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Mineral Spring Waters,

Manufactured by

HANBURY SMITH & HAZARD,

No. 35 UNION SQUARE,

NEW YORK.

1869.

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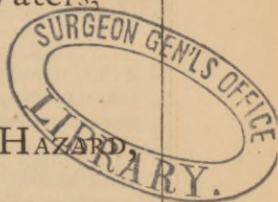
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MINERAL SPRING WATERS have been known as efficient and popular remedies from the earliest ages. So instinctive is the confidence reposed in their healing powers, that not a spring of any value is discovered which does not earn a reputation, at least in its immediate neighborhood.

“The evidence of antiquity with regard to the efficacy of mineral waters, the experience of centuries which confirms this efficacy, the universal favor in which they are held among all civilized people, notwithstanding the difference of medical theories, sufficiently demonstrate that they are of all remedies those of which the reputation is the most justly established. Nature bestows these remedies liberally upon us in order to invite us to have recourse to them more frequently in our diseases.” *

The remedy is however too often inaccessible to the sufferer; so few possess the means, the leisure, it may be the strength, to undertake a journey to that particular source which alone, perhaps, is suitable to the case. A very pressing sense of this difficulty led to the invention, it will soon be half a century ago,

* France contains 632 recognized mineral springs, of which 474 are thermal—that is, of a temperature higher than the mean annual temperature of the locality—and 172 are chalybeates; Germany and Austria more than 2000; Spain about 1200; Portugal more than 230; and Tuscany, with only 1975 square miles of surface, possesses 221.

of a new and valuable art, that of reproducing Mineral Spring Waters in the laboratory of the chemist. The two men of science, whose personal necessities made them inventors, were BERZELIUS and STRUVE. The illustrious Swede organized the first establishment in Stockholm, and drank of the waters there manufactured, with exactly the same effect as the natural had produced on him for a quarter of a century. Struve, a German physician, whose name is more popularly known in connection with artificial mineral waters, took out patents and established manufactories in several countries, one of these being the famous "German Spa" at Brighton, in England, whereat, during the season, 7 hot and 17 cold waters are furnished to its crowds of patients, each one at the proper temperature of the spring; not to mention the many hundred thousand bottles which are annually sold.

It will naturally be observed that the invalid, if unable to go to the spring, might still drink of its waters exported in bottle; vast quantities are so used. From a quarter to half a million of bottles is a common export from numerous springs of Continental Europe. In the case of Vichy and Selters the number exceeds two millions each.

It is found, however, that most natural waters lose very materially by bottling, in spite of the

improved methods of filling which have been introduced; Kissingen Rakoczi changes in taste and becomes less aperient. Struve found that only one bottle out of ten of the exported Eger Water contained a trace of iron; the case was still worse with Marienbader Kreuz. The Ferdinands-quelle in six weeks loses three-fourths of its iron. Pymont and Spa waters are reduced to the level of the poorest chalybeates. The thermal waters suffer still greater changes and decompositions. Hufeland and others have published observations proving that the medicinal effects of bottled waters are not merely much weakened but considerably changed in character.

The springs themselves are subject to many changes, sometimes to serious deterioration; of which latter the Congress Spring at Saratoga is so notorious and unfortunate an example. Reliable analyses of Kissingen Rakoczi show a loss of $22\frac{1}{2}$ per cent. of mineralizing ingredients from 1830 to 1855, besides a change in their relative proportions. The medicinal properties of the water have also changed; it is no longer so tonic and laxative as it was, but more diuretic. Every spring *must* vary more or less in the sum total or relative proportions, or both, of its mineralizing ingredients; from quantities practically of no importance to such damaging changes as above quoted of Congress and Kissingen. It is therefore

self-evident that to produce an artificial water possessing all the properties which made those springs so famous, the analysis representing the water at its best must be followed, if made by a competent analyst, not a later analysis representing a much deteriorated water, even though that one be made by a Liebig.

In artificially-prepared waters it is not difficult to prevent or indefinitely retard those changes which the natural undergo in bottle. HANBURY SMITH'S Waters, for instance, will be found to keep well in any climate, to be always the same in composition, and to produce precisely the same effects as the waters of the spring whose name they bear, at the period of its greatest celebrity. They are made by the processes of Berzelius and Struve, with such improvements as the progress of science and art have suggested and made possible. They are purposely more highly charged with carbonic acid gas than the natural, which not only insures their keeping better, but renders them pleasanter to the taste and more efficacious as medicines. When the large quantity of gas affects the head too much, producing a sort of intoxication, by allowing the water to stand uncovered in the tumbler, or pouring it from one to another a few times, the superfluous quantity will fly off. This extra quantity of gas also alters the taste, which, however, becomes again exactly like the

natural when the superfluity has escaped. Their excellence, and the confidence in their reliability felt by the profession and the public, created the large trade in them now carried on in America, and called forth a competition not always honest or capable—HANBURY SMITH'S *bottles being filled by other parties with inferior articles, and sold as genuine.* The lack of proper medicinal action and the difference in taste, with those accustomed to take the genuine, and who are ignorant of the imposition practised on them, lead to a suspicion of neglect or mistakes in Dr. Smith's laboratory. With strangers to their use, their not producing the expected effect leads to a general condemnation of all artificial waters, as being inert, valueless, disagreeable, not what they pretend to be; in a word—humbug. Thus a double wrong is perpetrated; individual—by casting undeserved blame and criminally inflicting loss on the honest manufacturer; public—by contracting the sphere of usefulness of and bringing into disrepute a most valuable means of alleviating human suffering and restoring health.

The corks of all genuine are branded as per margin.



In Europe, where the artificial waters have been so long in use, evidence as to their value has accumulated to a great extent. A few paragraphs are here introduced as specimens.

Of the success with which the new art has been crowned, says Dr Granville, in his "Spas of Germany":

"The artificial waters in question are found to contain all the qualities and properties, in the most minute degree, of their corresponding mineral springs, as well in regard to the effect which they produce on the human body, as in their chemical composition, taste, and intensity of union."

* * * "The testimony of the most celebrated physicians in Germany—at the head of which I may place KREYSIG, CLARUS, AMMON, and many more—strongly corroborates my opinion of those waters; and I was happy to find during my last visit to Germany that that opinion has been and is gaining ground all over that country."

"On est parvenu à imiter parfaitement, par la synthèse, les eaux minérales naturelles."—Nysten. *Dicte. de Med. de Chir. et de Pharmacie Art. Eaux minérales artificielles.*

Speaking of the great sales of the artificial waters from the establishment at Rosenborg near Copenhagen, Prof. BANG says:—

"This is partly to be attributed to the increasing experience among Danish physicians of the excellence as remedies of mineral waters in general, and partly to the conviction entertained by the great majority of them, that the artificial waters, even if not fully equal to the natural drank at the spring itself, are yet quite as good and often better than the imported."—*On the use of the mineral waters prepared at the Rosenborg Spa, Copenhagen, 1844.*—TRANSLATION.

"Struve's imitation of it (Kissingen) which is to be obtained from the German Spa at Brighton, is found to be equally good and efficacious, and the quantity drank both at Brighton and London, I have been informed by Mr. Schweitzer, has been prodigious."—*Granville, Spas of Germany.*

"I saw Struve's process at Dresden, and I have taken that made at the Brighton Spa, with all the effect of the original and genuine Pullna."—*Pilgrimages to the Spas, by Jas. Johnson, M. D., F. R. S., &c.*

As further proofs of the solvent powers of the Carlsbad waters it is stated that during their use, encysted tumors have disappeared, nasal polypi have spontaneously fallen off, that bony prominences diminish, and that fractured bones become softened at the point of fracture. *Some similar effects have also been observed from the use of the artificial Carlsbad waters in Struve's establishments.*"—*The Baths of Germany, by Edwin Lee.*

"As the process was till lately unknown, the possibility of accomplishing the object was denied and continued so to be by the uninitiated; but this denial is only founded on false notions of the modus operandi of mineral waters, and on mystic speculations about their origin and true nature, and is now so entirely rebutted by experience, that establishments for the preparation and drinking of the artificial mineral waters have been set on foot of late years in many parts of Europe, often in the immediate neighborhood of the natural sources, have been frequented by a continually increasing throng of patients, and proved eminently successful. The experience thus obtained has demonstrated that *properly prepared mineral waters, not only in their external or physical characters—color, taste and smell—but also in their chemical composition, so perfectly resemble the*

natural that the greater number cannot be distinguished from them; that their effects on the human organism are the same; and that they cure the same disorders as thoroughly, as quickly, and as permanently. The experience of the most celebrated physicians in countries where the art and science of medicine has arrived at a high standard of cultivation, and which I am in a condition to corroborate by numerous observations, sufficiently proves that *properly prepared mineral waters may replace the natural, perfectly and in all respects;* which makes it entirely unnecessary, easy as the task would prove, to answer by argument those declamations about the formation of mineral waters by some process above our comprehension—about their supposed inherent vitality—their resemblance to organized bodies—and about the supernatural character of the underground caloric, &c., which are resorted to by the lovers of scientific mysticism and its faithful coadjutors, superficial knowledge and prejudice, in order to damage the well-earned reputation of the artificial mineral waters in the eyes of confiding simplicity.”—*On the use and effects of the waters of Carlsbad, &c., by C. W. H. Ronander, M. D., First Physician to the Seraphim Hospital, Professor of Medicine in the Med. Chir. Institute of Stockholm, Sweden, Knight of the Order of the North Star, &c., &c.*—TRANSLATION.

“*Quelque idée que l'on se fasse d'ailleurs de l'analogie que peuvent présenter entre les eaux naturelles et les eaux artificielles, on ne saurait se refuser à convenir que celles-ci rendent journellement de grands services à l'art de guérir.*”—*Soubeiran, Traité de Pharmacie. Tome II.*

The correspondent of the London Med. Times and Gazette, under date, Berlin, March 30, 1861, says that “In the discussion on the reading of this paper” (by

Dr. Hellft, before the Medical Society of Berlin, on natural and artificial mineral waters), "*all the speakers agreed that in spite of the improved method of filling the natural mineral waters, a decomposition, especially of those containing iron, was not to be avoided, and that it would therefore be better, if a mineral water was used at home, to employ the artificial instead of the natural one.*"

Such an opinion, delivered after nearly 40 years of experience in contrasting the artificial with the natural waters, and these latter practically close at hand, by such an authority, must be considered conclusive.

On the same occasion the author of the paper remarked "that in consequence of the great success of Struve's establishment" (for the manufacture of artificial mineral waters) "a large number of other manufacturers have invested their capital in the same trade, and these generally produce very inferior fabrications. The price of the artificial waters was (is) lowered by competition, and now *their very cheapness suggests the suspicion that they cannot have been carefully prepared.*" This remark is eminently applicable to the manufacture of mineral waters in America. With his great facilities and long experience, Dr. Hanbury Smith has been able to reduce the price to the lowest possible point at which artificial waters can be afforded

in this country, *if manufactured in the proper manner and containing the proper ingredients.* Yet the market is flooded with low-priced imitations, of a quality tending to bring a most useful and indeed important manufacture into discredit.

Rust, the well-known Prussian surgeon, after alluding to the perfection with which Struve's process imitates such waters as Carlsbad, says: "But I contend that it is in the power of the human intellect to rise above these patterns, such as in nature result only from subterranean revolutions and chemical combinations, and to produce mineral waters which should not only be more active, but more useful in a larger range of disorders, and more suitable in individual cases than those of the best springs yet used or discovered."—"If we have hitherto confined ourselves to imitating mineral waters the effects of which are well known, and if the physician has commonly prescribed more out of respect to the name than the ingredients of the water, it will not always be so."—"The time will come when he will prescribe, and the laboratory furnish, any water that the case may specially require. Thereby will be gained a new treasure of therapeutic means, the beneficial influence of which on science, life and health, one cannot reckon; and why should mineral waters be an exception in the ordinary practice of physic? Why should the patient be confined

to one remedy previously compounded according to an unvarying recipe, instead of following a prescription specially suited to the occasion?"

In addition it may be urged that the new art affords the physician an invaluable opportunity of first trying the effects of a given water before he sends his patient on a long, expensive, and without such experiment, perhaps fruitless journey. Should one water not agree, another may be tried according to the special indications in each case.

Says Rust again: "*Many sick who had already tried different springs, one after another, I have cured by prescribing combinations of waters. One of them comes every year from St. Petersburg to Berlin, to use the artificial waters at the Soltman Establishment, prescribed in combination according to circumstances, whereby for at least the ensuing year he is freed from a troublesome disorder, for which previous visits to the natural springs of Carlsbad, Marienbad, Egra and Ems had brought no relief.*"

Not the least among the many advantages of such an establishment is the opportunity afforded to the physician to study the use and mode of action of mineral waters in general; to add to his store both of knowledge and of medicines; offering a vast field for research, probable relief in a majority of chronic curable disorders, and leading to a more purely practical and scientific valuation of the efficacy of a large class of therapeutic agents, hitherto but partially taken up out of the field of popular and even professional empiricism.

Mineral waters have lately attracted so large a share of public attention, that there seems to be a market, for a time at least, for almost anything going by that name, including natural waters almost chemically pure—that is, *remarkable for the absence of everything that constitutes a mineral water*—and waters claiming the most wonderful properties because of the asserted presence of some unknown but necessarily minute portion of lithia, arsenic or what not. It is best to look with suspicion on any water much advertised, if an analysis of the same by a competent authority be not simultaneously published. Not but what *the very pure water* of one of the springs now or lately very popular would be likely to produce some useful effect as a simple diluent and diuretic if taken in sufficient quantity; but it is most probable that the *wonderful cures* attributed to its use exclusively, are simply delusions—errors of observation and diagnosis.

Frequent inquiry is made for *powders* or *salts* with which to make Kissingen, Vichy or some other water after the fashion of Seidlitz powders. It ought to be distinctly understood that this is *simply impossible*, and that what is sold as such will not produce what is pretended of them, nor anything approaching in composition the waters whose name they borrow. Even the salts actually made from the waters do not bear the faintest resemblance to the waters from

which they were made, the process of evaporation decomposing and precipitating the metallic and earthy salts. Thus Vichy powders are a simple carbonate of soda, Carlsbad salt a mixture of carbonate and sulphate, and so on of the rest.

GENERAL INDICATIONS FOR THE USE OF MINERAL SPRING WATERS.

The use of mineral waters is indicated in almost all cases of chronic curable disease, especially if obstinate and resisting ordinary medication. Also in all anomalous forms of curable disease; in which cases the waters commonly cause the disease first to assume its normal form, when its cure is likely soon to follow.

Except in very small quantities, and under fully competent medical advice, *mineral waters are positively forbidden in all malignant diseases.* This may be called the *first axiom* in hydrology, and completely disposes of all cancer cases. In true cancer, the fatal end is all the sooner brought about by the use of mineral waters, often with frightful rapidity. In cases sometimes mistaken for cancer, even by skillful surgeons, the cure of the case by mineral waters decides at once that it was not cancer.

On the other hand, chronic non-malignant maladies, however rebellious they may have proved to ordinary medicine, cannot be justly termed incurable till mineral waters have been thoroughly tried under the best advice. This is *axiom the second*.

Intercurrent or accidental complications of some incurable diseases may be much benefitted by a cautious use of mineral waters, as in some cases of phthisis pulmonalis; and cases of pulmonary following the suppression of skin disease are rarely cured except by mineral water treatment.

In the *diatheses*, that is the *developed* constitutional tendency to diseases, provided these be curable, as scrofula, skin, liver and hemorrhoidal complaints, gout, rheumatism, &c., mineral waters are probably the most thoroughly curative agents known, sometimes totally removing the morbid diatheses and restoring the patient to a normal healthy condition.

The same is true of the cachexias and toxæmias or blood poisonings, in both of which the blood has undergone serious changes for the worse—in the former case, proceeding from within and accompanying or produced by certain diseases, as chlor-anæmia; in the latter, due to poison imbibed or acquired from without, as chronic alcoholic or metallic poisoning, &c. The worst cases of poverty of blood are often cured by chalybeate and chloride of sodium waters, after

resisting all other treatment. The same may be said of obstinate relapsing agues, regular and irregular, and of protracted convalescence from serious accidents, shocks, operations and diseases.

In that host of ailments where the patient suffers some undefined malaise of body or mind, not referable to any morbid condition or functional disturbance that can be diagnosed, yet embittering life by constantly reminding him that he is not well, mineral waters sometimes cure as alteratives, sometimes develop some latent disorder, which in its normal form is then easily cured. These cases are generally remarkable because they are only aggravated by all ordinary treatment, and if allowed to continue often lead to profound depression of spirits or true hypochondria.

It should be borne in mind, also, that diseases which have resisted a fair trial of many natural waters, with all the advantages of the visits to the springs themselves, have been cured at home by artificial waters, taken in combination or varied as the exigencies of the case may require.

During the exacerbations or active periods of chronic diseases, mineral waters should be very sparingly used, or they will intensify the morbid action. Skillful treatment may carry this intensification exactly to the desirable point, but no general

rules can be laid down. In all periodical or paroxysmal disorders, mineral waters should be only used in any quantity at periods as far removed as possible from attacks experienced or expected.

RULES FOR THE USE OF MINERAL WATERS.

The best time of the year to use mineral waters must be decided by circumstances. The height of a hot summer or the depth of a cold winter are certainly *not* the best times. The portions of the year during which the patient can most enjoy moderate exercise in the open air are unquestionably the most proper times during which to carry out an effective course of treatment. But in a less active way mineral waters may be most advantageously employed in all seasons.

The best time of the day for drinking is the morning, the earlier the better. In the morning the body is refreshed by rest, the mind tranquil, the stomach empty, and the quantity of fluid in the system being diminished, the water is more easily tolerated, digested and absorbed. At least a quarter of an hour should elapse between each glass, and from twenty minutes to half an hour or more between the last glass and breakfast.

The waters may be taken on an empty stomach

at any other period of the day, half an hour before the latest meal, or before going to bed.

When requisite to relieve acidity of stomach, an alkaline water like Vichy may be taken so soon after meals as the acidity is remarked; and in some cases where iron waters taken on an empty stomach produce headache, they do not do so if taken with or immediately after a meal.

Mineral waters should not be taken *too cold*. Though less agreeable, they are vastly more efficacious in the majority of cases when warm or tepid. At most cold springs in Europe, means are taken to raise the temperature to the degree which experience has shown to be the best for each class of cases. This is generally effected by the addition of some of the natural water kept hot for the purpose, warm milk or whey.

All persons using mineral waters should dress warmly.

The diet should be simple and easy of digestion. The appetite is generally stimulated by the use of the waters, but should be restrained within moderate bounds. In more serious cases, requiring a regular course of treatment, salt and smoked articles of diet must be avoided. Where there is great tendency to obesity, farinaceous food like rice and potatoes should be very sparingly indulged in. In these cases, and in all where the digestive organs are implicated, much gentle exercise in the open air

is of the first importance. May, June, September and October will be the months when the most improvement may be expected in such cases, while complaints, for the cure of which an abundant excretive action of the skin is desirable, such as chronic rheumatism, gout, catarrh of the respiratory mucous membrane, &c., are more amenable to treatment during the hotter summer months. During the winter months Russian and Turkish baths are powerful adjuvants to the mineral waters, particularly in obstinate rheumatic cases, sciatica, neuralgia and catarrh.

At most of the German springs, all sorts of additions are made to the natural waters. To mix one-third or one-half of warm milk or whey is much in vogue, especially in cases of pulmonary disorder. A quantity of the natural water is also kept hot to mix with that fresh drawn from the spring, for the purpose of raising its temperature, when this is too low for the particular case. Of course the water is generally much changed in composition by this process of heating. The waters of different springs are also thus mixed, and the salt prepared by evaporating the waters of Carlsbad, consisting only of sulphate and carbonate of soda, is added by the teaspoonful, not only at Carlsbad but at other Spas also. This system of adding and mixing may, of course, be abused, and interferes with exact observations on the effects of the water pure and simple.

But if the patient has discovered that some particular mixture suits his case better than any unmixed water, he certainly would be very silly to abandon his proceeding because told that the two waters he had mixed were of entirely different character. Suppose they are: the most valuable medicines have resulted from mixtures of things chemically incompatible. When, therefore, a patient having first tried Kissingen then Vichy without advantage, found himself rapidly cured of his rheumatism by taking the two mixed; and numbers of respectable persons in the same predicament, profiting by his experiment, follow his example with equal success; to call these, people of vulgar habits, is simply a piece of pedantic impertinence.

The addition of Kissingen to Carlsbad prevents the debilitating effects of that extraordinary water, without interfering with its solvent powers, and makes it more laxative. A pure chalybeate, like Pyrmont or Spa, may be added to any other water deficient in iron. Finally some waters proving at first a little too strong to agree well with the stomach, may very properly be diluted with simple carbonic acid or even common drinking water.

The glasses or beakers used in Europe are much smaller than our half-pint tumblers, one of the latter being the common, two being ordinarily an ample dose in almost any case. Experience and professional advice must govern the employment of larger quantities.

KISSINGEN

Is a small town in Bavaria, on the river Saale, about 800 feet above the sea-level, easily reached from Frankfort-on-the-Main or from Munich. The climate is good and the situation very healthy. There are five springs, but the one called Rakoczy is the one always referred to in these pages. More than 300,000 bottles of the water of this spring are annually exported. "Its taste is agreeable, although somewhat bitter, salt, and above all ferruginous."—*Rotureau* —[TRANSLATION.]

Compare Hanbury Smith's artificial water with this description. All other authors agree with *Rotureau* in this as well as regarding the difference in the taste during storms, high winds or floods, and when the atmosphere is calm and the weather warm.

Kissingen water is emphatically tonic and aperient; increasing also the cutaneous and urinary secretions. It is alterative and solvent; under its use obesity subsides. In one case the use of Dr. Smith's artificial water, in the very moderate dose of one pint a day, removed 70 pounds of superfluous fat in four months, without any unpleasant action or great restriction in diet. Its most remarkable property, however, is that of relieving congestions of the portal system, hyperæmia of the liver, abdominal plethora, and all the tribe of disorders connected with or dependent on these disturbed conditions of the

circulation in the organs concerned in digestion and excretion.

An exception must be made in the case of hyperæmia of the liver arising from muscular or valvular affections of the heart or pulmonary disease, though even in such cases much alleviation may be expected from a careful use of the waters.

Jaundice, from catarrh of the duodenum or emotional excitement, is nearly always radically cured. *Gall-Stones* are discharged during the free use of Kissingen, and the jaundice due to their presence disappears.

Simple induration and enlargement of the *liver* are cured, and cases of fatty degeneration improved if not too far gone.

Tumors of the *spleen*, due to malarial poisoning or suppressed hæmorrhoids, are often cured by Kissingen; but if there is marked anæmia, saline chalybeates should follow its employment.

Most cases of *piles* are susceptible of easy cure by the use of Kissingen. Even in the most obstinate and severe cases, with fistula or painful fissure, great relief is afforded, and the patient is brought into a condition much more favorable to the success of the surgical treatment necessary to a radical cure.

As this water excites the secretions of the intestines, kidneys and skin, reduces habitual plethora, and promotes a healthy metamorphosis of matter, it is very useful in regular *gout*, preventing paroxysms.

In irregular gout, on the other hand, where the patient suffers from abdominal plethora, loss of appetite, hypochondriasis, sleeplessness, vertigo, &c., the waters have the effect of increasing the severity of the symptoms at first, when a paroxysm of regular gout occurs, only lasting a week or two however; after which the patient improves rapidly.

In *dyspepsia*, from chronic catarrh of the stomach, liver disease, abuse of intoxicating liquors or deficient secretion of gastric juice, from sedentary habits or other causes, the Rakoczi is remarkably effective.

In obstinate *constipation*, combined with the Bitter Kissingen, it seldom fails to cure.

In chronic *diarrhœa*, small doses of Rakoczi, from three to six times a day, are often successful when remedies apparently more powerful have failed.

In *diabetes* connected with abdominal plethora and congestion of the liver, great relief, or, when not too far advanced, absolute cure may be expected. It should not be prescribed, however, where phthisis or disease of the brain accompany it.

During a free use of Kissingen, *gravel* is abundantly discharged, and the affections of bladder and kidneys connected with it relieved. In the chronic form of *Bright's disease* complete cures have been effected.

A number of female complaints are susceptible of cure or relief, especially amenorrhœa and dysmenorrhœa.

In the milder forms of *chlorosis* and *anæmia*, Kissingen is very useful, but if the poverty of blood is extreme, Pyrmont or some equally active pure chalybeate is more suitable.

The disordered condition of the system showing itself in recurring *boils*, *felons*, *whitloes*, ill-conditioned festering sores, &c., is entirely removed by this water, and these painful affections trouble no more. In more obstinate cases of recurring felons and whitloes, the use of quinine along with the water is indicated.

In *protracted convalescence* from choleraic attacks, typhoid fever, wounds, operations and accidents, no remedy exceeds, few equal the Kissingen in value.

Hysteria accompanied with disturbances of nutrition, indigestion, and cardialgic symptoms, and *hypochondriasis* due to disturbed portal and abdominal venous circulation, may expect great relief or cure.

The same is true of *chronic catarrh* in gouty or hemorrhoidal subjects, also of one form of *asthma* in the same class of patients. Even in cases of *consumption* where there are hemorrhoids, indigestion, hypochondriasis, bronchial catarrh, &c., the appetite is re-established, digestion and nutrition are improved, sleep restored and the mind tranquillized.

Exzema, herpes, acne and other *skin diseases* find a cure in Kissingen.

Many *diseases of the organs of special sense*, chronic

conjunctivitis, ulceration of the cornea, congestion and inflammation of the choroid, &c., rendered persistent or incurable by the often-quoted suppressed hæmorrhoids, portal congestion and abdominal plethora, become easily curable or get well of themselves, when these disordered conditions of the blood-making viscera are corrected by the use of Kissingen.

The *scrofulous diathesis* is most favorably modified by a prolonged administration of Kissingen; in fact may be thus entirely eradicated. Many local disorders, of eyes, glands, skin, mucous membranes, &c., previously rebellious to treatment, easily yield to ordinary treatment after such modification of the habit.

As a remedy for *worms* its efficacy is established. In the case of tapeworm it may be rarely necessary to give a moderate dose of extract of male fern or other specific anthelmintic, if a few weeks use of the water do not expel the parasite.

In *chronic poisoning* by metals, as mercury or arsenic, or by alcohol, &c., the Kissingen is nearly equal to Carlsbad, in the latter case preferable.

Recurring *sick headache* and *neuralgias* depending on the congestive states already alluded to, are cured by Kissingen.

This water is of remarkable service where *abuse of spirituous liquors* begins to tell on the appetite in the morning, creating nausea, gastralgia, &c. To obtain relief more alcohol is usually taken. If a glass of

Kissingen were substituted for the morning dram or bitters, the distressing physical symptoms would be at once removed, and appetite return. Could the slave of alcohol then be persuaded to repeat the dose of mineral water whenever the physical craving was felt, returning health and strength of body would make it comparatively very easy for him to break the bonds of a degrading habit. Some very remarkable cures of habitual drinking to excess have thus been accomplished.

General directions as to dose, &c., have already been given under the head "Rules for the use of mineral waters."

As a rule, it may be said of the Kissingen, that if it purges, too much is taken; if it constipates, too little. When it is desirable to act more freely on the bowels, when constipation is obstinate and habitual, or there is fullness of blood and depletion is needful, it is best to begin with one or two glasses of the Bitter Kissingen, sufficient to move the bowels freely so long as thought necessary, and then go on with the Rakoczi. In cases where the tonic effect is more desirable than the laxative, a glass may be taken (not too cold) before breakfast, at noon, and at bedtime, being careful to drink slowly.

HOMBURG

Is a small town near to and north of Frankfort-on-the-Main, is situated at the eastern end of the Taunus Mountains, 19 hours by rail from Paris, is 487 feet above the sea-level, with a healthy climate.

Of the four springs, the Elizabeth is the one alluded to in these remarks.

The water of this spring is a strong muriated chalybeate, with a composition somewhat parallel with the Rakoczy of Kissingen when in its palmy days, though stronger and much more stimulating. The taste is salt at first, disagreeably bitter and feruginous, but being exceedingly rich in carbonic acid gas—the most so indeed of all the German springs—one soon learns to swallow it without repugnance, even in large quantities. Like all the stronger muriated waters, a small quantity constipates; a larger, purges. Taken in a sufficient dose to act on the bowels it occasions a notable increase of appetite and ease of digestion. Taken more freely it is very apt to bring on a hemorrhoidal attack, especially in persons subject to such affections. Like Kissingen it stimulates and augments the *menstrual flow*; and like that water it produces or reduces *embonpoint*, according to the mode of its employment and the temperament of the patient.

Taken in very small doses, a wineglassful or two, three to five times a day, it cures *chronic diarrhxas*, even when associated with and kept up by chronic inflammation of the colonic mucous membrane.

In *dyspepsias* where the secretions of the stomach and bowels are much disordered, the Elizabeth, in rather larger doses, may be taken with confidence.

Where *constipation* is obstinate, without other appreciable disorder, its use in a sufficient dose to operate should be continued a long time, until a steady daily action has been produced, when it may be gradually abandoned; recurring again to its use whenever a relapse is threatened, or taking a milder water like Kissingen, until a healthy habit is restored and made permanent.

When any disorder can be traced to the *suppression of hemorrhoids*, the use of the Homburg water speedily restores the accustomed flux with corresponding relief to the secondary disorder.

Obese persons, of lymphatic temperament, by using this water in purgative doses, may soon get rid of their superfluous fat without any weakening of the system; on the contrary, with marked improvement of tone and general health.

Homburg has been found peculiarly useful to persons of mature or more than middle age, who are *convalescing slowly* from typhus or other exhausting disease.

Experience has also shown it to be adapted to the removal of a general scrofulous diathesis, to the relief of mesenteric scrofula with emaciation, ulceration of the subcutaneous glands, scrofulous ophthalmia and otorrhœa. It is contra-indicated in florid erithric scrofula.

In cases of *worms* it acts like Kissingen.

Abdominal plethora, with congestion of the portal system and some of its consequences, dyspepsia, flatulence, irregular stools, colic, headache, mental depression, occasional pains in the back, fullness of the abdomen, epigastric pulsation, &c., sometimes relieved by discharge of blood from the hæmorrhoidal vessels, but sure to return after such temporary alleviation, finds a certain cure in the Homburg water.

By the same remedy, and with equal certainty, may be relieved those *uterine and vesical disorders* dependent on or actually induced by this same abdominal venous congestion.

Chlorosis will be cured in like manner after it has resisted the pure chalybeate treatment. This is because the muriates of soda, lime and magnesia remove all local abdominal obstructions, and restore vigor to the digestive organs.

In fine, most of the remarks on the use of Kissingen R. are applicable to Homburg E., save that the latter cannot be taken with so much impunity as the former, being so much more irritating and stimulating; on which very account, however, it is to be preferred for lymphatic and hypochondriac subjects.

NOTE.—By drinking slowly and at a tepid temperature, one or at most two glasses, the E. proves powerfully diuretic and eliminating.

BITTER WATERS.

Frederickshall, Kissingen, Ivanda, Püllna, &c. The bitter taste which gives a generic name to these waters is due to the muriate of magnesia, and the sulphates of magnesia and soda, which they contain in large proportions.

They are almost exclusively used as laxatives in very obstinate cases of constipation, especially with torpor of the liver and abdominal plethora; as cooling purgatives and derivatives in febrile states, and, in order to gain time, as preparatory to courses of other waters.

The Kissingen is the best where it is desirable to continue its use for some time, as its large proportion of muriate of soda prevents the debility apt to follow a too free use of some others.

Ivanda is a sulphate of soda water, very much in vogue and increasing in favor in Europe. It is the most cooling, depletive, and least disagreeable of the class. It powerfully provokes biliary secretion, and if less pleasant is no comparison more advisable as a purgative than the citrate of magnesia, which is apt to weaken the digestive organs and debilitate the system. In very small doses three times a day, not sufficient to purge, it is much recommended in impetiginous affections.

VICHY.

Vichy is in central France, about 216 miles nearly due south from Paris, by railroad. Elevation above the sea-level about 797 feet. Water strong bicarbonate of soda.

The waters of nearly all the numerous springs at Vichy are strongly alcaline, some, however, containing no inconsiderable portion of iron. Properly employed they have, in most cases, but little sensible or disturbing effect; and many are of opinion that the best curative results are obtained in proportion to the absence of physiological action. When the water purges, which it more seldom does, or proves eminently diuretic, this effect is to be attributed to the injection of too large a quantity, or to the influence of season. No diuretic effect beyond that to be expected from the quantity of fluid swallowed should be looked for, and its action on the skin should be gently and gradually developed.

One of the most remarkable effects of Vichy is the improvement or restoration of impaired digestive functions, increase of appetite and improved tone. *Dyspepsia* is therefore the special field for the use of these waters; but dyspepsia, as a symptom of other diseases, must not be treated by them unless the primary disease is also susceptible of cure or improvement by the same medication. Dyspepsia caused by or accompanying catarrh of the stomach is better treated with Kissingen, but dyspepsia with

sour stomach, with constipation, loss of appetite, slowness of digestion, vertigo, weariness, sleepiness, or weakness during its progress (from the mildest derangement to the most pronounced cachexia consequent on its long continuance), may be entirely removed by the use of Vichy.

It is not so serviceable in *gastralgia*; and in general only very weak waters should be used in such cases. The paroxysmal form, however, known as *cramps in the stomach*, is almost invariably cured, provided the water is taken in the intervals only, and at periods as far removed from past or expected paroxysms as possible.

Disorders of the intestines are not so much benefitted by Vichy as those of the stomach. In one form of *chronic enteritis*, however, characterized by colics, a tender point generally in the course of the colon, glairy or pseudo-membranous diarrhœa, alternating with constipation, painful digestion with tendency to diarrhœa, and general debility, the water has an excellent effect.

In *biliary calculus* and *bilious colic* it has a deservedly high reputation. It tends to regulate the flow of bile, whether there are periodical fluxes or insufficient secretion, and restores its healthy character. In simple *congestion of the liver* it is of much service, so long as there is no abdominal plethora or portal trouble, in which case Kissingen or Homburg is indicated.

The waters of Vichy are employed with success in *gravel*, whether uric acid or phosphatic. When not accompanied by severe attacks of nephritic colic, the water should be used very freely—four or six glasses a day—and be continued a long time. But where nephritic colics occur at sufficiently distant intervals, it should be taken in more moderate doses, and never too soon after an acute attack. If the intervals between the attacks are short, Con-*trexéville* is more suitable than Vichy.

The *gouty diathesis* is favorably modified by Vichy, but the waters should be used with caution, under medical advice, and at periods as far removed as convenient from an acute attack—past or to be expected—in which case a favorable result may be looked for with certainty. The attacks grow less and less severe and the intervals between them longer. Repeated courses of Vichy sometimes prevent an attack for very long periods, with the exception, in some cases, of mild abortive threatenings. The excessive use of the water should be instantly suspended on the occurrence of a severe or unusual form of this painful disease, and only a couple of glasses a day, or better still, the same quantity in wineglassfuls at short intervals, be allowed.

As Vichy water restores the impaired functions of stomach, skin and kidneys, it modifies very favorably the *rheumatic diathesis* as well as the *gouty*.

In the first stage of *diabetes mellitus*, the production of sugar is always arrested by the proper use of Vichy, and though liable to return, the quantity excreted during the relapse is diminished. Many cases thus treated are unquestionably cured, and such cures have been observed also to follow the use of the Rakoczy water, and the thermal waters of Carlsbad. Even in the second stage, when all hopes of cure must be abandoned, these alkaline waters restrain the production of glucose.

PETERSTHAL is singularly efficacious in dyspepsia with gastralgia, &c.

RODNA is a very remarkable water, containing besides as much soda as Vichy, the carbonates of lime and magnesia in large proportions, sulphate of soda, chloride of sodium, iron and manganese; the latter in unusual quantities. It is indicated in the same cases as Vichy, and is powerfully tonic as well as alkaline.

MARIENBAD combines the leading salts of Vichy, Spa and Ivanda, namely carbonate of soda, iron, and sulphate of soda. It is a valuable and very agreeable antacid, tonic and laxative, though being comparatively feebly mineralized, requires to be taken in larger doses than those waters.

ANALYSES.

Grains of Anhydrous Salts in one pint ; round numbers.

HOMBURG (ELIZABETH). Chlor: Sodium 79, Carb: Lime 11, Chlor: Magn: 7, Chlor: Calcium 7, Carb: Magnes: 2, Proto-Carb: Iron $\frac{1}{2}$, &c.

KISSINGEN (RAKOCZY). *Chalybeate-magnesian-common-salt.* Chloride of Sodium 62, Chlor: Magnesium 7, Carb: Magnesia $2\frac{1}{2}$, Carb: Lime $3\frac{1}{2}$, Proto-Carb: Iron 8-10, &c.

VICHY (GRAND GRILLE). *Simply Alcaïne.* Carbonate of Soda 29, Chlor: Sodium 4, Sulp: Soda 2, Carb: Lime 2, &c.

RODNA. Carb: Soda 25, Carb: Lime 11, Chlor: Sodium 7, Carb: Magnes: 5, Proto-Carb: Iron nearly 1, Pr: Carb: Manganese $\frac{1}{2}$, &c.

PYRMONT (TEINKUELLE). *Pure Chalybeate.* Carbonate of Lime 6, Sulp: Soda 2, Sulp: Magnesia $2\frac{1}{2}$, Sulp: Lime 7, Proto-Carb: Iron $\frac{1}{2}$, &c.

SPA (POUON). *Pure Chalybeate.* Carbonates of Magnesia-Lime and Soda 3, Iron 4-10, &c.

MARIENBAD (KREUZ). *Alkaline-glauber-salt.* Sulphate of Soda 38, Chlor: Sodium 13, Carb: Soda 7, Carb: Lime 4, Carb: Magnesia 3, Iron, Manganese, &c.

HEILBRUNN (ADELHEIDSQUELLE). *Brom-ioduretted-alkaline-common-salt.* Chlor: Sodium 37, Carb: Soda 6, Brom: Sodium $\frac{1}{2}$, Iod: Sodium $\frac{1}{4}$, Alumina, Iron, &c.

KISSINGEN (BITTER-WATER). *Powerfully laxative.* Sulph: Soda 57, Sulp: Magnesia 50, Chlor: Sodium 76, Chlor Magnesium 38, &c.

FRIEDRICHSHALL. Sulph: Soda 46, Sulp: Magn: 39, Chlor: Sodium 61, Chlor: Magn: 39, Sulph: Lime 10, &c.

PÜLLNA. Sulph: Soda 124, Sulph: Magn: 93, Chlor: Sodium 16, Carb: Magn: 6, Sulph: Pot: 5, &c.

IVANDA. Sulph: Soda 117, Sulph: Lime 26, Chlor: Magnes: 14, Nitrate Magn: 3, &c.

PETERSTHAL. Carb: Lime 11, Sulph: Soda 6, Carb: Magnes: $2\frac{1}{2}$, Chlor: and Carb: Sodium, Iron, Lithia, &c.

