

## **Cursory observations on the mineral water of Baden / by Charles Hutton.**

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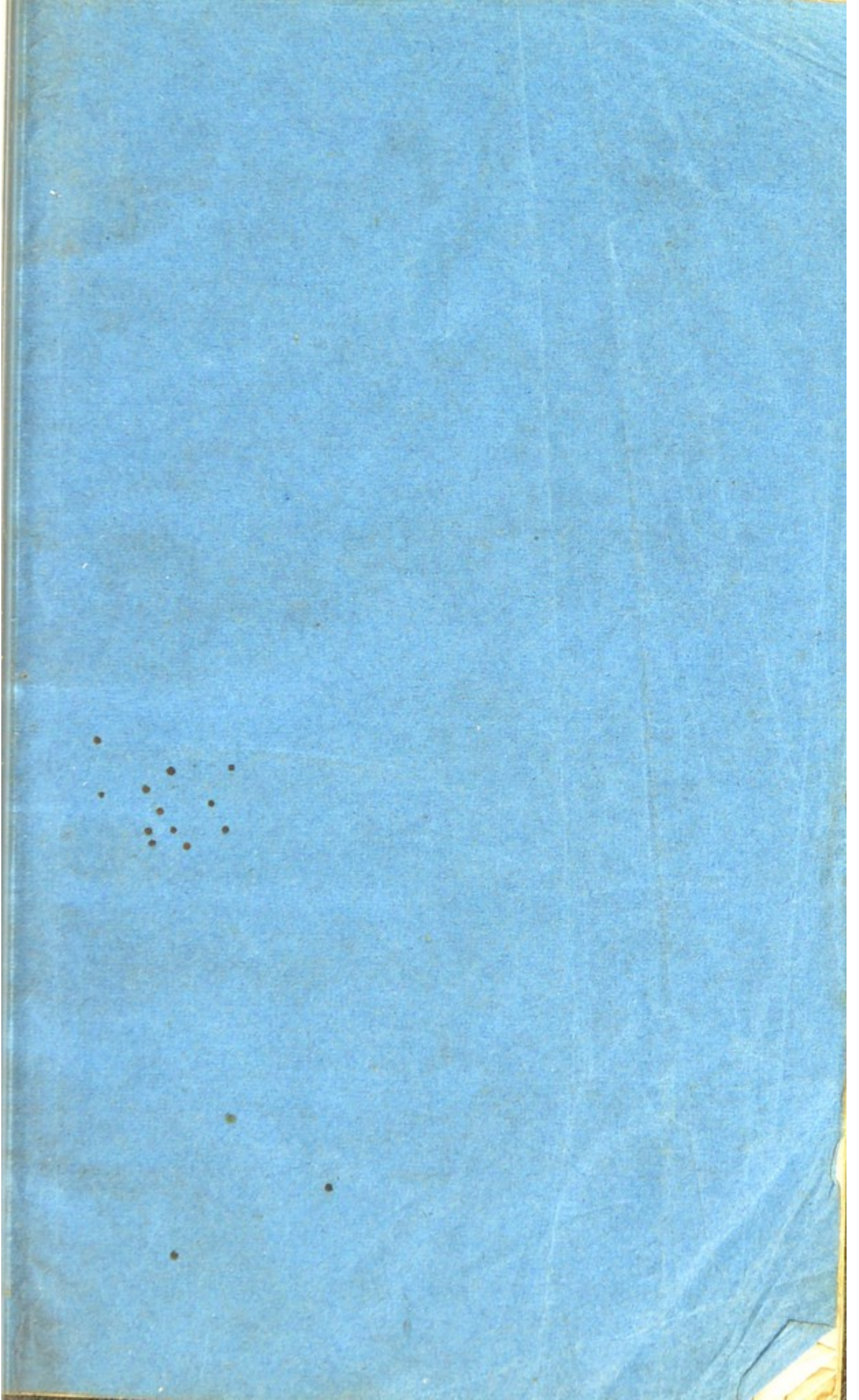
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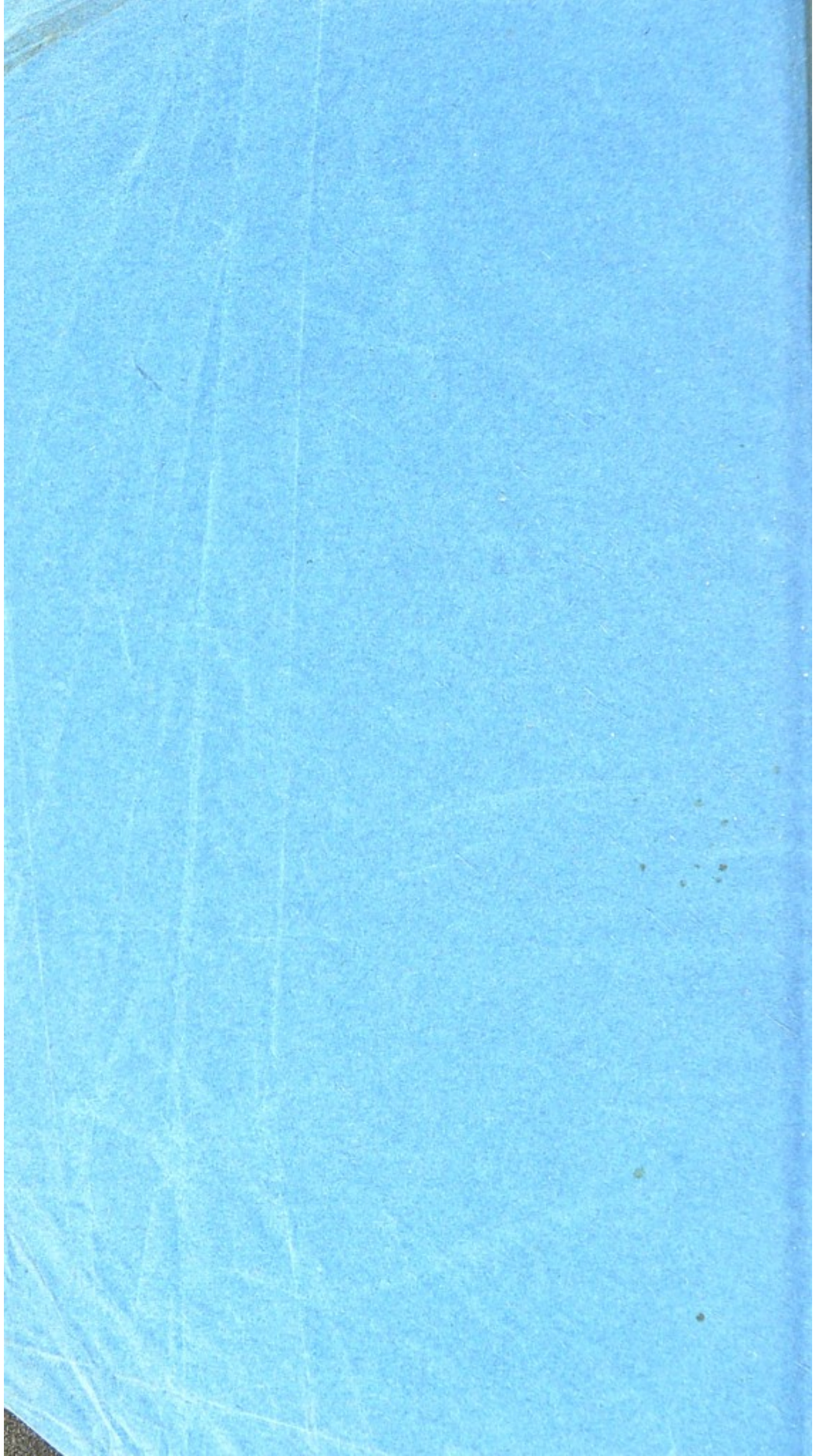
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**CURSORY OBSERVATIONS**

ON THE

**MINERAL WATER**

OF

**BADEN,**

BY CHARLES HUTTON, M. D.

*not in B. H. C.*

Carlsruhe, and Baden :

PUBLISHED BY D. R. MARX, BOOKSELLER AND STATIONER.

1838.

MINERAL WATER  
HOTEL SPAIN  
COURTY ORSERVATORS

PAM

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TO THE AULIC COUNSELLOR,

**DOCTOR PITSCHAFT,**

SUPERINTENDANT OF MEDICAL JURISPRUDENCE AT BADEN,  
ETC., ETC., ETC.

MY DEAR SIR,

However unworthy this trifling essay may be of being coupled with your name, even through the medium of a dedication, I trust that what I am going to say will plead my excuse, for taking the liberty of dedicating it to you, without permission. My object is not to give undue weight to a trifle light as air, by ushering it into the world under the auspices of a great name; but I cannot lose this, my earliest, perhaps my only opportunity of publicly expressing my gratitude for your great kindness to me, and my admiration of your talents, and general character. I should indeed be ungrateful, if I were to omit, on this occasion, to return you my heart-felt thanks, for your most kind, assiduous, and successful attendance, in a long

and severe illness, not only on me, but on one, whose life is justly dearer to me than my own. Never shall I forget, not only your great professional skill, on this occasion, but also those delicate and soothing attentions, which, you, and all other able physicians know, are, to a highly nervous patient, more than medicine.

Let me also add my feeble voice, to the testimony in your favor of all intelligent physicians, who have the happiness to know you, and in whom the love of doing good predominates, over selfishness and mean jealousy. They, as well as myself, know how to appreciate your profound erudition, your consummate medical science and skill, your successful and conscientious application of it. Let this be some consolation to you, if the multitude have not yet become aware of your great merit. The loss is theirs.

The vulgarminded and half educated of all classes are proverbially liable to become the victims of the cupidity of ignorant and presumptuous quacks—and, what is really won-

derful, persons of superior education and talents, many of whom, in the common affairs of the world, possess an intuitive penetration into the characters of men, seem, I will not say deficient in judgment, but rather unwilling to take the trouble of exercising it, in what relates to health or sickness, life or death—I mean the choice of a physician.

If it were not so, how could we account for the astonishing, though temporary success, of the impostor Cagliostro? Or in the present day, for the gains of that par nobile of speculators on human credulity, those lucida sidera, Le Roy and Morrison, the Castor and Pollux of quackery? When such men, being detected, fall into well merited contempt, they apply the consolation so well described by Horace:

.....*Populus me sibilat; at mihi plaudo*  
*Ipsæ domi, simul ac nummos contemtor in arca*<sup>1</sup>.

<sup>1</sup> The people may hiss me;  
 But I myself bless me,  
 When at home I behold  
 My strong chest full of gold.



Let me hope that this little unpretending sketch may meet with indulgence from you. It is written with a view, not so much of offering any new matter, as of presenting, in an English form, the virtues of the mineral water of Baden, and the mischief which may arise, from an indiscriminate and ill-advised employment of it. When accidents arrive from its improper use, it is very unjust, though it frequently happens, that this invaluable remedy, furnished by the hand of nature, should be blamed, for what is the effect of imprudence or ignorance. In warning therefore my countrymen, against the injudicious use of this excellent water, I hope I may contribute my feeble aid, to sustain its well merited reputation.

Believe me, with the greatest esteem,

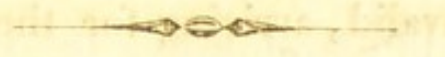
*Your obliged and grateful friend,*

**CHA<sup>S</sup>. HUTTON, M. D.**

*Rue du Château, 495.*

Baden-Baden, 26 July 1838.

**CURSORY OBSERVATIONS**  
ON THE  
**MINERAL WATER OF BADEN.**



To all persons, who, from long continued and close application to some laborious pursuit, especially if such application be attended with much anxiety, suffer from what D<sup>r</sup> JAMES JOHNSON has so happily described, under the name of wear and tear, I confidently recommend a visit to Baden. I do not know any remedy, which can be employed with a better prospect of success, or with greater comfort and convenience, more especially if the patient reside in England. A short sea voyage, succeeded by another voyage up the Rhine, and by land travelling, perhaps by both alternately, offers a constant change of habit, as well as of scene, which cannot fail, in the case of such an invalid, to be highly beneficial.

It would be superfluous in me, to dwell on the beauties of the far-famed Rheingau; they have already had their full share of description and illustration: but what scenery can be more exhilarating, more renovating to the depressed spirits and wearied frame of the sufferer, than this delightful succession of beautiful and romantic sites, viewed without fatigue or exertion?

Such an invalid, arriving for the first time at Baden, cannot fail, even after the voyage of the Rhine, to be agreeably impressed, with the rich, and varied beauty of the country.—The woody mountain, whence occasionally is seen the majestic Rhine, the vine-clad hill, the valley or plain, exuberantly rich in corn and pasture, solicit his attention, and delight his eye, at every step. He is thus encouraged to rise early, and to take the exercise of walking, the most salutary of all exercise, to those, who have still sufficient strength to bear it.

Every day he finds he can extend his little excursions, without any longer suffering from fatigue. If he possess a cultivated and well ordered mind, he will find much additional enjoyment, from constantly seeing a happy and contented peasantry, exhibiting every mark of prosperity, under

the mild paternal government of this country.— On this subject, I may be permitted to adduce the testimony of a republican. I met, last year, a very intelligent citizen of the united states of America, who was visiting Europe for the first time. «I expected» said he «to find some approach to American liberty in England; but I was prepared to meet with a degree of despotism, little short of slavery in Germany.—I have been agreeably undeceived. In this country I find the people as happy, as prosperous, and enjoying, for aught I can see, as much real liberty, as us Americans».

It is reasonable to expect, that, with all the recreation which I have mentioned, the invalid alluded to will rapidly improve in health. His frame invigorated, his spirits renovated, at length arrives that consummation devoutly to be wished, of good digestion waiting on appetite, and health on both.

Hitherto I have not mentioned bathing; though it is, in such a case, no mean auxiliary. Under proper precautions, to be noticed hereafter, invalids of the class alluded to will derive most decided benefit from a tepid bath of the mineral water of Baden. This bath, judiciously applied, is unquestionably tonic and invigorating.

I have begun by naming this numerous class of

invalids, not as the class, to which chiefly belongs the benefit, to be derived from the use of the Baden waters, but as likely to receive that benefit more early than any other patients. An improvement indeed may in such cases be reasonably expected, before they arrive at Baden. In slight cases, where attention to health has not been too long delayed, the improvement is usually very rapid. But where the patient has allowed the derangement of his health to proceed, till, in addition to general malaise and listlessness, his nerves are in a morbid state of irritability, the recovery will be slower. Such patients are rather too fond of seeking medical advice on every occasion. Not content with a judicious plan, laid down for them before leaving home, they eagerly listen to every fresh adviser, and adopt by turns every plan of treatment recommended, however absurd. To them may be well applied the advice of Montanus, «Fuge medicos et medicamenta, facileque convalesces.»

Not but that they may occasionally require medicine; though in general they should employ it most sparingly. Nothing is more calculated to aggravate their sufferings than drugging.

Before I proceed any farther, it may be as well to make some observations on the mineral water

of Baden. It is not my intention to write a history of it, still less to give any description of the localities of the civitas Aurelia Aquensis, as Baden was called by the Romans. All this has been amply and ably done, by D<sup>r</sup> A. SCHREIBER, and more recently by D<sup>r</sup> GRANVILLE, in his very amusing and instructive publication, entitled the Spas of Germany.

The mineral water of Baden is supplied by twelve springs, differing only in temperature. The principal of these springs, called the Ursprung, is situated on a considerable elevation, near the collegiate church of St. Peter. It has been arched over, ever since the time of the Romans. The arch is surmounted by a sort of chimney or funnel, for the escape of the vapour, which constantly rises, and a part of which is conveyed, by means of pipes, into the adjoining building, in which there has been formed of late years an establishment for the application of vapour baths, both general and partial.

The Ursprung issues from the crevices of a hard rock, formed of quartz and hornstone, and furnishes, in twenty four hours, above three millions of cubic inches of water, the supply of the whole twelve sources being above twenty one millions of cubic inches. The temperature of the Ursprung is

54 degrees of Réaumur, or 153 1/2 degrees of Fahrenheit. This temperature never varies. That of the other sources is somewhat lower, the lowest temperature of any being 38 degrees of Réaumur, or 117 1/2 of Fahrenheit.

It has been ascertained by the analysis of this mineral water, made by that most accomplished physician and chemist D<sup>r</sup> KOELREUTER, that each pound of it contains, in solid ingredients.

Hydrochlorate of soda . . . 16 grains.

— lime . . . 1 3/4 —

— magnesia. 1/4 —

Sulphate of lime . . . . . 3 —

Carbonate of lime . . . . . 1 2/3 —

Carbonate of iron . . . . . 1/10 —

Silica . . . . . 1/3 —

Extractive matter. . . . . 1/20 —

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23 3/20 grains.

It contains also half a cubic inch of free carbonic acid.

Like other hot mineral springs, it forms a deposit of a black viscid substance with a saltish taste, which is called bath-slime (bade-schlamm) and which is considered a vegeto-animal substance. The water itself is always clear. It has a faint smell,

somewhat resembling that of weak broth. The taste of it is rather flat and insipid, with a very slight degree of saltness, Its specific gravity, compared with that of distilled water, is as 103 to 100.

The Baden water, like that of all other thermal springs, retains its temperature much longer than rain-water, or river-water, heated to the same degree. This has given rise to the opinion, pretty generally entertained, that there is something in the nature of thermal, or, as it is called, telluric heat, differing from common caloric, inasmuch as it is more intimately and persistently combined with the water, than any artificial heat can be. I hope that none of my readers will smile at this opinion, as reminding them of the Laputan philosopher, whom Gulliver found actively employed in experiments, for extracting sunbeams from cucumbers. I firmly believe, that those, who maintain the above-mentioned opinion, are right; though it is a matter very difficult, if not impossible, to demonstrate. One thing is certain, that all the cold mineral waters, which have been correctly analysed, can be very closely imitated. Not so the thermal waters. They indeed may be imitated, as to their component parts; but the artificial hot waters never produce the same effect as the natural ones.



To what are we to attribute this, unless to the peculiar combination of the latter with a species of caloric, which differs from the heat of the sun, or that produced by combustion? In the present state of science, there does not seem any probability, that the formation of the heat of thermal springs will be accounted for. The most plausible theory rests on the old doctrine, lately revived, of a central fire. This doctrine has gained some support from the modern deeply bored Artesian wells. In these the temperature of the water is always increased, in the exact ratio of the depth. Those who deny that thermal differs from common heat, declare, that the argument of their opponents, drawn from the fact that thermal waters retain their temperature longer than pure water, raised to the same degree of heat, is fallacious, inasmuch as water, containing mineral substances in solution, and consequently of a greater specific gravity than pure water, always requires a longer time to be heated, and to be cooled, than the latter. This assertion is perfectly correct; and the fact was well known to the ancients. Hippocrates, in his aphorisms, informs us, that water, which is quickly warmed and quickly cooled, is the lightest.

Ἔδωκε τὸ ταχέως θερμαινόμενον καὶ  
ταχέως ψυχόμενον κουφότατον.

(HIPPOCR., *Aphor.*, V, 26.)

Now we have seen, that the specific gravity of the mineral water of Baden is 1,03 or 3 per cent above that of distilled water. D<sup>r</sup> GRANVILLE, in his preface to the spas of Germany, says. «The fairest and only decisive mode of comparison would be, to charge ordinary water with the same quantities of saline ingredients, known to exist in the mineral spring, to which it is about to be compared, in reference to heat, — to raise its temperature to that of the mineral water, to place both under like circumstances, and then mark the time employed by each, in assuming the ordinary temperature of the atmosphere.» Even this would hardly settle the question.

Perhaps some future discovery in chemistry or physics may elucidate the subject. Non nostri tantas componere lites.

However interesting this question may be, as a matter of curiosity, it is enough for practical purposes, to know, that the waters of thermal springs possess most active properties, from which, by the proper application of them, great advantages may be derived.

In order to estimate the therapeutic effects of


the mineral water of Baden, we must consider both its temperature and its composition — that is to say, we must regard it as a warm bath, rendered more exciting and active, by its saline ingredients, and therefore much more efficacious than a simple bath, in most cases, where warm bathing is indicated, and proportionately more injurious, where it is contra-indicated.

In warm bathing, it must be remembered, that the two opposite functions of the skin, inhalation and exhalation, or absorption and perspiration, are rendered more active. In addition therefore to the general exciting effect, somewhat transitory perhaps, produced by the local excitement of the capillary vessels of the skin, and the elevated temperature of the bath, a more permanent modification of the animal economy may be expected, from the quantity of saline substances, which are conveyed into the circulation by means of the absorbent vessels.

As the mineral water of Baden contains hydrochlorate of lime, though in small proportion, it is reasonable to expect, that it should exercise considerable influence on the lymphatic system. The well known activity of this salt, in exciting the absorbent vessels, has often led to its being employed as a mild stimulant, in glandular swellings, and

other scrofulous affections. There are physicians indeed, who declare, that even, when the several preparations of iodine had failed, they have succeeded, by means of hydrochlorate of lime, in curing bronchocele or goitre, which, though now generally admitted to be a distinct affection from scrofula, is still very closely allied to it. I suspect indeed, that in such cases, the iodine had paved the way for the success, attributed exclusively to the hydrochlorate of lime. The latter however is a very useful medicine.

At the same time, in estimating the properties of the Baden water, we must not undervalue the other saline ingredients, nor the minute quantity of carbonate of iron, which may tend to increase it's activity. We find, according to what might be expected, that this mineral water may be most advantageously employed, both internally and for bathing, in all cases of scrofula, as for instance, scrofulous eruptions, scalled head, swellings of the lymphatic glands of the neck, or of the salivary glands, ulceration superficial or deep seated, scrofulous ophthalmia, etc. In that most formidable and distressing form of this disease, attacking children, the engorgement of the mesenteric *glands,* this water produces the happiest effects, as well as

 in the softening of the bones, called rickets.

In all these cases, in addition to bathing, it will be advisable to take the Baden water internally. I would recommend, after a few days use of it, in order to render it more active, the addition of a small quantity of hydrochlorate of lime, or as it is called in the London Pharmacopœa, chloride of calcium. This would obviate the necessity of swallowing such quantities of the water, as sometimes oppress the stomach.

During the whole of this treatment, the occasional employment of a laxative medicine is attended with great advantage. A small dose of calomel, administered from time to time to time, may act in the double character of laxative and alterative; but this medicine should, in all scrofulous cases, be administered very sparingly.

In white swelling, and deposits in the joints generally, from whatever cause they may arise, after the first inflammatory symptoms have been subdued by a proper antiphlogistic treatment, the warm bath of mineral water is highly beneficial. In these cases it is generally advantageous, gradually to raise the temperature of each succeeding bath, and frequently the cure may be completed by the douche.

In chronic rheumatism much benefit is derived from warm bathing in general, and still more from the baths of Baden, in consequence of the excited state of the skin, which the mineral water produces. In this complaint it is sometimes very advantageous to use a flesh brush in the bath; and if this act as a rubefacient, and even occasion a little erythema, so much the better. The vapour-bath and the douche are peculiarly applicable to chronic rheumatism.

The pain arising from old wounds, which partakes somewhat of a rheumatic and a neuralgic character, is often relieved by these baths.

In atonic and in lurking gout, the mineral warm bath may be resorted to with very great advantage: but it should first be ascertained, that the patient be not plethoric, nor suffering under inflammation of the liver, a state which sir C. SCUDAMORE has frequently detected in this case. This must first be removed by an appropriate treatment, before the patient can bathe with any prospect of advantage, or even with safety. The ingenious author just quoted strongly recommends the daily sponging of the joints, which have been the seat of gout, with a saturated solution of common salt. I am inclined to think, that the Baden water would be at least as efficacious.

In many cases of partial paralysis, and even in obstinate hemiplegia, when there no longer remains any risk of producing an undue excitement of the brain, the mineral warm bath often gives great and permanent relief. In these complaints, after a short course of bathing in the usual manner, it is generally very advantageous, to have recourse to the douche.

In chronic syphilis, particularly where there exists an eruption of copper-coloured spots, and when the disease appears in the form of exostosis or node of the shin, or any other bone, much benefit may reasonably be expected from the use of the warm bath, in conjunction with a specific treatment.

The disease produced by an abuse of mercury, whether from the administration of an excessive quantity of this mineral, the too long continued employment of it, or a peculiarity of constitution which will not bear it, is always much benefited by the baths of Baden. At the same time, sarsaparilla, given in moderate doses, tends greatly to accelerate the cure.

There are some cutaneous diseases, arising chiefly from a depraved habit of body, with vitiated secretions, in which the use of this warm bath is of

great service. Among these, one of the worst is the disease called rupia, or as more correctly written by Dr MASON GOOD, in his Nosology, rhyphia. There is also frequently, with such habits, a dry dirty appearance of the skin, or, as french physicians expressively denominate it, *la peau terne*, in which the mineral baths effect a salutary change.

The close connexion and sympathy between the organs of digestion and the skin are generally known, as well as the occasionally vicarious action of the two. Thus in some states of the skin, which impede perspiration, a diarrhœa often supervenes; at other times profuse perspiration is followed by obstinate constipation. Again, many cutaneous eruptions are produced by a deranged state of the stomach, such as roseola or rose-rash, urticaria or nettle-rash, and very frequently erysipelas. It is obvious therefore, that in all cases of dyspepsia, the state of the skin should be examined, and in the treatment of this troublesome complaint, we may reasonably expect much good, from such management, as shall produce a healthy state of the surface. Foremost on this occasion stands tepid bathing, and especially in such mineral waters as those of Baden, which, by their stimulant properties, produce also, in a slight degree, the effect of



counter-irritation. In dyspepsia, depending on some slight chronic inflammation of the stomach or intestines, or both together, this remedy is invaluable. This state of chronic gastro-enteritis is now ascertained to exist much more frequently, than was formerly believed. It may be sometimes necessary, particularly where this state of the digestive organs is attended with a certain degree of febrile excitement, to have recourse to a topical bleeding, by means of leeches or cupping, before the use of the bath.

In derangements of the female economy, accompanied by vascular obstruction, the mineral water of Baden is most serviceable. In slight disturbance of the system, a tolerably hot foot-bath of this water may be sufficient; but most commonly it will be necessary to have recourse to the hip-bath, which is always more advantageous, in these cases, than an entire bath.

In chronic bronchitis, by which is meant an obstinate long continued cough, with expectoration usually tough and viscid, the lungs being perfectly sound, it has been recommended to inhale the vapour of the mineral water, a plan which is often attended with marked improvement.

In some cases of deafness, particularly where there

is either a quantity of hardened cerumen lodged in the ear, or a deficient secretion of it, the vapour of the mineral water, directed into the ear by means of a pipe, has sometimes effected a cure.

This vapour has also been employed with advantage, in some chronic inflammations of the eyes.

In spasmodic affections generally, such as cramps of the legs, etc., these baths constantly afford relief.

In more deeply seated spasms, such as gastralgia and enteralgia, they are equally serviceable.

In the spasmodic Asiatic cholera, they would in all probability be as useful, as they are in sporadic cholera, or as it is now the fashion to call it, cholérine, the modern disease having usurped the name of the older one.

A state of fatigue, with stiffness of the limbs, produced by violent exercise, is removed by warm bathing in general; and the baths of Baden are as applicable as any other to this case. It is a good precaution, to wait till the heat, which is the effect of extra exertion, has subsided, before bathing.

Some years since, D<sup>r</sup> KOELREUTER, by adding some carbonate and sulphate of soda to the Baden water, formed artificial Carlsbad water, closely resembling the natural one.

The composition of each is here given.

The temperature of the artificial Carlsbad water is from 50 to 54 degrees of Réaumur.

Each pound of it contains:

Bicarbonate of soda . . . . .	17 grains.
Carbonate of iron . . . . .	1/10 —
Carbonate of lime . . . . .	2 —
Sulphate of soda. . . . .	26 —
Hydrochlorate of soda. . . . .	17 —
Silica. . . . .	1/3 —

The natural Carlsbad water is of the same temperature.

Each pound of it contains:

Bicarbonate of soda . . . . .	17 grains.
Carbonate of iron . . . . .	1/50 —
Carbonate of lime . . . . .	2 —
Sulphate of soda. . . . .	26 —
Hydrochlorate of soda. . . . .	5 —
Silica . . . . .	2/5 —

The only perceptible difference therefore is, that each pound of the artificial water contains 12 grains of hydrochlorate of soda, and 4/50 of a grain of carbonate of iron, more than the same quantity of the natural water.

This water is recommended chiefly, in debility of the digestive organs, congestion of the vena

portæ, visceral obstructions, and calculous complaints; also for obstinate adhesions, the result of inflammation, as for instance that of the pulmonary to the costal pleura, after a pleurisy.

It is also advantageously employed in the various forms of scrofula; though I confess, that in this disease, I prefer the natural water of Baden. The use of the artificial Carlsbad water should be forbidden in all cases, where the natural Carlsbad water is prejudicial. On this subject I quote D<sup>r</sup> GRANVILLE. « Carlsbad is not a *panacea*, — nay, it is an unquestionably dangerous remedy in several complaints and temperaments — such as consumption, dropsy, scorbutic affection, plethoric habits of body, tendency to losses of blood or hemorrhages, distinct diseases of the heart, aneurism, etc. » *Spas of Germany*, vol. II, p. 61.

With regard to diseases of the heart, I am of opinion, that the artificial Carlsbad water, if taken in small quantity, is rather beneficial. I have prescribed it in cases of hypertrophy with some advantage; but then it was taken in very moderate doses, and constantly observed, to ascertain that it acted as a laxative. As soon as it required a larger quantity to produce this effect, I substituted for it a more concentrated solution of a neutral salt,

which I certainly prefer in this disease. Much mischief may arrive in such cases, from the large quantities of this water, which are sometimes taken without any laxative effect. In this complaint we should carefully avoid distending the stomach, as such distention always produces an attack of palpitation. There are also other reasons, why it is improper to allow the patient to take much liquid.

I was lately consulted by a delicate and nervous lady, in whom, by means of the stethoscopic signs, as well as the general symptoms, I detected hypertrophy of both ventricles of the heart, in a degree not very far advanced.

Shades of Corvisart and Laennec! and you, enlightened and sagacious Hope, who have so ably elucidated the nature and treatment of this formidable disease, as well as of all the various affection, of that complex organ, the heart. — You will hardly credit me, when I state, that this delicate lady had been directed to swallow every day, independently of the liquids taken at her meals, eight large goblets of spring water, and six smaller ones of a slightly laxative mineral water, which however, in her case, even with the addition of a neutral salt, produced no laxative effect. In addition to this, she was to take every morning a tum-

bler full of the juice of herbs, which never failed to produce flatulence, acidity, and cardialgia. Now this is frequently sufficient to bring on an attack of palpitation, even in a healthy heart. When this lady consulted me, she had followed the plan of treatment described a few days only; but, as might be expected, already all the symptoms of her disease were greatly aggravated.

The colour of her face was a deep crimson, she suffered much from headach, the action of the heart was tumultuous, the beating in the head greatly increased, as well as a pulsation in both jugular veins. — In short, all those who understand this disease will, I am sure, agree with me, that had the unfortunate lady continued the plan of treatment here mentioned, she would, within one month, have been numbered among those who tell no tales. And then, the incurable nature of the disease would have been lamented<sup>1</sup>; though in this case it was perfectly manageable. By desisting from the plan of treatment described, and by adopting one, somewhat more consonant with the directions given by Dr HOPE, and other able authors on this disease, though only in a partial

<sup>1</sup> Dat veniam corvis vexat censura columbas.

degree, a very short time sufficed, to reduce the formidable train of symptoms enumerated. The lady was then obliged to remove to a considerable distance; and I have since received a letter from her, thanking me for a detailed plan of treatment which I had drawn up for her, and assuring me, that she would adopt it as strictly as possible. I must not omit to observe, that she had been directed to undergo, after ten weeks deluge of water, the cure de raisins, one of the perils, to which those, who visit this part of the continent, are liable to be exposed : but this being quite foreign to the present subject, I will not, on this occasion, discuss it. But I have not quite done with water drinking.

As among the various fashions in medicine, before the homœopathic mystification is quite forgotten, a new one has arisen, which is a system of treating every disease, or no disease, by means of drinking great quantities of water, it may be as well to warn my readers of the mischief, which may arise from this practice. The plan is not absolutely new in medicine. Hippocrates relied chiefly on copious draughts of cold water, for the cure of fevers. This treatment afterwards fell into disuse; but has been frequently revived, and as often aban-

done. Let it not be supposed, that a large bulk of any fluid, even of water, is in all cases harmless. A more dangerous error does not exist.

Dr THOMSON on this subject, observes: « With respect to the influence, which the bulk of the liquid exerts, in modifying its diluent effect, we may merely observe, that although much of the benefit, to be derived from the diluting properties of water, depends on the regulation of the quantity thrown into the system, yet there is no standard, by which this can be easily determined. Much depends on the condition of the excretory organs at the time; namely, the skin, the lungs, and the kidneys. But, under every condition of these organs, a large quantity of water, taken into the stomach, oppresses from its bulk, in the same manner as any other distending cause. It is possible also, that the arterial system may be overloaded, not so much from the bulk of the water taken, as from a diminished action of the cutaneous exhalants, and other excretories. Much water, in this condition of the system, if taken into the stomach, may cause tension and fulness; and is not unlikely to produce a sudden determination to the head, which, in languid habits, may cause apoplexy — a disease not unfrequent in worn out in-



valids, who resort to watering places, and incautiously take large draughts of water; and this sometimes occurs, when no fever is present<sup>1</sup>. »

Here we have the result of nearly half a century's experience, during the greatest part of which, the practice of this intelligent author has been very extensive. Such authority is not to be questioned lightly.

In no state of the system, is a great bulk of liquid more dangerous, than in diseases of the heart, particularly hypertrophy; the reason of which may be partly collected from the quotation which I have just made: when in addition to this, we consider, that all liquids, unlike the bulk of solid food, must be absorbed, taken into the circulation, and pass through the heart and lungs, before they can be ejected (all excretions including the urine being first secreted from arterial blood), we can easily understand why, when the heart is in a state to require relief from its usual duty, a diminution of the liquids swallowed is imperiously called for.

I must now mention some of the cases, not very

<sup>1</sup> *Elements of materia medica and therapeutics*, by A. D. THOMSON, M. D., p. 1053.

numerous, in which the use of the mineral baths of Baden should be avoided.

Warm bathing in general, and especially in water so exciting as that of Baden, is préjudicial, and even dangerous, in all cases of plethora, especially if accompanied, even in the slightest degree, by a fulness in the vessels of the head.

In this case however, hot foot-baths frequently repeated, conjointly with depletion are of great service.

The use of the baths of Baden should be strictly forbidden, in all discuses of the heart or lungs, from their well known tendency to accelerate and increase, for a time at least, the action of the heart.

They should be interdicted also, whenever there exists a disposition to hemorrhage, of any description whatever-or to profuse sweating.

In all cases where there exists any considerable degree of fabrile excitement, it may be much increased by these baths.

In those rheumatic affections, chiefly recent cases, where the suffering is increased by the warmth of the bed, I have found warm bathing generally prejudicial. In some forms of chronic rheumatism indeed cold bathing is strongly recommended, and often successfully employed.

In sciatica, I have seen much mischief arise, from the too early employment of warm bathing. I was lately consulted by an English Surgeon, for a lady, his near relation, who was suffering from a recent and violent attack of this distressing complaint. She had taken two baths of the mineral water. After the first, her sufferings were much aggravated; and during the second, the pain was so dreadfully acute, that she could not remain in the bath. The next day, at my first visit, I found her writhing in her bed, under the influence of the most excruciating torture.

In irritable states of the skin the mineral bath is injurious, such as reseola or rose rash, urticaria or nettlerash, and other more formidable eruptions, such as psoriasis, lepra, etc. but in all these cases, much good may result from tepid or warm bathing, in river water.

In erysipelas, all bathing is more or less dangerous, from the disposition, which this disease has to shift its seat, and occasionally to attack the brain.

In addition to these more or less permanent diseases, there are certain temporary states of the body, which must be removed, before these baths can be used beneficially, or even without mischief, such for instance, as headach, indigestion, denoted

by acidity, heartburn, or oppression of the stomach, a furred tongue, etc. During a state of constipation, it would be improper to use the bath also.

Excessive debility has been said to forbid the employment of these mineral baths; and certainly, if by excessive debility is meant that state, in which a patient can hardly be moved from his bed, without danger of fainting, I perfectly concur in the prohibition; but in any degree of debility short of this state, I conceive the bath to be, under proper restrictions, beneficial. These restrictions are, that the bath be of a temperature of about 26° Réaumur, or 90° Fahrenheit and that the patient remain in it, at first, only from three to five minutes. As the strength returns, the bath may be prolonged.

With regard to the time of bathing, it must be observed, that it should not be immediately after a meal, however light, still less after a full meal; and that it will be as well not to take any meal, for at least an hour, after quitting the bath.

The time of bathing, in most cases, may be early in the morning; this being a convenient plan for leaving the remainder of the day free. Where there is much nervous irritability, the bath should be taken in the middle of the day, and so contrived,

as to allow at least an hour of repose on a sofa, before dinner.

In cases of obstinate chronic rheumatism, and of white swelling, the evening, immediately before retiring to rest for the night, is to be preferred. I was consulted last year for a boy of about eight years of age, who was entirely cured of a white swelling, by this mode of bathing.

The temperature of the bath should be in most cases, about 26 or 27 degrees of Réaumur, or 90 to 93 of Fahrenheit.

In chronic rheumatism, white swelling, nodosities, etc., this temperature may be gradually increased to 30 degrees of Réaumur, or 100 of Fahrenheit.

Many patients will experience no inconvenience, in beginning to bathe without any previous preparation: but it is not a bad general precaution, before using the bath, to clear the alimentary canal, by means of a mild cathartic.

There are also some persons of a very delicate and irritable skin, who cannot at first bear the bath of mineral water. They should begin by taking a warm bath of river-water, which they will find very comodious at the Stephanienbad, in the faubourg de Lichtenthal; after which they should take one or two baths, of mixed mineral and fresh water

The usual time, for taking the artificial Carlsbad water, is early in the morning, so as to have finished the dose an hour before breakfast. When the mineral water of Baden is taken internally, it would be as well to divide it by drinking small quantities at several distant intervals during the day, more especially, if, in scrofulous complaints, my suggestion of adding a little muriate of lime be adopted.

With regard to diet, during the use of the baths, and more particularly of the water taken internally, the patient should avoid all strong acids, and make use in general of a light nourishing diet, taking care only to avoid whatever is heating, or may disagree with the stomach.

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The usual time for taking the artificial mineral water, is early in the morning, as is to have finished the dose an hour before breakfast. When the mineral water of Baden is taken internally, it would be as well to divide it by drinking small quantities at several distant intervals during the day, more especially, if, in several complaints, my suggestion of adding a little muric acid is adopted.

With regard to diet, during the use of the acids, and more particularly of the water taken internally, the patient should avoid all strong acids and make use in general of a light nourishing diet, taking care only to avoid whatever is heating, or very disagreeable to the stomach.

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