

Observations upon the composition and uses of the water at the sulphur baths, at Dinsdale-on-Tees, near Darlington, in the county of Durham / by John Peacock, 1805.

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OBSERVATIONS

UPON THE

COMPOSITION AND USES OF THE WATER

AT THE

SULPHUR BATHS,

AT

DINSDALE-ON-TEES,

NEAR DARLINGTON,

IN THE COUNTY OF DURHAM.

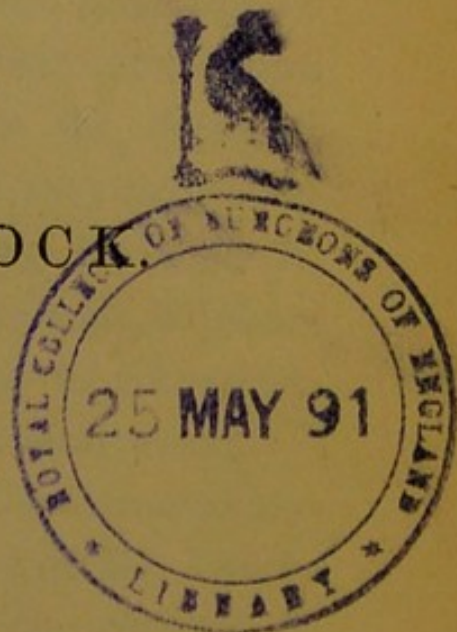
BY JOHN PEACOCK.

1805.

LONDON:

PRINTED BY WATERLOW AND SONS LIMITED, LONDON WALL.

1883.



ON THE

COMPOSITION AND USE OF THE WATER

SUPPLY OF THE

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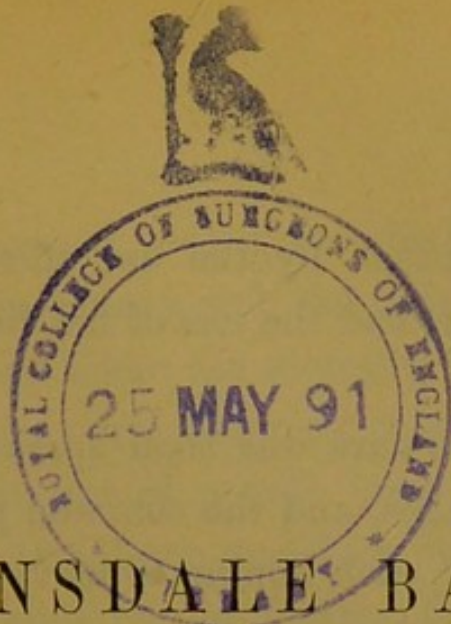
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BY

JOHN W. RAYMOND



DINSDALE BATHS.

HISTORY AND SITUATION.

THE SULPHUR SPRING, which is the subject of the following analysis, is situated in the parish of Dinsdale, on the south-east side of the county of Durham.

It was discovered accidentally, in the year 1789, by some men employed by the late Mr. Lambton, in searching for coal. According to the best information I can procure, the men had bored to the depth of seventy-two feet, chiefly through what they called red rock and whinstone, when the spring burst forth, accompanied with a tremendous smoke and sulphurous stench, so that they were obliged to relinquish their operations in that place during several weeks.

The remarkable qualities of the water attracted the attention of the labourers in the service of Mr. Lambton, who dug a hole in the ground, in the channel of the spring, for the purpose of bathing; and one of them, who had been a number of years afflicted with

a chronic rheumatism, by the use of the bath, and drinking the water, had the use of his limbs perfectly restored.

The fame of this cure was soon spread around the neighbouring villages, and the common people flocked eagerly to the well, each hoping to leave his malady in the water; and although under no rules nor regulations with regard to the dose or management there, its extraordinary effects in several chronic complaints, more especially of the rheumatic and cutaneous kind, added daily to its celebrity.

In the year 1797, a bath was built for the convenience of cold bathing, and since that time a warm bath has been added, with suitable dressing rooms, &c.

The warm bath promises to be a very valuable acquisition to the healing art.

Perhaps no medicated water in Great Britain can boast of greater advantages in situation than this. It is close by the bed of the river Tees, in a beautiful and picturesque country, where hill and vale, wood and water, are so variously and agreeably disposed, nature would seem to have exhausted her stores to produce scenes, which, to the eye of taste, border on enchantment. The sudden breaks and windings of the river, in the course of several miles, both above and below the bath, so diversify the picture that you cannot walk a hundred yards but a new landscape unfolds itself to the delighted sense.

The luxuriance of vegetation on the banks of the

Tees, and the great height to which agriculture has arrived in this county and the neighbouring part of Yorkshire, must make the morning ride of those who have a relish for rural economy extremely interesting.

About a quarter of a mile below the bath stands the village of Middleton-one-Row, which, as the name implies, is a single row of houses, that face the south on a very high bank of the river, and about half-a-mile above the bath we see the little village and parish church of Dinsdale.

In the space between these villages, the Tees takes a semicircular direction, and the high banks on the Durham side form one vast and beautiful amphitheatre, from every part of which the unwearied eye traverses an extent of country, which, for richness and grandeur, perhaps stands unrivalled. A verdant and elegantly disposed grazing farm forms the front of the landscape; behind it is the fertile and extensive vale of Cleveland, which has been emphatically called the *Garden of Yorkshire*; and in a clear day, from the hill above the bath, there is scarcely a village or gentleman's seat, within a range of many miles, but may be easily distinguished.

The Cleveland hills form a soft and sublime background to the enchanting picture. The high road between Darlington and Yarm lies about half-a-mile north of the bath, from each of which towns it is somewhat more than four miles distant. Croft bridge is about five miles south-west.

As there are neither mines nor quarries within a considerable distance of the spot, we can say nothing concerning the structure of the interior parts of the soil in this place. In the bed of the river you see large and continuous rocks, which are chiefly ferruginous sandstone.

The men who were employed to search for coal would have had it in their power to give the best information concerning the structure and composition of those parts through which the spring issues, as they bored to the depth of 432 feet below the surface: but, unfortunately, the operations of these people are always enveloped in such an impenetrable mystery as prevents the philosopher or naturalist from being benefited by their discoveries.

There is no bog or woody swamp within many miles of the place.

About two miles up the river there are the remains of an old bath, which was formerly in some repute. The water is slightly hepatic and saline, and, I am told, similar in its properties to the spring at Croft, about four miles further, which was analysed by the learned and ingenious Dr. Willan, about the year 1782, and before him by Dr. Short.

According to Dr. Willan's analysis, Croft water contains a considerable proportion of carbonic acid gas and carbonate of lime, with small proportions of hepatic gas, sulphate of magnesia, and muriate of soda.

PHYSICAL PROPERTIES.

The strong hepatic smell must strike the attention of every stranger upon his first approach to the spring. It is much stronger in this water than in the old well at Harrogate, but in the opinion of everyone who has had an opportunity of making the comparison, far more pleasant.

The walls of the bath near its source, and the channel through which the water runs, are covered with sulphur, and large quantities adhere to the sides and bottom of the cold bath. Sticks or leaves which have been lodged a few days in the channel will, upon drying, make matches.

No living insects or reptiles are ever seen near the bath; but in the channel we frequently find a number of dead worms, which have strayed from the banks, and experienced the deleterious effects of the hepatic gas.

The specific gravity, when compared with distilled water, is 1.0016, the distilled water being 1.0000.

Upon applying the bulb of the thermometer to the stream as it breaks into day, I found the quicksilver stand at 52, which is 8 degrees higher than the temperature of the neighbouring springs. Indeed, neither the cold bath nor the channel, which carries off the

water, have ever been known to freeze in the severest weather, nor does snow ever lodge very near it.

Considering the small bore through which the water issues, the stream is very copious, being more than twelve gallons in a minute; but neither the weather nor the seasons make any alteration either in the quantity or quality, as far as we are able to observe.

If you fill a glass with the water at the fountain head it appears beautifully clear and sparkling, but in a few minutes loses its brilliancy and becomes more and more opaque, till the whole of the sulphur is separated from the gas which kept it in solution, which will require several days to effect. It then acquires a transparency, which I hardly ever witnessed in any water.

To the taste it is extremely pleasant, and, like most hepatic waters, leaves a slight sense of sweetness upon the palate.

The sulphur which is deposited in the channel is of a pale straw colour.

CHEMICAL ANALYSIS.

A quart of water from which the carbonates had been separated was evaporated to dryness, and the residuum exposed to a dark red heat, after which it weighed 25 grains.

By preceding experiments a wine quart of the water contains—

	GRAINS.
Of carbonate of lime	2
Sulphate of lime	25
Of æriform fluids—	
	CUBIC INCHES.
Carbonic acid gas	2
Azotic gas	1.50
Sulphurated hydrogen gas, which contains $2\frac{1}{2}$ grains of sulphur	8.32

OBSERVATIONS.

The most striking circumstance in the analysis of this water, either to a chemist or to those who are totally ignorant of the science, is the large quantity of sulphurated hydrogen gas, or (as it is generally called) hepatic air, contained in it: indeed there is no water, the analysis of which has been made public, which contains so much. The famous hot sulphur bath at Aix la Chapelle is the only one which can pretend to vie with it; but in the water at Aix the whole of the sulphur is not kept in solution by hydrogen gas, but is in part united to an alkaline salt, forming an hepatule of soda; whereas the sulphur in the spring of which we are now treating is kept wholly in solution by hydrogen gas, which I presume must add to its value as a medicine.

It is customary to compare the quantity of sulphur in this water with that of the drinking well at Harrogate, but a slight glance will convince us that the comparison will not hold a moment.

It was a long time a matter of dispute whether Harrogate water really held any sulphur in solution, till Dr. Watson scraped a little off the bottom of a cistern which had been long in use, and solved the difficulty; but from the Dinsdale water the separation

of sulphur is so copious that in the winter months you may collect large quantities out of the channel which carries off the water : during the bathing season it is picked up almost as fast as it is deposited, which prevents at that time any great accumulation.

However, to satisfy the minds of those who might have doubts upon the subject, the following comparative experiments were made :—

EXPERIMENT I.—A quart of Harrogate water was subjected to the action of nitrous air, but after filtration I could not find in a pair of scales very nicely balanced that the paper had acquired any additional weight.

EXPERIMENT II.—Into half a pint of Harrogate water, previously saturated with muriatic acid, I carefully dropped a solution of oxymuriate of copper as long as the metal occasioned a deposition of a black precipitate, which ceased when six drops had been let fall.

EXPERIMENT III.—The same solution of copper was used with half a pint of Dinsdale water, and the precipitation continued till 30 drops were used.

MEDICINAL PROPERTIES.

It is an observation replete with truth (made by Dr. Saunders) that if we read all the treatises upon the several mineral waters now in use, "we must be struck with the general similarity in the virtues ascribed to each, even when the chemical composition appears to be the most distant."

The dyspeptic, the gouty, the nervous, the hypochondriacal, all find relief, whatever may be the ingredients with which the water is impregnated, let there only be *hope* at the bottom of the cup: indeed the relief from the anxieties of business and cares of domestic life, added to the regularity and temperance, which are the leading parts of a physician's prescription in these places, must have a salutary effect upon every constitution enfeebled by disease.

But I am happy to say, from several years' experience of the Dinsdale spring, and every person in the least acquainted with chemistry, will perceive from the foregoing analysis that its virtues are not equivocal or imaginary; its medicinal properties are not involved in unfathomable mysteries like many of the waters of fashionable resort; we have not here a gordian knot, which none but the sacred hand of resident physician dare venture to untie. The

sensible qualities are striking and the medicinal powers great, and easily ascertained (I might almost say anticipated) by those acquainted with the modern theory of pneumatic medicine: indeed, to the adherents of the new doctrine, the discovery of this spring must be considered as a most invaluable acquisition, as it is the only one in this kingdom which possesses the disoxygenating or sedative power to any extent.

As the majority of my readers will perhaps be totally unacquainted even with the rudiments of that science upon which the modern pathology of diseases is founded, it may not be amiss to give them such an outline as will enable them to judge how this water acts upon the human body; and it will be necessary to premise that in modern chemistry nothing is taken for granted: every process has been proved by experiment a thousand times repeated.

The atmosphere we breathe is composed chiefly of two different kinds of æriform fluids or gases, which are easily separable. The oxygen gas, or vital air, constitutes about one-fourth; the other three parts are named azotic gas.

Azotic gas is so called, from its deleterious effects upon all animals that breathe it, when separated from oxygen gas; an animal immediately dies, and a candle is instantaneously extinguished in it: but as this gas has no known action upon the human body, when united with oxygen gas, in the proportion of

one part of the latter to three of the former (it being inspired and expired unchanged), it would be foreign to our present purpose to enquire any further into its nature or properties.

Oxygen takes its name from two Greek words, which signify *acid-maker* and it is the acidifying principle of every acid, as far as experiments have yet reached. An apple, vinegar, aqua fortis, every solid and fluid which is called sour, is indebted for this quality to the oxygen it contains. A candle only can burn, or an animal breathe, whilst they are supplied with oxygen gas : as soon as this part of the atmosphere is consumed, the candle goes out and the animal dies ; and the bright red colour of the arterial blood is owing to the same gas, uniting with it in the lungs.

If blood be drawn from a vein, and exposed to the open air, the surface of it is soon seen to change from a reddish brown to a bright crimson, and this is effected by its union with the oxygen gas of the atmosphere.

Oxygen is kept fluid in the atmosphere by its solution in what chemists call *caloric* or the *matter of heat* ; it is its union with this substance, which constitutes it a gas or æriform fluid. If you introduce another substance, for which oxygen has a greater affinity than for caloric, it leaves the caloric, and joins the other substance, and the caloric escapes in the form of light or heat. Blood is a substance for

which oxygen has a greater attraction than for caloric. The pulmonary artery diffuses the blood through the lungs, and when we inspire, the following changes take place :—The oxygen of the air unites with the dark blood, and immediately changes it to a brighter red, which is carried to the heart, and by this organ, distributed through every part of the system, for the different purposes of nutrition, muscular irritation, and secretion. After these are effected, the blood has lost its bright colour, and is sent by the veins to the lungs, for a fresh supply of oxygen.

When the oxygen quits the caloric, to join the red particles of blood, the caloric is then set at liberty, and gives warmth to the arterial blood, which, by the circulation, is rapidly diffused over the whole body. This is with good reason supposed to be the chief source of animal heat.

The red particles of the blood are composed of phosphoric acid and iron, and as the proportions of one or the other prevail, the circulating fluid will be of a darker or brighter colour, and will impart more or less of heat to the whole system.

Some constitutions are very prone to imbibe a large quantity of oxygen from the atmosphere, which oxygenates or acidifies the blood, making the complexion florid, the circulation rapid, and exciting a greater degree of heat throughout the whole frame ; and these circumstances will be carried to such a

height, as frequently to constitute disease. This kind of constitution is very liable to inflammations, to florid consumption, diabetes, chronic hectic fever, cutaneous eruptions, inflammatory rheumatism, and, when passed the meridian of life, to gout and apoplexy.

Now to disoxygenate the animal system, to remove the superfluous oxygen from the fluids, the accumulation of which, according to the chemical pathology, is the cause of the increased heat and morbid action, no medicine promises so much as sulphurated hydrogen, the active ingredient in these waters.

If sulphurated hydrogen gas be mixed with atmospheric air in a glass jar, after a while the hydrogen seizes the oxygen of the air, and forms water, the sulphur is let fall, and almost nothing but azotic gas (the irrespirable part of the air) is left in the jar.* This is one proof how greedy hydrogen is of oxygen.

If you draw blood from a vein, and introduce it into a jar filled with sulphurated hydrogen gas, instead of acquiring the vermilion hue, which it gains in common air, it is changed to a dark brown; the hydrogen uniting with the oxygen and destroying it.

The manner in which sulphurated hydrogen is

* The sulphur deposited in the channel issuing from the spring, is separated this way.

supposed to act upon the blood, in a living animal, may be illustrated by the action of the same gas upon a solution of metal in an acid. For example, if copper be dissolved to saturation, in weak nitric or muriatic acid, the solution will be a fine green ; let a stream of sulphurated hydrogen gas pass through it, and the copper will fall to the bottom in a black powder, and the green hue will be lost. Here the hydrogen gas seizes the oxygen of the acid, and forms water, and at the same moment the sulphur unites with the copper and is precipitated.

I have before premised, that the red particles of the blood are composed of iron united to phosphoric acid. Now, when the sulphurated water is taken into the stomach, it soon pervades every part of the system, as is very demonstrable to the senses, and it may be presumed that the usual attraction which hydrogen has for oxygen, will be exercised here : indeed, experience of the action of these waters fully proves it ; but whether the other constituent part of the gas (the sulphur) unites at the same time with the iron, is not so clear. I believe it does *not*, as solutions of iron out of the body, are no further acted upon by sulphurated hydrogen, than by seizing a part only of their oxygen.

If the system *be* liable to imbibe a superfluous quantity of oxygen, so as to constitute disease (as is rendered very probable from several symptoms in the diseases above enumerated, and particularly as this

opinion is sanctioned by some of the first physicians and chemical physiologists in Europe), we have here a remedy ready formed in the laboratory of nature, the most promising to resist and subdue this particular diathesis of any that has yet been discovered.

The late Dr. Garnett, and the present surgeon-general of artillery (Dr. Rollo), with his associate Mr. Cruickshank, have been so much impressed with the applicability of sulphurated hydrogen to diseases apparently dependent upon an excess of oxygen in the system, as to prepare this medicine artificially, and they have succeeded in effecting a cure in a great number of cases, which would seemingly have set every other means at defiance.

Dr. Rollo's first trial of sulphurated hydrogen, was in a case of that terrible disease the *diabetes*, in an officer of artillery, in which he succeeded so well, as to encourage him to make it known to several of the most distinguished of the faculty in different parts of Great Britain, requesting them, at the same time, to make a trial of it in similar cases. The doctor has in consequence received various communications upon the subject, in which the utility of this medicine, with an appropriate diet, has been placed beyond a doubt; for nearly fifty cases of diabetes have been given in to him, in which the patients have either been cured, or so much relieved, as to evince its superiority over every medicine then in use.

The medical reader need not be informed how much more agreeable such a medicine must be to the palate of his patient, when taken blended as it is by nature in this water, than in the nauseous shape in which physicians have been compelled to use it, when prepared artificially in sulphuret of potass or sulphuret of ammonia.

I have had frequent opportunities of witnessing the good effects of this water in diseases of the *skin*, and particularly in those called *herpetic*; and I am sorry to say that I have formed a different opinion upon the nature of this class of diseases from most of the modern medical writers (Dr. Darwin excepted).

In getting rid of the absurdities of the ancient humoral pathology, they have run into the contrary extreme, and consider the cause of the generality of cutaneous affections to be merely local, arising from want of cleanliness, heats and colds, obstructed perspiration, &c., and recommended for their cure the use of topical remedies only: but still, allowing *that certain families are much more disposed to these diseases than others*. This remark of itself is sufficient to overturn the whole of their doctrine, for I have reason to believe that the greater part of cutaneous affections either sympathise with, or are curative of, some internal disease, but generally of the membranes of the thoracic or abdominal viscera.

I will just mention a few cases illustrative of this doctrine which have fallen under my care:—Mrs. M.

consulted me concerning a branny eruption which had come out in patches upon her arms, and which, from its itching excessively, was very troublesome to her. She told me she had been long subject to a gnawing pain at her stomach, attended with lowness of spirits, and bad digestion, but since the eruption had appeared she had been relieved from all her other complaints and had got fat. I recommended her by no means to try to get immediately rid of the cutaneous disease, but to cool and restore the altered tone of the skin, I advised her to drink the Dinsdale water, and use the tepid bath every other day. About two months after this I was called to see her, and found her struggling with a violent pain at her stomach, which bent her double, and from which she had not had an interval of ease for several days. Upon enquiry I found she had never used the water, but had been applying an ointment, by means of which the eruption disappeared and this dreadful stomach affection was the consequence. By the use of proper medicines and stimulating applications to the arms, the eruption again appeared and relieved the stomach; after this she used the water as before directed, which removed the heat and took away the rough branny surface: further relief than this she is never desirous of obtaining, but cherishes as her best friend what she before considered a loathsome disease.

Mrs. H., of a very spare habit, and somewhat

advanced in life, had many years an herpetic eruption upon the side of her knee, about the size of one's hand, which, whenever she caught cold, or was much agitated in her mind, disappeared, and a violent colic was the consequence. I have been repeatedly called to her when she was suffering under the agonies of this disease, and my first endeavour (after I had become acquainted with the nature of it) was to excite a degree of inflammation upon the skin of the knee, which invariably gave her immediate relief. It unfortunately happened that this lady had one of these attacks when I was confined with a fever about three years ago : another practitioner was called in, who not being acquainted with the peculiar connection which existed between the stomach and the skin, every effort to save her was ineffectual.

I will mention another instance among a great number which have come under my care, of the danger of suppressing an herpetic eruption :—

A young lady, about 20 years of age, was brought to me by her parents, from a considerable distance, apparently in the last stage of a consumption. She had a constant cough attended with a profuse purulent expectoration, night sweats, with much hectic fever and emaciation. I confess, that with all the improvements which modern industry has made in the treatment of pulmonary complaints, I undertook her case with little prospect of success ; however, I put her under tonic medicines and a nourishing diet.

During three weeks her complaints seemed stationary, when she awoke one night with so very hot a skin, and so much sickness and fainting, as to alarm her friends exceedingly.

In the morning a vesicular eruption, in large broad patches, appeared upon several parts of her body. I now learned, and not till now, that many years before our patient was attacked with pulmonary complaint, she had been subject to a tettery eruption upon her neck, arms, and legs, of which she had been cured by a lotion which had been much advertised in the papers.

The cutaneous affection no sooner re-appeared than the cough and every other phthisical symptom vanished, and in a few days she was restored to perfect health.

The foregoing cases will, I trust, make the practitioner hesitate before he employs any of those heroic and infallible remedies in cutaneous diseases, which are daily recommended not only by empirical pretenders, but by men of the highest estimation in the profession. I have no doubt, in my own mind, but the chapter on cutaneous ulcers, by Mr. Benjamin Bell, of Edinburgh, has occasioned the death of thousands. He there roundly states, "that all the fears of the ancients were groundless, and all their practice erroneous with regard to the repulsion of herpetic eruptions," and advises the washing of the skin freely with solutions of lead or mercury, without any regard to the origin or state of the disease.

I am sorry to find that many gentlemen in large towns, whose education and practice, during the greater part of their lives, have been confined merely to operative surgery, should, as soon as they have got a little fame in this department, all at once be inspired with a knowledge of the complicated and laborious science of medicine. It is not more inconsistent for a blacksmith to prescribe to every disease to which a horse is subject, as soon as he has learned to make a shoe.

It is cause of regret, too, that in this kingdom so little attention has been bestowed upon cutaneous diseases unattended with fever. There is not one practical treatise upon the subject in the English language ; and medical lecturers in general have treated it in a very cursory manner. It is true we have some very splendid noseological arrangements of these diseases, but the practical reader who wishes to be acquainted with their origin and treatment, might as well consult the court calendar.

I have often marvelled that Dr. Garnett, who resided some time at Harrogate, has not added to our stock of knowledge in this department, considering that place the resort of so great a number of sufferers in this way.

Almost every case of herpetic eruption, which has come under my care, I have been able to trace to some previous disease or derangement of the system, which the eruption is most commonly a cure of. The subjects of

them are generally of consumptive, or what is called *nervous* habits : low spirits, flatulency, indigestion, restless nights (particularly from the hours of two to six in the morning), occasional colics, which do not give way to the usual means of relief, hectic heats, palpitation of the heart upon motion, griping pains, and occasionally a lax state of the bowels, which seldom lasts more than a day ; a great sensibility of the skin to heat and cold ; occasionally a giddiness of the head, and an inability to fix the attention even on the most urgent business ; these, we have to lament, only form a part of those symptoms which characterise the herpetic temperament.

I know the sagacious reader will think that he can confront me with instances of very strong men laboring under cutaneous eruptions of this class ; but let me have a history of these people and their families before the eruption appeared. I am acquainted with a man, the greater part of whose family before him had died of consumption ; he married a woman of a very fairly-marked scrofulous temperament ; and all their children, which are numerous, are very healthy, but not one of them free from cutaneous eruptions of that kind which is commonly called tetter.

Here beneficent nature undertook, as it were, to anticipate disease ; but I have no doubt, in reasoning from analogy, that if this eruption had not taken place, something much more formidable would ; and am convinced that, should the eruption in any of these

children suddenly disappear, either a consumption or some derangement of the functions of the stomach or intestines would be the inevitable consequence.

We meet, in writers, with cases of severe herpetic eruptions succeeding to a sudden illness, where the patient had enjoyed good health (from their own accounts) the whole of their lives before ; but this is no exception to my doctrine ; almost every case, even of pulmonary consumption, for which we are consulted, if we take the patient's own opinion, arose from a sudden cold, without any previous indisposition. It is the privilege of a medical practitioner to take nothing on hearsay ; he must watch and examine with patient attention, scrutinise closely, and never give up the exercise of his own understanding to a foolish murdering complaisance. Actuated by these motives, I have investigated minutely every case of herpetic eruption which has come under my observation during the last ten years, and I have come to this conclusion—that herpetic eruptions are always metastical of some morbid affection of the membranes of the thoracic or abdominal viscera ; or (in more familiar language) they are an effort of nature to get rid of some internal disease.

When I can steal a little time from the exercise of a laborious profession, I mean to trouble the world with some observations upon the nature and treatment of pulmonary consumption, wherein the truth of the above doctrine will be elucidated by a great number of cases.

When herpetic eruptions first appear upon the skin, they exhibit the following appearances :—A cluster of small pimples or vesicles upon an elevated red basis, in irregular patches, generally upon the arms, legs, and sides of the neck, attended with a good deal of heat and itching, sometimes with a smarting pain after scratching or rubbing. If they be roughly handled upon their first appearance, there oozes out from the vesicles a clammy fluid, which forms crusts or scales ; when they are rubbed off, the cuticle desquamates, and a new set of vesicles may be seen by a magnifying-glass, which continue to throw out new matter, which, uniting with the oxygen of the air, forms a branny covering ; when the air is strictly excluded the redness will continue, but no scales form. This is the most common form in which we see herpes ; but it will assume a variety of appearances in different constitutions, and even in the same constitution it will vary by age and the habits of life, and particularly where it has been suppressed for a time and again thrown out.

Sometimes it appears in very small patches, with no moisture ; sometimes in a large dark-coloured inflammation, resembling erysipelas. In some constitutions the itching is intolerable, and there oozes out from large excoriations a thin scalding fluid, in the quantity of a quart or more during twenty-four hours.

Sometimes we see a cluster of vesicles upon an inflamed base, as large as currant berries, which break and form a flaky scab.

Authors have exercised their ingenuity more in adapting names to the several appearances in this disease, than in tracing their remote cause and discovering appropriate remedies. I repeat *appropriate*, because I am satisfied, from daily experience, that *getting rid of the disease, at all events*, is fraught with certain destruction ; and I would banish from the list of cutaneous remedies, lead, mercury, with all the fashionable lotions, as I would banish a hypocrite from society ; both one and the other, under the appearance of being friendly, may effect our ruin.

When the skin has suffered some time under one of these herpetic affections, it loses its tone and beauty, and its functions become impaired ; the transpiration is obstructed in the part affected, and should the patient sweat profusely, a greasy fluid is at first excreted, which, if wiped off, is succeeded by the usual aqueous one.

Now, to restore the lost tone of the skin, to wash off the offending matter, and bring about a free transpiration, sulphur baths have been in use from time immemorial (lately the water has been taken internally for the same purpose). And, as their mode of action was not known, nor even of what ingredients they were composed, physicians agreed to call them *specifics*, and they were used indiscriminately for every eruptive disease.

In the treatment of all cutaneous affections, strict enquiry should be made concerning the previous

symptoms; we should endeavour to find out whether the disease be curative of, or still associated with, some morbid affection of the viscera; whether it has been preceded by hectic heats and cough, by a pain in the stomach, flatulency and indigestion, by griping pains in the bowels, with tension of the belly and low spirits, or by palpitation of the heart, and intermittent pulse. If it has been found to succeed any of these trains of symptoms, we shall be able to judge with what diseased organ it is associated; whether the eruption was curative of consumption, dyspepsia, hypochondriasis, inflammation of the membranes of the liver, or of gout; and by medicine and proper diet, first strengthening and restoring to its healthy state the seat of the respective disease, before we attack the outworks, we shall thus, like prudent generals, secure a safe retreat.

But in no one of the eruptive cases which have come under my care have I once known the original disease return, whilst the patient was drinking the sulphur water and using the tepid bath. Some patients will, without taking any advice, plunge themselves indiscriminately into the cold bath (perhaps in a very reduced state of body at the same time), and finding themselves, after two or three dips, still uncomfortable, leave the place in disgust; but we must not judge of the utility of any medicine from its abuse.

This water has a peculiar determination to the skin. It is not uncommon for patients, after using it a little

while, to have very troublesome cutaneous eruptions, which last only a few days, and generally clear them of all their internal complaints—affections of the stomach particularly.

A lady of this place, about 60 years of age, having been several years troubled with a miliary eruption, which alternated with a pain at her stomach, after using this water a few days, had a most violent inflammation upon the foot and ankle ; and although her former complaints have now and then shewn a disposition to return, yet never with any violence.

Many people, accustomed to go to Harrogate, have objected to the Dinsdale spring, on account of its want of salt, but in the opinion of every intelligent physician, this is its greatest recommendation. It is an axiom, first laid down by the sagacious John Hunter, that no two important operations can be carried on in the system at the same time ; so that whilst the bowels are acted upon, there can be little or no determination to the skin. Now, this water, by having hardly any action upon the bowels, and being extremely agreeable to the stomach, the sulphurated hydrogen is wholly taken into the system, and passes off largely both by the sensible and insensible perspiration.

Every writer upon Harrogate and other sulphur waters, rests their efficacy almost solely upon the quantity of sulphurated hydrogen they contain. I will take the liberty of transcribing the words of the

late ingenious Dr. Garnett, as he is the last writer, and the most looked up to, upon the subject. In treating upon the medicinal properties of Harrogate water, he says, "The saline substances which it contains, *may* contribute to the cure of cutaneous diseases, both by promoting perspiration, when the water is taken internally, and by stimulating the cutaneous vessels when it is used externally; but I am inclined to think that the hepatic air (sulphurated hydrogen) acts a principal part in the cure of these complaints, for I have known common water impregnated with hepatic air, produce powerful effects in some herpetic cases, in which the sulphur water at Harrogate had formerly been used with success, but to which the patients could not then conveniently have recourse." And in another place he observes, "what would tend greatly to prove that the power this water possesses over cutaneous diseases, depends in a great measure on the hepatic air, is, that all the other advantages might be expected from warm sea water, which, however, is never found so efficacious as the sulphur water at Harrogate. May not the action of the sulphurated hydrogen gas, in the greater number of herpetic complaints, be rationally explained on the following principles? Most of these complaints depend upon an inflammatory state of the system, and there are in general evident marks of a superabundance of oxygen, such as the heat and florid color of the

parts affected, and the florid color even of the venous blood, when drawn in most of these cases. The sulphurated hydrogen will most powerfully diminish this oxygen, by uniting with it, and forming water."

(*V. Garnett. on Har. waters.*)

This beautiful theory of the action of sulphurated hydrogen gas, is worthy of the pen of Dr. Garnett, and it accords with the experience of all medical men, who have had opportunities of noticing its effects.

He here candidly gives us the action of the salts, and rests its efficacy solely upon the sulphurated hydrogen gas; and as the Dinsdale water contains at least six times as much of this gas as any water in this kingdom, its great medicinal power must be sufficiently notorious; and with regard to its action on cutaneous diseases, its safety is equal to its efficacy; for, during its use, many chronic internal complaints have a disposition to be thrown upon the skin, and a continuation of the same remedy restores the skin to its natural state, without danger of repelling the disease to its original seat.

The peculiar effect of this water also in removing all febrile heats, adds much to its value.

Almost all affections of the lungs, as well as of the stomach and liver, are attended with some degree of feverish heat, which this water has a peculiar tendency to remove. I have frequently known the pulse reduced 20 or 30 in a minute, before the patient had

used it a week ; and the thermometer, which was at first at 104 in the arm-pit of a young man, labouring under a hectic, with a short cough, which had succeeded a typhus fever, was soon reduced to 96.

I have not yet had any experience in the power which this water might exercise over confirmed consumption ; but as the sulphur water has proved so very beneficial in the hectic heats, and night sweats, which so often precede consumption, and further, as it frequently throws out a critical eruption, which removes *in toto* the phthisical diathesis, I have no doubt but it might be made a powerful auxiliary in able hands, of combating this obstinate malady, or rather, *compages* of maladies.

Dr Garnett (whose opinions I take a pleasure in quoting), in speaking of the cure of florid consumption, says, “ some of the sulphur waters, particularly *those which contain but little salt*, might, perhaps, be used with safety and advantage, both internally and externally ; for it is probable that the sulphurated hydrogen gas would powerfully diminish the superabundant oxygen by uniting with it and forming water. I have not yet seen a case of florid consumption in which these waters have been tried, but should think them much preferable to those of Bristol in these cases. In confirmation of this theory I beg leave to add the following fact :—After walking a great deal, for several days, in frosty weather, when the barometer was high, I was seized with a difficulty of breathing,

great tightness in my breast, a short dry cough, countenance very much flushed and florid, with every other symptom which attacked Dr. Beddoes, after inhaling oxygen gas, which convinced me that the system was superoxygenated; the exercise of walking obliged me to make more frequent respirations, while I took in at each respiration a greater quantity than usual of oxygen on account of the dense state of the air. These symptoms were instantly relieved, and soon cured, by inhaling sulphurated hydrogen gas."

(*Garnett on Har. water.*)

It seems the Dinsdale spring would have been the very desideratum which Dr. Garnett was wishing for. All lovers of science have to deplore that we were so early deprived of the labours of that excellent philosopher.

I anticipate an objection which will be made to this water from the quantity of sulphate of lime held in solution: this, I acknowledge, would have had serious weight before animal chemistry had arrived at its present height; the terrors of stone and gravel would have haunted every person who used it; but, thanks to the labours of the modern chemists, those terrors have entirely vanished, for we find, from the unwearied researches and experiments of Scheele, Fourcroy, and Dr. George Pearson, that the very article by which every drinker of hard water thought he was adding daily a new coat to the stone in his kidney, or his bladder, does not form any part of that

stone, and that what is called gravel in urine, is crystals of a salt peculiar to this fluid, and which the water we drink has no share in forming.

It is allowed on all hands, that, in certain states of the kidneys and bladder, this or that water has peculiar effects : sometimes the discharge of urine will be greater with one water and less with another ; but this is no criterion of their salubrity, An hysterical person, or one anxious about any object he has in view, or a patient under diabetes, will each of them have a frequent and large flow of urine ; but will it be said that they are benefited by it ? The fluid taken into the stomach is meant to serve many important purposes in the animal economy, and should not be too soon excreted : besides, we should arraign the beneficence of an all-wise providence, to suppose that all our pleasantest and most refreshing springs are laden with disease ; for the hard waters are always the most palatable, and, in the opinion of men who have studied nature, the most salubrious. I strike out of my list those overwise physicians who affectedly lay down theories, and wish to make nature bend to them. I lately had a gentleman under my care, afflicted with hereditary gout, but as he had had from his youth all the terrors of the disease before his eyes, he took care never to drink anything stronger than very dilute brandy and water ; yet, with this caution, he frequently had severe fits of what is called the gravel. His physician (who was one of those who refine upon

nature) ordered him the use of distilled water, as, in his own words, "*it was the pure element, deprived both of earth and air.*" What a misfortune for mankind, that such a man could not be consulted at the creation! However, after our patient had been under this regimen a few days he complained (using his own phrase) that "there was no *heart* in it," a torpor came upon his stomach and bowels, he lost his appetite, and had to struggle with the most obstinate constipation; and, to complete his misery, his legs and thighs gave most unequivocal signs of dropsy. So much for the *pure element*! But with a little medicinal help, and a return to his usual diet, he was restored to his *statu quo*.

The late illustrious Dr. Darwin was so impressed with the utility of hard water in diet, that he classed it in the list of his *Nutrientia*, convinced, from long observation of the important part it acted in the nourishment of man and other animals. "It is not improbable," he remarks, "that the calcareous earth, dissolved in the water of many springs, may contribute to our nourishment, as the water from springs, which contain earth, is said to conduce to enrich those lands which are flooded with it more than river water. Many arguments seem to show that calcareous earth contributes to the nourishment of animals and vegetables; first, because calcareous earth constitutes a considerable part of them, and must, therefore, either be received from without, or formed by them, or both. It was formerly believed, that waters replete with cal-

careous earth, such as incrust the inside of tea-kettles, or are said to petrify moss, were liable to produce, or to increase the stone in the bladder. This mistaken idea has lately been exploded by the improved chemistry, as no calcareous earth was found in the calculi analysed by Scheele and Bergman. The waters of Matlock and of Carlsbad, both which cover the moss which they pass through with a calcareous crust, are so far from increasing the stone of the bladder or kidneys, that those of Carlsbad are celebrated for giving relief to those labouring under these diseases. Those of Matlock are drunk in great quantities, without any suspicion of injury; and I well know a person who, for above ten years, has drunk about two pints a day of cold water from a spring, which very much incrusts the vessels it is boiled in with calcareous earth, and affords a copious calcareous sediment with a solution of salt of tartar, and who enjoys a state of uninterrupted health." (*Darwin's Zoonomia.*)

Dr. Saunders, too, than whom few men have laboured harder, or with more success, to advance the science of medicine, makes the following observation:—"It is certain that the salts which give the quality of hardness to spring water are always to be found in one form or other in the fluids of the body, in the state of the best health, and they appear to be necessary to the constitution of these fluids. Thus we find the component parts of selenite and common salt in the serum of the blood, in the urine and other secreted fluids; and even if these salts be considered as merely excrementitious, it would

appear, that in common cases, and in a healthy state of body, the usual course of circulation is sufficient to throw them off into the excretions."

(*V. Saunders on Mineral Waters.*)

If the foregoing authorities be not sufficiently convincing, we may add to them, that of the celebrated Cullen; and as he was not only a good physician, and a good chemist, but a great water drinker into the bargain, we may presume, that he bestowed some attention on the salubrity of his favourite beverage. In treating of the distinctions which are generally made between hard and soft water, he says, "we cannot discover that the harder waters, even when they have been much and constantly employed, have been very evidently hurtful; at least, we can find no good or clear evidence of the bad effects that have been ascribed to them. I lived for many years in a large city, in which the waters very universally employed were very hard, and although softer waters were within their reach, the most part of the people used only the hard; but among this people I found no endemic diseases, or at least none that I could impute to the water they drank, and certainly none that I did not find as frequent in a city which I have also practised in for many years, whose inhabitants very universally used no other than a very soft water."

(*V. Cullen's Materia Medica.*)

I have practised in the town of Darlington fourteen years, and in this time, have met with only one

person afflicted with the stone, and this was a very young child. Now Darlington has upwards of five thousand inhabitants, and they and the neighbouring country use nothing but hard water ; indeed, almost every house has a pump, and they find the water pleasant as well as plentiful, and as they do not experience any inconvenience from it, there are no enquiries made concerning its composition. It is true that I have frequent applications from old men, to relieve them from the stone and gravel, as they are pleased to miscall that painful affection of the bladder incident to old age ; but as we are generally able to convince them of their error, by making their days tolerably comfortable (which the stone never admits of), they soon get rid of their terrors, both of the stone and spring water, and these complaints are by no means more frequent here, than in those places where soft water only is used.

Those who drink daily of the Dinsdale water, frequently remark its diuretic quality ; but I have not yet heard of one person under a course of it, complain of the gravel, so that experience (which is the best test) will do away every objection to the hardness.

After eruptive diseases, chronic rheumatism is the most common complaint, for which recourse is generally had to sulphur waters, and, under proper management, they are an efficacious remedy : but a very important distinction should be made between

one species of this disease and another, otherwise the indiscriminate use of this very powerful medicine will often be attended with disappointment. Authors have generally divided this disease into acute and chronic, without noticing that there are two species of chronic rheumatism, which require as opposite treatment as any two diseases to which the human body is liable. When the limbs of one person are so painful under heat that he is obliged to throw off the bed-clothes in the coldest nights in winter, another cannot find relief till his limbs are rolled in flannel, and himself covered with six or eight blankets.

In the name of common sense, can this be one disease? But our learned teachers have been so fond of systematising; they will at any time wink at nature, if she does not exactly tally with their rule and square. A renowned professor, in treating of this disease, says, that one species of chronic rheumatism so resembles the acute, that we are to treat them both alike. To be sure, this sweeping mode of doing business saves a teacher much trouble in discriminating, and the student much pains in thinking; but how will this do in practice?

A lady, about thirty years of age, applied to me lately to relieve her from a rheumatism, to which she had been subject many years. She was of a pale complexion, pale lips, rather jolly for her years; her arms were cold and clammy, her appetite bad, and she complained of frequent swimming in her head,

particularly when fasting ; but although her hands seemed cold to me, she could not bear either a warm room, or her limbs to be covered in bed. During the day, and whilst she was cool, her legs and arms felt numb, and as if asleep as she termed it ; but during the night, she was either shivered with cold, or torn with the most excruciating pain ; although her tongue was the natural colour, she had a great propensity to drink cold water ; her pulse was 90, small and hard.

This was one of those cases in which a man must lay aside his books, and think for himself. Our patient had been bled about a dozen times, blistered frequently, sweated profusely, she had used hot and cold sea-bathing, had taken largely of a nauseous medicine, which I understood to be guaiacum, combined with calomel, and had drunk a decoction of the woods, till her stomach nauseated with the recollection of it. There appeared to me an increased action of the arteries, with great weakness of the system : she was directed to drink a quart of the sulphur water, and to remain in the tepid bath from 12 to 15 minutes every day, to use a nourishing diet, but refrain entirely from wine or any strong drink. I saw her again, after she had pursued this plan about a fortnight ; her pulse was now only 78, and although her pain was not much abated, her strength and spirits were so much improved, she said she was “conscious it would cure her ;” and indeed a few weeks verified the prediction. One circumstance was worthy of re-

mark,—when the pain began to abate, she complained of a most intolerable itching in her hands, and other parts of her body, attended with an eruption, resembling the true scabies, only the vesicles were larger : but, after being out about a week, this eruption gradually disappeared.

In this case, as well as in many others which I have witnessed, we have a strong proof of the power of this water in diminishing the morbid action of the arterial system, which in rheumatisms, attended with pain, during warmth, seems the chief measure indicated ; but the system must be strengthened at the same time, otherwise we gain only momentary relief.

Perhaps it might be expected that I should here lay down rules for the use of the tepid and hot baths, but as we find some general remarks upon this subject in almost every treatise upon mineral waters we meet with, and as it is impossible to lay down rules applicable to every case to which the water is likely to be beneficial, I will just insert a list of those diseases, for the cure of which it seems to be indicated ; and (for the information of those who have had no opportunities of acquiring any knowledge of the subject) it may be necessary to premise a few observations upon temperature.

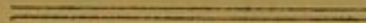
The ordinary heat of the human body, when in health, is from 96 to 98 of Fahrenheit's thermometer, and this it preserves in so extraordinary a manner in all climates, whether a man be wading the

snows of Lapland, or broiling on the torrid plains of Africa, that Dr. Currie has proposed, that this power in the body, of preserving its proper heat, be considered as a definition of life. In this island, the surrounding atmosphere is always many degrees colder than the human body, but habit reconciles us to it, and when our summer heat is as high as 80, or we sit in a room heated to that pitch, our feelings are rendered very uncomfortable; the circulation, by being thrown more than usual upon the skin, gives the sensation of great heat, but if our bodies be immersed in water at the above heat, it gives the sensation of coldness; this is owing to the greater density of water than air, which makes it a better conductor of heat, so that air at 70 of the thermometer, will feel as warm as water at 90.

When the body is plunged into cold water, our sensations experience an uncomfortable shock, which is immediately followed by an agreeable glow upon the skin, this is what medical men call the *reaction* of the system. The hot fit of fever is supposed to be produced by the same power in getting rid of the cold one. Now, in bathing, every degree of cold from the freezing point up to 86 of the thermometer, is capable of giving this shock, and consequent reaction in a greater or less degree, which is always in proportion to the degree of coldness (making allowances for peculiarities in constitution or habits of life), for the reaction or glow, which ever we please to call it, will

be scarcely sensible when the heat of the water is at 86.

Although the temperature of the Dinsdale water is considerably higher than the generality of cold springs, yet it is sufficiently cold to give a shock, adequate to any medicinal purposes for which a cold bath is used.



FEBRILE HEAT.

A man in health is conscious of an agreeable harmony in every part of the sentient system, and this consciousness constitutes one of the principle pleasures of his life ; but if any of the functions, either of the body or mind, be disturbed, the harmony or equilibrium is destroyed, and disease takes place. If his stomach be distended with undigested food, he will neither find his judgment so strong, nor his fancy so active, as when his stomach is eased of the load ; and, on the contrary, when his mind is oppressed with grief, or long intent upon any subject which materially interests his feelings, his corporeal frame will assuredly suffer : his appetite becomes bad, his limbs weak, his skin is hot, his hands stiff and swollen, and his nights extremely restless.

There is no case (as Dr. Saunders observes) for which the cold bath is so evidently useful as this ; a few dips will generally restore that harmony so characteristic of health.

The tepid bath generally ranges from 90 to 96 of Fahrenheit, and every degree of heat above this, may be denominated *hot bath*.

The tepid bath is one of the pleasantest remedies in the world, and one of the most powerful, particularly

the Dinsdale tepid bath, for in addition to every other property which a tepid bath possesses, the large quantity of sulphurated hydrogen diffused through it, renders it a most subtle and active remedy.

It has been long a prevailing opinion in this island, that a cold bath was strengthening, and a warm bath relaxing; and in the manner in which warm bathing was conducted, till within these few years, it must have been relaxing indeed; for after the patient had been parboiled in water heated to 110, he was put under a load of blankets, and drank hot wine whey; here he continued sweating as long as he could bear it.

But in those countries where tepid bathing is more practised, and better understood, it has generally been considered and employed as a tonic remedy of great power. In Germany, Italy, and Russia, the tepid bath has long been considered as one of the best restoratives for a debilitated constitution, and there (what is scarcely credible in England), a weakly person will remain in a bath 6 or 7 hours every day, and by this means soon recover his strength. But although tepid baths had been much in use with the ancient Britons, who had got this custom, I presume, from their intercourse with the Romans, who passed half their days in the bath; yet, during several centuries, they had fallen into neglect, and till lately British physicians had no idea of their utility. Dr. Marcard, of Germany, in a learned and experimental treatise upon the tepid bath, first drew our attention

to them ; and, about the same time, Dr. Beddoes, of Clifton, near Bristol, a man whose uncommon vigour of mind, and clearness of intellect, is sure to elicit some great and practical truths from every subject he engages in, made us acquainted with their extraordinary power in removing the hectic fever which accompanies consumption. The result of the experiments and practice of these gentlemen, is that the more the pulse is increased in frequency beyond its natural state, the more it is reduced by the bath.

I have made much use of the tepid bath in my own practice, within a few years, in hectic, and in many cutaneous affections, for which I have found it almost an infallible remedy, and in consumption and hypochondriasis a grand auxiliary. But as the intention of these sheets is just to draw the public attention to a most valuable and potent remedy, and not to go into an elaborate discussion upon its merits, I will subjoin a list of diseases in addition to those above mentioned, in which sulphur waters have been found useful by physicians of eminence, in those countries where these springs are more common.

HECTIC FEVER.

I do not mean to confine the use of this water to the genuine hectic fever, which generally takes the form of an irregular intermittent, and is kept up by some suppurative process, carried on in the system either internally or externally ; but every species of preternatural heat of the skin, to which the human body is liable, will in many cases be cured, and in all relieved by it.

Those burning heats of the skin, consequent on fevers, which are succeeded by profuse sweats, without previous chills, are completely removed by the bath, and drinking a few tumblers of the water every day. The scarlet fever is peculiarly liable to leave these teasing heats behind it, along with a dry tickling cough, which sometimes terminates in consumption. I can speak from much experience, that the tepid bath most effectually relieves both these affections.

People who have lived generously, and been engaged perhaps in some very active employment during their youth, when passed the meridian of life, are very liable to a sort of chronic erisipelas, which is often preceded by pain in the stomach, low spirits, flatulence, and indigestion. In this complaint, the tepid bath, and drinking the water rather warm (by

restoring, I suppose, the healthy connexion between the stomach and the skin), is very efficacious, but the complaint is very apt to return, and bring in its train a number of hypochondriacal affections, which, however, a frequent recourse to the water, with now and then a little medicinal help, generally surmounts.

The hectic heats, brought on by much anxiety or painful attention to business, are (as I have before remarked) best relieved by the cold bath.

WORMS.

All the writers upon Harrogate water, bear testimony to its efficacy as a vermifuge, and agree in ascribing this effect to the sulphurated hydrogen gas, which is carried into the intestines by the aperient salts which it contains. How readily then we have it in our power to compose a medicine of tenfold efficacy, by adding some of the neutral salts to the Dinsdale water, and daily experience proves its great power as an anthelmintic.

The round worm is very readily dislodged, by adding to a pint of the water, an ounce and a half of sulphate of magnesia, or, what is more palatable, where this is a consideration, the above quantity of phosphate of soda: an up-grown person should take this at two draughts, with an interval of a quarter of an hour between each, and work it off with the warm sulphur water; or where it is meant to purge very briskly, a small quantity of the salt may be dissolved in every draught of the water.

The ascarides, or small thread worms, are destroyed very expeditiously by glysters, made with half a pint of the sulphur water, and a table-spoonful of common salt; this should be used every evening, and a brisk

purge given every fourth day, till there be no further appearance of worms in the stools.

The tape worm is generally expelled with some difficulty, as sometimes the most drastic purgatives make no impression upon it; and I have many times found this formidable animal set at defiance all the boasted specifics. The mode I have found most successful in my practice, is the following:—first, to completely empty the bowels by some mild aperient, and the next morning to take some very quickly-acting purgative, which has generally been successful, in proportion as it was voluminous.

Four ounces of the sulphate of magnesia may be dissolved in three pints of the sulphur water, and half a pint drank every quarter of an hour, till the whole be taken: it does not diminish the efficacy of this water, if a little tincture of cardamoms be added to it, or a few carraway or coriander seeds eaten after each dose.

COLIC FROM LEAD.

This complaint, in its most formidable shape, is happily very rare in this country, though it is generally supposed, and I believe with some truth, that many of our colics and paralytic affections owe their origin to this deleterious metal; and when we consider how readily lead is acted upon by acids, and how much it is used in those utensils which are employed in preparing and preserving the food and drink of the inhabitants of this island, it may reasonably be supposed to have its share in laying the foundation of many nervous and paralytic affections. Not only in the manufactory of cyder, the cooling of milk, the salting, of cheese, but we are told in those books which treat of the several arts and manufactures, that a large proportion of lead is used in the tinning of copper vessels and it is certain that the glazing of all our earthenware is chiefly composed of this metal, and both salt and acids of every description will in time corrode and dissolve it. The leaden pipes of our pumps, every plumber knows, are dissolved rapidly by the selenite held in solution by spring water. In the common mode of cleaning bottles by means of shot, a few of the corns are generally left in the angle at the bottom,

and when wine is long kept, we find them much corroded by it.

There is a sweet gin which comes from Holland, and is generally preferred by the drinkers of that article, which owes its sweetness entirely to the salt of lead with which it is adulterated, as I have frequently proved by tests. Almost all the British wines which are made for sale, have a large proportion of lead in their composition; and it is too common a practice when any of the foreign wines become *pricked* (as they term it), for the dealers to restore their sweetness by the salt of lead.

In addition to the other good properties of the sulphur water, it forms an admirable test for the detection of lead, in the most minute quantity, in any fluid. We have only to mix equal parts of the suspected fluid and sulphur water in a large goblet, and if lead be held in solution, a very dark brown or black powder will fall to the bottom; if there be no lead, the sediment will be white. The brown powder is a combination of sulphur and lead, and the attraction of sulphur and lead is so great, that the use of waters impregnated with sulphur have been rationally recommended by skilful physicians to those who have had the misfortune to imbibe any of that deleterious metal; and there are many instances upon record of the sulphur waters of Germany having relieved the paralysis and colic occasioned by lead; and, as in this case, the water cannot be too strongly impregnated

with sulphur, the Dinsdale spring promises superior effects to any water in England, from its great strength and mildness, for instead of being hurried off by the bowels, like the saline springs, the whole must run through all the mazes of the circulation, and penetrate every part of the system.

The attraction of sulphur for mercury is pretty nearly the same as for lead, and I have several times witnessed the good effects of the Dinsdale water in speedily checking salivation from the too liberal use of mercury.

There are several diseases besides those above mentioned, to the cure of which the sedative quality of this water may be applicable; but these time and the ingenuity of physicians will discover. My intention is fully answered, if I fix the public attention upon a most powerful agent in moderating the morbid heat of the human body, and diminishing the preternatural action of the vascular system.

ADDENDA.

SIR CHARLES SCUDAMORE, M.D., F.R.S.

“For whatever complaints the Harrogate water has obtained its just reputation, the Dinsdale spring may fairly put forth rival pretensions.”

DR. GRANVILLE.

“Dinsdale, in fine, is one of those places so happily situated, and by nature as well as art so well favoured that, as a summer resource for invalids, even without any mineral water at hand, a medical man consulted can recommend it with perfect confidence and pleasure. . . . Efficacious in hepatic disorders and cutaneous complaints, in dyspepsia, hypochondriasis, diabetes, and even poisoning by lead.”

DR. JAMES JOHNSON.

“Individuals labouring under diseased action of the liver, whether arising from chronic inflammation, or obstruction of the biliary secretions, will derive great benefit from the use of the water. In rheumatism, particularly in the chronic form of the disease, the Dinsdale water possesses a high and well-merited reputation. In the diseases incident to the fair sex, the Dinsdale water is of infinite service. This spring acts powerfully on the skin.”

THOMAS DIXON WALKER, *Surgeon.*

“Whether the liver be torpid in its action in the secretion of the bile, or in a state of irritation, secreting

in excess, in either case, the invalid will derive benefit from the Dinsdale water, for upon this organ it seems to possess an effect almost as specific as that of mercury. I depend upon my reader taking the word of one who has watched the efficacy of the Croft and Dinsdale waters for thirty-two years.

“The water will bear removal, and will keep without any material diminution of its gaseous properties.

“Upon collecting a quantity of the sediment from the cold bath at Dinsdale and drying it, it burnt with a blue flame, and possessed the other properties of sulphur. The Spa is surrounded by a beautiful plantation, which extends upwards of a mile along the bank of the Tees, forming a cool and delightful ramble for the invalid.

“The Stockton and Darlington Railway is within two miles distance.”

DINSDALE SPA.

To the Editor of the Darlington and Stockton Times.

“DEAR SIR,—Though I have lived for nearly thirty years within a drive of Dinsdale Spa, I was ignorant until this last month of the virtue of its sulphur water, and believe that a large proportion of the medical profession in parts of this country, and the community generally, are in similar ignorance. Feeling a debt of gratitude for the benefit I have, with God’s blessing, received, I feel that I ought to overcome my repugnance to obtrude my case on the public notice, and testify, for the good of others, to the great value of its healing waters, and its sulphur baths for cases of exema. I do not, however, wish to convey the impression that the Dinsdale water will cure exema in an acute state, but that it is of great value in expelling it from the system, and in guarding against its attack, I am convinced. Since last May I have been unable to go out in the air without my face, neck, and hands being thoroughly

protected from the air. I had not been at Dinsdale Spa Hotel a week, bathing in hot sulphur water, before I left off my veil. All roughness disappeared from my face, and, at the end of three weeks, I may say that I am virtually well. The hotel, under the management of Mr. Messenger, is superior to any that I have seen in this country, while the cleanliness pervading the establishment, and the civility and attention of the staff, are only equalled by the refined taste which has directed its furnishing and fitting.

“I am, Sir, yours faithfully,

“CHARLES HENRY FORD.

“Bishopton Vicarage, Ferryhill, Sept. 8th, 1882.”

From Northern Standard, 1881.

“Dinsdale Spa Hotel is a model of neatness and comfort in its structural arrangements, and, considering the acknowledged extraordinary curative virtues of the Spa itself, it ought soon to enjoy the reputation of a high-class sanitorium.”

SIR G. HEAD. *Home Tour, 1836.*

“Sulphur is contained in the water in considerable proportion; so much that those who drink it find, in a very few days, every article of silver in their pockets turned yellow. If its potency be sufficient to discolour the silver in a lady's or gentleman's very pocket, it is reasonable to conclude that, carried through the various channels and pores of the body, it must at the same time work an indisputable change in the system. The walks through the fields and woods in the neighbourhood of Dinsdale Spa are as beautiful as can be imagined.”

