

**Treatise on the use of the mineral waters of Homburg / by Frederick Muller
; translated from the 7th German edition by C. Murphy Mortimer.**

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T R E A T I S E
ON THE USE
of
THE MINERAL WATERS
of
HOMBURG

by

FREDERICK MÜLLER M. D.

Privy Councillor and Privale Physician to his Highness
the Landgrave of Hesse etc.

Translated from the 7th German Edition

by

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HOMBURG.

PRINTED AND PUBLISHED BY LOUIS SCHICK,

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THE EAST

OF THE

THE MINERAL WATERS

ROMBURG

FREDERICK WILHELM V. B.

First Conductor and Private Physician to his Majesty
the Landgrave of Hesse etc.

Translated from the German Edition

C. WILHELM MORITZ

Author of the book "The Mineral Waters of the Rhine",
and of the book "The Mineral Waters of the Rhine",
at the University of Bonn.

ROMBURG

PRINTED AND PUBLISHED BY F. W. B. B. B.

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P R E F A C E.

The great and rapidly increasing popularity of MÜLLERS "*Treatise on the mineral waters of Homburg*" a fact evidenced by the sale of 7 editions, is a convincing proof of the intrinsic merit of the work. Putting forward no claims to high scientific merit, it has the rare advantage of being the result of personal experience.

The author, having himself repeatedly suffered from ailments occasioned by constipation, naturally sympathised with those who were similarly affected, and whom the generality of physicians are but too much inclined to treat as mere hypochondriacs.

The sufferings inseparable from those ailments and the relief afforded by the use of the waters strongly impressed him with the duty of making known the valuable properties of the Homburg springs. These causes led him to publish the results of his own experience, as well as the observations made during the course of his long professional career, and to point out the most advisable means of using the waters with safety and success.

THE MINERAL WATERS.

These waters issue forth in a charming valley, situated within a few hundred yards from the city of Homburg. — Among them, the four most in request and consequently best deserving of mention are:

Der Elisabethen - Brunnen — or Elisabeth's Well,

Der Ludwigs - Brunnen — or Lewis' Well,

Der Kaiser - Brunnen — or the Emperor's Well,

Der Stahl - Brunnen — or Chalybeat Spring.

Before describing the effects of these waters and the manner in which they should be administered, I shall make a few observations on abdominal plethora, its origin and consequences, the possibility of preventing and the means of relieving or totally removing it.

Sedentary habits and free living, combined in many cases with hereditary tendency are the predisposing causes of abdominal plethora. A superabundance of blood, its accumulation in the vessels of the abdominal organs, and morbid distention of the latter are the inevitable results of such a mistaken mode of living. Excess of nutrition induces excessive sanguification, and sedentary habits, by obstructing (even occasionally) the large ascending vein, bring on impeded circulation and venous congestion.

The natural consequence of obstructed circulation is vascular congestion, which, when occurring in the veins of the rectum, is termed Hemorrhoids, an ailment which usually generates new disorders.

The morbid change of the blood, designated preponderant venosity or venous dyscrasy, arises in like manner from obstructed circulation. By the over-repletion of vital organs and their concomitant functional derangement, the normal condition of the blood is directly or indirectly impaired.

Thus for example, the venous blood cannot be entirely changed into arterial by the act of respiration, when the lungs are morbidly overfilled, nor can the sanguineous sediment which the vena porta carries to the liver be perfectly transmuted into gall, when the liver itself is morbidly distended (See Physiolo-

gy of the Vena Porta System by Dr. Pries.) This sanguineous sediment will therefore remain in the circulation, and will not only vitiate the venous blood, but also that of the arteries. The very appearance of persons who suffer from morbidly increased venosity betrays the nature of this Dyscrasy. Their faces and skin want that freshness of colour, which is attendant on a normal state of the blood. They are markedly pale, or their countenances have a livid hue, which threatens to merge into a still darker shade. The warmth of the body is often diminished, the process of digestion is in most cases seriously impeded, secretions take place under conditions more or less morbid, and debility, both physical and mental is the consequence.

So important can be the consequences of disproportionate income and expenditure in the animal economy.

This abdominal plethora and morbid state of the blood are directly and efficaciously combated by aperient invigorating mineral waters; this accounts for the great variety of diseases, on which those springs exercise a beneficial influence.

Many, in fact most of these complaints, could be prevented by a mode of life more conformable to nature.

Exercise and greater moderation in the use of nourishing food and spirituous liquors, by maintaining in the system a due equilibrium between nutrition and waste, would exempt the vessels of the abdominal organs from that repletion so prolific of disease and so inimical to health. The less, social position, the exigencies of fashion, love of luxury and indulgence in the pleasures of the table, permit an individual to pursue a course of life compatible with health, the more imperatively requisite is the use of mineral waters of a resolvent and at the same time of an invigorating and stimulating nature; partly, to remove already existing disease, and partly, to prevent its occurrence.

In the former case, it were desirable that the patient, previously to having recourse to the waters, should rigorously pursue a special regimen, and not, as so often occurs, indulge to the last, in aliments difficult of digestion and strictly prohibited while using the waters. The more deeply rooted an affection of the abdomen is, the more difficult is its removal, and the more severe the struggle between the remedy employed and the morbid principle. If, before the commencement of the cure, the latter be aggravated by indulging in aliments difficult of digestion and charged with sediment, more time will be required; as a preparatory course will be necessary to re-establish those conditions, under which the waters can produce a salutary effect upon the system.

Exercise in the open air, temperance in eating and drinking, avoidance of mental excitement and depression of spirits, of late hours and all excesses, are warmly recommended to patients, both as means of promoting the cure, and of preparing for it successful adoption.

The difference between the springs of which we mean to treat, depending more on the quantity than on the quality of their elements (as they all belong to the ferro-saline class) general directions respecting the indications and contra-indications, as well as the course to be pursued by patients during the cure, will suffice to explain the use of the several springs.

COMPLAINTS

for which the use of ferro-saline mineral waters is advisable.

Derangements of the digestive canal are first to be mentioned, a class of ailments generally grouped under the term „Indigestion“.

They usually commence with want of appetite, distention of the stomach and more or less pressure in the region of the heart, eructation and other inconveniencies, which, according to the difference in the quantity and quality of the aliments taken, occur with more or less violence, and if neglected, degenerate into Dyspepsia. In these complaints our springs (particularly the Elisabeth-Brunnen) have been eminently successful, when judiciously used and accompanied by the necessary regimen. In some inveterate cases, which for years had defied the most skilful medical treatment, the success has been truly surprising.

For instance, a lady who had been confined to her bed for a year by a chronic nervous affection — of long standing — suffered severely from functional derangement of the abdominal organs. Total deprivation of appetite ensued, the tongue was continually covered with brownish matter and the constipation was so obstinate, that besides the daily use not merely of ordinary purgatives, but even of the most violent drastics, it was necessary to have recourse to clysters to procure an alvine evacuation. After her sufferings had long defied all the resources of medical science, the waters of the Elisabeth-Brunnen were prescribed. Although the patient was unable to move, and compelled to drink the waters in bed; she experienced no inconvenience from them, and beginning with a glass, was, in eight or ten days, by gradually increasing the dose, enabled to take two pints every morning. After fourteen days, without any further aid, the tongue became clean, the evacuations regular, the appetite increased, and at the expiration of the fifth week all derangement of the digestive organs had ceased.

If impaired digestion be not properly attended to, especially if the patient be prone to indulge in the pleasures of the table, a severe regimen is of the highest importance; for, if the complaint be not actively combated by dietetic means, it may attain a dangerous degree of intensity. The nervous system of the digestive organs is affected, the difficulty of

digestion is accompanied with pains in the stomach and intestinal canal, spasms and colic, with vomiting and total irregularity of the alvine evacuations, which at one time costive, at another time too fluid, weaken the whole system and endanger the very existence of the patient. In this advanced stage of the malady, the judicious use of the Elisabeth-Brunnen has been attended with the happiest and most surprising results.

Two elderly gentlemen arrived here at different periods during the summer of 1837. Both came from other medicinal springs, to which they had been sent by their physicians, without having obtained any relief for aggravated derangements of the vegetative and sensitive life of the abdominal organs. Both had fallen off in flesh, both had thoroughly cachectic complexions, one moreover presented a turgid appearance and had the feet considerably swollen. Obstinate constipation, alternating with fluid evacuations, irregular appetite, often morbidly ravenous during meal-times and indicating a dangerous nervous affection, violent pains in the stomach and abdomen after the most moderate repast, frequently accompanied by vomiting; such were the complaints of the patient, whose appearance was far from encouraging one to prognosticate a favourable result. Private reasons allowed them to remain but a short time, the one 3, the other 4 weeks, however, the

waters agreed so well, that, after having taken them for several days, the evacuations became regular, to their ravenous craving succeeded a natural appetite, and towards the end of their short stay, their strength remarkably increased, their appearance visibly improved, and spasms, vomiting and colic completely ceased.

In the summer of 1837 I had the pleasure of seeing a gentleman, who had arrived here the preceding year a perfect picture of misery, seeking to regain his health by the use of the waters. A feeling of gratitude had urged him to revisit them, as in all probability they had saved his life.

His symptoms were precisely similar to those of the gentlemen above mentioned, except that his strength was so reduced, that he could only take the waters in his room, and had much difficulty in reaching a bath in the immediate neighbourhood. After a fortnight, he was able to drink the waters at the spring, and at the end of 4 weeks could walk a league without over-fatiguing himself.

Another patient, of quite cachectic appearance, whose constitution had been much impaired in the West Indies, after having fruitlessly had recourse to different medicinal springs, was completely cured of inveterate Rheumatism and Obstruction by the use of the Elisabeth-Brunnen. Since that time, many analogous cases have occurred, to enter into prolix details of which would merely fatigue the reader.

If symptoms of impaired digestion present themselves in a person of plethoric temperament, and if the plethoric tendency be favoured by sedentary habits and luxurious living, the inevitable result will be a derangement of the abdominal organs attended with the most serious consequences. This derangement, (termed *plethora abdominalis*) proceeding from the sanguineous repletion of those organs, occasions congestion of the veins of the abdomen, hemorrhoids, morbid secretions in the intestinal canal, chronic congestions and inflammations of several organs, as well as their enlargement and induration, and finally, the reaction of those maladies on the nerves of the abdomen produces hypochondria and hysteria with their various modifications.

The waters of the Elisabeth-Brunnen have proved themselves a sure and efficacious remedy for this sanguineous repletion of the abdominal region and its melancholy consequences, particularly, when the patient is willing and able to submit to the necessary regimen. We shall mention a few instances of its efficacy.

A man of 40 years of age, who had enjoyed life in every possible manner, of vigorous frame and active temperament, after having recovered from an attack of apoplexy, indulged anew in wine and the pleasures of the table. The result was a total derangement of the abdominal organs.

The evacuations became irregular, repletion supervened, specially producing a morbid formation of fat in the abdominal region. When the patient arrived in the autumn of 1836, the slightest movement was attended with difficulty, his legs were swollen to above the knee and permanently affected with erysipelous inflammation, while the weight of the body had so overcome the once active mind, that even in the most animated conversation he was overpowered by an irresistible desire to sleep, his complexion had assumed a livid hue actually fearful to behold; at the same time his appetite was so ravenous, that the most copious repast failed to satisfy it, and only produced a feeling of discomfort and a difficulty of respiration.

The patient began his course by taking the waters at first in bed and afterwards reclining on a sofa, as he was unable to leave his room. He strictly adhered to the prescribed regimen, taking only two meals a day, consisting of bread and soup. From the very first day he experienced the salutary influence of the waters, which soon produced the desired effect on the intestinal canal; the drowsiness diminished, the ravenous craving completely disappeared, so that his scanty fare produced an agreeable feeling of gratified appetite. In a couple of weeks he was able to take short walks, and as the season had become too wintry to continue the cure, he left the springs after a stay of six weeks, not quite recovered, it is true, (the

erysipelous inflammation of the limbs not having entirely disappeared,) but so much improved in health, that several of his friends assured him, that he was hardly to be recognised.

In the summer of 1837, after having passed the winter in a state of almost perfect health, he spent a few months here and was so benefited by the waters, as to be able to take the longest walks, and to leave in autumn, a complete convalescent.

A young man, having exchanged a military career for a sedentary life, had to endure the evil consequences. Serious derangement in the functions of the abdominal organs, a plethoric habit and severe attacks of giddiness (the usual symptoms of apoplexy) such were the results. The waters of the Elisabeth-Brunnen proved so beneficial, that in a few weeks they completely freed him from all those alarming symptoms.

Also in cases, in which an accumulation of blood in the abdominal organs, combined with excessive sensibility, has give occasion to repeated attacks of neuralgia, a course of the waters rigidly persevered in, has, by removing the causes of disease, effected a perfect cure.

A young lady, besides confirmed venous dyscrasy and abdominal plethora, had for 3 years been suffering from intense neuralgia. The attacks usually preceded the menstrual evacuations by several days,

and lasted during their continuance. She was affected with terrible headaches, spasms in the uterus etc. in rapid succession.

During the attacks, all the pulses of her body beat most violently. Instead of bleeding, the treatment previously adopted; footbaths, sinapisms and fomentations to allay pain, were employed, and after the menstrual evacuations had duly set in, recourse was had to the waters. The second time, the evacuations were much milder, and the third time, they were quite unattended with suffering. The patient remained here 12 weeks and was richly rewarded for her perseverance. We could cite a number of analogous cases, of which, ten are particularly deserving of mention. Among the patients were 4 women and 6 men.

In the case of one lady, disorder of the stomach was complicated with violent palpitation of the heart. Both complaints yielded to the use of the waters. Another was freed from chronic affection of the chest, and a third, whose disorder of the stomach had already lasted for many years and resisted all medical treatment, was so much relieved (a relief which continued unimpaired for several months) as to inspire the most sanguine hopes, that a complete cure would be effected by a second course of the waters. The following year proved that those hopes were

well founded. In the case of one of the men, disorder of the stomach was complicated with asthma; the repeated use of the waters freed him from those complaints. Another, suffering from disorder of the stomach and from periodical attacks of colic, was similarly relieved.

Another, a man of high rank, afflicted with violent cardialgia, and whose digestive system was much impaired, after using the waters of the Elisabeth-Brunnen for several weeks, derived the most signal benefit from an after course of the chalybeate waters.

Hemorrhoids.

The term „Hemorrhoids“ strictly speaking, denotes a special result of abdominal plethora, an effort of nature to relieve the system. They have such influence on the general health of the party affected, their development or suppression is of such vital importance, that I have no hesitation in grouping a number of disorders under this general appellation.

The judicious use of our waters has proved a most efficacious remedy against all kinds of hemorrhoids, even those of the most opposite nature. Undeveloped and suppressed hemorrhoids have been made to flow, while in other cases the profuse discharge has been checked and reduced to its normal state.

Suppressed Hemorrhoids.

Suppressed hemorrhoids have often been developed by the use of our waters. The benefit derived by a lady so affected was really surprising. Besides many other complaints, she suffered from inflammation of the eyes, which had assumed a chronic character and resisted all the resources of medical art. After using the waters for several weeks, a hemorrhoidal crisis set in, followed by immediate relief of the affection of the eyes.

Profusely flowing Hemorrhoids.

These hemorrhoids have frequently been brought to a normal state. Very remarkable in this respect was the case of a man, who had been reduced to the lowest ebb from the quantities of blood, which for years he had been in the habit of losing. The patient's appearance was quite cachectic. He used the waters of the Elisabeth-Brunnen with such happy results, that the excessive bleeding disappeared, his strength increased, and a year later he was in the enjoyment of perfect health.

A lady affected with profusely flowing and at the same time painful hemorrhoids, derived the most signal benefit from the use of the waters. When I saw her late in autumn, several months after the cure had

been completed, she was evidently stronger, and assured me that her sufferings had altogether ceased.

Hemorrhoids of the bladder.

Persons affected with Hemorrhoids of the bladder, have derived great benefit from the use of our waters, some from the Elisabeth-, others from the Ludwigs-Brunnen. Seven patients, all men, have used them with the happiest results. One of these patients was subject to profuse bleeding, which during the use of the waters diminished, and by degrees completely disappeared.

Mucous Hemorrhoids.

Against mucous hemorrhoids, assuming the form of chronic diarrhea, the waters have been repeatedly used with advantage.

Under such circumstances, the use of the waters requires certain modifications, and must be specially directed, according to the state of the complaint, and the constitution of the patient.

Undeveloped Hemorrhoids.

In cases of undeveloped hemorrhoids, with predisposition to critical secretions from the hemorrhoidal vessels, often attended with formidable symptoms, our waters have frequently proved most efficacious.

A lady, who for years had suffered in this manner, after having fruitlessly had recourse to different medicinal springs and to other usually effective remedies, was in a few weeks completely relieved.

A middle-aged man of robust frame and healthy appearance, in whom slight hemorrhoidal symptoms manifested themselves without coming to a crisis, suffered from repeated and violent attacks of colic, which for a number of years had resisted all medical treatment. In the course of some weeks the waters of the Elisabeth-Brunnen effected a perfect cure.

Another young man, who under similar circumstances suffered from constant headache, so that he was often threatened with inflammation, and compelled to have recourse to repeated bleeding, was in eight weeks restored to perfect health.

A third was in the same manner freed from habitual giddiness, and a fourth from periodical palpitation of the heart, the paroxysms of which recurred

with such violence and frequency that his once vigorous constitution was severely shaken.

Six persons, three men and three women, were cured of strong tendency of blood to the head producing violent giddiness. A man and a woman were freed at the same time from violent palpitation of the heart. Another man was cured of an abdominal pulsation, which had long tormented him; he returned to the springs the following year quite freed from the ailment.

A man was freed from an asthma of such an aggravated character, that it was with the greatest difficulty he could walk. A six weeks course so relieved him, that he was able to join in pedestrian excursions to the mountains.

Anomalous Hemorrhoids.

In anomalous hemorrhoids, that is, cases, in which the abdominal plethora seeks an issue, not through the hemorrhoidal vessels, but through other organs, the springs have rendered the greatest services.

Four patients were cured of periodical spitting of blood. A fifth, in whose family pulmonary tubercles were hereditary, and who had suffered for years from chronic affection of the chest with bloody cough and

obstinate constipation, used the waters during two seasons with so much success, that the chest complaint completely disappeared and bleeding piles regularly set in.

With a sixth, who for years had suffered from spitting of blood and chronic chest catarrh, the use of the Ludwigs-Brunnen brought on bleeding piles, to the great relief of the chest.

A lady, who after having recovered from inflammation of the lungs suffered from repeated spitting of blood, derived the greatest benefit from the Ludwig-Waters mixed with whey.

Six persons suffering from repeated vomiting of blood, used the waters, partly of the Elisabeth-, partly of the Ludwigs-Brunnen with complete success. They all repeated the course the second year, though not having experienced any relapse.

Hypochondria.

The waters have proved most efficacious in cases of hypochondria, not only in its more simple form, caused by vascular congestion, but also in more serious cases, resulting from or combined with liver complaint. Among the great number of hypochondriacal affections cured by the use of the waters here, a few cases are deserving of special mention.

A man, whom long residence in South America had afflicted with hypochondria, and who had recourse to every means of relief, including hydropathy etc., came here in quite a hopeless state, to try, as he said, his last chance. Before the end of six weeks he felt himself quite recovered; according to his own expression, born again. A year later, he returned in a state of perfect health to the springs to which he owed his recovery.

Another, whose hypochondriacal ailments were combined with asthmatic affection and bloody cough, was cured by the waters of the Ludwig-Brunnen.

An elderly gentleman, afflicted with giddiness, heart disease and total inability to sleep, was in six weeks completely freed from his sufferings.

Another patient, middle aged, who, besides that derangement of the digestive system peculiar to hypochondriacs, suffered also from want of sleep, used the waters two years in succession with the happiest results. Towards the end of each course he passed a large tape worm.

The latter has occurred to many persons, who were far from imagining that they harboured such a guest.

A lady had a long time previously recovered from a gastric fever, without however regaining her for-

mer health. She was highly hypochondriacal, had quite lost her appetite, and after partaking of the slightest nourishment, suffered severely from indigestion. A course of the Elisabeth-Brunnen relieved her from all those ailments, so that she returned home in perfect health, both mental and physical, with capital appetite and sound digestion.

Two ladies afflicted with profound melancholy, one of whom at the same time suffered from violent palpitation of the heart — but without any symptom of organic disease — were so benefited by the use of the waters, that they left this in perfect mental health.

A gentleman, on account of a highly aggravated hypochondriacal affection, obstinate constipation and a difficulty of digestion amounting to dyspepsia, had repeatedly had recourse to the waters of Carlsbad, for which he had a special predilection. By the advice of his physician he came here, though with much reluctance, and derived so much benefit from the Elisabeth- and Kaiser-Brunnens, that at the termination of his cure, he asserted their superiority to the Carlsbad springs. A second visit to our waters has been attended with similar results.

A lady, who suffered from a high degree of hypochondria, accompanied with violent giddiness and a chronic rheumatism of the lower extremities resembling palsy, was completely cured by a six weeks

course of the waters and baths. She left our spas in perfect health, both mental and physical.

A middle aged man suffering severely from hypochondria, accompanied with giddiness and palpitation of the heart, left, completely restored.

We could cite a great number of similar cases, but prefer omitting them, in order not to fatigue the patience of our readers by too frequent repetition.

Hypochondria with Liver Complaint.

The waters have likewise been frequently the means of relieving hypochondria, combined with or caused by liver complaint. As instances of their efficacy we shall mention a few cases.

A lady, who in consequence of previous inflammation of the liver suffered from chronic irritability of that organ, attended with general irritability of the nervous system and a high degree of cachexia, recovered so rapidly by using the waters, that a daily improvement was visible. The pain in the liver diminished, her strength increased, the colour returned to her check and a new life displayed itself in every glance and movement of the convalescent.

Another patient, who suffered from a high degree of hypertrophy of the liver, presented a perfect picture of venous dyscrasy, the whole appearance turgid, the lower extremities swollen with chronic ulcers. The use of the waters during two summers, combined with a strict regimen and regular exercise completely restored her.

Another patient had a severe liver complaint, combined with such violent attacks of giddiness as to excite apprehensions of apoplexy. The repeated use of the waters removed all these complaints.

A gentleman high in the official world, of robust constitution, suffered repeatedly from such violent colic of the liver, that the accompanying nervous attacks menaced his very existence. A course of the waters removed all those complaints.

A gentleman suffering from liver complaint and chronic rheumatism, the result of long residence in the East Indies, felt himself much relieved by a six weeks course of the waters; by repeating the cure he was completely restored.

A lady of plethoric habit, suffered from violent and often recurring colic of the liver; the use of the waters immediately removed the colic, and the lady returned the following year in perfect health, in order that by a second course, she might ensure its continuance.

A lady, who for many years had suffered from repeated and violent attacks of bilious colic which were usually preceeded and invariably followed by chlorotic symptoms, used the waters for about two months. The result was so favourable, that from the termination of the course until the commencement of the following year, she had not a single serious attack. For safety sake she repeated the cure the following year.

In the case of this patient, as in many others, in which the existence of gallstones was ether proved or highly probable, the singular incident occurred, that during the use of the waters, solid substances were often voided in the form of grains of sand.

Another lady, who likewise suffered from severe liver complaint, experienced the same presence of gravel during two seasons.

In the year 1845, a lady was affected with inflammation of the liver, which, as her skilful and experienced physician declared, brought her to the brink of the grave. She recovered but very slowly and imperfectly from her illness, as evident indurations of the organs affected remained. Deranged circulation, congestions in the head with violent headache, sleeplessness etc. were the results, which were further aggravated by derangement of the biliary secretions. Moreover, besides excruciating pains in the right hypo

chondrium and the shoulder of the same side, the diseased liver exercised on the neighbouring organs a mechanical action of a most injurious nature. Upwards, on the organs of the chest, producing more or less difficulty of breathing, downwards, by pressure on the vessels of the pelvis, causing serious swelling of the lower extremities. In the year 1846, a prolonged course of the waters had so favourable an effect, that in about two months all these ailments diminished, and the patient felt herself wonderfully relieved.

She passed the winter from 1846 to 1847 almost without suffering, and came here the latter year in high spirits to repeat the cure. Pains in the liver, headache, shortness of breath and swelling of the feet, mental depression etc. all had disappeared. After the second course she returned home perfectly cured.

A lady, who during a long residence in Brasil had been repeatedly attacked by inflammation of the liver, was in consequence reduced to a very low state. On her arrival here, she was suffering from swelled liver, impaired digestion, jaundice and deep depression of spirits. A five weeks course of the waters was sufficient to remove all those symptoms, so that she passed the winter free from ailments, and considered it quite superfluous to accompany her husband, who returned the following year to the springs.

A lady, in consequence of repeated inflammations of the liver, had contracted an enlargement of that organ. On her arrival here she complained of constipation, impaired digestion, and particularly of congestion towards the head, occasioning violent headache accompanied periodically with deep depression of spirits. The waters were employed with the greatest success, so that the patient left much improved, passed an excellent winter, and the following year returned in high spirits to repeat the cure.

Another lady had during 12 years suffered from abdominal plethora and consequent derangement of the digestive organs. The nature of her complaint not having been discovered at first, it was considered to be nervous and treated as a hysterical affection. Many preparations of iron were administered, but so far from effecting any improvement, they had a directly opposite tendency. Impaired digestion supervened, so that she passed many years in a state of uninterrupted suffering. The liver complaint grew periodically more intense, and manifested itself by serious enlargement and induration of that organ, by jaundice, colourless evacuations and complete prostration of the digestive powers. Another result was frequent vomiting of blood. Under a different medical treatment, resolvents were administered, by which the state of the patient, though she still suffered much from depression of spirits, was considerably

ameliorated. However, notwithstanding the prescribed means, clysters had to be resorted to, to procure the alvine evacuations. A residence of about two months at the springs, with regular use of the waters, aided by strict attention to regimen, had such happy results, that she left our spas, freed from all the ailments, under which she had for so many years been suffering.

Hysterical Affections.

The springs have also proved most efficacious in mitigating and curing hysterical affections, with or without derangement of the menstrual evacuations. Persons, suffering from nervous debility, have been wonderfully relieved by the braeing air of the neighbourhood, combined with the invigorating influence of the waters. If the uterus be deranged, a cure is the more confidently to be hoped for, as the waters exercise a special influence on that organ. It has frequently occurred in the course of my practice, that women, who in order not to lose time, continued to drink the waters during the menstrual period, had to atone for the error by a serious issue of blood.

A lady, who during several mouths had been repeatedly attacked with bleeding from the uterus, and who li-

ved in constant doubt as to whether she was pregnant or not, was suddenly seized with pangs, which freed her from a mola (false foetus).

A girl, besides deficient menstruation and chlorotic symptoms, suffered from such violent attacks of palpitation of the heart, as to give rise to a suspicion, that she was affected with organic malady. By the use of the waters the menstrual evacuations were promoted and a complete cure effected.

A lady, who suffered from weakness of the genital system manifesting itself in a tendency to miscarriages and chlorosis, combined with a high degree of nervous irritability often resulting in convulsions, used the waters with the greatest success.

In three cases of obstinate hysteralgia with morbid secretions, and in one case with decided hypertrophy of the organ affected, the waters joined with bathing proved most salutary.

The action of the waters has been most beneficial in cases of chlorosis, a result no doubt due to the considerable proportion of iron that they contain. In such cases the use of the chalybeate spring is generally to be recommended.

In consequence of long continued irregularity terminating in total suppression of the menstrual evacuations, a young girl had become subject to epileptic spasms.

After using the waters for several months, the menstruation returned and the epileptic spasms ceased.

Several girls, who at each return of the menstrual period suffered from violent colic and also from chronic headache and constipation, were freed from these ailments in a few weeks.

Since then, the use of the waters has in many instances proved beneficial in cases of menstrual colic, and many ladies, who had for years suffered from this complaint, were completely freed from it.

A lady employed the waters with the happiest results, as a remedy for excessive menstrual evacuation combined with colic. The appearance of this patient indicated the existence of venous dyscrasy.

A young lady, who for years was affected with suppressed menstruation, loss of appetite and incapacity to digest, was cured by the use of the waters.

Nervous Affections

affecting the abdominal organs, or combined with derangement of those organs, have in many instances been successfully treated by the use of the waters.

A man, who in consequence of a contusion which he had sustained suffered from great functional de-

bility of the abdominal organs, was perfectly cured. His cachectic appearance gave place to a healthy complexion, and his mental depression to high animal spirits.

A somewhat younger man, who after having recovered from chronic inflammatory colic suffered from great inactivity of the abdominal organs and consequent nervous derangement, was perfectly restored, both mentally and physically, after using the waters.

A patient of high rank, who suffered from obstinate and often recurring attacks of intermittent fever the result of abdominal plethora and consequent derangement of the abdominal organs, had become excessively nervous. During the use of the waters he visibly improved. His pale and cachectic appearance gave place to a ruddy fullness of the cheeks, and at present he looks actually healthier than before his illness, in fact, one would say that he had grown several years younger.

A woman, who had been long suffering from the *douloureux*, originating in rheumatism and abdominal derangement, was by the use of the springs and baths freed from her ailments, which had resisted all previous remedies.

A boy, who had already suffered from several attacks of St. Vitus dance, was again severely afflic-

ted with this malady. None of the remedies most in repute, and which had formerly proved beneficial, availed. After vainly employing them for several months, I prescribed (agreeably to the opinion of an English physician, Hamilton sen.) a course of the Elisabeth waters, and with such happy results, that the boy was completely relieved.

Abnormal mucous secretions.

Our waters have also proved most salutary in cases of abnormal mucous secretions, not only of the stomach and intestinal canal, but also of the respiratory organs under the form of chronic catarrh, as well as of asthmatic affections arising from the same source. Here, the action of the waters has evidently been of a resolvent, alterative and stimulating nature; in many cases after the patients had suffered for years from chronic catarrh accompanied with excessive mucous secretion, their use persevered in for some months, has been attended with the most satisfactory results.

In the last few years a number of similar observations have been made, and it is particularly the new Ludwigs-Brunnen, which has proved so beneficial in chronic catarrh of the chest.

A lady, who for many years had suffered from abnormal secretions of the organs of the abdomen and chest, accompanied periodically with violent vertigo, was in a few months completely relieved from all these ailments.

Chronic rheumatism.

The waters, whether used internally or externally, have been most efficacious in many varieties of chronic rheumatism, and their use has been attended with the most extraordinary success.

Gout.

Various kinds of gout have likewise been cured by the use of the waters, and the most remarkable results have been obtained. A gentleman, exposed to the influence of all those circumstances which tend to engender the malady, particularly high living and want of exercise, suffered from serious constitutional derangement and general loss of health. The results were partial apoplectic attacks, morbid obesity, and such severe gout in the feet, that the patient was incapacitated from walking. By persevering in the use of the waters and baths he has been completely cu-

red, and healthy hemorrhoids have been developed in his case. Several other patients have been freed from gout in the feet, arthritic inflammation of the eyes, chronic asthma occasioned by arthritic metastasis etc.

Scrophulous complaints.

In scrophulous complaints the waters have also rendered the greatest services.

A young man had the preceding year passed several months at another watering place, and taken a number of baths without the least success. He was here recommended to restrict himself to drinking the waters, as warm baths (from which alone resolvent effects were to be expected) disagreed with him, occasioning violent congestion etc. — This patient was from childhood scrophulous, and his present ailment consisted in palpable enlargement of the mesenteric glands, accompanied with obstinate constipation and violent congestion in the region of the head; also, beneath the under jaw and at both sides of the throat, the glands were visibly swollen. The use of the waters, combined with a strict regimen and plenty of exercise, in two months, completely re-established the patient.

Ringworm.

Ringworm, in one case covering only the face, in several others spreading at the same time over the entire person, and in some cases appearing locally on parts of the body, has been successfully treated by the simultaneous use of the waters and baths; in some instances, it appears, the benefit has been of a permanent nature.

INDICATIONS

respecting the use of the waters.

Decided counter-indications are fever and acute inflammation. Also, if during the cure, gastric fever or catarrhal rheumatism should be developed, it will be necessary to discontinue the use of the waters, as their invigorating and stimulating influence necessarily aggravates the febrile and inflammatory symptoms and aggravates the malady.

In cases of strong determination of blood towards the head and chest, the greatest precautions are necessary, as such symptoms may demand a temporary discontinuance of the waters, and render a preparatory treatment indispensably requisite. According to the nature of the complaint and the constitution of the patient, bleeding, cold applications to the parts affected etc. may be necessary to prepare the system.

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COUNTER - INDICATIONS

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In cases of strong determination of blood towards the head and chest, the greatest precautions are necessary, as such symptoms may demand a temporary discontinuance of the waters, and render a preparatory cure indispensably requisite. According to the nature of the complaint and the constitution of the patient, bleeding, cold applications to the parts effected etc. may be necessary to prepare the system, so that the

waters may exercise a beneficial influence. Particularly effective is the application of cold to the upper parts of the body, especially when combined with warm foot or hip baths, which, if necessary, may be rendered more stimulating by mustard, alkaline salt etc. The following case will serve as an instance, how little the waters are to be recommended under the above mentioned circumstances.

A young man, who had a strong hereditary tendency to hemorrhoids without any regular development of them, hoped by aid of the Elisabeth-Brunnen to free himself from a disagreeable sensation of fullness and oppression of the chest; in consequence of his ill timed employment of the waters, he was afflicted with a violent hemoptysis.

If the waters operate with sufficient promptitude on the intestinal canal, the derivation thereby effected will fully obviate the symptoms of congestion and dispense with all auxiliary means.

Still more serious counter-indications are — organic disease of the heart and of the large arteries, aneurisms, a high degree of hypertrophy, particularly if its seat be the left side of the heart etc. At the same time, a person should not be too precipitate in supposing the existence of such disease, as affections of the heart, occasioned by hysteria and hypochondria, which, notwithstanding the violence of their symp-

toms, proceed from dynamic disproportions, have been repeatedly mitigated and cured by the use of the springs.

We must finally mention as counter-indications, consumption and cachexia when in an advanced stage. Likewise, dropsy and pulmonary suppuration. Pulmonary tubercles, which have not yet begun to suppurate, and are unaccompanied by inflammatory irritation, have been frequently relieved by the springs, particularly by the Ludwigs Brunnen, with or without the addition of milk or whey.

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DIRECTIONS **for using the waters.**

The ailments, as well as the constitutions of patients, are too different to permit of laying down special rules for the use of the waters. We shall consequently restrict ourselves to giving general directions, which are subjected to numerous modifications, so as to meet the exigencies of each particular case.

The duration of the cure is different, for many constitutions and complaints a three weeks course is sufficient, while for others, it must extended to six weeks or two months. In many deeply rooted maladies, it may be necessary to repeat it several years in succession. In certain cases, it is attended with the greatest advantage to repeat the course in the same year; for instance, after having interrupted it for 5 or 6 weeks towards the end of spring, it may be resumed towards the end of autumn. The more deeply rooted and inveterate a complaint is, the more

prolonged and vigorous must be the action of the waters, to obtain the desired result.

The most suitable time for drinking the waters is the morning, that is, fasting, as they agree better, and are more easily assimilated, when the stomach is empty. It would be highly injudicious to take them at a time, when the stomach is occupied with the digestive process, as by that means, not only is the digestion interrupted, but the proper assimilation of the waters is prevented. Whoever transgresses this rule, has to blame himself, if, instead of the salutary effect hoped for, symptoms of impaired digestion and stomachic derangement manifest themselves.

It very seldom occurs that the waters disagree with an empty stomach. However, extreme irritability and weakness may render it necessary to take something an hour before drinking; even in this case, only a light nourishing drink can be permitted; a half cup of coffee were most to be recommended.

Patients, whose state does not permit them to drink the waters at the spring, or whose weakness does not allow them to take the necessary exercise after having drunk them, would do well to take the first glasses in bed. If, after this, the patient can keep up a slight perspiration (a profuse perspiration would only interrupt the salutary effects) the waters will agree better and be more easily digested.

As nothing prevents the good effects of mineral waters so much as colds, warm clothing is strenuously recommended, particularly to those who take the waters early in spring. There exists a strongly pronounced special action and reaction between the external skin and that of the intestinal canal, so that any derangement of the action of the skin has a prejudicial effect upon the digestive functions, and consequently renders the body more susceptible of cold. Accordingly, it cannot be too strongly impressed upon all those, who desire a salutary effect from the use of the waters, that the greatest care must be taken to avoid colds and dietetic errors.

In hot weather, it is advisable to visit the springs early in the morning, in order that the exercise, necessary to promote the digestion and assimilation of the water, may be taken, without heating the body or bringing on profuse perspiration. Excessive activity of the skin prevents and impedes the secretions of the intestinal canal, as on the other hand, excessive evacuations disturb the activity of the skin and dispose it to cold. In cool weather, particularly in spring and autumn, the waters are to be visited later, but always before breakfast, in order that their good effects may not be retarded or frustrated by cold and interrupted activity of the skin, with its reaction on the abdominal organs.

The quantity to be taken every morning varies much for different constitutions, according to the digestive power of the individual, and the manner in which the waters agree with him. For many, 8 ounces (half a schoppen) is sufficient to operate upon the intestinal canal, others must take 48 ounces to obtain the wished for result. It may however be generally affirmed, that the water operates most effectively, and penetrates the system most thoroughly, when taken in small quantities of from 4 to 8 ounces, and at intervals of about 15 minutes, during which the patient should take gentle walking exercise.

However beneficial, exercise may be during the cure, however much it may promote the digestion and assimilation of the waters, still, it is advisable to avoid all excess, both in this respect, as well as in the quantity of water taken. Violent exercise heats the body, wastes the strength, and produces an over-activity of the skin; results which act rather injuriously than otherwise on the system in general, as well as on the functions of the intestinal canal in particular. Equally erroneous is the idea entertained by some, that the good effects of the waters are in proportion to the quantity consumed. If the stomach be deluged by large doses of water in rapid succession, it is impossible for the quantity so swallowed to be thoroughly digested and assimilated, and the drinker will consequently rather injure than promote his health.

In general, it is advisable to begin with small doses, two or three glasses, containing each about four ounces. After each glass, as above mentioned, the patient is to walk about for 15 minutes, and according as it operates on or agrees with him, to augment the dose daily by one or two glasses, until either, constipation, if such exist, ceases, or the usual evacuations take place with greater ease and in increased quantity. A regular looseness is not necessary, for the waters to produce their salutary effect, and many a patient has been cured, without the evacuations being unusually frequent, but only somewhat easier than before. Persons are therefore in error, who imagine, that the success of the cure depends on the number of evacuations. Such an error may be attended with the most fatal consequences.

If the constipation be obstinate, for with many persons the evacuations have at first a tendency rather to diminish than increase, it might often be advisable for patients, to drink towards evening a few additional glasses at the spring, observing the rules which have been given for the use of the waters in the morning. Moreover, they are strictly to avoid drinking the second time, until the mid-day repast has been fully and thoroughly digested. They are besides to abstain from all food between dinner and the time of drinking in the evening.

REGIMEN

to be observed while drinking the waters.

The constitutions and digestive powers of patients differ so much, that it would be impossible to lay down invariable rules, as a person can without injury allow himself at one time what would be seriously prejudicial at another. One thing can however be affirmed with certainty, that no person has ever been injured by too close an observance of dietetics and many who had strength of mind to adhere rigorously to a strict regimen, have most essentially promoted their cure. It is also to be remarked, that persons suffering from derangement of the abdominal organs often experience a craving for food; it is no natural appetite, but a disagreeable feeling of exhaustion, particularly in the region of the stomach; momentarily relieved by partaking of food, it continually stimulates to fresh excess, and in this manner occasions

a repletion most injurious to health. Persons, afflicted with this morbid appetite, are particularly recommended to resist it by the observance of a strict regimen, refraining from all aliments, except such as are nourishing and easy of digestion. Light repasts at regular hours, for instance, at dinner, soup and a little meat, no vegetables, if accustomed to it, a glass of old wine; between meals, no food or at least very little should be taken. This restricted diet will in a short time remove all disagreeable sensations.

On the whole, the principle must be firmly maintained, that the more serious the derangement of the organs of digestion and assimilation, the more necessary will it be to observe a strict regimen, if health be the object in view. We would even recommend it to those who are less seriously affected, if they wish to ensure a successful result. To promote the cure, the aliments must be light and easy of digestion, not flatulent but nourishing, so as to contain the necessary nutriment in a small volume, in order that the stomach may not be unnecessarily overloaded, and that an easy and thorough digestion may be attained. The less the stomach suffers in a dietetic point of view, the better will the water be assimilated, while on this assimilation and on the digestive capacity depends the success of the cure.

An hour or an hour and a half after drinking the last glass, breakfast should be taken, consisting of

coffee with dry white bread or biscuit. Cake or other kinds of pastry, fresh white bread or bread and butter are not to be recommended, as they act injuriously on the digestive organs if weak, and paralyze the good effects of the waters.

During the use of the waters, it were advisable to limit the dinner, to soup (in small quantities, if the stomach be weak) to tender meat and dry bread. This regimen can of course be modified according to the state of the patient. Most patients can bear light vegetables and cooked fruit. Thick rice soup, instead of vegetables, is recommended as highly nutritious and easy of digestion. Uncooked fruit and salad are strictly prohibited. The kinds of meat recommended are, beef, mutton, veal, roast venison and hare, but not served in vinegar, as by this means, the meat most easy to digest may be rendered quite indigestible. Beef and lean mutton are more easy to digest than veal. Fresh pork is not to be recommended, either boiled or roasted, but when salted, it gains in digestibility, as by that means a portion of the superfluons fatty matter is removed. Lean ham, particularly when raw, can, if tender, be recommended as an aliment easy of digestion. The kinds of fowl to be recommended are those with white flesh, such as hens, turkeys and partridges. On the other hand, aquatic fowl, roast goose and duck are to be avoided. Of fish, only those with dry white fibre are permitted,

particularly trout and small tender pike. Rich luscious fish, such as carp, eel and salmon, must be avoided. Of vegetables, besides roots, cooked salad, both lettuce and endive, may be recommended. Potatoes, though in general regarded as easy to digest, should be partaken of but sparingly, and then only mashed, by persons suffering from a tendency to constipation, or from abdominal or digestional derangement. Potatoes are no doubt wholesome and nutritious, for persons whose inside is sound and who are subjected to severe physical toil. All kinds of cabbage are to be avoided by persons suffering from abdominal disease.. Asparagus is to be recommended as digestible, if not rendered otherwise by the addition of sauce or butter. Besides heavy sour bread, all kinds of fresh bread are to be avoided. Dry bread, either mixed or entirely white, is recommended to those who use the waters.

Patients, to whom wine has become a necessary of life, are not required to abstain from it during the use of the waters; it is however desirable that it should be good, and only taken in small quantities. Young and sour wines are always injurious to the digestive organs, and particularly so, when these organs are deranged or diseased; they must therefore be carefully avoided. Only old and mellow wines can be recommended, and even the finest and most mellow, when new, are unfit for daily use. They over

excite the vascular system in general, and when often indulged in, irritate the vessels of the abdomen and paralyze the beneficial effects of the waters.

The older the wine is, the more intimately combined are its elements. Good old wine can be truly termed a spirituous means of nourishment, but only when taken in proper quantities.

Those who visit the springs towards evening should eat nothing between dinner and supper, the latter should consist of aliments easy of digestion, such as soup and preserved fruit, to which, if required, some light digestible meat may be added. The daily use of tea, especially with bread and butter or pastry, should be avoided.

Whoever is willing and able to follow the preceding dietetic rules, will essentially promote the successful issue of his cure, and will find in renovated health a rich reward for a temporary renunciation of sensual enjoyments.

Analysis and effects of the mineral waters.

I. The Elisabeth-Brunnen.

According to the analysis of the celebrated chemist, Dr. Justus von Liebig, Professor of chemistry at Giessen, a hundred parts of water from the Elisabeth-Brunnen yield

1,030661 Muriate of Soda

0,004967 Sulphate of Soda

0,107029 Muriate of Lime

0,101457 Muriate of Magnesia

0,004112 Silica

0,143106 Carbonate of Lime

0,026219 Carbonate of Magnesia

0,006020 Carbonate of Iron

0,281000 Free Carbonic Acid

1,698571 parts of fixed and volatile matter.

Consequently, a pound of water (16 ounces) contains of:

Muriate of Soda . .	79,1548	Grains
Sulphate of Soda . .	0,3815	„
Muriate of Lime . .	7,7590	„
Muriate of Magnesia	7,7919	„
Silica	0,3158	„
Carbonate of Lime . .	10,9905	„
Carbonate of Magnesia	2,0136	„
Carbonate of Iron . .	0,4623	„
Free Carbonic Acid . .	21,5808	„

Of fixed and volatile matter 130,4502 Grains.

A pound of this water, exactly occupying a space of 32 cubic inches, contains 48,64 cubic inches of free Carbonic Acid, and in all 58,78 cubic inches. These mineral waters consequently belong to the ferro-saline acidulous class. Professor Liebig speaks of them in the following manner:

„From its great richness in carbonic acid, in which it surpasses all the known mineral springs of Europe, and from the large proportion of iron, which it contains, it must necessarily produce on the organisation, an effect rivalling that of the chalybeate and acidulous springs most in request, while the saline elements, which it contains, render it equal to the most celebrated alkaline spas.“

The experience of many years has fully justified those claims, and the happy combination of resolvent,

stimulating and invigorating elements, which we find in these waters, has, by its effects, particularly in cases of abdominal disease, satisfied and partly surpassed the most sanguine expectations.

The waters can be preserved in perfect condition and for a long time, in glass or stone vessels. I have examined some that had been kept for above a year and found it good in every respect; it is consequently well adopted for exportation, which takes place to a large extent, since the spring has become better known.

A few years ago, a quantity was shipped to the East Indies, and as a trial, some was sent back again. The water was found not to have experienced the least injury from the double voyage.

The effects of the Elisabeth-Brunnen.

The effects of this brunnen on the digestive system are such as might be expected from the happy combination of its elementary particles. The saline particles correspond with the vegetative activity, and relieve the overfilled organs by the evacuations they produce. The large proportion of Carbonic Acid directly exercises an exciting influence on the sensitive system, thereby vivifying the whole frame, while the ferrugineous particles powerfully stimulate the prostrated organisation. Similar effects are produced on

the sensitive and vegetative existence, so that the whole nervous system, the failing vital powers and nutritive functions are renovated, and fresh life and vigor infused into the entire organisation. We have often been surprised, at seeing patients who had arrived in the last stage of emaciation, bid adieu to the vivifying springs, rejuvenated both in mind and body.

The first perceptible symptoms of the action of the waters are their effects on the intestinal canal, in increasing the evacuations; besides their general exhilarating influence, they produce an agreeable sensation of warmth in the region of the stomach, specially resulting from the large proportion of Carbonic Acid which they contain, and from their temperature, which even in summer is never more than 8 or 9 degrees. However, abundant evacuations are not absolutely necessary for the successful operation of the waters; on the contrary, they would rather militate against it. With many persons the use of the waters actually gives rise to constipation in the commencement; this is relieved by continuing and judiciously increasing the doses of water, which usually dispense with all other means of removal. It would be very erroneous to estimate the beneficial effects of the waters from the number of evacuations obtained, as the most successful results have often been obtained with a very moderate increase and without any actual purging. The alvine

evacuations usually take place without pain, very quickly, and leave behind a feeling of comfort and relief. If weakness or exhaustion ensue symptoms, which are to be regarded as unfavourable, the doses are to be diminished or, according to circumstances, the course is to be altogether suspended. Sooner or later, usually after several weeks, the evacuations undergo a qualitative change and become firm and slimy, in colour and consistency like dark soap; these symptoms may generally be regarded as favourable.

Increase of appetite is a very favourable and agreeable symptom, but through abuse, it is often attended with evil consequences, as the use of the Elisabeth-Brunnen requires a particularly rigorous diet. Though the waters are easy of digestion, it is remarkable, how severely patients have often atoned for apparently trivial dietetic errors, and how persons of vigorous constitution, who confiding in their digestive powers had defied the effects of the waters, have been compelled to succumb to their influence.

Increased activity of the intestinal canal is usually accompanied with increased activity of the kidneys. The urinal secretions are largely augmented, thereby giving a gratifying proof of the augmented vigour and activity of the entire digestive system. In obstinate derangement of the abdominal organs,

both in acute and chronic cases, we find the diminution of the urinal secretions proportional to the intensity of the disease; this is most palpably manifest in Cholera Morbus.

When the digestive apparatus is relieved, the secretive organs freed from obstruction and the vascular system restored to its normal condition, a calm and refreshing sleep gives the most favourable indication of renovated health.

It may be regarded as a favourable symptom, when the patient drinks the waters with pleasure; should he take a dislike to them during the course, it will be necessary to discontinue. The latter case, however, rarely occurs, as in general, the waters are taken with pleasure and agree well with the stomach. They have agreed perfectly well with, and rendered infinite service to many persons suffering from abdominal derangement, who were unable to bear the waters of Kissingen, whether taken at home or at Kissingen itself, as their use invariably brought on cardialgia and indigestion.

The crises, which follow the salutary use of our springs, are neither accompanied with, nor preceded by violent symptoms, for the qualificative change in the secretions, which takes place after using the springs for several weeks, is not to be regarded in that light.

The irritability of the vascular and nervous system, arising either from the ferrugineous particles disagreeing with the patient, or from the organisation being saturated with water, is no more to be regarded as a crisis, than the formation of carbon after the prolonged use of the cold water cure. They are morbid symptoms, caused either by too long continued use of the remedy or by actual abuse of it. I have often observed accidental symptoms, gastric and rheumatic derangements etc. accompanied by fever, occur during the cure. The patients, who had either seen or themselves experienced something similar at other springs, regarded them as crises produced by the use of the waters. Patients have to blame themselves for such accidents, as they proceed from remissness in observing the prescribed regimen. That they should occur more readily during the cure is but natural, and is accounted for by the change in the organisation, by the increased receptivity of the skin during the use of the bath, and by the increased irritability of the digestive organs, occasioned by drinking the waters. Consequently, the chief care of the patient should be to avoid dietetic errors and catching cold.

II. The new Ludwigs-Brunnen.

The former Ludwigs- or Sauer-Brunnen having become quite useless in the year 1845, experiments in boring were made, the result of which was the discovery in the same place of the present spring.

Issuing forth from a depth of about 140 feet, it yielded a large quantity of water clear as crystal, which appeared in a state of continual effervescence from the abundance of carbonic acid which it contained. According to the analysis made at Giessen in the year 1843 by Doctors Will and Fresenius, under the direction of Professor Dr. Justus Liebig, a pound = 16 ounces of water from this spring contains

Fixed Elements:

Muriate of Soda	84,461568 . . .	Grains
Muriate of Potash	2,198748 . . .	„
Muriate of Magnesia	6,001920 . . .	„
Muriate of Lime	9,506324 . . .	„
Sulphate of Lime	0,225792 . . .	„
Carbonate of Lime	9,796608 . . .	„
Carbonate of Magnesia	0,046080 . . .	„
Carbonate of Iron	0,390144 . . .	„
Silica	0,125184	„

Volatile Elements:

Free Carbonic Acid 18,427392 Grains

= 41,35912 Cubic Inches.

Towards the end of the year 1845, it happened that the waters of the spring were less abundant and limpid than before. An examination instituted shewed, that the iron tubes were partially destroyed and that the shaft was filled to a considerable height with clay, sand etc. Consequently, in the winter 1845—1846 they bored afresh for the purpose of clearing out the choaked shaft, and in the spring of 1846 had terminated their labours.

They had bored deeper than before, so that the present depth of the shaft is about 180 feet. This may account for the changes which the spring has undergone.

The quantity of water has more than doubled, so that while the spring formerly yielded 1500 gallons in an hour, it now yields 3200 gallons in the same time. After the shaft had been sheathed with cast iron and the water had recovered its former clearness, the amount of the mineral, particularly of the saline particles which it contained, appeared to the taste to have diminished.

An analysis made by Dr. Julius Hoffmann,

Apothecary in Homburg, gave the following results:

A Pound of water = 16 ounces contains:

Muriate of Soda 47,95852 Grains
 Murate of Lime 1,71494 „
 Muriate of Magnesia 3,06355 . Grains
 Muriate of Potash 7,28064 „
 Sulphate of Lime 0,15437 „
 Carbonate of Lime 5,74388 „
 Carbonate of Magnesia 0,09532 „
 Carbonate of Iron 0,41780 „
 Silica 0,19814 . „
 Free Carbonic Acid 19,42118 Grains
 = 43.58863 Cubic Inches.

The spring has consequently assumed a quite different character. Iron excepted, its mineral and particularly its saline elements have diminished, the amount of carbonic acid has increased and it yields more than double the quantity of water. These changes may partly proceed from the increased depth of the shaft but in any case, they indicate a spring quite different from the former one, and which, though the weakest here, may still be considered as a very efficacious ferro-saline spa. A spring, which in a pound of water contains above 66 grains of fixed mineral elements, including 58 grains of chloro-metallic matter, is far from contemptible, as many (even physicians) would

insinuate. Moreover, the results of its use, particularly since the season of 1846 (consequently in its present state) have proved, that though milder and less energetic than the other springs, it is still highly efficacious and salutary, when its use is steadily persevered in.

With very irritable persons suffering from hemorrhoids, particularly such as are afflicted with hemorrhoidal tumours, its waters have agreed better than those of the Elisabeth-Brunnen, whose action has often in such cases been too violent.

Also, when abdominal plethora and its consequences are complicated with affection of the chest, chronic catarrh, asthma etc., this spring has proved almost as efficacious as in its former state, when the analysis exhibited more salts and less iron.

This phenomenon can be explained by supposing that the water level under ground is connected with cavities in such a manner, that these latter in their extension lie above the water level, so as to be closed by it. In this manner it is intelligible how the gas which collects itself at fixed intervals in these cavities can attain so high a degree of expansion, as to overcome the weight of the superincumbent aqueous column and forcibly raise it, there by occasioning a

III. The Kaiser-Brunnen.

This remarkable spring, quite a colossus among ferro-saline acidulous springs, gushes up from a depth of 380 feet. Its waters are clear and limpid. During the two first years of its existence, it bubbled up so violently at intervals of an hour, that its surface at the time closely resembled water in a state of ebullition.

After the lapse of a certain time the waters gradually ascended and attained such a height that, their ordinary level was considerably exceeded and the reservoirs were no longer able to contain them. Later, the bubbling on the surface still continuing, the ascending movement ceased for some time, and finally, the column of water rapidly sank 6 or 8 feet lower.

This phenomenon can be explained by supposing, that the water level under ground is connected with cavities in such a manner, that these latter in their extension lie above the water level, so as to be closed by it. In this manner it is intelligible, how the gas which collects itself at fixed intervals in these cavities can attain so high a degree of expansion, as to overcome the weight of the superincumbent aqueous column and forcibly raise it, there by occasioning a

violent agitation of the spring; the whole terminating with the evaporation of the gas itself.

In the last few years the periodical recurrence of these phenomena has ceased. The change in the emanations, which had previously taken place periodically, is only to be explained by supposing that, subterraneous cavities, charged with gas and acting as condensers, have by the sinking in of their sides ceased to exist.

According to the analysis made by Professor Liebig at Giessen, a pound of this water contains:

Muriate of Soda 117,00480 . Grains

Muriate of Potash 0,29952 . „

Muriate of Magnesia 7,86432 „

Muriate of Lime 13,32480 . „

Sulphate of Lime 0,19200 . „

Carbonate of Lime 11,10528 „

Carbonate of Iron 0,80640 . „

Free carbonic acid 2545920

— 55,4 Cubic Inches.

The preceeding analysis shows us in its principal elements a great resemblance between this spring and the Elisabeth Brunnen, the chief difference between the two baing rather quantitative than qualitative. Its waters and those of the Elisabeth Brunnen act similarly on the system, and are to be prescribed for a similar class of ailments. The Kaiser Brunnen is

however to be preferred in cases of torpor and inactivity, if the other be not sufficiently efficacious, or would have to be drunk in such large quantities as might prove injurious to the digestive organs. The Kaiser Brunnen contains in the same space a far greater amount of active elements than the Elisabeth; in fact, one might term it a double Elisabeth Brunnen. Its action has been more beneficial than that of the Elisabeth Brunnen, in cases where the latter produced too fluid secretions or a too rapid transit of the water through the intestinal canal; by having recourse to the Kaiser Brunnen, these inconveniencies were avoided and more feculent evacuations were obtained.

Notwithstanding the good effects I have mentioned, and its decided superiority to the Elisabeth Brunnen in many cases and for many constitutions, I would strong dissuade patients from having recourse to it without medical advice, as in most cases it would be desirable to commence the cure with a preparatory course of the Elisabeth Brunnen.

Although chemical analysis has not determined the amount, the Kaiser Brunnen exhibits a development of Hydro-Sulphuric gas, particularly when the water is shaken. The same is observed when it is kept in jars or bottles, the water then acquires a strong

taste and smell of Hydro-Sulphuric gas, and is consequently less agreeable to the palate than when drunk at the spring. Those, who with a view to its salutary effects, desire to take the water at home, are recommended to drink it, not from a glass, but from the jar or bottle, as is often done at regular sulphureous springs.

IV. The Stahlbrunnen.

According to the analysis of Professor Liebig of Giessen, a pound of water from the chalybeate spring contains the following elements:

Muriate of Soda . .	79,86432	Grains,
Muriate of Potash . .	0,17664	„
Muriate of Magnesia . .	5,32992	„
Muriate of Lime . .	10,66852	„
Sulphate of Lime . .	0,14592	„
Carbonate of Lime . .	7,53408	„
Carbonate of Iron . .	0,93696	Grains,
Sulphate of Silica . .	0,31488	„
Free Carbonic Acid . .	21,26592	„
= 46,90538 Cubic Inches.		

As regards its saline elements, this spring has a close affinity to the Elisabeth-Brunnen, but at the same time contains so strong a proportion of iron, that it equals in this respect the strongest chalybeate spas, Schwalbach, Pyrmont etc.

As there are many cases, in which a remedy at once tonic and resolvent is required, it may be imagined how beneficial this spring is under such circumstances. Equally resolvent as the Elisabeth-Brunnen,

and equally tonic as the most celebrated chalybeate springs of Germany, which it for the most part far excels in the quantity of carbonic acid that it contains, this ferro-saline acidulous spring stands almost without a rival. It has frequently been most efficacious in cases of chlorosis, general debility combined with abdominal obstruction, deficient menstruation etc. After a prolonged use of the Elisabeth-Brunnen, an after course of the Stahl-Brunnen is highly to be recommended.

In general, the waters of this spring have a strong resolvent effect, but at the same time they thoroughly warm and vivify the blood. Clear and limpid they issue forth from a depth of 280 feet.

Like the Kaiser-Brunnen, they exhibit traces of Hydro-Sulphuric acid, the smell of which, when they are preserved in jars or bottles, becomes highly disagreeable; on this account it is better to drink them at the spring. They appear however to lose none of their efficacy when kept in jars and bottles.

and equally toxic as the most refined chlorides
of Germany, which is for the most part for
tests in the quantity of carbonic acid that it con-
tains, this toxic-saline substance being almost
without a rival. It has frequently been most effec-
tively in cases of chlorosis, several bottles combined
with a liberal abstraction, debilitated constitution etc.
After a prolonged use of the Kaiser-Brunnen, an
other course of the Stahl-Brunnen is likely to be
recommended.

In general the waters of this spring have a strong
resolvent effect, but at the same time they thoroughly
warm and vivify the blood. Clear and limpid they
issue forth from a depth of 250 feet.

Like the Kaiser-Brunnen, they exhibit traces
of Hydro-Sulphuric acid, the smell of which, when
they are aerated in jars or bottles, becomes highly
characteristic; on this account it is better to drink them
at the spring. They assist however to lose some
of their effect when kept in jars and bottles.

For medicinal purposes the water of this spring is
highly recommended.

It is a very good tonic and is highly recommended
in all cases of debility, chlorosis, and other
diseases of the blood. It is also highly recommended
in cases of indigestion, flatulency, and other
diseases of the stomach.

THE BATHS.

The waters usually employed for bathing are those of the Kaiser and Ludwigs Brunnen, which are collected for this purpose in subterraneous vaulted cisterns. They combine the effects of the saline bath with those of the carbonic acid chalybeate one, and consequently while acting as a resolvent they directly vivify and invigorate the system.

The baths are usually employed in aid of the waters taken internally, and the indications for the use of both are the same. The modifications which may from time to time be necessary in their use must be left to the physician who directs the cure, as it is impossible to give any general directions on the subject. It is for him likewise to determine when douche, shower, vapour baths etc., should be administered.

Mode of employing the baths.

In general, persons should not commence bathing, until after having drunk the waters for some days, and thereby re-established the functional activity of the abdominal organs.

This precaution is particularly to be recommended to those suffering from abdominal disease, for as long as obstruction, inactivity or repletion of the internal organs exist, the use of warm baths, particularly stimulating ones, occasions a most injurious determination of blood towards the head and chest. Should however the necessary evacuations from the intestinal canal take place, such evil consequences are less to be dreaded.

Morning is in general the most suitable time for bathing, especially if it is intended that the matter with which the water is impregnated should be absorbed, because at that time of the day, the absorbent power — the receptivity — both of the whole system, as well as of the principal organs, is greatest.

Persons of strong constitution, and whose malady is of a more intense nature, are recommended to bathe before breakfast, half an hour or an hour after having

drunk at the spring, as at that time the baths act with most energy. Persons of delicate constitution and who are less seriously affected should bathe an hour or two after a light breakfast, consisting of coffee etc. This is the most usual time of bathing.

It is a known fact, that persons, whose nervous system is debilitated, feel themselves weakest in the morning and are at that time of the day most deeply affected by external impressions.

On the contrary, towards evening they appear stronger and more capable of reaction against external impressions.

On this account, those suffering from nervous irritability find it agree far better with them to bathe in the evening, so that they can retire to rest immediately afterwards and take supper in bed.

The temperature of the bath must be regulated according to the individuality of the patient and the nature of his complaint; it is consequently very different for different individuals, varying from 20 to 28° R. The safest guide is the feeling of the bather, and one can lay down as a general rule that, the temperature of the bath should be as low as possible, without the bather experiencing a sensation of cold. When it is required to strengthen a weak skin, or where the susceptibility of the skin is so great that,

a person must begin with a high temperature, in order to avoid a sensation of chilliness, it were advisable to diminish by degrees the temperature of the bath. In this manner, after taking from 20 to 24 baths, the temperature can be lowered from 4 to 6 degrees.

The length of time that a person should remain in the bath depends in like manner on his individuality and on the nature of his complaint. In general, it may be asserted that it should not be less than 20 or more than 45 minutes.

In exceptional cases, it may appear advisable to prolong it somewhat more. The number of baths to be taken depends upon their effect upon the individual, and according to this they may vary from 12 to 30 or more. Taking more than one bath daily, so as to abridge the period of the cure, without losing the desired number of baths, is not permitted, and as a general rule, it were better to take fewer baths than in such a manner to attain the prescribed number.

Persons inclined to congestion toward the head and chest, but in whose case other symptoms indicate the use of saline baths, would do well not to sit too deeply in the bath, in order that the menaced parts may from time to time be bathed with a sponge dipped in cold water. In such cases, it is necessary to cover the upper part of the body with a woollen

bathing dress, so as to avoid taking cold during the bath. In general, the bather is recommended to be particularly attentive to his clothing, so that the good effects of the morning bath may not be neutralized or marred by his subsequently taking cold. For the same reason, excursions should not be prolonged till late in the evening.

Above all, the patient is advised to retire early to rest, in order that, refreshed and invigorated by sleep, he may the following morning pay an early visit to the spring.

THE END.

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Above all, the patient is advised to retire early to rest, in order that, refreshed and invigorated by sleep, he may the following morning pay an early visit to the spring.

THE END.



