit of the stomach and the extremities, will restore the excitability of the system. As a preparatory measure for the future use of the cold bath, which should not be used oftener than every other morning, let him use the tepid or warm bath a few times; but if, after these precautions, a pleasing sensation of glowing warmth is not perceived to diffuse itself over the surface of the body, it is a proof that cold bathing ought not to be persisted in, and that the aid of a physician of skill and integrity is necessary for the safety of the patient.

The best place for cold bathing is in a clear river, or in the invigorating water of the sea, which we think preferable, as the heat is more uniform: where neither of these can be conveniently resorted to, we recommend the shower-bath, an apparatus of which may be procured from the tin-man. This is a modern invention, in which the water falls through

numerous apertures on the body. Its effects are, doubtless, more powerful than those of the common bath; and though the latter covers the surface of the body more uniformly, yet this circumstance by no means detracts from the excellence of the former; because those intermediate parts which the water has not touched receive an electric and sympathetic impression in a degree similar to those brought into actual contact. As every drop of water from the shower-bath operates as a partial cold bath, its vivifying shock to robust individuals is more extensive and beneficial than any other method of bathing.

The external use of cold water is of singular use, as we have already noticed in the treatment of Scarlet Fever; it is also beneficial when applied to particular parts of the body, where its use may be continued much longer than the cold bath without danger.

Of all the parts of the body, the head receives the most benefit from the affusion of cold water: its application to the head was recommended and justly extolled by Celsus, eighteen centuries ago: and daily experience proves that cold water is a simple and effectual remedy for the painful affections of the head which arise from intoxication, and against too great an impetus of blood towards the head, where persons are menaced by an apoplexy, or sudden death, by the rupture of a blood vessel of the brain.

WARM BATHING. People who return to Britain from hot climates frequently hope to repair the injury done to their relaxed constitutions by the use of the cold bath. It is proper that they should first have recourse to a bath of the temperature of 90° or 93°: this ought to be used for some time. Its warmth may be gradually diminished; he may then resort to the cold bath with safety and advantage. The heat of a warm bath should never exceed that of the body, or ninety six degrees. By the moderate application of the stimulant power of the warm bath, vigour and activity are communicated to the system, and an equability of temperature is acquired by those who occasionally use it: even where heat and fever have been present, it reduces the pulse to its due equilibrium.

In fine, warm bathing promotes personal cleanliness; is excellent for children afflicted with convulsions; and retards the progress of old age. It is proper for patients attacked by tetanus, or locked jaw; it abates the violence of spasmodic coughs; is useful in cutaneous diseases; it restores suppressed perspiration; relieves gouty, rheumatic, nephritic, and hectic complaints; removes the oedematous swellings of the legs, and obstructions peculiar to females; and it obviates, in the most agreeable manner; the aching pain that is occasioned by excessive fatigue.

Persons of a full habit, however, and those who labour under inflammatory affections of the lungs, should have recourse to warm bathing with a due degree of caution. The application of its temperature should be gradual, and it ought not to be very often employed till habit and custom have reconciled the system to its full effect.

Valetudinarians, and others, who are desirous of further information on "Sea-bathing and the Use of the Warm Bath," we refer to the perusal of the ingenious "Practical Observations," by A. P. BUCHAN, M.D.

MINERAL WATERS.

IT is a circumstance of importance towards success in the cure of many disorders, to be acquainted with the qualities of the water which is generally used by the patients. The change of air has often received the credit of a cure, which was the sole effect of a change of water. This observation is more particularly worthy the notice of mineral waters; the antiquity of their use we learn from Galen, Pliny, and others, who speak largely of their virtues. The illustrious Hoffman, and many authors, extol them; whilst others observe that a pure water, on account of its simplicity, such as from Malvern springs, is to be preferred, both for drinking and for bathing; and that, in want of these, they may be as well supplied by distilled rain, or any other water that is soft and pure. Objectors say that the medicinal qualities in these waters only quicken their operation as water; but contribute nothing further, and the solutions of the like materials are of equal efficacy: to which has been replied, that the mineral contents are often volatile, and of parts more subtle than those which are the product of art; and that, when the powers of nature are expiring, experience proves their efficacy as a last resource.

The effects of mineral water are, in general, according to the qualities of their contents; these known, their use is easily determined. Their chief contents are, 1. Acids; but none pure except fixed air. 2. Alkalies; but none pure, except the fossil. 3. Neutral salts; of these none but the common and Glauber's salt. 4. Inflammable fossil oil. 5, Sulphur; only in the state of hepar. 6. Metals; none but iron and copper. 7. Earths; of these there are the calcareous, those of alum and magnesia; and these only as united with fixed air, the vitriolic acids and the marine acid. Their brisk sparkling property is owing to the quantity of fixed air which they possess; and, indeed, to this is owing their chief use as a medicine. To increase this property when defective, or to communicate it where it is totally wanting, we must refer the reader to the directions given for impregnating water with fixed air, communicated to the public by that illustrious benefactor to science, the late Dr. Joseph Priestly.

The chief medicinal waters in foreign countries, which our limits will allow us to notice, are those of AIX-LA-CHAPELLE in Germany. The hot sulphureous waters and baths of this place have been long celebrated: they arise from several springs, from whence eight baths are supplied in so many different parts of the town. At the springs these waters are perfectly transparent, and have a strong smell of sulphur, resembling the explosion of gunpowder; but this smell goes off on their being exposed to the air: they are salt and bitter to the taste, and do not appear to be chalybeate. The heat of all these waters is upwards of 100 degrees of Fahrenheit's thermometer and some very considerably more

When they are first used, they are disagreeably harsh to the palate; but after the taste is familiarized to them, they become pleasing. When they are first taken internally, they frequently affect the head with giddiness, which also wears off by degrees. They are aperient, diuretic, and sudorific, and recommended in diseases that proceed from indigestion, in rheumatisms, in scorbutic and scrophulous cases, and in disorders of the skin; they are also directed in hysteric and hypochondriac disorders; in the gravel and stone; in the palsy; in those numerous ills which attend the injudicious use of mercury, and in a vast variety of other cases. They are, however, to be avoided in hectic cases accompanied with fever, in all putrid disorders, and in every instance where the blood appears to be dissolved, or the constitution much broken down.

The mineral water of CLEVES, in Germany, is a lively, sparkling chalybeate; acts chiefly by urine, and resembles the Pyrmont water.

OF THE WATERS OF PYRMONT IN GERMANY. These wells are in the country of Pyrmont: this is very strongly chalybeate, transparent as crystal, and sparkles like champagne when it is first taken from the fountain. It is pungent, sharp, refreshing, and pleasant to the palate; but the smell is somewhat sulphureous, and a subtile vapour of the same kind arises from the wells, and affects those who serve as well as those who drink the water with giddiness like intoxication, which may be attributed to the great quantity of fixed air with which this water is impregnated. It generally acts as a purgative if taken in large quantities; taken in smaller doses, its ordinary operation is diuretic and sudorific, though in some constitutions it is said to raise a spitting, discharging the foul humours by the salival glands. The waters are recommended in chlorosis, heart-burn, and against female obstructions; they are even said to relieve barrenness; in scorbutic diseases and those of the skin; in relaxed and broken constitutions, mixed with milk: and it is also prescribed in apoplexies, epilepsies, and other disorders of the head, and in those of the breast and lungs, in which latter case it is advised to be taken lukewarm; in nervous, hysteric, hypochondriac, and paralytic complaints; in the gravel and urinary obstructions of the more minute vessels. It is said to correct the texture of the blood when it is in a lax state; and to exhilarate the spirits, without producing the disagreeable inflammatory effects which follow the use of a sufficient quantity of wine to answer this purpose.

Little preparation is necessary to the drinking these waters: if, however, the stomach and bowels appear to be so loaded that their operation is retarded, gentle laxatives may be proper; especially if the Pyrmont water occasion a retention of urine, or produce drowsiness, giddiness, restless nights, cramps, or other disagreeable symptoms of the like kind. If a purge or two should prove ineffectual to remove the complaints just mentioned, it will not be prudent to persevere in the use of these waters.

Of the Waters of Seltzer, in Germany. This spring rises near the town of Neider, or Lower Seltzer, about three leagues from Frankfort on the Maine, in an open, pleasant, and fertile country. The water bursts from the earth with great violence, is perfectly bright and colourless, and throws up a considerable number of air-bubbles when it is poured from one vessel to another. The taste of Seltzer water is an agreeable acid; but it leaves an acrid one on the tongue after it is swallowed. Exposed

to the air for any considerable time, it assumes the taste of a vapid alkaline ley, but drops no sediment, and is fetid and highly offensive to the smell.

It effervesces with acids, and especially with Rhenish wine, or sugar, whilst it is fresh; but ceases to produce that effect after it has stood some time. It is impregnated with an alkaline salt, a portion of sea-salt, and a quantity of fixed air. It does not purge, but operates chiefly by urine in correcting acidities in the stomach, and relieving the heart-burn; it promotes the circulation of the blood by rendering the juices more fluid, and is therefore prescribed in glandular obstructions, and to carry off gross and viscid humours. In the gravel and stone, and other disorders of the kidneys and bladder, it is said to be peculiarly efficacious; and to have been administered with success, mixed with milk, in gouty and rheumatic complaints; and alone in the scurvy, eruptions on the skin, and in what is called the king's evil, as well as in those disorders that are supposed to be occasioned by a dissolved or broken state of the blood.

As a diuretic, it is given in dropsies; and, with equal quantities of asses'-milk, in consumptive cases, and other disorders of the organs of respiration. In nervous disorders it may be given either with or without milk, as may be most suitable to the constitution, as well as in hypochondriac and hysteric disorders, and in female obstructions; in the latter case, exercise is necessary.

Dysenteric and other violent discharges, occasioned by acidities in the bowels, are also checked by this water: it corrects the milk of nurses, renders it more wholesome and nourishing, and prevents it from turning sour on the infants' stomachs.

If the water disagrees with the stomach, a small portion of some generous wine, or a still smaller of some good rum, may be added to it, in cases where these mixtures will not be prejudicial.

Of the Waters of Spa, in Germany. The town of Spa is situated in the district of Liege, six leagues east of that capital. In this town and in the neighbourhood are several springs of excellent chalybeate waters, which have been imported in greater quantities into Great Britain than of any other foreign mineral waters. If Spa-water is well corked, it bears carriage and keeping better than any mineral water; but it should not be left exposed to the air, as the fixed air it contains in more abundance than any other waters of the like kind will soon evaporate: it is this abundance of fixed air which gives this water its briskness and agreeable vinous taste; and it is from the same cause that it boils from a very inconsiderable heat, and dissolves additional iron immersed in it. Acids mingled with Spa-water disengage the fixed air, and occasion effervescence; but, hot or cold, it mixes with milk without curdling.

The operation of the Spa-waters is most commonly by urine, though they sometimes act as purgatives, and in that case produce the effect of changing the colour of the stools in the same manner as other chalybeate waters; and, like them, have also a surprising effect on the spirits, procuring a constant and equal flow: they act principally on the fibres, which they brace and strengthen; and they are also cooling, refreshing, and invigorating.

They are recommended in an infinite variety of chronic disorders,

and particularly in all cases where the stomach and fibres being relaxed, or the constitution being broken down by excesses or diseases, a general weakness, languor, dejection, or tendency to wasting, has been the consequence.

These waters have also proved highly serviceable in all kinds of nervous disorders, especially where they affect gross and phlegmatic habits; in such obstinate coughs and asthmatic complaints as are occasioned by relaxation of the pulmonary vessels; in hysteric and hypochondriac complaints; in obstructions of the intestines, such as the liver, spleen, or other viscera; in all cases where the blood is in a dissolved or putrescent state from irregular lining, from scorbutic eruptions imprudently repelled, or from disorders of a putrid tendency.

They are prescribed in all cases where the fibres are either too much relaxed, and inclining to introduce a general debility, or so irritable as to threaten inflammation; in palsies and epilepsies; in all fluxes and preternatural discharges, and particularly the fluor albus, or whites and gleet in both sexes; in the gravel, stone, obstruction of urine, and such other cases as require stimulating and active medicines, and they are said to assist in relieving barrenness.

But the use of Spa-waters is forbidden without proper previous evacuations; in all cases of flushing of the face, or strong determination of blood to the head; or of feverish heat; and in hot and sanguine constitutions, and such as are affected with a redundancy of bile; in all ulcerations of the intestinal parts, and in particular of the lungs, or wherever the matter cannot be discharged; and in all such obstructions as are accompanied with any considerable degree of fever: 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.

As the quantity must in all cases depend on circumstances, all directions on this subject are useless; but the patient himself will be the best judge; and the more he can get down without feeling the inconveniences of sickness, or weight at the stomach, the better chance he will have of speedy relief.

It is advisable to begin with a small dose, as a wine-glass or two, twice or thrice in the forenoon, and to augment it by degrees to as much as will pass off with ease, without producing any of the disagreeable symptoms already mentioned. When this point is attained, the course should be persisted in till relief is obtained, or the hope of deriving benefit from it is vanished: and in the former case the water should be discontinued in the same gradual way. In whatever quantities the patient's stomach will admit the water to be taken, moderate exercise should accompany the course; and if it should, in the first instance, prove cold to the stomach, it may be warmed, by placing the glass a minute or two in hot water; or by adding as much hot common water as will take off the chilliness of the Spa-water; or a few warm or aromatic seeds may be taken after it, till the stomach is reconciled to the use of it.

During the course, a cooling regimen is recommended; all excesses, whether in eating, drinking, exercise, or indulgence of the passions, is

to be avoided: the food should be plain, and the animal flesh such as is easy of digestion. Whenever the human body is disordered, and whatever be the disease, abstemiousness, in a certain degree, will generally contribute to its restoration.

As a preparation for the active properties and stimulant powers of the Spa-waters, gentle purgatives are prescribed; and if a plethora attend, we recommend bleeding to the degree that may be required by the constitution of the patient and the season of the year. If the stomach appears loaded with the phlegm, a small dose or two of ipecacuanha may be useful as an emetic. If the water should produce costiveness, the body should be kept open by small doses of vitriolated magnesia or rhubarb taken now and then in the first morning draught of it.

Where these waters are directed to be used in cases of too great rigidity of the solids, warm bathing is recommended as a previous measure; and the springs of Aix-la-Chapelle, being in the neighbourhood of Spa, are resorted to by those who drink the waters upon the spot. When the complaint, on the contrary, is apprehended to proceed from too great a laxity of the fibres, the cold bath is advised.

The waters of the springs at Spa are also applied externally in many different cases; they have been used with success as an injection in female weakness, such disorders as produce ulcers in the womb, and even in recent venereal diseases; as a lotion for old and offensive ulcers, and as a gargle for venereal eruptions in the mouth; for relaxations in the tonsils of the throat, and to fasten loose teeth. Taken internally, and used as a bath at the same time, they are said to cure the itch and other eruptions on the skin.

There are five principal springs at Spa. 1. The Pohoun, or Pouxon 2. The Geromsterre. 3. Sauvenierre. 4. Wartroz. 5. Tonnelet. In the application of these waters, regard should be had to the different degrees of strength, as they have been already described; and they may by this means be suited to the various diseases for which they are prescribed. Some little variation of the qualities of these waters will point out which of them are to be preferred in one case, and which in another.

The powerful efforts of the human mind have, during the last fifty years, been productive of many chemical discoveries and improvements extensively useful to the arts, and equally important to the preservation of health and the relief of disease. Messrs. Nicholas Paul and Co. of London now so happily imitate the processes of Nature, as to produce the following artificial mineral waters, in the several classes of acidulous, alkaline, bitter-saline, simple and acidulous chalybeate waters, and likewise sulphureous waters, that after having undergone the most scrupulous examination, have been approved and recommended by the most celebrated proficients in chemical science. The good effects of these factitious waters the learned Professor Bergman often found even superior to natural ones, in hæmorrhoidal affections, in arthritic pains, and in obstinate intermitting fevers.

The Seltzer waters prepared by Messrs. Paul and Co. have been used with advantage in catarrhs, rheumatism, asthma, and in bilious and putrid disorders; they prove diuretic and antiseptic even when externally employed. They are serviceable in spasmodic affections of the

stomach; and they promote digestion. They may be mixed with milk, with wine, or with syrup of capillaire. He likewise manufactures Seltzer water, either strong or weak, which to the properties of the Seltzer water, formerly imported in great abundance, unite the tonic and stomachic qualities which the preparations of iron are known to possess

Our desire to point out the means of relief to the afflicted will not permit us to omit the mention of the gaseous alkaline water (water impregnated, according to the discoveries of Dr. Priestley, with fixed air), or, as it is now termed, carbonic acid. This is highly commended in cases of gravel and stone, affords very great relief to the pain which accompanies these complaints, and is also an excellent antiseptic drink; is a proper vehicle for taking the powder of cinchona bark in putrid diseases; and, being mixed with port-wine, imparts to it the exhilarating effects of that of champagne. These, and other excellent medicated waters that we have not room to mention, may be had of Messrs. Allen and Co., Plough-court, Lombard-street, and of the chemist already mentioned in page 105 of this work.

WE must now briefly notice some of the medicinal waters which Nature has bountifully bestowed on this favoured island. The city or BATH, in Somersetshire, has long been celebrated for its hot springs which are of a higher temperature than any other in this empire, and, indeed, are the only natural waters which we possess that are all at hot to the touch, all the other thermal waters being of a heat below the animal temperature, and only exceeding the general average of the heat of common springs. There are three principal sources of these waters; namely, the King's Bath, the Cross Bath, and the Hot Bath, which all arise within a short distance of each other. The supply of water is so copious, that all the large reservoirs used for bathing are filled every evening with water, fresh from their respective fountains.

This water, when drank fresh from the spring, has in most persons, especially in invalids, a tendency to raise, and rather accelerate the pulse, increasing the heat of the body, and promoting its secretions. It operates by urine and insensible perspiration: on first using it, a patient is apt to complain of drowsiness and weight of the head; but these effects soon disappear. Taken in small quantities, it induces costiveness; but this may be corrected by increasing the dose, when it will rather act as a purgative

A course of these waters is recommended to be preceded by a regimen as to diet, and, in case of full and sanguine habits, bleeding may be proper. The seasons for drinking them are the months of April, May, June, August, September, and October; and a course should continue six weeks. They may be taken in quantities of from one pint to two quarts in a day, beginning with small doses, and increasing as they sit on the stomach and agree with the constitution: in whatever quantities, however, they are administered, the dose for the day should be divided into three unequal parts; the largest to be swallowed before breakfast, the next in quantity before dinner, and the smallest before supper: the doses should be taken an hour before each meal. Immediately after taking the

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water, the patient should use moderate exercise; and during the whole course, regard must be had to regimen in diet, and hours; and the mind should be kept in as tranquil a state as possible. Used internally, these waters appear chiefly to exert their stimulating properties on the stomach. When they are likely to prove beneficial, they excite, on being first taken, a pleasing glow in this organ; which is soon succeeded by an increase of appetite and spirits, and a quick determination to the kidneys. On the other hand, when they sit heavy on the stomach and produce sickness; when they occasion head-ach, thirst, and dryness of the tongue, and do not pass off by urine or perspiration, their operation is unfavourable, and the further use of them is not to be recommended. To the young and plethoric they are frequently injurious, and, unless some evacuations are premised, often at first disagree; occasioning head-ach, heat in the hands, drowsiness, and giddiness. Physicians have concurred to forbid the use of the Bath waters in cases of inflammatory rheumatisms, inflammations on the lungs, and particularly if they tend to suppuration.

The Bath waters are said to electrize the nerves and fibres, to correct acrimonious putridity, to strengthen the tone of the bowels and stomach, and to invigorate the whole human system. Great relief has been obtained from Bath waters in cases of painful menstruation, in spasms occasioned by the poison of lead, in St. Vitus's dance, and in those biliary concretions commonly called gall-stones; but in these cases the use of them must be accompanied with the Castile soap, and sometimes a detergent purge of rhubarb with tartarised kali, or the like.

The virtues and effects of these waters have been applied externally, with great advantage, in many paralytic complaints, rigidity, sprains, relaxation of the joints, and in other disorders of the limbs occasioned by obstructions; in old sores, in diseases of the skin, and in restoring strength and pliability to the joints and limbs after long and weakening fits of the gout and rheumatism. When particular parts of the body are affected, pumping on the diseased limb is to be preferred to general bathing. The mud and scum of these waters have been successfully employed with good effect by way of poultice in hard swellings, in weak joints, in contractions of the limb, in scald heads, running ulcers, and in many cutaneous and leprous eruptions: herbs are sometimes boiled with them in the Bath water to a proper consistence for these and the like indispositions.

It is in most cases proper to join the internal to the external use of these waters, if the former should occasion a roughness and erysipelatous redness on the skin, especially of those who are scorbutic, after taking them; no danger need be apprehended, as it will disappear after the course has been some time continued.

With regard to the medicinal effect of the Bath waters, a physician (not one of the physicians resident at Bath) hath lately said, that much of their salubrious influence is owing to the natural degree of warmth peculiar to these springs, which for ages have preserved an admirable uniformity of temperature; that one of their most important uses is their EXTERNAL application; and that in this respect they do not appear to differ from common water, when heated to the same temperature and applied under similar circumstances. The learned Dr. Falconer, however, is of opinion that the Bath waters possess further powers, of specific

qualities more stimulating to the nervous system, than a common warm bath.—The four principal waters in England that possess any remarkable heat, are those of Bath, Buxton, Bristol, and Matlock; the first of which raises Fahrenheit's thermometer from one hundred and eight to one hundred and nineteen degrees; the second to about eighty; the third to seventy-six; and the last to sixty-six or sixty-eight.

BAGNIGGE WELLS, near LONDON, is much frequented in the spring. It is a salt purging water, containing in the gallon two hundred and fifty-seven grains of sea-salt and vitriolated magnesia mixed: it is therefore a useful purgative water, and is also diuretic. The dose is from a pint to a quart; but it is usual to quicken its operation with vitriolated natron, or some other cathartic salt. In small doses, it is alterative, antiscorbutic, antacid; relieving heart-burn, vertigo, and pains of the head. It is prescribed as a remedy for pimples, heats, and other eruptions of the face; and as a cure for worms, by scowering away the slimy viscid humours which lodge and nourish these troublesome guests in the intestines. If the cold water disagrees with the stomach, it may be warmed without lessening its purgative qualities; or those who have weak stomachs may add to each dose of the water a tea-spoonful of the tincture of cardamoms; or they may chew and swallow cardamoms, caraways, or other warm seeds. It is always advisable to use gentle exercise, and to take a liquid diluting breakfast, of tea, water-gruel, or whey, during a course of this water.

The chalybeate well is about forty yards from the purging well. The catalogue of diseases for which these waters have been prescribed will hardly come within the compass of our present undertaking; suffice it to say, that in glandular obstructions, bilious habits, beginning consumptions, atrophy, and in nervous debilities, we have reason to believe they have been of service.

BARROWDALE. This spring is about three miles from Keswick, in Cumberland. It is a salt water, and much of the nature of that of the sea. A gallon of this water affords seven ounces and two drachms of sea-salt mixed with a little vitriolated magnesia. It is a brisk and rough cathartic even to strong constitutions, occasioning great thirst, and heating the body. A pint is usually sufficient for a dose. Taken in half or a quarter of a pint, it is a useful alterative, and operates by urine. It is of excellent use in scorbutic complaints, in scrophula, and the leprosy. It is also powerful in removing chronic obstructions; in clearing the blood of acrimonious humours; in diseases of the skin; and in all those complaints in which sea-water is serviceable. Like that, also, it may be used externally by way of fomentation; or as a bath in glandular swellings, and in disorders of the skin.

BRISTOL HOTWELLS. This spring issues from a lime-stone rock, on the bank of the river Avon, about a mile below Bristol, between high and low water-mark. Its medicinal virtues are said to have been originally discovered by some seamen, who, frequenting this place, found the water serviceable in curing the itch and healing old sores. It was not noticed till the beginning of the seventeenth century, nor did it arrive to any degree of reputation till the end of it, when the magistrates of Bristol thought it worth their care, and secured it from the tide by a high wall erected round the spring: various improvements have been since made

to this security. The Bristol water appears to the naked eye transparent, colourless, and manifestly impregnated with air, sparkling and bounding through its substance in the form of little bubbles, so that the whole seems to be in a ferment: to this cause we may attribute the property of this water to keep untainted any length of time in hot climates; it therefore forms a most valuable provision for long voyages, and is accordingly exported in great quantities to distant parts.

This water is without smell, peculiarly soft, pleasant, and agreeable to the taste, and to the touch barely lukewarm. For common drink at meals, it should stand uncorked a few hours after it is brought from the well, or the bottle uncorked may be set in a vessel of warm water: it is usually mingled with wine, but is much better unmixed.

Little preparation is necessary for the drinking of these waters; yet the following directions may be of use. To the sanguine, the florid, and those of grosser habits, some preparatory evacuations may be serviceable; thin, pale, enervated, and phlegmatic patients will be rather injured by any. Where the stomach or intestines are clogged with a gross glutinous phlegm, gentle purgatives are necessary; and in such cases, no medicine can be used with better effect than *magnesia alba*, which may be administered with safety at all times and seasons.

Emetics should only be admitted as preparations for the Bristol waters, when there is not any apprehension of an inflammatory diathesis affecting the intestines: should any of the internal viscera be affected, the administration of vomits may be attended with danger.

In inflammatory fixed pains, or in cases of giddiness brought on by the use of the waters, bleeding may be proper; but it is seldom or ever necessary as a preparative.

The method commonly recommended to invalids for taking these waters, is to begin with a single glass containing a quarter to half a pint before breakfast, as early as the patient chooses to rise, and another in the middle of the afternoon between dinner and supper, adding another glass in each interval at the distance of a quarter of an hour the second day, and another glass may be added in like manner on the third day; and this, allowing for variation of constitution and circumstances, may continue to be the course. Some patients take two glasses in a morning, interposing between them half an hour spent in gentle exercise; and taking two more glasses in like manner about the middle period between breakfast and dinner, and then seldom take more of the water in the course of the day.

This water is regarded as beneficial in several disorders of the alimentary canal; in the symptoms of indigestion and loss of appetite which often afflict Europeans who have resided many years in hot climates. In bilious diarrhoeas, in diabetes, in all disorders of the lungs proceeding from neglected colds, fevers, and inflammations, the Bristol waters are held to be highly efficacious. In internal hæmorrhages of all kinds, whether the blood passes by urine or stool; in the piles, or by immoderate discharge of the menses, these waters afford relief; for as the Bath waters are proper where the secretions are defective, so the Bristol water is of service when they are in excess. The Bath water WARMS; the Bristol water COOLS. The hotter months are best for using it: regardless of the rules of drinking above mentioned, some take

a pint to two quarts a-day, in repeated doses of one-fourth of a pint, or double that quantity. In obstinate gleet, in cases of preternatural thirst, and in diabetes particularly, it is permitted to be drank as freely as the thirst requires.

The diseases for which these waters have been drank are of very opposite natures; therefore the same benefit cannot be expected in all. In consumption, there are some authenticated cases of cure where the disease was at its commencement and the constitution was not broken down, but where it has made progress, and hectic symptoms are far advanced, little is to be expected from this mineral production, or any other remedy.

Bristol-well waters are advised to be used externally in washing old sores and ulcers, whether of a scrophulous or a cancerous nature; as a collyrium in the case of inflamed eyes, and in particular where the eyelids are tender or excoriated.

BUXTON, in Derbyshire. This water, which is of moderate warmth, and has long enjoyed a considerable degree of reputation, is clear and transparent, and perfectly inoffensive to the taste, containing neither steel, sulphur, nor any kind of acidity in its composition; but having a small quantity of sea-salt and a still smaller quantity of purging-salt. As an internal medicine, Buxton water possesses great activity; it increases the vital heat, and is of course serviceable in the cure of many diseases. In deranged symptoms of the stomach and alimentary canal, where these have been the effect of intemperance; in hard tumors of the joints; in contraction of the vessels and limbs, especially from age; in habitual vomitings; in cramps, convulsions, gout, rheumatism, and paralytic disorders; in the dry or convulsive asthma unattended with fever, and also in defective menstrual discharges, these waters are beneficial. The painful complaints incident to persons afflicted with the stone and gravel are much assuaged by them; but they are prohibited in cases of active inflammation, or where a strong determination to the lungs prevails.

Of these waters, which are alterative and not evacuant, about a pint is taken in the course of the forenoon, and the quantity is gradually increased. The season for drinking the Buxton waters is usually from the beginning of May till the end of October.

The use of the baths at Buxton is serviceable in the maladies already mentioned; also in nodes and chalky swellings. The chronic rheumatism succeeding the acute, and where the inflammation has been seated in particular limbs, is wonderfully relieved by them.

There is in the neighbourhood a chalybeate water, which may be used by those for whom it may seem proper.

CHELTENHAM, in Gloucestershire, six miles from Gloucester. The medicinal spring that has its source at this town has been found of essential service in bilious disorders, and in the cure of glandular obstructions, especially those that affect the liver, and the other organs connected with the functions of the alimentary canal. It has also a good effect in treating an appetite, in some cutaneous complaints usually termed scorbutic eruptions.

The season of drinking the Cheltenham waters is during the whole of the summer months. This, like the Bristol water, should always be drank at the fountain head, and never long exposed to the air. Half a pint of

this purging chalybeate water is sufficient for a single dose; and this quantity, repeated at different intervals during the day, is generally enough to produce the desired effect on the bowels, without griping or other uneasy sensations, strengthening the organs of digestion, and invigorating the whole constitution.

HAMPSTEAD. The chalybeate water of this place is of the nature of that of Islington, but somewhat stronger. The dose is from half a pint to two or three pints: its virtues and efficacy have been celebrated in several elaborate treatises. It is of a perfectly transparent colour. Its taste is strongly mineral, though not unpleasant; and, after it has been some time in bottles, it sparkles like the Pyrmont water. It is recommended as serviceable in glandular obstructions; in the scurvy, gout, stone, and rheumatism; in eruptions of the skin; in piles; in nervous and hysteric disorders; and in weaknesses, whether acquired or constitutional.

This water sits easy on the stomach, operates mostly by urine, and deserves more to be attended to than it is at present.

HARROGATE, Yorkshire. The waters of this place, though they rise from different springs, are alike in quality. They are transparent, throw up a great number of transparent air-bubbles at the surface, and have a fœtid sulphureous smell. When these waters are taken as a purgative, the dose required will be from two to four pints: in this way it is efficacious in destroying worms. In smaller quantities, it is a good alterative in scrophula and diseases of the skin. It may be used at the same time outwardly, by way of bath or fomentation, as a remedy for those disorders in which waters strongly impregnated with salt and sulphur are beneficial.

ISLINGTON. The spring of this water rises on the south west side of Islington, which now, in a manner, joins the city of London. This is a pleasant, clear, light chalybeate water, which has been long in repute. It is said to be serviceable to restore the appetite, brace relaxed habits, and to raise the spirits; hence it may be of use in hypochondriac, paralytic, and other nervous disorders. It is also recommended in female weaknesses, whether occasioned by frequent miscarriages, or the fluor albus; in the gravel, palsy, and diseases of the skin.

This water operates chiefly by urine, and may be drank to the quantity of several half pints. It may be rendered more strongly chalybeate by adding to each pint of the water a grain or two of vitriolated iron; and it deserves much more of the public regard than it has lately obtained.

MALVERN, in Gloucestershire. There are two noted springs at this place; one of them is called the Holy Well. They rise at some distance from each other: are nearly of the same description, being both chalybeate, light, agreeable to the taste; and are remarkable for being almost entirely free from any earthy matter. They are recommended in glandular complaints; in scorbutic, scrophulous, and cancerous disorders; in diseases of the skin, sores, and ulcers; in obstructions of the female discharges; in palsy, gout, gravel, and stone; and in external applications, particularly of the eyes.

Contrary to all other baths, it is usual here to bathe in the body-linen, and to leave it wet about the body, and suffer it to dry there: it being remarkable that the waters of these springs, though free from salt, are no

more apt to give cold than sea-water. Linen cloths kept constantly wet must be applied to the diseased parts.

Previously to the external use of these waters, they should be taken internally for some days, in such quantities as the stomach will bear; as in some cases they excite sickness, and purge, though they more commonly act as a diuretic.

MATLOCK, Derbyshire. The waters of the several springs at this place are very slightly chalybeate, and occasion petrification; in other respects they resemble those of Bristol, being, like them, of a moderate warmth: they are recommended in most cases where the Bristol waters are used.

NEVILHOLT or **NEVIL-HOLT**, Leicestershire. This water is recommended as a powerful antiseptic in putrescent disorders: it is perfectly transparent and void of smell when it is fresh from the fountain, but it loses its transparency, and becomes fœtid, when it is exposed to the air for any considerable time. It is somewhat rough and bitter to the taste. It acts by stool, urine, and perspiration, but requires a pretty large dose to produce the former effect. It is recommended in all cases of weakness and relaxation; in discharges of blood and other old fluxes; as a good remedy in old diarrhœas: against gleets in both sexes; atrophy, dropsy, gravel, arthritic diseases, and other chronic complaints: in acute and inflammatory diseases it is said to be rather hurtful.

PANCRAS, Middlesex. The water of this well acts as a cathartic and diuretic; it contains a purging salt, and a small quantity of sea salt, yet it is almost tasteless. It is said to be useful in the gravel and scurvy, to help digestion, and restore the appetite.

CARBOROUGH, Yorkshire. Near this town are two springs, distinguished by the several names of the purging and the chalybeate wells; but they seem to differ more in degree of strength than in the properties of the waters. They are both brisk, active, and pungent to the taste, throwing up bubbles of air when they are poured out of a bottle into a glass, and both apparently abounding with fixed air. Neither of these waters will bear exposure to the air. They have been recommended in general relaxations; as a tonic to restore the system after too copious or excessive evacuations of any kind; in all disorders of the stomach arising from flatulence, indigestion, or acidity; in hypochondriac and hysteric complaints; in asthma, scurvy, obstructions, and rheumatic pains; and they are said to be excellent in allaying the heat of hectic fevers.

The purging waters may be drank in half-pint glasses at small intervals, till stools are procured, for which purpose from one quart to three pints is generally sufficient. The chalybeate-water is less purgative, operating principally as a diuretic: both waters contribute to give the patient unusual gaiety of spirits, and the patient has here an opportunity of breathing pure air, and of bathing in the sea.

Such of our readers as wish to be informed of the amusements, accommodation, &c. at this and other watering-places, at Brighton, Margate, Weymouth, &c. we refer to the "GUIDE TO THE WATERING-PLACES," published by R. PHILLIPS, Bridge-street, Blackfriars.

SOMERSHAM in Huntingdonshire. This water rises on the side of a small hill, about three miles from St. Ives.

It is a chalybeate strongly impregnated with vitriol of iron and alum; is much stronger in dry than in wet seasons; and may be drank at the

spring head from the beginning of May to the beginning of October, though it will bear carriage to any distance: nor will its virtues be impaired by keeping, provided it is bottled at a proper time, and well corked; but it should be carefully decanted or strained after keeping, as it will drop a sediment. It may be taken before breakfast in the quantity of three large wine-glasses, at half an hour's distance from each other: each dose should be warmed with a small quantity of common spring water heated, or with powdered caraway or cardamom-seeds, the patient in the intervals keeping in gentle motion either on foot or on horseback, otherwise this water is apt to occasion a giddiness, or sickness at the stomach; and he may eat a little preserved ginger, if it can conveniently be had, to obviate the nausea that this medicine may excite.

This water is also sometimes directed to be taken mixed with an equal quantity of new and warm cow or ass's milk: or a whey made from it, by boiling equal portions of the water and milk till the curd separates, which should then be carefully taken away. This method of administering it is advisable in consumptive cases. But in whatever way it is given, it will be necessary to give the patient a cathartic before the course is begun; this may be done with such medicines as are most suitable to the disorder and constitution. In ordinary cases, a solution of half an ounce or an ounce of vitriolated magnesia in a glass of the chalybeate water, warmed as before directed, will be a proper detergent dose: a smaller quantity of the cathartic salt may afterwards be added, as occasion requires. It may also be expedient to observe that this water, as well as all other ferruginous medicines, is apt to change the colour of the stools, which generally become black.

It has been much recommended to remove putrid crudities of the stomach; in debilities of the stomach and bowel; in jaundice; in obstructions of the liver and spleen; in scurvy, and consumptions from scorbutic habits: in diabetes, worms, and schirrous tumors; in dysenteries, in profuse hæmorrhages, and in many other disorders. It may also be applied externally to foul ulcers and cancers. But it is no advisable for persons who are troubled with acidities in the stomach, which it rather tends to increase than correct; nor should it be prescribed to those who are affected with asthma, dropsy, or swelled legs; or to those who are affected with vertigo, or giddiness of the head; in obstruction of the female discharges, and in full habits, it is hurtful; nor should it be taken in any case without proper previous evacuation by purging. A regimen as to diet is absolutely necessary during a course of these waters. the food should be light, plain, and easy of digestion.

TILBURY, in Essex, near Tilbury Fort. This water is *not* quite limpid at the well, but somewhat straw-coloured. It operates chiefly by urine, though it is also somewhat purgative, and increases perspiration. It excites an appetite, and helps digestion; is efficacious in dropsical swellings, in scorbutic and scrophulous disorders, and in those diseases of the skin which are occasioned by glandular obstructions. It is remarkable that this water produces a sensation like that of a benumbed limb when it approaches the fire, though in a less degree. From a pint to a quart of Tilbury water, according to circumstance, may be taken in a day.

TUNBRIDGE WELLS, Kent. The two medicinal springs which are known by the name of Tunbridge Wells, rise contiguous to each other

above five miles to the southward of Tunbridge. There is no perceptible difference in the quality of the water of these springs, which are chalybeate, taste strongly, though not disagreeably, of iron, and contain also a small portion of sea-salt. This water, exposed to the air, soon loses its virtues, as it does also by keeping a few days; it must therefore be drank at the wells, the exercise of going for that purpose, and returning, adding in no small degree to the virtues of the water, which has long been celebrated as a tonic in the diseases peculiar to women, whether arising from chlorosis, fluor albus, or from a profuse flow of the periodical discharge; disorders that are at once debilitating and painful, and that are frequently the causes of abortion, and sometimes of sterility. The stimulant and diuretic properties of the Tunbridge well water recommend it as efficacious for increasing the appetite, accelerating the circulation, and in the removal of obstructions of the liver, jaundice, and dropsy; for this mineral not only promotes the secretions by stool and perspiration, but it is particularly useful, by promoting a regular determination to the kidneys, and in removing obstructions of the urinary passage; it has also the reputation of being destructive of worms, and of curing chronic disorders arising from laxity and weakness of the solids. It is, however, improper in all inflammatory cases, except, indeed, in those feverish exacerbations occasioned by the green-sickness, and which in that disease generally give way to the persevering use of this, and often to other chalybeate medicines. Externally applied, it is said to assist weak and sore eyes, and to remove pimples and other eruptions of the skin.

The season for drinking this water is from the beginning of June till Michaelmas. A little preparation is advisable; in most cases gentle purging is sufficient; but in gross and sanguine habits, other evacuations are required.

In entering upon a course of the Tunbridge waters, a regimen is also necessary: the food should be light; and that part of it which consists of animal flesh should be mutton, fowls, and game, rather than beef or pork: veal and lamb are also to be allowed. The bread should be pure, and well baked; and the less wine is taken the better.

The quantity of the waters required can only be ascertained by circumstances: the age, constitution, and complaints of the patient must be considered, and more or less of this mineral administered as may be found necessary. It is 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 before noon. The quantity may be soon augmented to half a pint at each dose; and if, as is often the case on entering on a course of mineral waters, giddiness, a disposition to sleep, nausea or vomiting, should happen, these symptoms will disappear after a little use: but when, after due trial, this does not happen, the patient may conclude that the waters are unsuitable to his complaint or constitution.

It is common for those who drink the water at Tunbridge Wells to mix occasionally a tea-spoonful or more of common salt, or of vitriolated magnesia, with the first glass of the water, in order to make it operate by stool; others, in case of an extreme irritability of the stomach, caraway or cardamom-seeds, or some warm confection, after each glass; as

this water is apt to occasion sickness, especially where the stomach is loaded with impurities. It is also customary to pour the water into a bottle, and, after closing it carefully with a cork, that the chilliness of the medicine may be diminished, with the escape of as little of the fixed air as possible, immerse the vessel in hot water: by this means the mineral water will be accommodated to the temperature of the stomach.

WITHAM, Essex. This chalybeate spring rises about three quarters of a mile from the town of Witham into a small reservoir, from whence it is brought up by a pump. This water operates chiefly as a diuretic, and is recommended in nervous, hypochondriac, and hysteric disorders; to promote digestion, and to restore the appetite; to check vomiting, and allay hectic heats; to relieve chronic-colicky pains; to restore the constitution when it has been debilitated by excesses; and it is said to have afforded relief in the first stages of dropsy, in scurvy, asthma, and gravel.

It must be drank at the spring, in such quantities as the stomach will receive without nausea. Temperance, light suppers, early rising; moderate exercise in the open air, as riding, sailing, swinging; agreeable company, and rational amusements; all concur in promoting the salutary operation of these medicinal treasures;—treasures prepared in the laboratories of Nature, from her "congregated stores."

When gush the streams, the ceaseless fountains play
And their unfailing wealth the rivers draw.

THOMPSON