

Carlsbad its thermal springs and baths and how to use them / by J. Kraus.

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ITS THERMAL
SPRINGS
AND
BATHS

CARLSBAD

AND
HOW TO
USE THEM





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SAUERBRUNN-BILIN

(BOHEMIA).

Railway Station: "Bilin-Sauerbrunn," of the "Prague-Dux"
and "Pilsen-Priesen" Railway.

Recommended for Stomach-, Kidney-, and Bladder-
Troubles; also for Gout and Rheumatism.

ANALYSIS.

The Bilin Water (alkaline-acidulous) contains in 1000 grammes:—

	Solid Parts.
Sulphate of potash	2.3496
" " soda	7.1917
Chloride of sodium	3.8146
Carbonate of soda	33.6339
" " lithia	0.1089
" " lime	4.1050
" " magnesia	1.7157
" " protoxide of iron	0.0279
" " " " manganese	0.0107
Phosphate of lime	0.0922
Silicic acid	0.4339
	53.3941
Carbonic acid, half combined	16.7323
" " free	14.0921
	84.2185
Altogether	84.2185
Density (at temp. 14° C.)	1.00663
Temperature of the spring	12.30° Cels.

Capital Table Water.

Especially recommended as an after-cure, after having taken treatment at Carlsbad.

Therapeutic Establishment: "SAUERBRUNN BILIN."

All kinds of Baths and Inhalations. Cold Water Cure. Massage.

Every possible Comfort. Charges Moderate.

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BRUNNEN DIRECTION, Bilin, Böhmen.

Or *WILH. RITTER v. REUSS, Consulting Physician.*

THE CARLSBAD MINERAL WATER,

THE

NATURAL CARLSBAD SPRUDEL SALTS

(Crystallised or Powder),

as well as all other Preparations manufactured from the Springs, are sent direct to all Countries on either side of the Atlantic, only by the

CARLSBADER MINERAL-WASSER-VERSENDUNG,

LÖBEL SCHOTTLÄNDER

(BOHEMIA, AUSTRIA).

For Transatlantic Export the Carlsbad Natural Sprudel Salt is brought on the market in *round* glass bottles, each containing 100 or 200 grammes (3 or 6 oz.). These have the **trade mark** both on the label and on the strip of paper surrounding the neck of the bottle, and bear in addition **the signature** of the CARLSBAD MINERAL WATER EXPORTING CO., LÖBEL SCHOTTLÄNDER, CARLSBAD, AUSTRIA (Retail and Export Department, Egerstrasse, 575).

These bottles, as well as the bottles containing the Carlsbad Water, when designed for export to Great Britain or the United States, bear the signature of the general agents besides, namely, **Messrs. Ingram and Royle, London**, for Great Britain and the British Colonies, and of the **Eisner and Mendelson Company in New York and Philadelphia**, for the United States of America.

MATTONI'S
GISSHÜBLER
reinsten
alkalischen
SAUERBRUNN

THE PUREST ALKALINE ACIDULOUS SPRING,

being delicious, refreshing, prickling, and free from every after-taste, is not only admirably adapted as a **table beverage** for visitors under treatment at Carlsbad, but, owing to the fact that it keeps unchanged for years, and loses none of its properties through transportation or climatic influences, it widens its field, and becomes at once **the best table-water for any people in any climate**, and the one most admirably suited for mixing with wines and spirits.

The beneficial use of this Acidulous Spring **during a cure at Carlsbad** is also acknowledged by the physicians residing in that place, and it is generally recommended as **an after-cure**.

In addition it may be stated **that Mattoni's Giesshübler** is partaken of with great advantage in cases of **catarrhal affections of the stomach and the intestines, hæmorrhoids, gout, bronchial catarrh, jaundice, muscular rheumatism, &c.**

Giesshübler water is supplied in **England** by the principal agents, Messrs. REUSS, LAUTEREN & Co., 39 Crutched Friars, LONDON, E.C.; also by Messrs. W. BEST & SONS, Henrietta Street, Cavendish Square, W., and Messrs. INGRAM & ROYLE, E.C., 52 Farringdon Street. The agents for the **United States of North America** and for the **Dominion of Canada** are Messrs. EISNER & MENDELSON Co., NEW YORK.

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“VILLA TERESA.”

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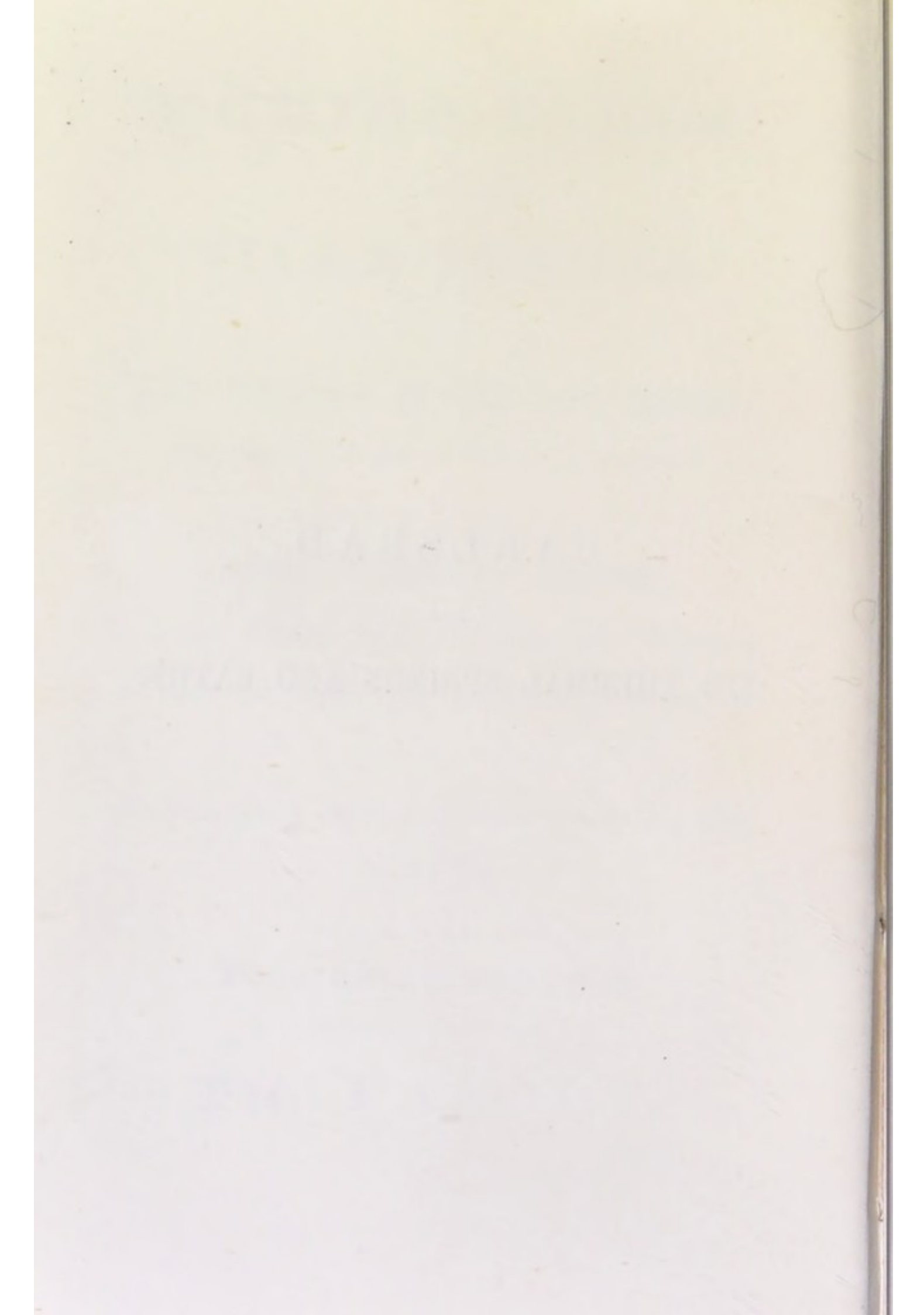
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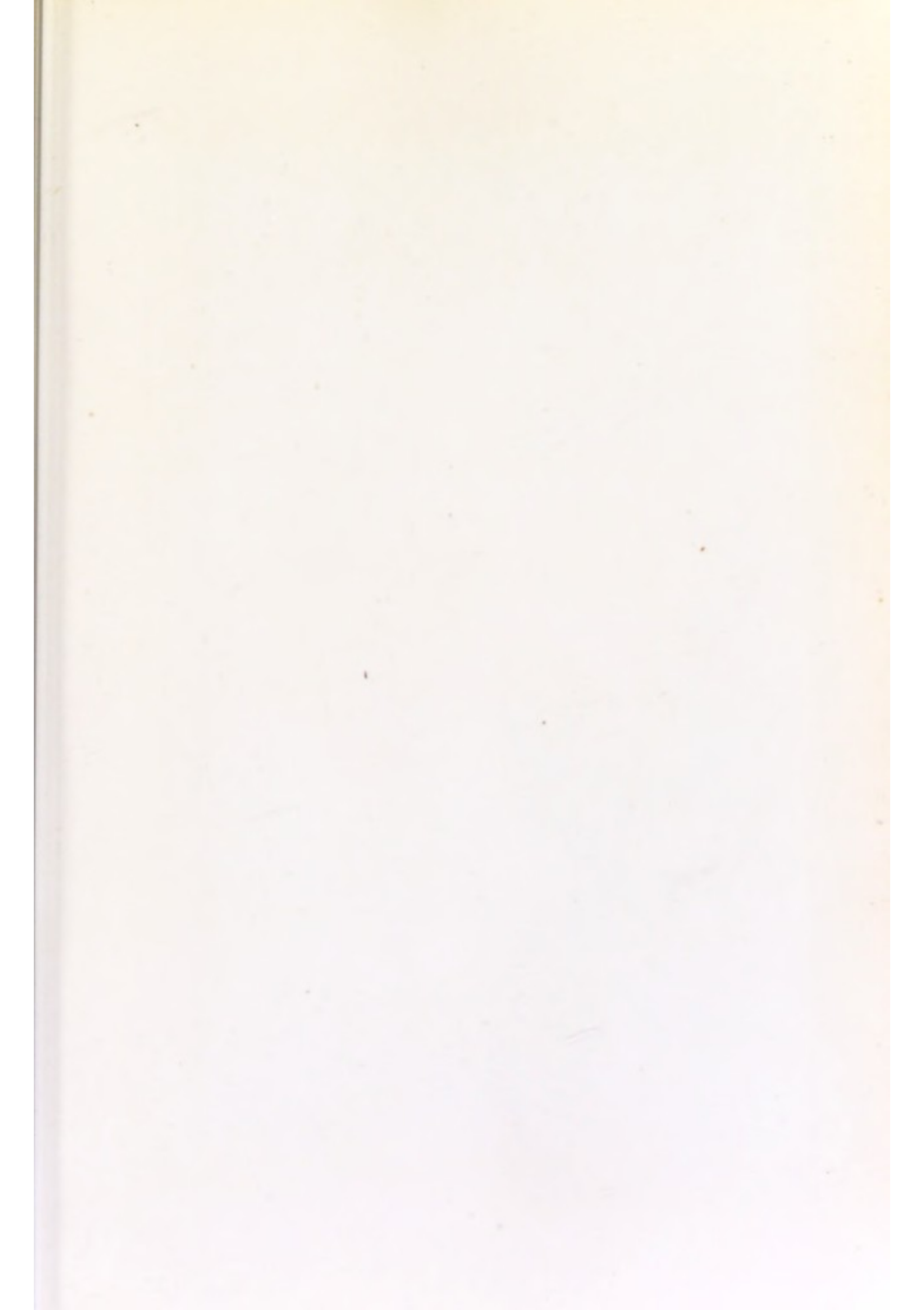
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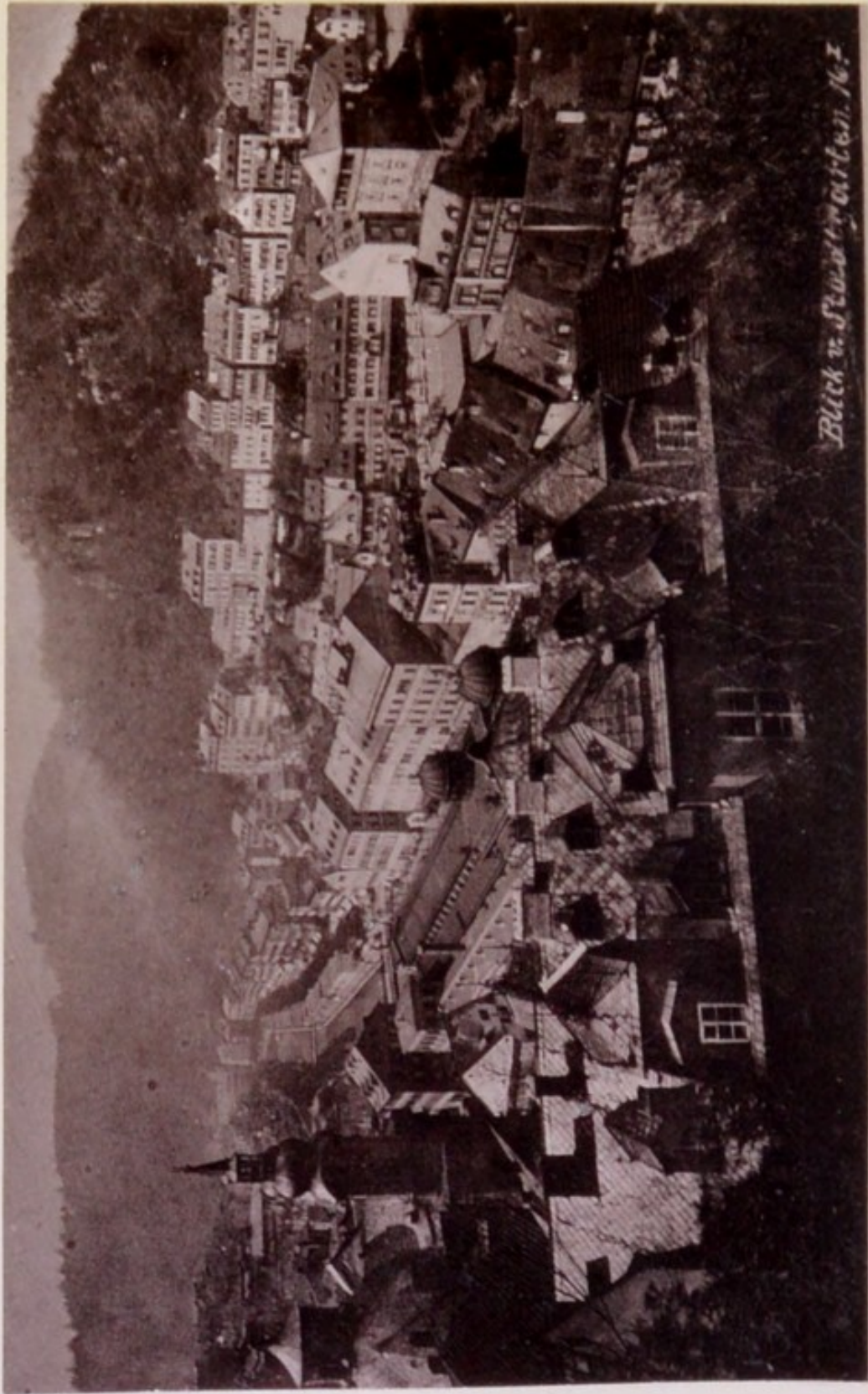
CARLSBAD

AND

ITS THERMAL SPRINGS AND BATHS.







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CARLSBAD

ITS THERMAL SPRINGS AND BATHS

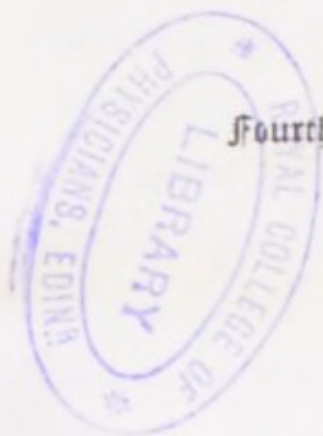
AND HOW TO USE THEM.

BY

J. KRAUS, M.D., & C.

RESIDENT PHYSICIAN IN CARLSBAD.

Fourth Edition, Revised and Enlarged.



LONDON:

KEGAN PAUL, TRENCH, TRÜBNER, & CO., LTD

1891.

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PREFATORY NOTE BY THE AUTHOR.

To give a complete account, within small compass, of the Carlsbad mineral waters and baths, is the leading purpose of the present monograph.

The first part contains a short topographical and historical sketch of Carlsbad and the description of the natural healing agents of its waters and baths.

The rationally sustained indications for treatment are detailed in the second part; and an outline is given of the different morbid conditions, in their ætiology and symptomatology, that are amenable to treatment at Carlsbad. A note of the contra-indications is added.

I have generally avoided the description of particular cases, intending to publish, as a supplement to this little book, a part of the material collected during my many years of medical practice at Carlsbad.

An Appendix, containing local information, will prove a useful guide for the visitor.

I only wish that your own, or the writings of your eminent colleagues, could succeed in making Carlsbad better known and more thoroughly appreciated in England and its Colonies and in India, for assuredly the benefits it is capable of conferring are such as would be peculiarly applicable to the residents of these countries, by whom they are often sorely needed.

I have noted during my visits to Carlsbad, that while natives of other European nations and Americans are numerous, comparatively few English avail themselves of this most desirable health resort. This may be due, to some extent, to distance from England; but it is also due, I am afraid, to a prejudice which seems to me to be without sufficient foundation—*i.e.*, that the action of the waters is of a spoliative and too depressing character. A better knowledge of the facts would, I believe, correct this prejudice.

I feel convinced that, rightly used, with due attention to diet, habits, and mode of living, the Carlsbad waters are capable of producing the greatest benefit, without any of the depressing effects so often attributed to them. Of course Carlsbad is not suitable for all disorders; indeed, the cases must be carefully selected. Organic diseases in an advanced condition are not likely to be benefited, but in the early stages of some of these, so much improvement may be made in the general health as to retard their development and ameliorate the condition of the sufferer.

But when the cases for which Carlsbad is not appropriate are excluded, a large number still remains for which the benefit would be great indeed. You have yourself so well indicated the nature of the cases for which the Carlsbad waters are applicable, and you have so clearly pointed out the necessity of care in respect of mode of life, clothing, diet, occupation, mental tranquillity; the importance of

travelling slowly—*i.e.*, not hurrying through from England to Bohemia without rest; the need for a more gradual return to the locality and the work in and by which the necessity for the Carlsbad waters was induced; you have so well insisted on the importance of the mental attitude of the visitor to Carlsbad, in addition to all the hygienic precautions otherwise required, that it is needless, and would be out of place, for me to refer to them further than to say that I emphatically endorse them all.

I, with many others, have been deeply moved by the sad news so recently received of the great catastrophe which has caused such destruction to the picturesque valley of the Tepl, and the death of your excellent Burgomaster. There is one consolation, however, to visitors and residents alike, amidst this misfortune—that the springs of Carlsbad have not suffered, and that no interruption will take place in its health-restoring functions. But many of the thousands who have benefited by their annual pilgrimage to this charming place, with its kindly and courteous inhabitants, its comfortable residences, its glorious pine forests, its innumerable drives and walks to places of historical and artistic interest, will long retain a deep feeling of regret for the great misfortune which has recently befallen it in the destructive flood and the untimely death of the excellent man who presided over its councils.

Yours sincerely,

J. FAYRER.

LONDON, *Jan.* 28, 1891.

The first part of the history is a general account of the state of the world in the beginning of the world. It is divided into three parts: the first part is the creation of the world, the second part is the history of the world from the beginning to the present, and the third part is the history of the world from the present to the end of the world.

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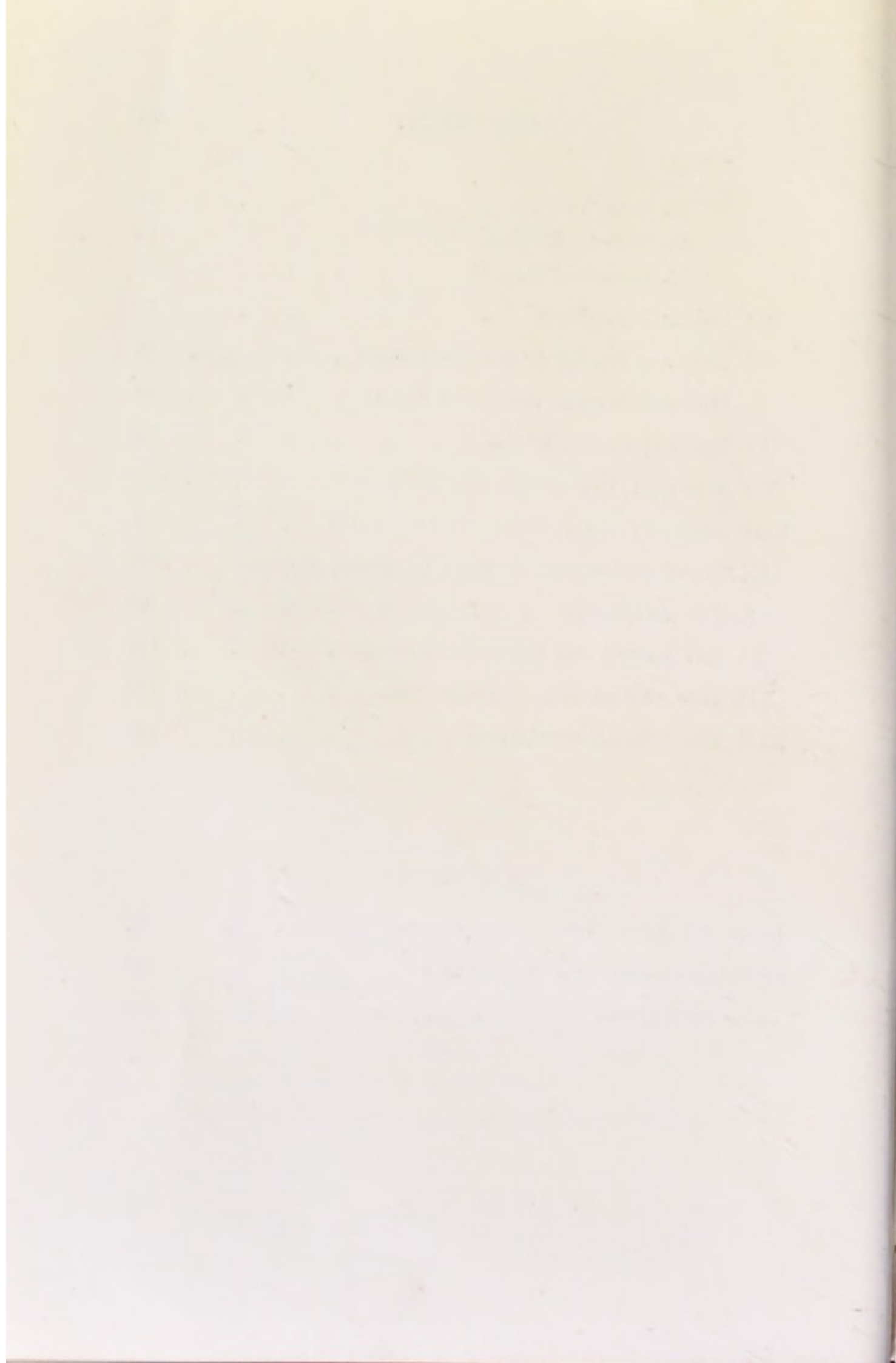
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CARLSBAD

AND ITS TOPOGRAPHY.



I.

CARLSBAD (the Emperor Charles IV.'s Bath), the gem of the Bohemian, and the queen of all bathing-places, is situated in the north-western part of Bohemia, in the district of Eger, 1214 feet above the level of the sea, in a charming valley on both banks of the river Tepl, not far from its confluence with the river Eger.

The two parts of the town, separated by the Tepl, communicate with each other by thirteen iron bridges.

The mountains surrounding the town, and covered by beautiful woods (fir trees), offer magnificent views from their summits, the latter being rendered easily accessible by well-kept paths. From several places fine bird's-eye views may be obtained of the

picturesquely situated city. The mountain, in the cleft of which Carlsbad is as it were imbedded, consists principally of granite of various structure, intersected by more or less extensive veins of hornstone. Some outlets of this mountainous region show mighty layers of basalt.

As in all mountainous countries, the weather at Carlsbad is rather inconstant, and the temperature, principally in the morning and at night, is subject to marked changes.

The mean temperature of the year is 43° Fahr., of the summer, 66.50° ; the height of the barometer is twenty-six inches.

The state of health at our watering-place is excellent, in consequence of its favourable situation and the constant, and sometimes rather powerful, current of air. Up to the present time epidemic diseases have been unknown at Carlsbad. The town within the last ten years has considerably increased in size, has been greatly embellished, and contains 900 dwelling-houses, many of them new, and 12,000 inhabitants. Nearly 10,000 visitors can be accommodated at one and the same time.

Trade and industry flourish to a great extent. Carlsbad prides itself on the superior manufacture of shoes and gloves, of steel-ware (knives and the

celebrated Carlsbad needles), of cabinet and mosaic work, the latter made of Sprudel stone, &c., &c.

The greater part of the inhabitants belong to the Roman Catholic Church, only a small proportion professing the Protestant or Jewish creed.

Carlsbad has a Roman Catholic, a Protestant, an English, a Jewish, and a Russian church.

There are three hospitals for the admission of the sick poor, and an asylum for invalids.

Railroads connect Carlsbad in every direction.

II.

HISTORICAL NOTES.

LIKE so many other watering-places whose origin is merged in the mists of antiquity, the discovery also of Carlsbad is associated with a legend, according to which the Emperor Charles IV. accidentally discovered the hot springs while hunting, and subsequently bestowed upon them his own name, "Carl's Bad."

But it is a fact that Carlsbad had long been known previous to the time of the Emperor Charles IV., and used as a *Spá* under the name of "Warm-

bad." At all events, the present name and importance of Carlsbad are due to its first patron, the Emperor Charles IV., who conferred upon it various privileges and donations, which for the most part were confirmed and extended by his successors.

But we must not be surprised that at that time, and even for two centuries later, Carlsbad was but very little resorted to, and that it was scarcely known and appreciated beyond the boundaries of Bohemia; for at that distant epoch little or nothing was known of balneo-therapeutics, the means of communication were extremely primitive, and the place itself consisted of but a few huts, capable of accommodating only a small number of visitors, who for the most part came from the immediate vicinity, and who neither knew nor claimed much comfort.

Till the year 1520—the time previous to that date is styled by Hlavacek in his book on Carlsbad as the first period of the medical history of this place—the mineral water it supplied was used only for bathing, the patients spending the greatest part of the day in the bath, until the epidermis was quite dissolved and ejected, in order, as it was believed, to obtain an outlet for the injurious matter of the illness, the “*materia peccans*.”

It is to Dr. Wenzel Payer (1520) that the great

merit is due of having recognised and introduced the correct use of our sanative springs, namely, as a "drinking-cure;" and though his innovation, as is commonly the case, at first met with some opposition, the drinking-cure soon obtained general approbation, and at last almost entirely superseded the "bathing-cure," that until then had been so generally in use. But physicians went so far at that time as to prescribe to the patient between thirty and forty cups of water a day, and this practice of drinking large quantities was quite in vogue, though to a more moderate degree, even at the beginning of this century.

The fore-mentioned Dr. Wenzel Payer has, moreover, the merit of being the first medical author on the thermal springs of Carlsbad. The indications established by him for and against the use of the Carlsbad water are the standard ones even at this time, notwithstanding the former have experienced many an extension in the course of time.

The indications advanced by him for the use of the Carlsbad waters are the following: Chronic gastric catarrh, biliary and renal calculus, congestion of the liver and spleen, gout. As counter-indications he mentioned: Syphilis, defects in the valves of the heart, general dropsy, phthisis.

Among the successors of Dr. Payer in that

distant epoch may be mentioned, as authors on Carlsbad and its mineral springs, Drs. Summer, Reudenius, Strauss, Hoffmann, Schachern, and Springsfeld.

With the medical activity of Dr. David Becher (born 1725, died 1792), who was himself a native of Carlsbad, this place may be said properly to commence the era of its universal reputation, and at the same time to advance scientific reasons—which until then had been rather defective—for the curative properties of the springs and their utilisation. Judging by Dr. Becher's numerous medical treatises, his knowledge was far in advance of the medical learning of the time, and he was very proficient, especially in chemistry. It was he, says Hlavacek, who first executed, on the basis of correct scientific principles, a chemical-physical examination of our mineral springs, and in such a manner that his results coincide—with but very slight modifications—with those which have been made almost a century later, with all the aids that chemistry, which has since developed to an exact science, can supply. He stated the minimal quantities of the elements of iron contained in our mineral water exactly as they have been proved by the most recent chemical examinations; he, moreover, not only knew of the

carbonic acid contained in our mineral water, but also determined with tolerable accuracy the titres of disengaged carbonic acid in the several springs, and duly appreciated their hygienic importance.

Dr. Becher, moreover, gained no slight merit by re-introducing the adoption of the bathing-cure, which since the introduction of the drinking-cure had been almost entirely neglected as an integrating part of the treatment. And lastly, he tended most energetically to reduce the excessive daily quantity of the mineral water to be taken. From thirty to forty cups a day they gradually came down to fifteen to twenty cups, while to-day the "maximum" of the daily quantity is six cups.

Dr. Becher, by his practical and scientific activity, has undoubtedly contributed greatly to enhance the importance of our watering-place, and has secured to himself a grateful remembrance in his native town. His well-hit bust adorns the new Sprudel Colonnade.

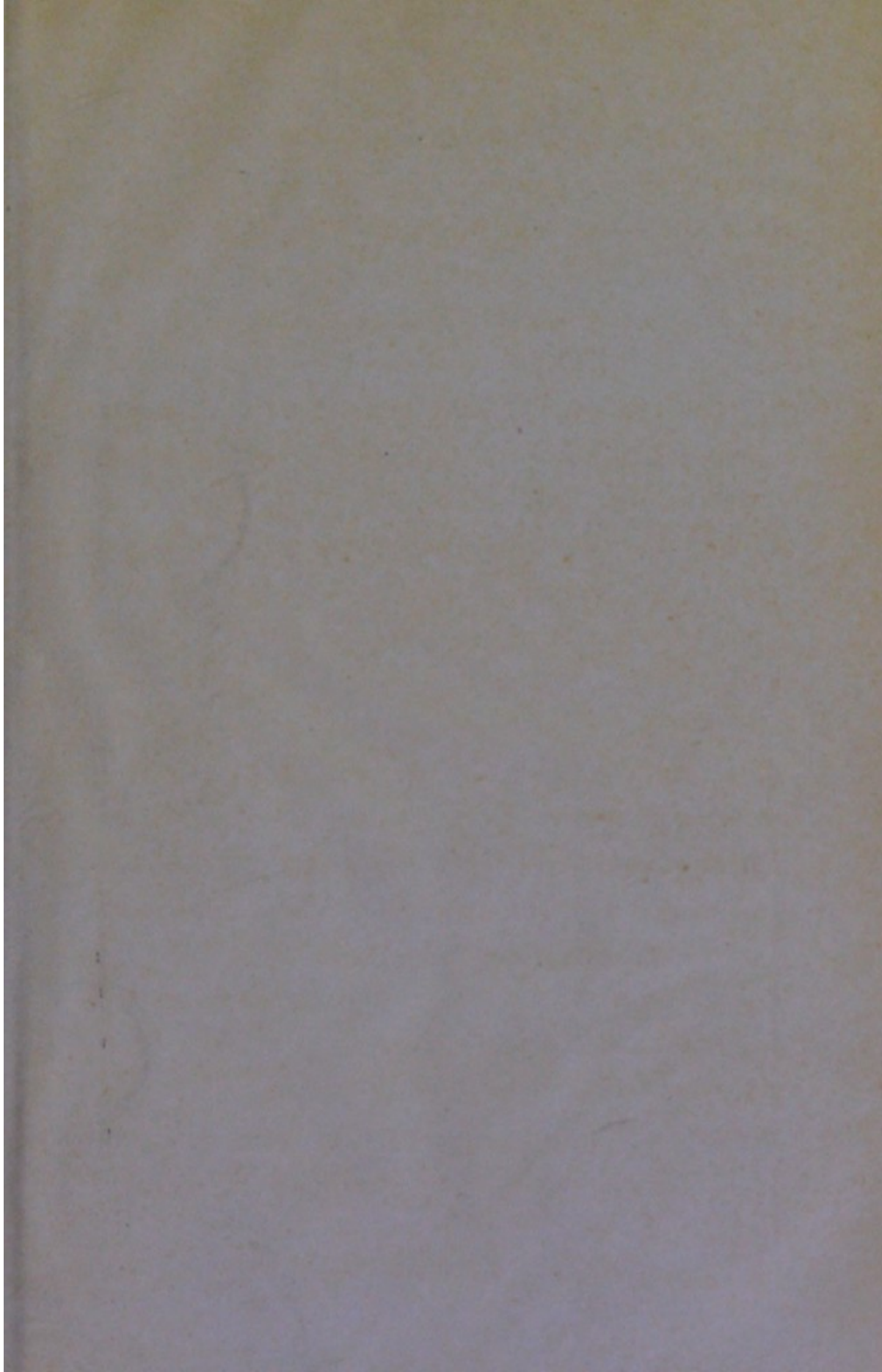
Further chemical examinations of our mineral water have been made, in the course of time, by Klaproth, 1790; Reuss, 1812; Berzelius and Steinmann, 1823; Wolf, 1838; Zembsch, 1844; Jahl, 1847; Hlasivetz, 1849; Göttl, 1852; Ragsky, 1862; Ludwig, 1879.

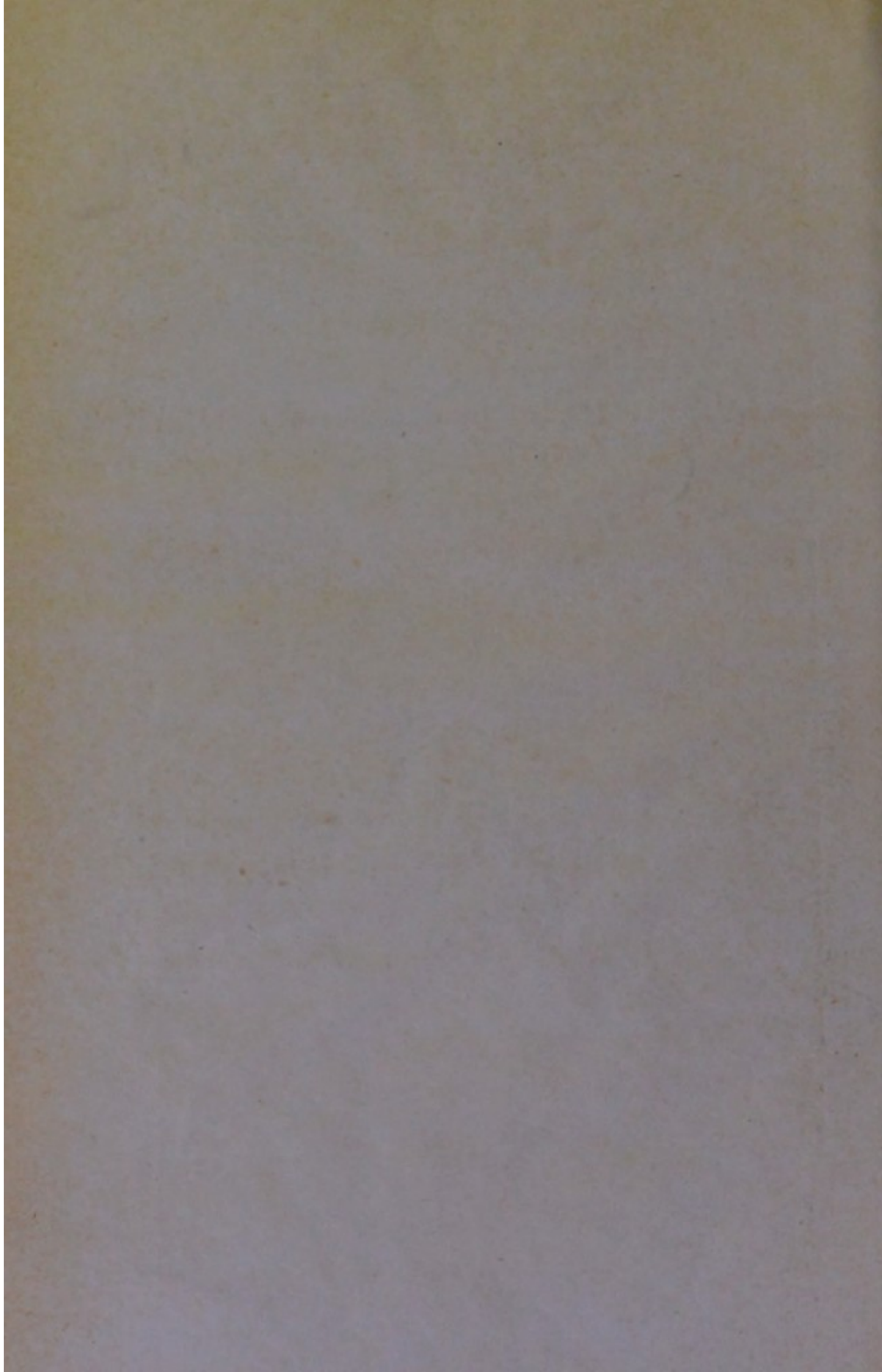
Among the physicians who, in the course of this

century, have distinguished themselves both by their eminent medical practice and by their activity as authors on Carlsbad, may be mentioned the late Doctors De Caro, Mannl, Fleckles, and Hlavacek; the Nestor of the physicians of this place, Dr. von Hochberger; and, last not least, Professor Dr. Seegen. It is especially Dr. Edward Hlavacek, who, on account of his indefatigable endeavours, continued under the most difficult conditions, to enhance and promote our watering-place, may justly be placed even above Dr. Becher.

The record of Professor Seegen's activity is fortunately not yet closed, although he has given up his former practice at Carlsbad, and has retired altogether to Vienna. His scientific activity and its sensational results is so universally known and appreciated, that it would be like "carrying coals to Newcastle" to say more on the subject.

In contradistinction to Professor Seegen, the scientific balneologist *par excellence*, whose activity was indeed devoted in a great measure to our watering-place, but in a far higher degree to medical science, Dr. Hlavacek's activity has been more local, but for that very reason more valuable and beneficial to Carlsbad. Hlavacek's "Monographs on Carlsbad" have made the tour of the world, and have







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J. B. Obernetter, München impr.

The Sprudel.

everywhere proclaimed the renown of our incomparable sanative springs.

The exportation of our mineral waters, one of the chief sources of our income, is mainly due to his merit, and in like manner the preparation of the products of our mineral springs is reducible to his initiative.

“Exegit monumentum ære perennius!”

III.

NAMES AND TEMPERATURES OF THE THERMAL SPRINGS NOW IN USE AT CARLSBAD.

MEASURED 19TH NOVEMBER 1886.

	Réaun. Deg.	Cels. Deg.	Fahr. Deg.
Sprudel	58·00 =	72·50 =	162
Hygieaquelle	58·00 =	72·50 =	162
Marktbrunn	35·20 =	44·00 =	111
Kaiser Karlsquelle	38·60 =	48·30 =	119
Russische Krone	27·80 =	34·80 =	95
Schlossbrunn	43·00 =	53·30 =	129
Mühlbrunn	42·90 =	53·10 =	129
Neubrunn	48·30 =	60·40 =	141
Theresienbrunn	47·70 =	59·60 =	139
Bernhardsbrunn	52·20 =	65·20 =	150
Elisabethquelle	34·40 =	43·00 =	109
Felsenquelle	47·80 =	59·70 =	140
Kurhausquelle	52·00 =	65·00 =	149
Kaiserbrunn	39·00 =	48·80 =	120
Parkquelle	29·90 =	37·40 =	99

These springs have been analysed by order of the Government by specially appointed Commissioners, as well as by physicians and private analytical

chemists; they agree in saying that one pound of the Carlsbad mineral waters contains from 41 to 42 grains of solid constituents. The differences resulting from the comparison of the various analytical examinations are so trifling as not to be worth consideration. It is acknowledged that the Carlsbad mineral waters all contain the same solid constituents in substantially equal quantity.

The following table contains the separate analysis of three of the most important and principally exported mineral springs of Carlsbad, resulting from an examination made by Professor Ragsky in 1863 :—

Solid Constituents Contained in 16 Fluid Ounces.	Sprudel.	Mühlbrunn.	Schlossbrunn.
Sulphate of potash . .	1·2564	1·7172	1·4645
Sulphate of soda . .	18·2160	17·9610	17·2455
Chloride of sodium . .	7·9156	7·8690	7·5282
Carbonate of soda . .	10·4593	10·8679	9·5620
Carbonate of lime . .	2·2870	2·0236	3·0658
Carbonate of magnesia .	0·9532	0·2641	0·3870
Carbonate of protoxide of iron	0·0215	0·0230	0·0176
Carbonate of protoxide of manganese	0·0046	0·0053	0·0053
Carbonate of strontia .	0·0061	0·0069	0·0046
Phosphate of aluminum .	0·0030	0·0025	0·0023
Phosphate of lime . .	0·0015	0·0016	0·0030
Fluoride of potassium .	0·0276	0·0268	0·0291
Siliceous earth . . .	0·5590	0·6190	0·7365
Total of solid constituents	41·7090	41·3870	40·1523
Free carbonate	5·8670	7·3260	10·2940
acid	11·8820	14·8370	20·6200
} in grains			
} in cubic			
} inches			

Besides, there were found minute quantities of iodide of sodium, bromide of sodium, lithia, boracic acid, rubidium, and cæsium.

But the various springs differ essentially with regard to the quantity of free carbonic acid contained in them, the cooler springs possessing more, the hotter springs less of this gas.

ANALYSIS BY PROFESSOR LUDWIG OF VIENNA (1879).

10,000 Grammes of the Water contain	Sprudel. 162° Fahr.	Mühlbrunn. 129° Fahr.	Schlossbrunn. 129° Fahr.
Carbonate of protoxide of iron	0·030	0·028	0·001
Carbonate of protoxide of manganese	0·002	traces	traces
Carbonate of magnesia	1·665	1·613	1·615
Carbonate of lime	3·214	3·266	3·337
Carbonate of soda	12·980	12·790	12·279
Carbonate of strontia	0·004	0·004	0·004
Carbonate of lithia	0·123	0·118	0·136
Sulphate of potash	0·862	1·188	1·930
Sulphate of soda	24·053	23·911	23·158
Chloride of sodium	10·418	10·288	10·047
Fluoride of potassium	0·051	0·046	0·046
Borate of soda	0·040	0·029	0·039
Phosphate of lime	0·007	0·009	0·004
Siliceous earth	0·004	0·005	0·005
Silicic acid—anhydrate	0·715	0·735	0·703
Cæsium, rubidium, bromine, iodine, arsenic, antimony, zinc, selenium, thallium, formic acid	} traces	traces	traces
Total of solid constituents	55·168	54·730	53·304
Carbonic acid, half-combined	7·761	7·672	7·493
Carbonic acid, free	1·898	5·169	5·822

The springs situated on the right bank of the Tepl, under the Sprudel Colonnade, are three, namely:—

1. *The Sprudel*, the oldest and most abundant spring of all, is used for drinking, for the preparation of salt, and for bathing.

2. *The Hygiea-Quelle* came to light in 1809 on the occasion of an outbreak of the Sprudel, and is only used for bathing.

3. *The Sprudelsäuerling*, enclosed in 1863, but rarely used.

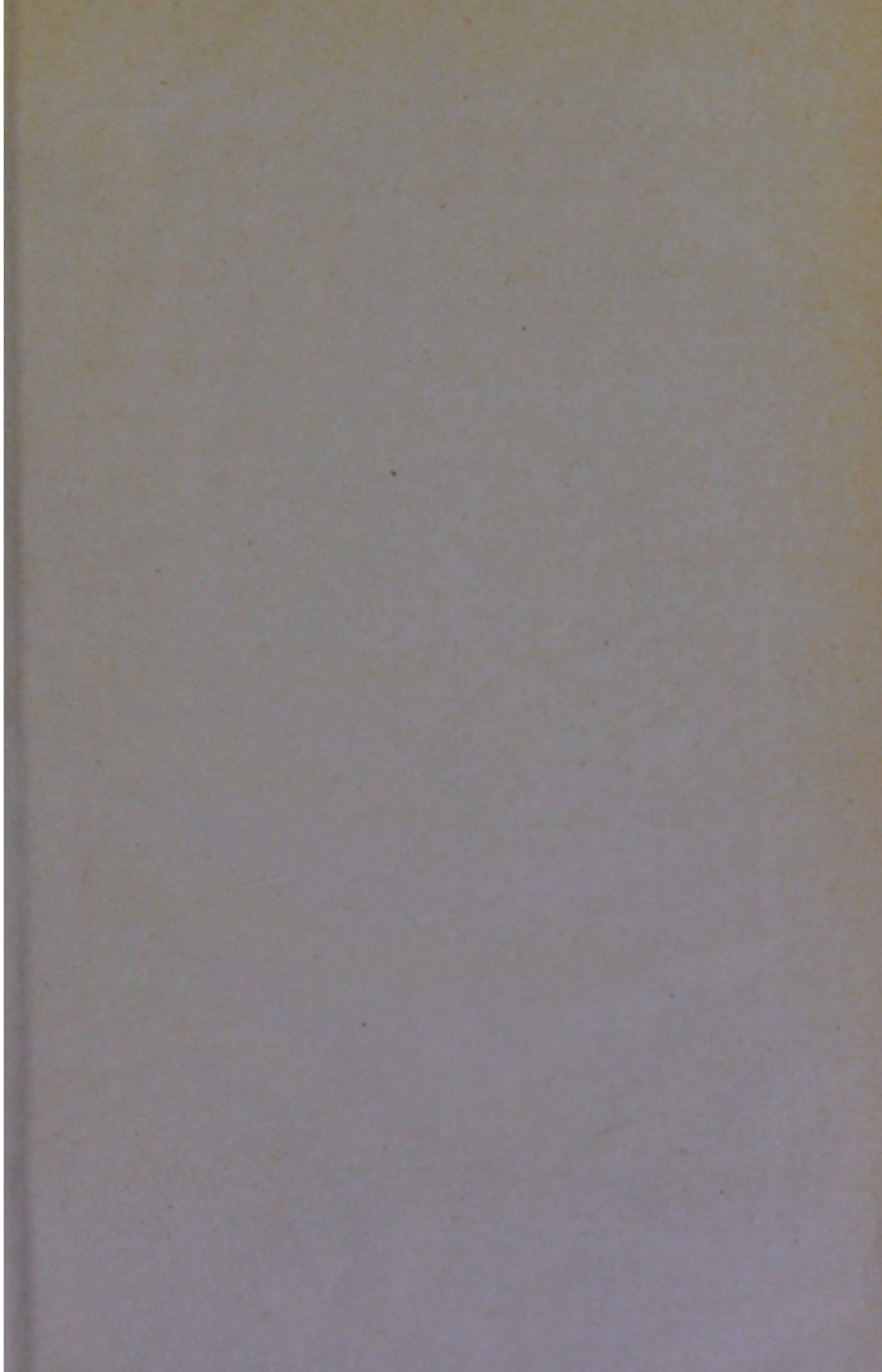
The springs situated on the left bank of the Tepl are as follows:—

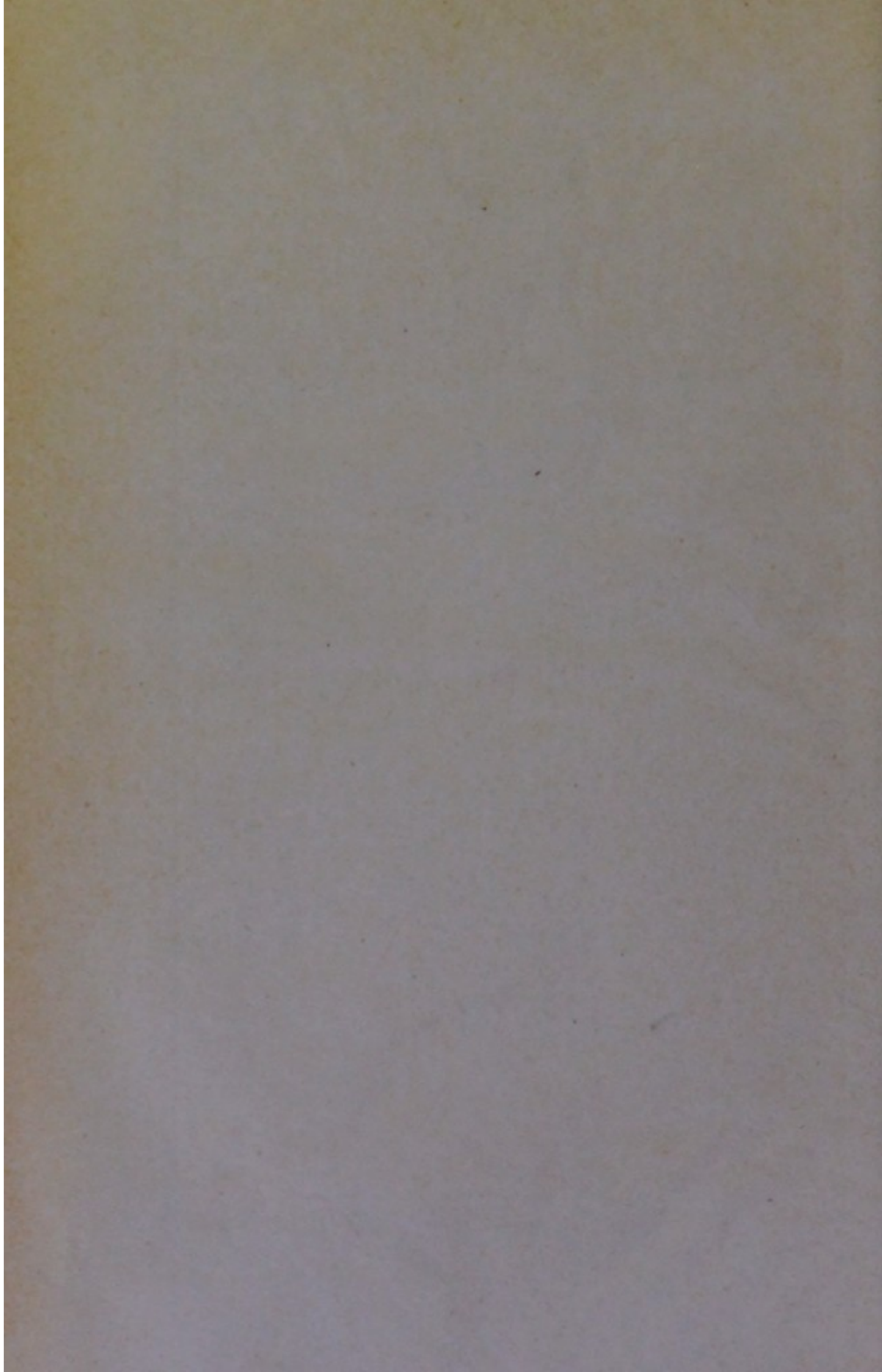
4. *The Marktbrunn*, on the Marktplatz, discovered and enclosed in 1838, is much used for drinking.

5. *The Kaiser Karl-Quelle* (formerly called Rathhausbrunn), also on the Marktplatz, enclosed since 1871, and used for drinking.

6. *The Schlossbrunn*, on the Schlossberg, enclosed and used for drinking since 1797. This spring suddenly disappeared on the occasion of the great outbreak of the Sprudel in 1809, and made its reappearance as late as 1823. The Schlossbrunn, together with the Markt and Mühlbrunn, are principally used for drinking.

7. *The Russische Kronquelle*, opposite the Schlossbrunn, is more frequently used for bathing.







Pletner phot.

J. B. Obernetter, München impr.

The Schlossbrunnen.

8. *The Theresienbrunn*, above the Mühlbrunn Colonnade, is an old and well-known spring. It has been enclosed since 1726. Its temperature having been much cooler, it was more in use formerly than at the present time.

9. *The Mühlbrunn*, at the entrance of the Mühlbrunn Colonnade, has been used for drinking for two centuries, and is still resorted to with great partiality.

10. *The Neubrunn*, beneath the Mühlbrunn Colonnade, enclosed in 1748, was more used in bygone times than now.

11. *The Bernhardsbrunn*, beneath the Mühlbrunn Colonnade, known since 1784, was formerly used for the manufacture of the salt; at the present time its use is discontinued almost entirely.

12. *The Elisabethquelle* (formerly called Orchesterquelle), likewise beneath the Mühlbrunn Colonnade, enclosed and used for drinking since 1874.

13. *The Felsenquelle*, at the lower end of the Mühlbrunn Colonnade, enclosed in 1844, and in great demand for drinking.

14. *The Kurhausquelle* is situated between the Felsenquelle and the Kurhaus. It was enclosed in 1866, and is used for bathing.

15. *The Kaiserquelle*, at the military hospital,

discovered and enclosed in 1851, is used for drinking and bathing.

16. *The Hochbergerquelle*, likewise at the military hospital, is merely used for bathing.

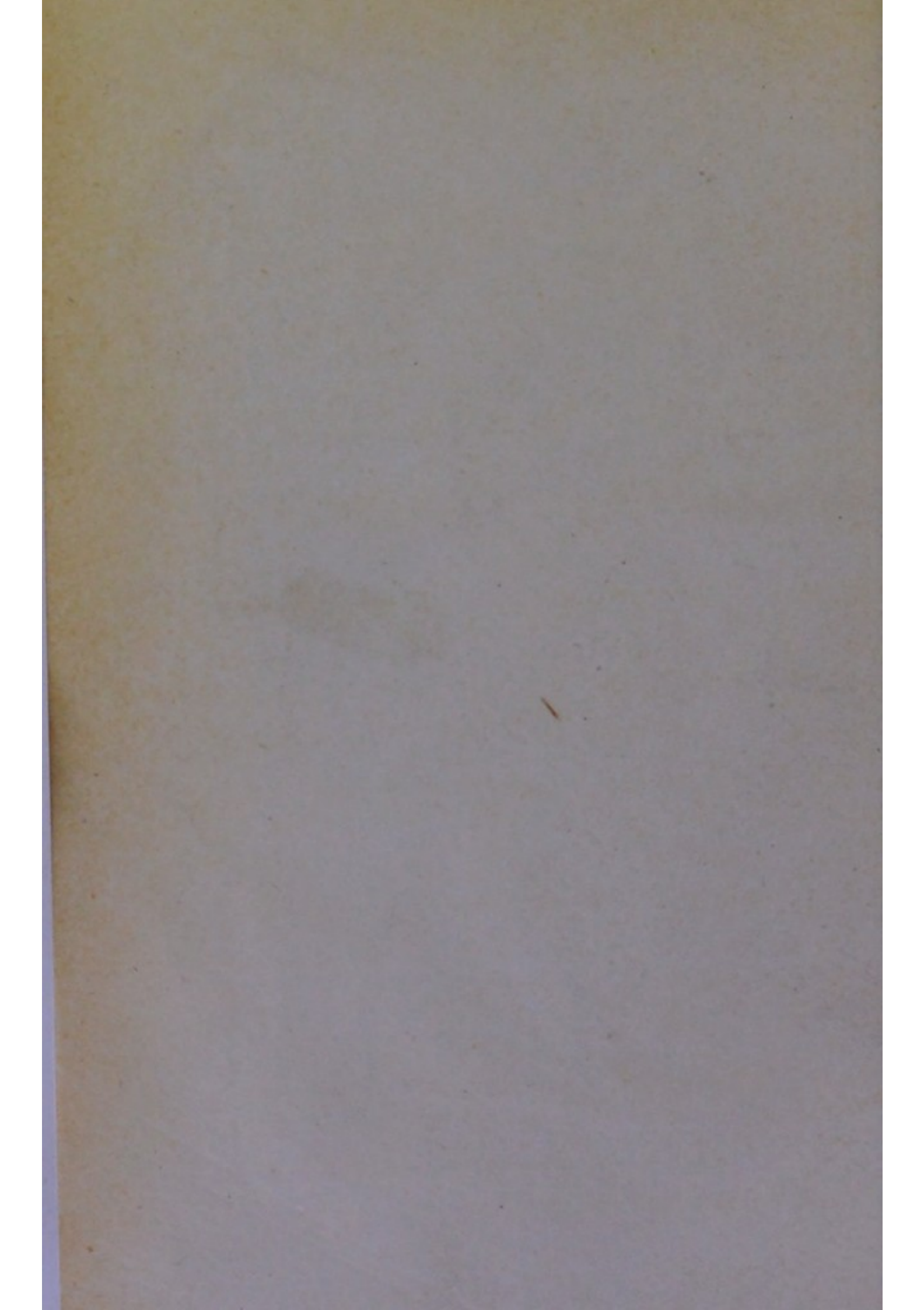
IV.

THE ORIGIN OF THE CARLSBAD MINERAL SPRINGS.

THERE can be no doubt that the manner of formation of the Carlsbad springs does not differ from that of all other mineral waters. They receive their natural temperature and their solid and gaseous ingredients by chemical and mechanical processes in the depths of the earth.

The atmospheric vapour, which, after rising to form clouds, again descends as rain, snow, &c., is in this form ultimately absorbed by the soil. There it accumulates in fissures and clefts, until its quantity having become sufficiently large, the pressure of the subterraneous gases causes it again to force its way to the surface of the soil, where it appears as "a warm mineral spring."

The deeper the above-named precipitates penetrate





Pletaner phot.

J. B. Obernetter, München impr.

The Muhlbrunn colonnade.

into the depth of the soil, the hotter will the strata be with which they come into contact, the latter imparting their own temperature to them; hence the high temperature of many springs, their reservoirs necessarily lying at a great depth, as the heat of the soil increases in proportion to the depth penetrated.

Thus the waters of the Carlsbad Sprudel, having a temperature of 162° F., would consequently have their reservoir at a depth of about 7000 feet. As mentioned before, all our mineral springs contain the same solid ingredients, differing respectively only in temperature and in the amount of free carbonic acid; we are therefore led to the conclusion that they all have one common reservoir, their respective branches, however, finding their way by various channels to the surface of the soil.

The stronger the branch and the shorter its way before it reaches the surface, the less will it lose of its original temperature; the smaller the spring and the more numerous the windings it has to pass through on its way from the reservoir, the cooler will its water be. The great influence which the amount of water of a certain spring possesses on its temperature is proved if a spring, hitherto containing but little water, is enclosed in a greater depth, its side

outlets being blocked up at the same time; this spring will in consequence not only contain more water, but its temperature will be raised to a higher figure.

How does the water receive its solid mineral constituents? First by becoming impregnated with the carbonic acid contained in the soil: being further aided by the strong hydraulic pressure, it is enabled to dissolve solid minerals existing in its course by mechanical and chemical action, and to imbibe the dissolved salts which are kept in solution by the aid of the carbonic acid gas.

This mineral water is at last forced to the surface by means of the combined pressure of the succeeding quantities, and of the gas accumulated in the subterranean regions, and finally shows itself as a warm mineral spring.

Experiments made for this purpose by the chemist Göttl have shown conclusively that the granite from which our springs emerge contains all their mineral constituents, viz., soda, lime, potash, siliceous earth, aluminum, magnesia, iron, manganese, arsenic, chlorine, fluorine, sulphur, sulphuric and phosphoric acid.

The specific gravity of our mineral waters is greater by the fourth or fifth of a thousand when compared

with that of common water ; they are perfectly clear and transparent, having no smell, and a faint flavour of salt, leaving an after-taste of diluted potash.

Erdmann and Göttl have furthermore discovered negative electro-magnetic currents emanating from the warmer Carlsbad springs.

The Sprudel, the hottest of our springs, covers all solid objects, over which its water runs for any length of time, with a stony crust, varying in colour from a light yellow to a darkish brown in all possible shades, and consisting principally of calcareous earth, siliceous earth, and iron.

The explanation of this strange phenomenon is as follows:—The earthy constituents of the mineral waters are only kept in solution by means of the carbonic acid in the form of bicarbonates. As soon as the hot Sprudel water comes into contact with the atmospheric air, part of its carbonic acid is lost, and consequently a part of the salts is precipitated, and this forms a hard crust on the outer surface of all objects covered by the water.

Besides the other precipitates, quantities of a more or less solid deposit, the so-called “green matter,” may also be discovered in close proximity to our hot springs. They consist of *confervæ*, which contain an abundance of microscopic animals of the

lowest orders, but none of these are found in the spring water itself.

V.

MINERAL PRODUCTS OF THE CARLSBAD SPRINGS.

1. *The Carlsbad Salt (Sprudel Salt).*

Dr. Borries, in 1733, was the first to obtain the Sprudel salt by evaporating and crystallising the residuum of the Sprudel water, Dr. Berger having already, as far back as 1708, hinted at the idea of obtaining the salt from the Sprudel water. In 1734 a work was published by Dr. F. Hoffmann, under the title, "The Superior Virtues and Effects of the Carlsbad Salt." The citizens of Carlsbad, however, at that time objected, out of pure narrow-mindedness, against the preparation and the sale of the salt, fearing lest the influx of strangers should suffer thereby. This feeling of apprehension increased to such an extent that, after the manufacture had been entirely stopped for a certain time, the salt was allowed to be given only to patients residing in Carlsbad for a cure, merely a few ounces of it being dispensed at a time.

Dr. B. Becher very much simplified the manner of preparing the salt, and greatly reduced its price, by applying the natural heat of the Sprudel water itself for the purpose of evaporating, instead of resorting to the wood-fire used in former time.

He, too, had to struggle against this prejudice, until at last, in 1761, the public preparation of the salt (till then in private hands), according to Becher's method, was authorised by a Government act, and thus the unjustifiable narrow-minded prejudice was overcome in the lapse of time.

The production increasing rapidly in proportion with the demand, it was at length considered necessary to construct, in 1808, a special building, connected by pipes with the Sprudel water, for the purpose of its evaporation by means of coal-fire. Even this new arrangement proving inadequate, a new process of manufacture has been put into operation, so as to obtain the salt in larger quantities.

The production of the salt at present already exceeds fifty tons annually, but even this quantity does not cover the ever-increasing demand for it.

The analysis of the Sprudel salt by Professor Dr. Ragsky shows that 100 parts of Sprudel salt contain—

Sulphate of soda	37·695 parts.
Carbonate of soda	5·997 „
Chloride of sodium	0·397 „
Water	55·520 „
	<hr/>
Total	99·609 parts.

Besides, there are traces of sulphate of potash.

The Sprudel salt (which is exported in well-corked and sealed bottles, containing one half to one pound) appears in crystallised form (larger and smaller hexagonal prisms), is of neutral reaction, of pure, colourless transparency, has a bitter saline taste, and is soluble in cold and warm water.

2. *The Pulverised Carlsbad Salt.*

Besides the crystallised Sprudel salt, which contains only the chief components of the Carlsbad water, a second preparation of salt is made from the Sprudel water in the town salt-works, which is sold under the name of “Pulverised Sprudel Salt,” and has already become very popular with medical men as well as with the public.

The “pulverised Sprudel salt” is produced by boiling the Sprudel water, removing the precipitation (sinter) by means of filtration, boiling down the filtrate to a mass of salt containing but a slight

percentage of water, and saturating it with gaseous carbonic acid.

The carbonising of the salt is done in order to restore, by means of natural carbonic acid, the bicarbonates of lithium and sodium which the concentration of the water has decomposed.

The “pulverised Carlsbad Sprudel salt” therefore contains—except the silicic acid and the carbonates of manganese, iron, calcium, and magnesium—all the soluble constituents of the Sprudel water in the same combination and the same quantitative proportions as they occur in a dissolved state in the Sprudel water itself.

The natural “pulverised Carlsbad Sprudel salt” constitutes a white powder of a mild bitter-briny taste, and its chemical combination, in 100 parts, is as follows :—

Bicarbonate of lithium	.	.	0·39
,, sodium	.	.	36·29
Neutral sulphate of potash	.	.	3·06
Sulphate of sodium	.	.	43·25
Chloride of sodium	.	.	16·81
Fluoride of sodium	.	.	0·09
Borate of sodium	.	.	0·07
Anhydrite silicic acid	.	.	0·03
Ferric oxide	.	.	0·01

The "pulverised Carlsbad Sprudel salt" is a remedy that separates acids, is easily dissolved, and taken in a larger dose is aperient; it is taken either in ordinary warm water or in carbonised water, or in addition to the Carlsbad water, in order to increase the detergent effect of the latter.

This "pulverised Carlsbad Sprudel salt" has likewise its legally protected trade-mark, and is sold in round bottles of 100 grammes and 200 grammes each.

The therapeutic effects of the Sprudel salt, generally speaking, and with only some slight modifications, are similar to those of the Carlsbad mineral waters, and consequently its indications and contra-indications are nearly the same as in the case of the waters. According to the effect desired, and to the individual constitution, the Carlsbad salt must either be taken early in the morning, before breakfast only, or at bedtime as well, the respective dose amounting to one teaspoonful, to be dissolved in five ounces either of common water, or, what is better still, in the same quantity of Giesshübler-Sauerbrunn.

The water is first made to boil, then the salt is added, and the solution is consumed slowly in a lukewarm state. Further directions for use are given in Part II., Section XIII.

3. *The Carlsbad Sprudel Lozenges.*

These lozenges are stronger than those made at Vichy, and their use is attended with good results in cases of acidity in the stomach, heartburn, acid eructation, and flatulency. Four to eight lozenges may be taken in the course of the day.

4. *The Sprudel Soap.*

The Carlsbad soap, or Sprudel soap, is prepared from the liquor left after the Sprudel salt has been extracted in the crystallised form. The remainder of the brine has a specific gravity of 1.160, and 16 ounces of it contain 2 ounces and 3 drachms of a mixture of salts freed from water. This mixture is composed of different salts of soda, organic matter, and traces of lime, magnesia, bromine, iodine, iron, ammonia, lithia, arsenic, sulphuretted hydrogen, phosphoric and carbonic acid.

In order to make soap out of this chemical compound, it must be condensed, purified from the Glauber's salt which it still may contain, and, by adding some quicklime, be turned into caustic ley.

The further preparation is the same as with all other soaps.

The Sprudel soap is of soft consistence, of greyish-white colour, very strong, perfectly soluble in water, and possesses considerable healing power.

It acts on the skin as a stimulant, dissolving the lymph stagnating in the capillary vessels, and tending to remove any inflammatory deposits which may have accumulated in the areolar tissue. It is principally used as an addition to plain water-baths, one quarter, one half, to one pound being required for each bath.

VI.

THE BATHS.

WE have at Carlsbad :

1. Common or fresh-water baths.
2. Mineral baths.
3. Peat or mud baths.
4. Steam baths.
5. Douche baths.
6. Iron baths.
7. Acidulous baths.

It is thus evident that Carlsbad possesses a greater variety of baths than almost any other bathing-place in the world.

The common or fresh-water baths may be taken in the Kurhaus, and are only used for the sake of cleanliness.

The mineral baths (formerly called Sprudel baths) may be taken at the Sprudel-Badehaus, Mühlbadehaus and Kurhaus. The springs, which are in use for bathing, have already been spoken of. The temperature of the baths varies from 90° to 100° Fahr.

The peat baths formerly found but scanty room in the Kurhaus, but the demand has of late increased greatly, and they are now required in numerous cases.

In consequence of the combined and long-continued exertions of the physicians of Carlsbad, the Municipal Council constructed recently a large bathing establishment, entirely devoted to the use of peat baths.

The peat or mud used for making these baths is brought by rail from Franzensbad, the Municipality of Carlsbad possessing extensive mud layers at the latter place.

A peat bath is a thin pulpy mass, which is prepared by the mixture of Sprudel water with the peat. Of this four to six cubic feet is considered a sufficient quantity for a bath. The temperatures of the bath are from 90° to 104° Fahr.

The vapour and douche baths, both in the Kurhaus, are constructed according to the latest and best principles available for such purposes.

The steel baths may be had close to the town (not far from the confluence of the Tepl with the Eger), and are fed by a strong chalybeate spring situated near the bath-house.

The acidulous baths are constructed at the other end of the town, five minutes distant. The Sauerbrunn feeding these baths has its origin in the bath-house itself.

The river baths may be taken in the Tepl (private baths), or at the swimming-bath in the Eger.

VII.

THE GIESSHÜBLER SAUERBRUNN.

OUR enumeration of the healing agents of Carlsbad would lack completeness if we were to omit mentioning the "Gießshübler Sauerbrunn." Though it has been known and used for centuries past, it only became popular during the last twenty years. Apart from its large consumption at Carlsbad itself, the annual exportation at present amounts to four millions of bottles.

This effervescing alkaline water has already acquired popularity in England and its Colonies, as well as in France, and it is most probable that its exportation will increase from year to year.

For the town of Carlsbad this water is a great blessing. Most patients not being allowed to drink wine or beer, or at the most in very small quantities, and the common drinking-water being generally almost unfit for use, it is a great boon that we are enabled to recommend to our patients the Giesshübler water. It invigorates the nervous system, corrects sourness of the stomach, gently stimulates the action of the bowels, and causes a copious flow of urine, thus combining the qualities of a good drinking-water with those of a mild curative agent.

This water is accordingly recommended to all our guests, and even large quantities, if not drunk too quickly, will generally agree with the patient. Patients, however, who suffer from dilatation of the stomach or of chronic diarrhœa ought not to drink any effervescing water at all, and of course no Giesshübler water either.

The "Giesshübler Sauerbrunn" further ranks first among all similar springs by containing a great quantity of combined carbonic acid, besides its amount of free carbonic acid gas, so that an uncorked

bottle of it may be left standing for hours without losing any of its effervescence, provided the bottle is not shaken.

It is particularly indicated—partly with the other Carlsbad mineral waters, partly as an independent beverage—in cases showing uric acid diathesis, in cases of gravel and stones in the kidneys, in diabetes mellitus and gout, as recommended by Dr. A. B. Garrod and other medical authorities.

VIII.

OTHER ALKALINE SALINE SPRINGS.

I HAVE already described the powerful agents that produce the action of our mineral waters, and, of course, of other alkaline saline springs—their principal and uncontested representative being Carlsbad. I will consequently confine my present remarks only to the important springs of Carlsbad, Marienbad, and Tarasp, rich in solid constituents, giving no consideration to the springs of Bertrich, Buda, Füred, and Stubnia—their mineral waters, although belonging to the same category, being considerably less powerful in their action, and not so much in demand. The waters of Marienbad and Tarasp are richer in solid

constituents, and principally in drastic salts, than those of Carlsbad; but the great, and I may say incalculable advantage of the Carlsbad springs is to be found in their natural temperature, varying from 85° to 162° Fahr., and in the favourable proportion of their solid constituents. Carlsbad furthermore offers superior climatic and local advantages. At Tarasp the cure can only be resorted to in the height of summer, when the patients, of course, may simultaneously enjoy the good effects of the alpine climate; but on account of the restricted number of dwellings, only a limited number of patients can be provided for at one and the same time. Marienbad offers more advantages, the season extending for nearly five months (May to September), and ample provision being made for the simultaneous accommodation of more than 3000 visitors.

Carlsbad, in this respect, again leads the way. Although the regular season is over by the end of September, many patients resort to our place during the winter months for the sake of deriving health and benefit from its springs. They find Carlsbad worthily prepared even in winter time to receive them and to make their stay as agreeable as possible. The lodging-houses are fitted up so as to give great comfort at all seasons of the year; and the two new

colonnades, principally the closed Sprudel Colonnade, provided with a heating apparatus, affords to the patients ample opportunity to move about in the fresh air, even in boisterous weather.

The indications for the use of these mineral waters, belonging as they do to the same category, but at the same time differing in several points, are to a certain extent identical, demanding, however, a scrupulous consideration on the part of the medical adviser, as well as of the patients themselves, of all the above-named circumstances, the individuality of the respective organism, and the manner of the desired action on the morbid condition, before definitely deciding for any one of these health resorts. There is no doubt that in cases demanding an energetic action on some particular organ, as on the constitution in general, we should give the preference to Carlsbad.

COMPARATIVE ANALYTICAL TABLE.

(The minimal constituents are not given.)

16 Fluid Ounces contain Grains.	Marienbad.	Carlsbad.	Tarasp.
Sulphate of soda	38	18	16
Chloride of sodium	15	8	29
Carbonate of soda	10	10	27
Carbonate of lime	4	2	12
Carbonate of magnesia	3	1	5
Carbonate of protoxide of iron	0.5	0.02	0.20
Carbonic acid in cubic inches	22	17	32
Temperature	22° F.	162° F.	14° F.

PART II.

THE TREATMENT.

I.

THE ACTION OF THE WATERS.

A.—GENERAL.

THE Carlsbad thermal springs belong to the class of alkaline saline springs. Their curative effects are produced by the combined action of the water, its mineral elements in solution, its high temperature, and its contained carbonic acid gas. The temperature of the water accelerates the action of the absorbing tissues, stimulates the circulation of the blood, produces a salutary perspiration, and acts as a sedative and an anti-spasmodic on the nervous system.

The carbonic acid gas not only acts upon the skin, but also on the stomach; thus either augmenting the secretion of gastric juice, or calming the sensitive nerves of the stomach. It also acts in an invi-

gorating manner on the peristalsis of the stomach and intestinal tract, facilitating as well digestion as absorption. By acting directly on the lungs and lymphatic vessels, it ameliorates the condition of the respective secretions, stimulating at the same time the action of the ganglionic system, if this be somewhat sluggish.

The salts of soda generally have a dissolving rather than a purgative effect. As a constituent of the human body, they augment the formation of the blood-corpuscles and regulate the economy of the whole system, thus inducing beneficial effects.

The sulphate of soda acts as an agreeable aperient. The carbonate is a milder agent; its power of neutralising the acid in the intestinal tract is not sufficient to account for the excellent results produced in so many diseases of nutrition and reproduction, and in functional disorders of the same. This action is powerfully assisted by the water itself, as the common solvent principle, which pervades and dissolves the contents accumulated in the bowels.

The carbonate of lime combined with soda removes acidity, and by its chemical action stops the formation of urinary deposits, contributing, at the same time, energetically to the solution of concretions that may have eventually formed.

Although the quantity of protoxide of iron, siliceous earth, and magnesia, of lithia, iodine, and bromine, is less considerable, still their presence may be deemed essential to the curative effects of the waters.

If, then, we sum up the effects of the chief constituents of our mineral waters, we find that it promotes defecation and diuresis; that it materially increases the absorption of fat in the different organs; that it enhances the change of matter; that it has a favourable influence on the formation of blood; that it excites digestion; and altogether that it produces superior vitality of all the organs of the body and their functions.

Our mineral waters are agreeable to the taste, cause a pleasant feeling in the stomach, and, after the lapse of one or several hours, induce one or several fluid motions, which, in common with the flatus, have a strong smell of sulphuretted hydrogen. The stools, especially at the beginning of the cure, are of a dark brown, sometimes of a green or blackish-green colour, which is caused by the increased secretion of thick bile, and partly through the decomposition of the sulphate of soda into sulphate of sodium and sulphide of hydrogen, whereby—as the Carlsbad waters also contain small quantities of iron—sulphide of iron is produced.

An increase of urine is seen in nearly all cases, but generally not before the sixth, seventh, or eighth day. But in cases of diabetes the contrary takes place, and we see a return of the increased urinary secretion to its normal state, corresponding to the diminished thirst and to the reduced want for fluids.

Repeated examinations of the fresh urine have shown that, when containing at first much acid, one hour after drinking the waters it will show a very slight acid, and sometimes even a neutral reaction.

I have, however, never succeeded, even with patients using the waters for six weeks, in producing a distinct alkaline reaction of the urine. Professor Seegen has proved a decrease of uric acid and urea, corresponding with an increase of phosphoric acid.

All the mucous membranes soon show more vitality, and increased secretion follows in consequence.

Further, absorption is stimulated, and a diminution of all fatty deposits is soon traceable.

An energetic influence upon the whole nervous system soon becomes evident.

Patients who have suffered even years previously from ague will sometimes, while drinking the waters, suffer a relapse of the fever in its primary form. My experience in this respect, however, has shown that

these relapses, if occurring at all, only do so during the first fortnight of the cure.

The case is different with patients suffering from gout; sometimes an attack of this malady will take place during the first days of the treatment, perhaps in consequence of the fatigues of the journey and the unaccustomed exertion attendant upon walking. But more frequently I have observed them towards the latter end of the cure. Some of my patients have written to me, saying that they were seized with an attack on the journey home, or soon after their return; remaining, however, free from gout for years afterwards.

The influence of our Sprudel and peat baths on patients suffering from gout is most remarkable, but never to be guessed beforehand, as it can only be traced by experience in each individual case.

Many of these patients are greatly relieved by the baths; they feel better and stronger after each bath, their beneficial effect upon the arthritic joints, in restoring their mobility, being very rapid.

In some cases, however, we find just the contrary taking place; although the patients are relieved while drinking the waters, the baths do not agree with them. They feel physically weak and depressed in mind even after the first bath, and occasionally

suffer from repeated attacks of gout, which may increase in violence to such an extent as to necessitate an interruption of the cure. If in these cases the baths are discontinued, the patient's condition will soon improve, and the symptoms of the arthritic diathesis gradually disappear. But the most striking occurrence,—and I have made this observation very frequently in my practice,—was, that when I sent such patients for an “*after-cure*” to a so-called indifferent thermal spring, like Gastein, Ragatz, Wildbad, the baths at these places had a very good effect upon them. I do not think it possible to give a general explanation of this strange fact; its cause, according to my opinion, arising from the individual constitution of the respective patients, and from the increased or deficient irritability of their vascular systems. There can be, however, no doubt that the different climate and the different thermal waters have a certain influence on that matter.

It may be mentioned, further, that in cases of diabetes a marked improvement of the most harassing symptoms, such as the thirst, the parched mouth, the frequent micturition, begins to be apparent after a few days. In cases of hemorrhoids, repeated bleedings commonly occur; in female patients the catamenia appear earlier and more abundantly, and

should their beginning have been attended with pains, these become less severe or cease altogether.

THE GENERAL EFFECTS OF OUR MINERAL WATERS
MAY CONSEQUENTLY BE SUMMARISED AS FOLLOWS:—

1. The vital action of the organism is stimulated to greater energy.
2. The surplus of acidity and of fatty deposits is removed by increased and altered absorption.

B.—LOCAL OR SPECIAL EFFECTS OF THE CARLSBAD WATERS.

By coming into immediate contact with the mucous membrane of the stomach and intestinal tract, the waters act—

1. As soothing, invigorating, and regenerating agents on the nerves of the stomach; whence an increased appetite and a pleasant warm sensation that diffuses itself from the stomach over the whole surface of the body.
2. In a healing way upon erosions and ulcers of the mucous membrane of the stomach and duodenum.
3. As correctives of the too abundant secretion of acid in the intestinal tract.
4. As gentle purgatives and accelerators of the

peristaltic action, removing the viscid mucous secretion, and mechanically dissolving the hard and dried-up fæces. As a result of these influences, the mucous membrane of the intestinal channel is energetically stimulated to increased secretion.

Being absorbed by the blood, the waters act

1. By dissolving the concentrated and obstructed bile contained in the biliary ducts.

2. By changing the condition of the blood, which, in its venous state, principally stagnates in the mesenteric vein and its branches; thus the waters regulate and increase the venous, and consequently also the arterial circulation.

3. By relieving the lymphatic glands and vessels of the thick and concentrated lymph contained in them.

4. By removing the fat accumulated in the subcutaneous areolar tissue and other organs, and by causing old inflammatory residues (for instance in the peritoneal cavity) to be absorbed.

5. By acting powerfully on the kidneys, the mineral waters at the same time succeed in removing gravel and even larger stones, from kidney and bladder.

These beneficial influences of our mineral waters

are enhanced by the following circumstances, if the waters are partaken of at Carlsbad itself:—

1. By the invigorating effect of the journey, and the change of social intercourse.

2. By getting rid of the usual occupation and by changing the ordinary mode of life, frequently attended with care and excitement, and by the benefit resulting from a new and unusual way of living.

3. By the change of air, surroundings, diet, &c., &c.

These salutary adjuvants are, of course, wanting altogether, or at least to a large extent, when the mineral waters are used at home, and consequently it is easy to understand that home cures are seldom attended with entirely satisfactory results.

The total effects of the cure on the separate organs and on the whole of the organism generally show themselves either during the time of drinking the waters, or at its conclusion. Sometimes, however, this is not the case, and the patients leave Carlsbad without having improved to any remarkable extent. In such cases, supposing that the use of the Carlsbad waters was really indicated, the improvement will take place during the time of the after-cure; and it may be regarded certainly as more than a vague consolation, if the medical attendant positively assures

the patient who, on the point of leaving Carlsbad, is dissatisfied and disgusted, that the good results of its waters will only show themselves after some weeks more.

This experience of the salutary effects of an after-cure has already long ago been acknowledged. Dr. Strobelberger in his book, published in the year 1630, says:—

“As the human body at the time of the cure does not enjoy any rest through the constant worry attendant upon the drinking and bathing, and as the whole system is being revolutionised and stirred up by the treatment, it is impossible for the patient, during or immediately after the cure, to feel as well as a fish in water. The most decided improvement only takes place after some time, with the help of good diet and nursing.”

It is difficult, nay, almost impossible, to give any general or special rules concerning the mode of using our mineral waters. This is a matter of practical experience, and the treatment is to be adapted to each individual case; consequently we must take this carefully into account, as there is no treatment that suits all cases alike.

This rule applies to all the various springs, which, although containing the same solid constituents, yet,

as I have said, act in a very different manner upon one and the same person, according to the temperature and the greater or smaller amount of carbonic acid dependent thereon, as well as to the quantity taken daily.

THE FOLLOWING IMPORTANT PRINCIPLES ARE TO BE TAKEN INTO CONSIDERATION WHEN PRESCRIBING OUR MINERAL WATERS FOR INTERNAL USE :—

1. The cooler springs are more slowly absorbed by the system, while the hotter waters are taken up in a rapid manner.

2. Patients whose action of the heart has to be watched with care, and whose vital energy will not submit to much stimulation, must partake of the cooler springs.

3. For acting more energetically, we use the hotter springs, if the constitution of the patient will admit. The particular spring selected is not to be changed without sufficient reason.

4. The waters, as a rule, are taken in the morning before breakfast, as the empty stomach will require less time to absorb the waters.

5. The quantity for daily use is not to exceed six tumblersful (30 ounces), and it is advisable to begin with two or three tumblersful, and in many cases

even with less. After several days, the quantity is to be increased, this depending partly on the individual constitution of the patient and on the particular disease, and partly on the effect already obtained or desired.

6. The tumblerful of the water is to be consumed slowly, *i.e.*, in from one to three minutes. A pause of twenty minutes or so should be made between each tumbler, according to the state of the patient's digestion; the interval should be employed in leisurely walking.

7. After finishing the last tumblerful, the patient should continue walking until he feels an appetite, which will generally be not longer than half an hour in making itself unmistakably felt.

II.

INDICATIONS FOR THE USE OF THE CARLSBAD WATERS.

GENERAL INDICATIONS.

THE Carlsbad mineral waters are successfully prescribed in cases of abdominal complaints in general, excepting acute fevers, malignant degenerations, and tumors. They are further indicated in constitutional

ailments, such as chlorosis, adiposis, gout, malaria, and diabetes, when this is not too far advanced.

Many authors and practitioners also mention different diseases of the respiratory organs as suitable for treatment in Carlsbad, such as catarrhal affections of the throat, larynx, bronchial tubes, attended with abundant mucous secretion. Certain forms of emphysema are considerably relieved, and the same is said of incipient fatty degeneration of the muscle of the heart. According to my opinion, these conditions may be taken into consideration so far as they show themselves in consequence of abdominal plethora, liver complaints, &c., &c.

This is the case also with people suffering from different affections of the eyes who are sent to Carlsbad, as their illness can only be relieved by first attempting to cure their abdominal disorders.

Apart from the cataracta lentis, developed in consequence of diabetes, which by a cure at Carlsbad is often improved, or at least checked in its progress, we may principally mention chronic irritation of the conjunctiva and of the meibomian glands, amblyopia, amaurosis, and glaucoma, caused by abdominal plethora, or by a morbid state of the blood (viz., gout), and progressing farther on account of the primary disease not being properly treated.

SPECIAL INDICATIONS.

1. *Chronic catarrhal affections of the stomach*, or dyspepsia, the second stage of acute gastric catarrh. This is caused by a too abundant supply of food, or by food of bad quality, by the abuse of spirits, by hot spices, irritating drugs, by catching cold, by nausea or mental anxiety, &c., &c.

The symptoms of chronic gastric catarrh are various. It causes distressing sensations of fulness and pressure in the epigastric region, loss of appetite, vomiting (principally in the morning—"vomitus matutinus"), headache, general debility, nervous depression, and often want of sleep.

The tongue generally is more or less furred, and there is sometimes a metallic taste perceptible on the tip of the tongue and "foetor ex ore;" constipation generally occurs. If this state continues for any length of time, the patients become greatly emaciated, and often present a grey or yellowish-grey colour of the skin.

Some medical men think that the mineral waters of Carlsbad are indicated neither for patients in the last-mentioned state, nor for those suffering from the atonic form of catarrhus ventriculi. I cannot share this opinion. From my personal experi-

ence, on the contrary, I am happy to state that I have obtained remarkable results in these cases (of course when organic disease does not exist), by a treatment quite opposite to that usually applied in cases of catarrhal affections of the stomach, namely, by substituting a different diet, and principally by directing the patient to use the waters in a different way. These must be taken in a cooler state, and only in quantities of from three to six ounces twice daily. Should constipation set in, Carlsbad salts and all other purgatives are to be avoided, and only cold injections are to be used.

The catarrhal affection of the stomach frequently extends into the duodenum (catarrhus gastroduodenalis), and further into the larger, and in long-standing cases, also the smaller, biliary ducts, so that stagnation of the bile and jaundice supervene. Carlsbad is especially indicated in such cases, and the use of its waters is attended with the greatest success.

2. *Dilatation of the stomach*, as a primary disease, shows itself in consequence of continued overloading of the stomach with heavy indigestible food. It may also occur as the sequel of ulcerations in the pylorus. Frequently, too, it is the result of long-standing catarrhal affections, the latter appearing also frequently in combination with the dilata-

tion ; hence the symptoms are only in part of an independent nature, such as the vomiting of undigested or fermenting food with a fæcal smell, or of food swallowed a long time before.

Nearly all the symptoms coincide with those of the chronic catarrhal affection of the stomach.

On minute and careful examination, the distension of the stomach may be detected from without, and proved by palpation and percussion. But it will be found advisable in all cases to confirm the diagnosis by introducing effervescing drugs, or by sounding the stomach with the probe.

It is evident that a complete restoration of the organ can only be expected in light cases, not of the long-standing order. In severe or protracted cases, Carlsbad will only act as a palliative, and its healing effects will be confined principally to the accompanying catarrhal symptoms. In all cases of dilatatio ventriculi, while directing the patients to drink the waters, I make use of the stomach-pump ; once daily it is imperatively necessary to rid the stomach from the stagnating remnants of the food, as well as from the tough mucous secretion, so as to stimulate and strengthen its peristaltic action.

3. *Cardialgia* is more frequently the symptom of another disease than an independent form of neur-

algia. This last-mentioned kind—to which I allude only—is almost as frequently met with in the male as in the female, and is characterised by a spasmodic contraction of the walls of the stomach, combined with severe pain (according to many patients' expression, as if the stomach were squeezed by an iron hand).

The cramp generally sets in suddenly, even when the stomach is empty, without apparent reason, and at any time in the day, or after catching cold, after eating ices or drinking iced-water, after mental anxiety, &c., &c., and generally concludes with vomiting of slimy and often sour liquids, mixed with bile if the retching lasts long.

This spasmodic contraction is not confined to a certain part, but generally affects the stomach in its entire circumference. Sometimes it may be relieved by a firm pressure on the epigastric region, or by the swallowing of some solid food. As soon as cramp and pain are gone, the patient again feels perfectly well. The origin of this complaint cannot always be ascertained; in most cases it is caused by over-acidity, or by pressure of the left lobe of the liver, and it is not always accompanied by chronic catarrhal affections. The effect of the Carlsbad mineral waters, especially of the Sprudel (two to

four half-tumblersful daily), in such cases of genuine cardialgia, is miraculous.

4. *Ulcus ventriculi* is more frequently met with in the female; it is caused either by already existing erosions in the mucous membrane of the stomach, or is of independent origin in consequence of local disorders, or of a general derangement of the system. Developing farther, the ulcer causes erosions of the blood-vessels, bleeding, and eventually (though not very often) perforation.

The symptoms of *ulcus ventriculi* are very conspicuous, and consequently the diagnosis is difficult in only a few cases. Apart from the idiopathic symptoms, such as constant pain at the seat of the ulcer, which is increased by the slightest pressure, and invariably radiates towards the spine; vomiting of every particle of food, and extreme exhaustion resulting therefrom; anæmic complexion, and in some instances a characteristic sanguinolent vomiting, accompanied by bloody, tarlike motions, it is almost always accompanied by catarrhal inflammation of the stomach, and by constipation of the bowels.

Cases of *ulcus ventriculi* are often met with at Carlsbad, and their treatment by the mineral waters is attended with the best results. The careful regu-

lation of the diet, also, with regard to the quantity of the food, is of the greatest importance.

The cooler springs only are applicable in these cases (Markt, Kaiser, and Mühlbrunnen), in moderate quantities (three to six half tumblersful), and at intervals of half an hour. They ought to be used during at least five or six weeks. During the second course, or at any time if there is reasonable ground to believe that the ulcer is entirely healed, the hotter springs may be used with advantage, especially for the neuralgic pains frequently caused by cicatrisation. In case there should be any bleeding from the stomach during the time of the cure, the use of the waters must, of course, be at once dispensed with for a shorter or longer period of time, according to the violence of the bleeding; or perhaps even be left off entirely, when local treatment is to be substituted.

I have had under treatment more than four hundred cases of ulcer in the stomach, but have only in one single case met with a slight bleeding, showing itself twice during the first fortnight of the cure. In this case the treatment, which lasted over forty-five days, was attended by the best results. Other symptoms of little importance, resulting principally from the effects of the cicatrisation, which showed themselves

during the following winter, were entirely cured by a repetition of the cure at Carlsbad. The lady, who has since given birth to two children, is now in perfect health.

5. *Constipation.* Habitual constipation of the bowels often reaches a dangerous degree by being neglected at first, or by not having been treated in a proper manner. This malady, often tolerated by the system with apparent impunity for years together, gradually increases in severity, and at last may lead to all kinds of derangement of the circulation, to swelling of the liver, and even to dangerous local inflammations.

Under this head we also may include the constipation which frequently exists while the bowels apparently act in a sufficient and regular manner. We often meet people whose bowels act daily, or at least every other day, passing, however, only a very small quantity of fæces each time; these patients are generally extremely astonished on being told by their medical attendant, after a careful examination has been made, that their intestines are filled with hard fæcal masses, and that this is the cause of all their sufferings.

The usual symptoms of chronic intestinal obstruction are: difficulty of breathing, palpitations of the

heart, a feeling of oppression and tension in the abdominal region, swimming before the eyes, headache, mental depression, and melancholy.

The constipation is most frequently caused by neglect, by sedentary life, by drinking too little water, by long-standing affections of the biliary ducts, by the abuse of strong purgatives, and often in the female by repeated pregnancies.

The use of the mineral waters at Carlsbad, during one or more seasons, is in all such cases followed by regular motions, but all such patients should be earnestly admonished to repair to the water-closet daily, and at a fixed hour, even though they should not feel a natural inclination to do so.

6. *Chronic intestinal catarrh* is a disease also frequently treated at Carlsbad. *It seems surprising, but it often* happens, that such antipodal diseases as constipation and obstinate diarrhœa are entirely cured in one and the same Spâ, and even by the use of one and the same spring.

Chronic intestinal catarrh is caused by repeated colds, by damp feet, by long-standing exhausting illness, by habitual constipation, and by the abuse of purgatives.

These patients mostly suffer from tenesmus, with no feeling of relief even after emptying their bowels

every half hour. The evacuations are always of a thin and slimy character, containing hardly any consistent fæces, and very little bile.

It is characteristic that the tenesmus often appears so suddenly that the patients scarcely have time enough to reach the proper place.

Gripes and flatulence are also conspicuous in such cases.

After minutely examining these patients, we often detect old dried-up fæces strongly adhering to the intestinal walls, principally of the cæcum; on this account, as well as for the sake of freeing the bowels of their viscid contents, I have made it a rule in such cases to begin the treatment by administering a mild purgative, such as castor-oil. The use of the mineral waters after this proceeding is generally attended with a quicker and more lasting result.

I have during the last three years attended upon five cases of chronic catarrh of the large intestine, deserving a special enumeration on account of their scarcity. I shall, however, confine my remarks in this place to a general description, leaving a more detailed narrative for a later publication. In the cases just referred to (and they all occurred in female patients) the catarrh was situated in the transverse colon, the sigmoid flexure, and partly also in the descending

colon. The cause in two cases was dysentery, in three cases constipation, existing for years; it was most likely an already developed intestinal catarrh of a lighter order. The symptoms—of course differing in intensity with the different cases—were as follows:—

Swelling of the lower abdominal region, associated with pain, corresponding accurately with the site of the colon; frequent tenesmus, but no evacuations without resorting to strong purgatives; piles; chronic inflammation of the sexual organs, accompanied by irregular and abundant menstrual discharges; catarrh of the stomach; restless nights with heavy dreams; general emaciation and psychical depression. The evacuations contained only some extremely hard and lumpy fæcal masses, but a great deal of glairy slime (enveloping the lumpy fæces), and large quantities of a skinny substance, which I at first thought to be pieces of necrotic mucous membrane. Under the microscope, however, I detected a gelatinous, structureless mass and some intestinal epithelium; this discovery, as well as the chemical analysis, proved beyond a doubt that these substances consisted of intestinal mucus, forming, as it were, an imprint of the mucous membrane. These severe cases of intestinal catarrh are fortunately of rare occurrence,

and unless diagnosed in proper time and treated accordingly, may lead eventually to ulceration and perforation of the intestinal tract. Strong drastic remedies are contra-indicated, as they would certainly aggravate the symptoms. I have in these cases had recourse to a careful and long-protracted cure with the Carlsbad waters, and besides to injections of a tepid slimy infusion (linseed infusions) per anum by means of an irrigator, and have seen very good results from adopting this method.

7. *Congestion of the liver* is often met with, and if of long duration, may lead to structural disease of the organ. We have only to consider the passive congestion caused by emphysema, stagnation in the mesenteric veins, constipation, and other functional disorders of the abdominal viscera. The liver is generally painful to the touch and more or less enlarged, principally in its left lobe.

8. *Fatty liver* is caused by the accumulation of globules of fat in the liver cells, and consequently the function of the organ is seriously interfered with.

We only consider those cases of accumulation of fat in the liver, occurring in individuals otherwise healthy and well-fed, and caused by good living, the abuse of spirits (gin-drinker's liver), and a general tendency towards obesity. The liver in such cases

is enlarged in its entire circumference, its edges have lost their normal sharpness; there is no pain, but by the pressure exercised on the stomach and the adjacent organs, a sensation of weight and tension usually is experienced in the epigastric region (the "iron girdle"), accompanied by difficulty of breathing, dyspepsia, &c., &c.

The amyloid degeneration of the liver is to us of interest only so far as it causes disorders in the digestive system, which may be improved by the use of the Carlsbad mineral waters; but even such improvements are merely of a temporary nature, as it is impossible to remove the primary cause of the disease.

9. *Cirrhosis of the liver*, in its first stage, may be benefited by a cure at Carlsbad. But our mineral waters are certainly contra-indicated in the second and third stages; and the same may be said with regard to syphilitic degenerations and malignant tumours of the liver.

10. *Polycholia*, or a superabundant secretion of bile with an insufficient discharge. The obstacle is not in the biliary ducts, but is caused by a want of pressure, which impedes the regular flow of bile into the intestinal canal.

The stoppage first shows itself in the gall-bladder,

which becomes distended, and may sometimes, by external palpation, be felt as an elastic tumour. By degrees a lasting dilatation is brought about, continuing even as far as the biliary ducts. In some cases the accumulated bile is now and then evacuated, either by vomiting or by purging; and, in default of this, jaundice, organic disorders of the liver, inspissation of the bile, or gallstones may eventually develop.

11. *Gallstones.* The formation of gallstones is met with very often, in consequence of many and various causes, and occurs more frequently in the female.

As the shape and nature of gallstones are sufficiently well known, it may suffice to mention that the smallest concretions may cause the same serious symptoms as the larger kind. On the other hand, it is a well-known fact that stones, as long as they sojourn in the gall-bladder, cause little or no uneasiness at all, and often are detected accidentally at *post-mortem* examinations, the subject not having experienced any inconvenience whatever during lifetime.

These concretions may be caused by anything that impedes or obstructs the regular stream of the bile, such as habitual constipation, pregnancy, repeated disorders of the biliary ducts, &c.

There is no decided proof whatever to support the opinion that the beneficial results brought about by the use of the Carlsbad waters in these cases are due to any dissolving action on their part. I have repeatedly and for some considerable time exposed gallstones to the action of hot Sprudel water without noticing any changes whatever; and it is, *a priori*, quite incomprehensible how the mineral water should act in a direct way on the concretions formed in the gall-bladder or the biliary ducts. On the other hand, the possibility of the bile, after becoming alkaline to a certain extent, acting destructively on the concretions, cannot be denied altogether. It is certain, at least, that we frequently meet with corroded concretions in a porous state, and sometimes even crumbled to pieces, in patients who have been drinking the waters for a considerable time. A similar process, as we all know, sometimes takes place in some cases of urinary concretions.

At any rate, the disappearance of the stones is not due to their being dissolved; but it may safely be asserted that their elimination is caused by the mechanical action of the waters. Their usefulness, moreover, is shown by the thinner and normal condition of the bile during their use, by which the formation of fresh concretions is evidently prevented.

The regulation of the action of the bowels, brought about through the use of the waters, naturally ranks first in these cases, and it will, in consequence, be found advisable for such patients to repeat the cure for several consecutive years.

Although the structure of the common gall-duct allows of a good deal of expansion, and thus small stones may pass through it without much inconvenience, yet larger stones or the simultaneous formation and elimination of several calculi usually cause the severest colic and grave symptoms, which, as a rule, not menacing life itself, may eventually lead to very critical conditions (hepatitis, perihepatitis).

According to experience, such colics most frequently occur during the time of the cure at Carlsbad. It is obvious that in consequence of the imbibition of large quantities of water, there is a tendency towards the elimination of the stones, and this again gives an increased chance for their incarceration; the same reason may be assigned in those cases where we see stones being passed repeatedly during the use of the waters at Carlsbad.

The colics are usually followed by jaundice of variable intensity. This symptom, which disappears a few days after the cessation of the incarceration, is of the greatest diagnostic importance.

The diagnosis may also be considerably strengthened in cases where gallstones can be detected in the evacuations of the bowels, but the latter proof is not absolutely necessary for forming the diagnosis. The diagnosis of gallstones is as easy as it is difficult. This sentence may appear paradoxical, but nevertheless it is perfectly true. In some cases showing the whole series of well-known symptoms, and favouring us perhaps with the detection of gallstones in the evacuations after some severe attack of colic, the diagnosis may easily and accurately be formed. On the other hand, every experienced practitioner will attest that there are many cases wanting in some of the most important symptoms, and showing the morbid appearances of quite different diseases, thus rendering the diagnosis extremely difficult, or even altogether impossible.

I remember one case of a physician's wife, in which the symptoms indicated everything else rather than gallstones. The lady had consulted nearly all the medical celebrities of Germany, and almost every one of them had expressed a different opinion. They had, however, unanimously given a highly unfavourable prognosis. At last, as an ultimum refugium, she was recommended to try the effect of the Carlsbad waters.

The patient, having attained the climacteric period of life, presented a very cachectic appearance. She was extremely nervous and suffered from want of sleep; her stomach rejected every particle of food, and her bowels could only be brought to act by means of strong drastic remedies. The evacuations presented a normal colour and a pulpy consistence, but were constantly followed by most acute pains in the meso-gastric region, sometimes of an eclamptic character. At the same time she complained of an unquenchable thirst and a salty taste on her tongue, and of constant piercing pains in the back, situated just opposite the epigastrium. On examining the abdomen, I thought I felt a tumour in the depth of the epigastric region, emanating, in my opinion, from the pancreas; the liver showed the normal limits; jaundice had never been noticed; the urine contained great quantities of urates and traces of sugar. I formed the diagnosis of carcinomatous degeneration of the pancreas, and I heard later on that the same diagnosis had been formed by two other colleagues. But although, or rather because, I had given up all hope of recovery, I conformed to the urgent wishes of the patient, and advised her to drink the Sprudel (six tumblersful daily) for four weeks. The patient, whose symptoms became more

and more aggravated, grew weaker from day to day, and her condition when she returned home was much worse than at the time of her arrival at Carlsbad.

After several months, to my astonishment, I received from her husband a letter saying that after her return from Carlsbad the patient, during three weeks of most agonising pain, had wavered between life and death, until, simultaneously with a spontaneous copious evacuation, she passed a great number of gallstones of the size of a bean. From that moment a rapid improvement had taken place, leading to her ultimate complete recovery.

This case will demonstrate sufficiently how difficult, nay, even impossible, it may be in some cases to diagnosticate gallstones. It shows too the great curative power of an energetically conducted Carlsbad treatment, and of the impossibility of its being replaced by any other remedy.

The non-appearance of jaundice, although this is rare, or the failure to detect concretions, must not deter us from diagnosticating gallstones, in case the remainder of the symptoms are in favour of this ailment. Any one who has attended hundreds of similar cases will have no difficulty in forming a pretty accurate diagnosis even in those instances

which are characterised by only very minute concretions (the so-called biliary gravel). The colics and other symptoms in such cases do not, of course, appear in a conspicuous manner. Still they will not escape the eye of a careful observer, who can easily distinguish them from other morbid conditions that present similar appearances.

12. *Tumours of the spleen.* We restrict our observations to those swellings of the spleen which may allow of reduction to the normal size, and which are caused by disorders of the abdominal circulation, by malaria, or by the influence of unseasonable and hot climates. Such cases strongly indicate the use of the Carlsbad mineral waters. The spleen is the starting-point whence the deleterious poison may spread over the whole of the organism, and if help is not sought for in time, it may soon be altogether too late.

13. *Albuminuria*, not originating in diseased kidneys, but caused by deranged abdominal circulation or by general debility. The use of the Carlsbad mineral waters in such cases consists in relieving the dropsy by simultaneously attacking and curing the primary disease itself.

14. *Gravel and catarrhal affections of the kidneys.* The formation of gravel and stones in the kidneys.

more frequently met with in the male, is caused by the superabundant secretion of some of the solid urinary constituents. These are soon precipitated into the renal tubes and the renal cavity, and thus contribute towards creating gravel or larger stones. The latter sooner or later cause bleeding from the kidneys, and when passing through the ureters are the cause of those violent spasmodic pains which are best known under the name of renal colic. Bleeding from the kidneys is not a rare occurrence, although I have never seen any bad consequences resulting therefrom. It is hardly necessary to interrupt the cure on this account, the patient only requiring rest and abstinence from bathing. The cooler springs, mixed with some whey, should be used in such cases of renal bleedings.

The Carlsbad mineral waters are strong enough to dissolve the gravel deposited in the renal tubes, and by increasing the urinary secretion, mechanically to impel, and eventually to eliminate, even larger calculi.

The repeated use of the Carlsbad mineral waters is of such beneficial influence upon the circulation and formation of the blood, that, together with a well-regulated diet, the new formation of stone and gravel will be most securely prevented.

The concretions have an irritating influence upon the renal cavity, which may bring on inflammation. After the elimination of the stones, however, and through the beneficial action of the Carlsbad waters, this affection will soon disappear.

15. *Catarrh of the bladder* will be relieved by the use of the Carlsbad mineral waters only if unaccompanied by fever, the urine at the same time showing the acid, or, at most, neutral reaction; in these cases no local treatment is required. This form of vesical catarrh is caused by cold, by drinking badly fermented beer or iced water, and by gravel and stone in the bladder.

If the stones are of a small size, the increased secretion of urine will suffice for their removal; if they are so large that they cannot pass through the urethra, they will have to be operated upon before the commencement of the cure. There is no reason to cherish the hope that the mineral waters may succeed in dissolving stones of so large a size; the Carlsbad cure will prove entirely useless, the bladder being constantly irritated by the presence of the stones. These patients ought not to be sent first to Carlsbad, and afterwards operated upon, but just the contrary ought to be done. If, however, decomposition of the urine should set in, accompanied by an

alkaline reaction and a putrid sediment, local treatment is indicated from the first, and the Carlsbad waters should only be recommended if, according to careful examination, there is little or no pus in the sediment, the urine showing at least a neutral reaction.

16. *Hypertrophy of the prostate* is met with principally in people of mature age, or in consequence of gonorrhœa, but may as well occur in very stout persons quite unconnected with the first-mentioned circumstances; it is amenable to the treatment at Carlsbad.

17. *Inflammatory deposits in the peritoneal cavity* have only of late been considered with regard to the salutary effects of the Carlsbad waters, these having been of great benefit in some cases of this kind. These residues of inflammatory action must, however, not be excessive, but still capable of absorption; such as deposits following an attack of perityphlitis, para- and peri-metritis.

Peritoneal inflammations, even when they end favourably, are mostly attended by exudations in the peritoneal region, which, if not resorbed, very frequently lead to other illnesses that are often more dangerous than the original complaint. It is therefore an important duty of the physician to promote

by all possible means the resorption of such exudates, as long as they are fresh, that is, still capable of being resorbed. Among the remedies that promote resorption, a drinking and bathing treatment at Carlsbad first attracts attention by the really miraculous effects in fresh cases. Of course only such exudates of inferior dimensions as occur in circumscribed peritonitis can here be taken into consideration; the most frequent partial inflammations of the peritoneum of this kind occur in the vicinity of the cæcum, and of the vermiform process; and in the vicinity of these the greatest number of secreted exudates are met with, in size as large as a walnut up to that of a hen's egg. It is really astonishing how rapidly often such exudates subside under the influence of the Carlsbad drinking and bathing treatment, especially when it is combined with a carefully directed massage, which I always prescribe in suitable cases. But the use of the Carlsbad waters is attended in a great many similar cases with another very material success. Very frequently, namely, perityphlitis is the consequence of habitual constipation, and by a treatment conducted to this end the latter is removed, thereby preventing in the most efficacious manner the frequent recurrence of the complaint.

To modern gynæcology the merit is due of having examined and appreciated the excellent effect of the thermal springs and mud-baths of Carlsbad in various diseases of the female sexual organs, and at present it is not alone the German, but also the English, and yet more the American gynæcologists who send a large part of their female patients to Carlsbad, there to find improvement and cure of their maladies.

These are mostly cases which require no further local treatment, and in which the dissolvent, resorbing, and modifying influence of the mineral water and mud-baths suffices to remove the disease. Such cases are, in the first place, parametrical and perimetrical exudates, and the alterations in the position of the uterus consequent thereupon, which, upon the disappearance of the exudate, returns of itself into the normal position, or may be easily rectified by proper after-treatment, provided the uterus be not fixed in the abnormal position by old restiform neoplasms of the connective tissue.

In such cases alone in which local treatment is urgently requisite, I combine it, and if necessary also massage, with the general treatment.

The use of the waters in almost all these cases is attended with excellent results.

18. *Anæmia*. It may seem strange, at the first glance, to name anæmia among the diseases curable at Carlsbad, but the assertion is true, nevertheless, if made with the proper limitations, and not in a vague general manner.

The number of patients suffering from poverty of blood, and yet resorting to Carlsbad, is very considerable, and naturally there are some cases among them not suitable for our mineral waters.

Catarrhal affections of the stomach, *ulcus ventriculi*, habitual constipation, are often followed by anæmia, the latter subsiding, however, as soon as the primary affection, indicating the cure at Carlsbad, is relieved. Of course I am not speaking of these kinds of anæmia as the principal indication, for the cure at Carlsbad is based upon the primary disease, and not upon the poverty of the blood.

We have only to consider that kind of anæmia which is known as the anæmia attendant upon the age of puberty, its name plainly showing its origin.

But even this latter affection will not be benefited indiscriminately by the use of the Carlsbad waters, and it is imperatively necessary to select the individual cases with the greatest possible care and consideration, as regards the accompanying symptoms.

Such cases mostly occur in girls fifteen to twenty

years old, in whom menstruation has not shown itself at all, or only in very minute quantity. Such patients may safely be sent to Carlsbad, if otherwise properly built; and if, besides showing the usual symptoms of anæmia, they suffer from disorders of the abdominal circulation, chronic inflammation or congestion of the womb, catarrhal affections of the stomach, constipation of the bowels, moderate enlargement of the liver, mental depression, want of sleep, &c., &c., they will be entirely cured by our waters, as I am happy to state from a large experience in such cases.

19. *Adiposis*, *i.e.*, that kind of general derangement of the alimentary system, which consists in the abnormal and superabundant formation of fatty tissue, and its accumulation in the areolar tissue of the skin, as well as in different other organs of the body.

This disease may be caused—or, if already in existence, increased in severity—by too good living, combined with insufficient bodily exercise, but it may also be developed independent of any such causes, as is proved by a great many cases. It may also have hereditary predisposition, and in the female, sterility and the change of life, for its origin.

The symptoms are: an enormous increase in size,

sometimes verging upon monstrosity, difficulty in walking and moving about, a pale and puffy countenance, and a disordered state of the intellectual functions.

In the latter stages of adiposis there are functional disorders of internal organs, such as difficulty of breathing, palpitations of the heart, affections of the brain, and, in many instances, gout and diabetes mellitus.

20. *Malarial Cachexy* principally develops itself in some of the tropical countries, in consequence of ague, yellow fever, and the so-called bilious fever, but it may also occur in Europe in the swampy parts of Italy, Hungary, and Holland.

Patients suffering from malarious fever have a characteristic yellowish-grey complexion, they are generally emaciated, and may also become dropsical, in case the disease has been progressing to a certain extent.

There is enlargement of the spleen, and sometimes also of the liver, and frequently the kidneys are deeply affected. The disease is generally accompanied by chronic catarrhal affections of the stomach, and very often by intestinal disorders.

I have attended upon many cases of this kind at Carlsbad, and have always seen good results from

the use of its waters. A corresponding after-cure, particular attention being devoted to the enjoyment of a fresh and pure air and strengthening diet, and a repetition of the treatment at Carlsbad, will be found advisable in all such cases.

21. *Gout.* This disease, showing itself in a regular or irregular manner, and in various forms, is more frequently met with in palaces than in humble dwellings.

Hereditary predisposition and luxurious living, as well as the abuse of alcoholic beverages (wine and strong beer, spirits) are most frequently found at the root of this evil, and trifling injuries may often suffice to develop the disease previously lurking in the organism for some time.

Although we can hardly speak of premonitory symptoms or forerunners of the gout, still there are some signs which lead us to the conclusion that some patients, whose antecedents we know, may eventually become gouty, especially if there is a hereditary predisposition. Such patients mostly complain of general debility, restless nights, palpitations of the heart, asthma; they suffer from abundant perspiration, with an acid smell, and have a full but irregular pulse; their urine, as a rule, is scanty and concentrated, and shows a great quantity

of urates. If proper treatment is not soon resorted to, an attack of gout is sure to manifest itself in a very short time.

Gout is caused by a uric acid diathesis of the system; if the kidneys are not enabled to remove the superfluous uric acid (*i.e.*, if their passage is rendered impervious to a certain extent by uric acid precipitates), it will at last (as the "materia peccans" of our ancestors) be deposited by the blood in the different organs of the body; at first in certain joints, and afterwards in organs of a higher order.

Some clinical teachers seem to think that the use of the Carlsbad waters is only indicated in such cases of gout resulting from abdominal plethora and liver disorders.

According to my experience, I am bound to say that Carlsbad is not only indicated in *all* cases of gout, but that the use of its waters is attended with the most remarkable results. It is necessary, however, that the cure should be watched with great care in all cases affecting weak and debilitated individuals, or if there is already disease of the kidneys, or if there is an affection of the arteries or arterioles.

Gouty deposits, capable of absorption, will generally disappear during or soon after the use of the Carls-

bad waters, but the latter have no influence whatever on chronic indurations.

In most cases it will be found advisable, after the use of the waters, to recommend to the patients a so-called after-cure at Wildbad, Gastein, Ragatz, Tep-litz, Wiesbaden, Aix-la-Chapelle, or Aix-les-Bains.

22. *Diabetes mellitus.* This mysterious disease, which deservedly occupies the careful attention of the medical profession, will for a long time to come be the subject of controversy, although much has been contributed during the last twenty years, and principally by Carlsbad physicians, towards its elucidation.

It was Hufeland who at first designated diabetes as a fit object for a cure at Carlsbad. Since that time the patients afflicted with it betake themselves to Carlsbad annually, in ever-increasing numbers, and our place is called "the great hospital for diabetes."

It was found impossible hitherto to demonstrate any constant pathological changes at the *post-mortem* examinations of the diabetic cases.

Numerous observations by medical authors have shown that this disease is not of so rare occurrence as it was formerly believed to be; although it may be taken for granted, that the altered circumstances

of modern times and life are instrumental to some extent in causing its present frequency.

Diabetes shows itself more frequently in the male, and attacks almost any age. It is mostly met with in people ranging from twenty to fifty years, less frequently in children, and very seldom in old age.

I lately had occasion, at the hospital of Dresden, to see two cases of diabetes, in children of a younger age than I had ever known to be liable to that disease; they were brothers, at six and seven years respectively.

Dr. Seegen says, and I have made the same observation, that amongst all his cases of diabetes, the percentage ranged highest with the Jewish race; this may perhaps be accounted for by their mode of living, their constant activity, and their increased mental irritability.

THE CAUSAL INFLUENCES OF DIABETES MELLITUS

ARE—

1. Injuries directly affecting the brain or the liver.
2. Spontaneous diseases of the brain.
3. General disorders of nutrition.
4. Chills and exposure to damp weather.

5. Continued excess in baccho et venere.

6. Cerebral diseases (the most frequent cause), and too much straining on the brain.

The greatest number of cases of diabetes which I have treated occurred during and after the late Franco-German war, and during the commercial crisis of 1873-74.

7. Hereditary predisposition.

Abundant accumulation of fatty tissue is considered by some authors as predisposing to diabetes; according to my opinion, adiposis may very well be classified under the third cause as above. The symptoms of diabetes, which are not always present, however, in their full combination, are as follows:—

(a.) Excessive secretion of urine, containing *sugar*.

(b.) Abnormal increase of thirst, and generally of appetite, too; a peculiar “*foetor ex ore*.”

(c.) Dryness of the skin, loss of hair and teeth, general emaciation, a feeling of faintness; in one word: *marasmus præcox*.

(d.) Itching of the skin, eczema, principally in the region of the generative organs, tendency to furuncles and carbuncles, caused by want of resistance in the tissues.

(e.) Mental depression, various disorders of the nervous system, decreased activity of the senses,

caused by affections of their respective organs ; impotence.

The influence of the Carlsbad mineral waters on diabetes is highly beneficial, according to the unanimous opinion of medical men in general, and of those practising at Carlsbad in particular, and is based on the experience of the last fifty years.

In every case of diabetes, even of the greatest severity, a marked improvement in the condition begins after a few days' time. At first the intolerable thirst and the parching of the mouth is considerably relieved ; the patient gets more rest, and may enjoy a quiet sleep for several hours ; this is accompanied by a diminution, or, at least, temporary cessation, of the regressive tendency.

In lighter cases the effects produced by the use of our waters are even more striking, and at the same time lasting ; in such cases all diabetic symptoms gradually disappear altogether, even the impotence ; the patients at last enjoy the long-wished-for good health. The power of resistance is in many cases strengthened to such an extent that a mixed diet, at least for a certain time, may be resorted to, without any striking relapse taking place ; a yearly return to Carlsbad, however, will be absolutely necessary for these patients.

I know of diabetic persons, who have visited Carlsbad annually for twenty years or more, enjoying tolerably good health, although not living exclusively upon animal diet, their urine containing sugar only from time to time.

The question whether diabetes may be entirely cured by the Carlsbad mineral waters, or by some other remedies, remains undecided at present, and according to the experience hitherto attained, is not likely to be answered in the affirmative.

I have in my own practice met with two cases which, perhaps, may be considered as perfectly cured. I may just be allowed to relate them in a few words.

In the year 1871 I attended upon a tavern-keeper of Weimar, suffering from the milder form of diabetes, and presenting almost all the usual symptoms, which, however, under proper treatment at home, had undergone a favourable change. While drinking the waters, the rather considerable quantity of sugar contained in his urine, as well as the other diabetic symptoms, entirely disappeared.

I have since had the opportunity of seeing this man on repeated occasions, he having, during the time of the cure, already improved in weight (5 lbs.), and I have received, through his family physician, several accounts respecting his health. There

has been no trace of sugar in the urine since, and he feels perfectly well up to the present time.

The second case is that of a merchant from Frankfort on the Maine, who still comes to Carlsbad every year. During the first year his urine contained a great quantity of sugar, all the other symptoms of diabetes being apparent; after using our waters during six weeks, the symptoms entirely subsided. During the second and third year the urine on his arrival contained sugar in moderate quantities (about two per cent.), the other symptoms being less numerous and less marked, compared with the first year. During the last three years, however, I could not detect any more sugar in his urine, and the man is in the enjoyment of perfect health.

I relate these cases, which at a future date I shall publish in detail together with many others, without, however, drawing any conclusions from them.

23. *Diseases of the skin* only have to be considered so far as they are connected with stagnation of the blood or with disorders of the abdominal organs. There is no doubt that the regulation of the circulation, and the strengthening of the debilitated constitution, will tend to heal some diseases of the skin; they constitute, in fact, the necessary conditions for their cure.

The use of the Carlsbad waters may be recommended in cases of:—

- (a.) Erysipelas migrans, especially if the patients show a constitutional tendency to this affection.
- (b.) Sclerosis of the skin, showing itself on the calves of the legs, in consequence of repeated attacks of erysipelas.
- (c.) Urticaria.
- (d.) Pemphigus, especially in its milder forms.
- (e.) Eczema (gouty), likewise in the milder forms.
- (f.) Morbid tendency to furuncles, so frequently met with, unconnected with diabetes mellitus.

III.

CONTRA-INDICATIONS.

THE use of the Carlsbad mineral waters, although apparently indicated by the aforesaid conditions, may under certain circumstances, however, prove decidedly injurious, and necessary as it was clearly to state the indications for their use, it will be of equal importance to point out also their contra-indications, of course only in those cases which at

first presented an indication for the use of our waters.

The use of the Carlsbad mineral waters is not indicated:—

1. In all the above-mentioned diseases, in case they should be accompanied by high fever.

2. If there is a simultaneous occurrence of disease of the brain or the spinal cord, of tuberculosis, of valvular disease of the heart, of affections attacking the great blood-vessels, of Bright's disease of the kidneys, or of malignant degenerations in any of the organs of the human body.

It is a well-known fact, that the use of our mineral waters may accelerate the fatal issue in patients suffering from malignant tumours and other degenerations. This has occurred in cases of cancer of the stomach and the liver, the formation of a proper diagnosis at the first instance having proved utterly impossible.

IV.

TIME AND SEASON OF THE TREATMENT.

ONE can use the Carlsbad waters with benefit at all times of the year; but if one wishes to combine pleasure with benefit, it is better to choose for the visit either the spring, the summer, or the fall, according to convenience or necessity.

In general it can only be said that for more vigorous patients the cooler months, April, May, September and October, are more suitable; while for weak persons, with poor blood and a susceptibility to colds or rheumatism, the warmer season, June, July, and August is preferable.

Patients whose condition necessitates the use of the waters twice a year (for example, those suffering from diabetes) should come in April or May and again in October.

As I have said, the Carlsbad springs may be used in winter also. Our mineral waters produce the same beneficial results at one time of the year as at another.

In fact, the number of winter visitors increases from year to year; and since the town authorities

are making all provisions for rendering the stay of visitors even in the winter as pleasant as possible (a good beginning has recently been made by the construction of a closed and heated colonnade at the Sprudel spring), Carlsbad will soon have a regular winter season; and the wishes of many physicians who would like to send patients here in the winter will be accomplished.

The time necessary for the treatment is generally from three to six weeks. As a rule there arises in case of a long stay—usually in the sixth week, sometimes earlier—so strong a feeling of dislike for the water that one is forced to bring his visit to an end.

But the length of the stay should in all cases be left to the decision of the attending physician. The kind and severity of the disease, the quicker or slower action of the water upon the diseased organism, the age and strength of the patient—are the points that must be taken into consideration.

It is, in my opinion, rarely possible to give at the first examination an exact estimate of the time that will be required for a cure; and in general failure is assured beforehand when the patient, without any regard to the nature of his disease, comes to the

physician with the statement that he can or will stay only so long.

The length of the visit, however, is often determined beforehand by the calling or occupation of the patient, which leaves at his disposal only a short fixed time ; and unfortunately only a small proportion of our guests are able to make the length of their stay dependent entirely upon the advice of the physician.

The effect of the Carlsbad waters is much increased by a careful attention to one's diet before the cure (and afterwards also).

It is especially advisable for persons who are well-nourished, stout, and disposed to congestion, to *restrict their diet* already at home for a week or a fortnight before beginning the regular cure, and to take under the direction of their family physician a few bottles of Carlsbad water (cold), or of bitter water (Hungyadi János), or some Carlsbad salts. It is also well to cease from active and absorbing occupations a week or so before starting for the Spâ, so as to give mind and body the necessary relaxation. On the journey one should avoid as much as possible all over-exertion and fatigue, and if the distance is great several days should be taken for the trip. Patients who do not regard these precautions usually

arrive in such an exhausted condition that they are compelled to rest several days before beginning the treatment.

V.

HOW THE WATERS SHOULD BE TAKEN.

PEOPLE in former times went to extremes in this matter. They either used the waters only externally (the oldest method was bathing), or only internally (the later method, drinking); but now the two treatments are combined with the most satisfactory results.

The drinking of large quantities (eight, ten, or even twelve glasses daily) belongs happily to the past. One should drink as a rule four, five, or at the most six glasses a day. And here I must take occasion to admonish the patients *to drink only from the spring recommended by the physician, and to take exactly the quantity prescribed.* Neither the spring nor the quantity should be changed according to one's fancy. Many who have failed to follow the advice of the physician in this respect, and have deviated from it in accordance with their own notion

or the recommendations of their kind (?) friends, have had to rue it bitterly.

As a rule, the waters should be taken only in the morning, and if possible before breakfast. Experience shows that it is best to take medicine upon an empty stomach—and our mineral water is a medicine—because thus the ingredients are most rapidly absorbed by the blood.*

There are some patients who cannot endure the water on an empty stomach. These may drink beforehand a cup of tea, or coffee, or beef tea. The effect of the water (which should be taken about half an hour later) is not at all weakened by so doing. In other cases of this sort it is sufficient for the patient to drink the first glass warm while he is still in bed, and then stay there quietly a quarter of an hour longer.

Happily this condition, which is caused by an abnormal irritability of the nerves of the stomach, is removed in a few days by the water itself.

The cooler waters may be drunk quickly, but the

* The springs are most frequented between six and seven o'clock in the morning, especially the Markt-, Mühl-, and Schlossbrunnen; and in order to secure their turns the guests are obliged to form a so-called "queue," sometimes of several rows. Weak persons, and those who are liable to dizziness, find this a great inconvenience. It is accordingly well for all such to visit the spring as early as five o'clock, or, better still, after seven o'clock.

warmer ones should be taken slowly. To empty the glass at one draught is a great mistake; dizziness and congestion are frequent consequences of such haste.

The separate glasses should be taken at intervals of from fifteen to thirty minutes. Between those the patient should quietly walk about, and now and then sit down for a few minutes, especially if he is not very strong. After the last glass he should walk for an hour or so, and then take breakfast, which, as the saying goes, is the greatest pleasure known in Carlsbad.

Although, as already mentioned, it is no longer customary to drink a great deal, yet cases occur occasionally in which it is desirable to supply the diseased organism with larger quantities of the water, without, however, overloading the stomach; and this is accomplished by going to the springs not only in the morning, but also at midday (11-12) and again in the evening (4-6).

The use of the waters should never be interrupted without a good reason, and then only by the direction of the physician.

There is no reason why ladies should cease using the waters at the time of their periodical courses. They should simply drink less (one or two glasses),

and return to the previous quantity twenty-four hours after the courses have entirely disappeared.

Of course there are exceptions to this rule, as to every other; and since in all cases of profuse hæmorrhage warm drinks are hurtful, it follows that in such cases the patient must abstain entirely from the use of our waters.*

Continuous and exciting conversation during the time of drinking is to be avoided.

Smoking during the time of drinking the waters, or immediately after, is decidedly injurious.

VI.

THE USE OF BATHS. PRECAUTIONS TO BE OBSERVED BEFORE, DURING, AND AFTER BATHING.

As already mentioned above, nearly all patients besides drinking the waters use the baths. Which baths, and how many of them, should be taken, as well as the temperature of the same, can again be

* It is best to go to the springs warmly clad, because (1) in the morning hours, even during the warm season, it is always rather cool; (2) the weather often changes very rapidly; (3) the body, excited by the warm water to perspiration, is more in need than usual of warm clothing to protect it against colds.

determined in each individual case only by the physician.

An additional degree of heat, or a longer stay in the bath than the physician finds necessary for the special case, may under some circumstances be followed by serious consequences.

The best time for bathing is the forenoon, but not earlier than an hour and a half or two hours after breakfast. Baths may also be taken in the afternoon, three or four hours after the midday meal, or at least two hours before going to bed. The effect of the bath is the same whether it be taken in the forenoon or the afternoon.

Rest, both physical and mental, is an essential for the bather. To bathe immediately after severe bodily exercise or violent mental excitement is decidedly injurious, and must be guarded against. It is also injurious to bathe on a full stomach.

The usual temperature for mineral-water baths is between 90° and 95° Fahr.; in exceptional cases, 95° or even 100° Fahr. This last temperature is the normal one for peat baths. For vapour baths, 104° to 118° Fahr.

There is a thermometer in every bath, and the bather will do well to assure himself always that the water is at the desired temperature.

It is best to enter the bath slowly and sit down at once. The water should reach only to the shoulders. Dipping the head under, and even wetting it, is to be avoided: the former, to prevent congestion in the head; the latter, to prevent catching cold.

It is well to rub gently the suffering parts (the joints, limbs, region of the liver and the spleen) during the bath. This is at the same time a good way of overcoming any tendency to sleepiness.

Patients who are disposed to congestions may, while in the bath, cover the head as a safeguard with a cold compress. The time for remaining in the mineral bath is from a quarter to half an hour, for peat and vapour baths, from twenty-five to forty minutes.

Should there be the slightest symptoms of a rush of blood to the brain, as dizziness, sickness, buzzing in the ears, the patient should leave the bath at once, and if need be ring the bell for the attendant.

After the bath the bather should dry himself as quickly and thoroughly as possible, hurry through his toilet, and then go home and lie down, so as to rest and allow the body to perspire a little.

A bath every day would weaken the system too much. It is better accordingly to bathe only every

second day, or to bathe two days and abstain the third. This is especially so in the case of Sprudel and Mud baths, while there is less to be said against the daily use of the acidulous and iron baths.

Vapour baths should be taken twice a week generally ; never more than three times a week.

Sweet-water baths should be taken only for the purpose of ablution.

Ladies should not bathe during the monthly period.

The question whether the waters, together with its soluble ingredients, or any part of them, is really absorbed through the skin, and thus to some extent acts in a manner corresponding to the internal action of the mineral waters, still remains unanswered. Parisot, who instituted experiments in this respect, has come to the conclusion that the layer of fat covering the skin, and secreted by the sebaceous glands, renders it incapable of absorption ; but he succeeded in obtaining absorption through the skin by dissolving in alcohol, or better in chloroform, these chemical agents he wished to be absorbed. It is a fact that alcohol and chloroform again render the skin capable of absorption by dissolving the fatty layer covering it, as well as the withered epithelial cells.

It may then be readily understood that the alkaline water of our mineral baths, after acting on the skin for a considerable time, at last dissolves the layer of fat covering its surface, and removes the obstacle to its absorption.

Putting aside this controversy, the beneficial influence on the diseased organism resulting from the use of the baths in general, and the mineral baths in particular, is positively proved by a medical experience of more than a thousand years.

Indeed, it was by this influence that Carlsbad's reputation was first created, as up to the sixteenth century the Carlsbad mineral waters were only used for bathing, the patients at that time remaining in the bath during the greater part of the day.

The drinking-cures were introduced in the sixteenth century; bathing being then considered as only of secondary importance. Of late years, however, drinking and bathing were both resorted to simultaneously, and this kind of treatment is in general use at the present time.

The effects of the mineral baths are produced by their temperature, their high specific gravity, their amount of carbonic acid, and their mineral constituents, principally the alkaline salt.

They are indicated in all diseases where the use

of the Carlsbad mineral waters is considered advisable, and the same may be said of the mud baths, their action even being more vigorous, which may be accounted for by their higher temperature, serving as they do at the same time as a kind of poultice (*sit venia verbo*).

The chemical composition of the peat also enhances its effects. It consists of decomposed mineral and vegetable substances, of residues of plants, vegetable earth and humic acid, of resins, siliceous earth and clay, of phosphate of protoxide of iron, sulphate of iron, chloride of sodium, sulphates of carbonic acid, sulphuric and formic acid, all of them powerful elements, acting directly on the skin. Their effects are materially increased by the Sprudel water, which is mixed with the mineralised mud for each bath.

Apart from these general indications, the mud baths are especially beneficial in the following diseases:—

1. Neuralgias of various origin, principally when caused by rheumatism and arthritis.
2. Palsy of a lighter degree, caused by disorders in the current of the peripheral nerves, as well as caused by hysteria.
3. Morbid deposits, which have not yet undergone organic transformation.

4. Uterine disorders (not of malignant origin), such as residues of chronic inflammation and amenorrhœa.

5. Tumours of the spleen and enlargement of the liver, which are capable of absorption.

The mineral mud baths, at any rate their methodic use, are contra-indicated only in a very few cases; as, for instance, when there is an idiosyncrasy against bathing in general, and in cases of excessive nervous irritability, or of morbid changes in the blood-vessels.

The Sauerbrunn baths, containing a great quantity of carbonic acid, stimulate the action of the peripheral nerves, thus creating a beneficial influence on the whole of the organism.

The steel baths act in a strengthening and invigorating manner upon debilitated and anæmic individuals, and are principally used in alternation with the Sauerbrunn baths.

VII.

RÉGIME AND DIET DURING THE CURE.

THE physician's directions in regard to *régime* and diet should be strictly followed, because carelessness in this respect not only lessens the chance of recovery, but also sometimes induces new complaints in addition to those which the patient already has.

This caution should be borne in mind, especially by those who are suffering from disease of the stomach and from diabetes.

The fundamental rule during the cure is : never to satisfy thoroughly the appetite, to say nothing of overloading the stomach.

For most of our patients the following diet is the best :—

For breakfast : coffee, tea, or cocoa, with rusks or rolls ; one should limit himself to two or at the most three of the latter. It is a great dietetic mistake, but one that unfortunately is very often made, to eat five or six or more rolls. Bad consequences usually follow, but without making the sufferers any more careful. Whoever is not satisfied with two rolls may take also one or two soft-boiled

eggs, or fish or meat. *I need scarcely warn the patient against indulging in confectionery, cakes, and pastry.*

For dinner : soup or bouillon with the yolk of an egg, one or two easily-digested meats, as very tender and juicy beef, veal, and lamb, young pigeons and fowls, capons, partridges, pheasants, turkeys, and venison ; fish : trout, pike, and sea-fish, with green boiled vegetables, mashed potatoes, and stewed fruits. The simplest puddings may sometimes be allowed, and even these in small quantities only.

One glass of claret or *one* glass of good beer is allowed to most patients ; also fresh spring water, Giesshübler, Biliner or Krondorfer Sauerbrunnen, soda or seltzer waters.

For afternoon lunch : a cup of coffee or tea, with or without a roll according to one's appetite.

For supper : two soft-boiled eggs, or freshly cooked white meat or fish.

Strictly forbidden are all fat and sour dishes, fresh fruit without exception, nuts, hard-boiled eggs, cheese, brown bread ; especially all dishes that are hard to digest, as well as spiced drinks and spirits, ices and iced water. Of course this dietary is a very general one, and in many cases it may be altered by the physician.

To those who suffer from diabetes only the following dishes are allowed: all kinds of fish and meat, but not with sweet sauces; further: crawfish, lobsters, eggs, cream, butter, spinage, asparagus, and cauliflower; coffee (black, or with the yolk of an egg, or with rich cream), tea, good drinking water, bitter beer (Pilsener), and red wine (genuine claret, Austrian and Hungarian wines).

*All kinds of food and drink not expressly mentioned here are strictly forbidden to those who suffer from diabetes.**

Special Directions in regard to Diet.

In every single case special directions must be given in regard to diet, with particular regard to the constitution of the patient and the condition of the digestive apparatus. A carefully regulated diet is an essential part of the medical treatment, not only in the sick-chamber but also at the Spâ, and those are

* I do not consider it superfluous to mention here, in order to avoid any misunderstanding, that I allow patients who are suffering from diabetes, instead of the glutinous bread, three small rolls of 30 grams each (one at breakfast, one at dinner, and one at supper). The glutinous bread, as well as most of the other substitutes for bread that are especially prepared for such patients, contain, as I have repeatedly convinced myself, considerable starch. Many kinds, for example Seegen's almond bread and the gluten bread, are indeed free from starch; but, like all the others, they have the disadvantage of being hard to digest, and hence cannot be recommended.

greatly mistaken who think it sufficient if they attend to the bathing and drinking and disregard the physician's directions as to their diet.

Till within a few years the diet at Carlsbad was a rigorous one and very much feared. The guests were allowed scarcely as much as was absolutely necessary for subsistence, and wine and beer, with very few exceptions, were placed under the ban. When we remember, however, that the visitors to our baths were formerly of quite a different class from those of the present day ;* that then for the most part only those who suffered from diseases of the stomach or liver were sent to Carlsbad ; and that these were almost exclusively rich people, accustomed to luxurious tables ;—the rigorous diet of that time seems by no means so unjustifiable as it would be to-day.

In our time, on the contrary, it does not require as many shillings for a visit to Carlsbad as it formerly required pounds. Communication now-a-days is easy and cheap ; and, finally, the proofs of successful cures here are much more numerous. We have a large and quite different class of guests to

* In those days, when there were no railroads, or at best only a very few, a trip to Carlsbad was an impossibility for a person of moderate means.

deal with, and I think I am not going too far when I maintain that constitutions have also become weaker and less capable of resistance, and for this reason need a more generous nourishment. Besides this, the scientific views in regard to the way the body is nourished and the influence of food on the diseased organism, have been cleared up and extended during the last few years. These are in reality the causes of the different diet that now-a-days is prescribed almost universally by the physicians in Carlsbad. If we take account of the change in circumstances and of the demands of modern science in determining the diet of our patients, it is to be regretted that they still overstep the dietetic limits—now by no means too narrow—that are assigned by the physician.*

So far as it is possible, I will designate the diet that is best suited for the various individual diseases; and those who would like further information in regard to this matter I refer to the excellent papers of the late Zürich physician, Docent Dr. Josef Wiel, on the subject of diet.

In *cases of chronic catarrh of the stomach* a simple diet is the best, and all dishes should be avoided

* Sometimes it happens that the patient, to his dismay, partakes of four or five dishes at dinner, and drinks more beer than mineral water.

that tend to cause acidity on the stomach, or to distend it too much by their volume; since if, for example, a person whose stomach is diseased takes two or three cups of strong sweet coffee with rich cream for breakfast, and eats besides three or four fresh rolls, it is quite natural that he should be troubled, soon after having finished such a heavy meal, with acidity of the stomach, and that the stomach should become swollen and hard as a drum, and the breathing laboured.

The proper diet is as follows :

In the morning (at least one hour after the last glass of water, but not before the patient feels really hungry) : one cup of tea or coffee, with very little milk and a little sugar, two pieces of rusks, and finally a soft-boiled egg.

At noon : a little strong broth, one piece of roast beef or venison, and the crust of a roll; for drink, a small quantity of Giesshübler Sauerbrunn, or one glass of Pilsener beer (not cold, and not to be drunk quickly), or one glass of good red wine.

In the evening : a piece of cold roast beef, or lean ham, and the crust of a roll.

When there is a prevailing acidity of the stomach, all sweet sauces and puddings must be carefully avoided. Patients who suffer from dilatation of the

stomach, should take very little *fluid* nourishment, and should eat mostly meat with green boiled vegetables and soft-boiled eggs, and even of all these not too much. It is better for them to eat often than to eat much at a time. Such patients must avoid all food that tends to produce flatulency, and all drinks that contain carbonic acid gas.

To patients with ulcer in the stomach a milk diet is above all to be recommended. Such a diet can be very easily followed even in Carlsbad. Besides, they may eat cold roast meat or raw minced meat, and rusks or the crust of a roll.

Those who suffer from intestinal catarrh, which manifests itself usually in the form of constipation, should confine themselves to the following diet :

For breakfast : coffee, tea, or milk, rolls, soft-boiled eggs.

For dinner : soup, white meat, green boiled vegetables, stewed fruit.

For supper : white meat with stewed fruit.

When intestinal catarrh is accompanied by frequent thin and slimy discharges, the most suitable diet is the following : cocoa with rusks or toast, thick soup, raw minced meat, roast beef or venison, rice, mashed potatoes ; the only drink, good red wine.

As for patients whose liver or bladder or kidneys are diseased, as well as for gout, the diet must be specially determined for each particular case, with reference to the condition of the patient's digestion.

VIII.

REGIMEN : SLEEP, EXERCISE, OCCUPATION.

As to division of time, the general rule for the visitor to Carlsbad must be, "Early to bed and early to rise." In the case of weak and delicate persons this rule must not, of course, be pressed; for such persons the morning nap is often the most beneficial part of the night's sleep.

Breakfast is seldom taken before nine o'clock. After breakfast it is well to rest for some time, to attend to the most urgent correspondence, and then to take a walk or a bath. Dinner is usually eaten between twelve and two o'clock. In this regard custom is of less importance in Carlsbad than hunger. After dinner the body should be given a long rest, and the stomach time enough to begin digestion.

In the afternoon, as a rule, a longer excursion is

usually taken into the environs of Carlsbad. At five o'clock, a small afternoon meal is eaten, and then at seven o'clock, or a little later, according to the season, all return to town for supper. Afterwards the visitor walks or sits for a little while in the open air, and then about nine o'clock goes to bed, with the happy consciousness of having made a proper day's work.

That in Carlsbad "constantly running about is an indispensable part of the treatment" is an opinion quite generally believed among the guests, but it is entirely erroneous. Every patient is advised, to be sure, to stay out of doors, and to take a certain amount of exercise; but many visitors entirely overshoot the mark by making, despite their physician's warnings, forced marches in a disproportionally short time, and when they come home tired and exhausted, they think to have done wonders for their health, while, in fact, they have taken the shortest way of ruining it.

Again, there are others who fancy that they have made but half a cure if they have not climbed over every hill and mountain around Carlsbad.

"Everything in moderation" is the best rule here as well as elsewhere.

Scholars, government officials, teachers, and all

those who, in consequence of their calling, have but little opportunity to move about in the open air, may, with advantage, take more exercise when they come here, while active business men and farmers often require no more exercise than they take at home.

People do not go to Carlsbad to engage in serious occupations. On the contrary, it is precisely the freedom from one's ordinary employments, the putting aside of all business cares, and the rest that is given the mind as well as the body, that constitute the chief elements in a successful cure.

When the weather is good the largest part of the day should be passed in the open air, in lively company if possible, and the conversation should be about everything in the world—except one's ailments. Easy reading (newspapers and novels) is allowed; but correspondence should be restricted to what is really unavoidable, and of course all exciting mental employments should be shunned.

A pleasant and permissible recreation is afforded by billiards. Card-playing is less advisable. As a mere way of passing time, it may be permitted for half an hour or so at a time; but all continuous and exciting play, such as playing for money, is strictly forbidden.

Moderate dancing is allowed to most guests. Also smoking, which rarely has to be given up altogether. Hard smokers would do well to reduce their daily allowance of cigars as much as possible during the time of their cure.

Concert and theatre going belong to the list of permissible amusements. In visiting the theatre and evening concerts great care should be taken in regard to clothing. A sudden change, from a hot day to a very cold evening, is not at all rare with us. *Never go out in the evening without an overcoat or a wrapper.* Carelessness in this respect is often severely punished.

Sleeping in the daytime does not exactly belong to the list of daily occupations, yet it may be mentioned here.

Sleeping before dinner is allowed :

1. To those patients who feel very tired and sleepy in consequence of the baths, or of the drinking and the exercise that is connected with the latter.

2. To those who have slept little and have been restless through the night.

3. To weak persons in general who find that sleep improves their strength.

Sleeping after eating ought to be avoided.

IX.

SYMPTOMS INDUCED BY USING THE WATERS.

DURING the drinking of the waters, and in consequence of the same, some noticeable changes in certain functions of the body usually take place, occasionally in such a way that the patient—fortunately without good reason, for the most part—gets frightened. It is accordingly advisable to prepare the visitors beforehand for these symptoms.

Most people drink our waters with pleasure, at least without dislike. They pass off easily, causing in most cases not a disagreeable eructation.

The cases in which the waters cause congestion occur for the most part among those patients who do not follow exactly the physician's prescriptions, or among those who consult no physician at all, but drink according to their fancy, now from this spring, now from that, or even from several at the same time and those generally the strongest ones.

The dictum of these self-healers, "The springs are all the same,"—if taken in its full meaning, is far from being true. Our waters are "all the same" only as regards their constituents; but the tempera-

ture, in regard to which the various springs differ so greatly from one another, together with the greater or less quantity of carbonic acid, are precisely the factors which determine the way in which the waters should be used, and factors of which the physician best knows the value.

In cases of diabetes there appears, even in the first days of treatment, a noticeable diminution of the thirst. The troublesome feeling of dryness in the throat disappears at the same time.

I have not as yet observed an increased secretion of the saliva, merely as a consequence of the use of the waters. But an increased activity of the mucous membrane is observable in all cases.

The evacuations are for the most part copious, at first firm, then thinner, and at last watery.

If several watery evacuations, accompanied by griping pains in the stomach, follow one another rapidly, the patient should procure medical aid without delay.

The secretion of urine is in most cases increased.

Patients who suffer from gallstones or from gravel in the kidneys, if they are watchful, especially after attacks of colic, often have an opportunity of finding the "corpus delicti."

Hæmorrhoidal bleeding sometimes occurs. It is

not unwelcome. It often causes—temporarily at least—great relief. Through the frequent use of the Carlsbad waters the causes of this bleeding, and consequently the symptom itself, are removed.

The periodical courses are in many cases materially influenced by the use of our springs. They generally begin a few days before the usual time; sometimes, though this is rarely the case, a few days later. This is a temporary symptom, and of no importance; it usually disappears again after the cure.

In many cases the flow of the blood, which before was very scanty, and accompanied by violent griping pains, becomes copious, and begins—to the joy of the lady-patient—without any suffering whatever.

I may also mention here the beneficial effect of our waters, when taken as an injection, in removing leucorrhœal discharges (the whites), which are not only troublesome but hurtful as well when of long standing.

Some symptoms, such as pains in the liver, colic, loss of appetite, a feeling of oppression in the region of the stomach, &c., increase usually during the first eight days, and do not begin to abate in severity before the second week.

Patients who have been subject to ague occasion-

ally suffer from periodic attacks during their cure ; but they pass quickly away, and usually without the interference of the physician.

Patients who have a tender skin occasionally suffer, in consequence of the use of the waters, and especially after using the mineral or mud baths for a long time, from a slight cutaneous irritation in the form of a pimply eruption that causes a violent itching. Or else the salt appears on the skin in the form of microscopic crystals, making it look as if it were exquisitely powdered with rice flour.

The complexion grows brighter and fresher in nearly all cases.

The appetite improves even during the cure, with few exceptions ; but usually does not reach its normal condition until during or after the "after-cure." The thirst, except in diabetic patients, rarely undergoes any marked change.

In most cases the sleep is at first rather restless, and the patients often complain of troublesome dreams. These bad symptoms, however, pass away soon and leave no trace behind.

The general health varies of course with various patients, according to the constitution, the stage of the disease, and the way of using the waters.

X.

THE AFTER-CURE.

THE cure is not completed on the day when the patient leaves Carlsbad. Just as preparation must be made for it beforehand by a suitable and carefully regulated diet, so it must also be supplemented by the so-called "after-cure." The patient must lead at home for three or four weeks exactly the same physiological life that he has been leading in Carlsbad. This especially means diet and occupation. Whenever this advice (which every physician gives his patients when they leave Carlsbad) is scrupulously followed, the result of the cure is a lasting one.*

It is highly advisable to drink every morning, before and at breakfast, a few glasses of fresh water,

* Unfortunately, however, there are certain circumstances which make it impossible for the patient, though he may have the best intentions, to follow exactly the directions of the physicians in this regard. Social position or limited means are the usual hindrances. Under such circumstances the after-cure becomes far more difficult, but it is by no means rendered impossible. The prescribed diet will never have to undergo any serious change. The necessary exercise too can be taken under all circumstances. It is otherwise, however, with the matter of occupation. An immediate resumption of the usual employments is for many a patient unavoidable. But he should not plunge at once into the whirlpool of business affairs after returning from the Spâ. He should, instead, gradually take up his daily occupations.

and to take an hour's walk immediately after breakfast. This is a very good way of preventing the constipation that sometimes follows the use of the Carlsbad waters.

Patients who suffer from diabetes ought to keep to the diet prescribed above for the rest of their lives. There are, however, many such patients who are so far restored to health by the use of the Carlsbad waters that they can also endure a mixed diet without harm. More particular directions in regard to that matter can be given only by the family physician. *All who suffer from diabetes, however, are strongly advised to use the Carlsbad waters every year.*

In many cases it is advisable, and sometimes even necessary, to send the patients to another Spâ after their cure in Carlsbad is ended. This second trip is taken either immediately after leaving Carlsbad (when the bath recommended must be used at a certain time of year, as Franzensbad, Elster, Ragatz, Gastein, Wiesbaden, Teplitz), or a little while later (as when the grape cure is recommended, or sea-bathing).

Whether such a second course of treatment is necessary, and where it is to be sought, can be determined only by the physician for each individual case.

XI.

THE USE OF THE EXPORTED CARLSBAD WATERS.

THE Carlsbad water is exported in glass bottles only. In this way it keeps for years much better than formerly when it was exported in stone bottles.

I have said that our springs differ from one another only in respect of temperature and the amount of carbonic acid they contain. The greater the amount of free carbonic acid a spring contains, the longer and better will its waters keep.

The cooler springs, the Mühlbrunn, the Schlossbrunn, the Marktbrunn, since they are richest in free carbonic acid, are especially well adapted for export; and as by warming the water any desired temperature can be given it—even that of the Sprudel—it makes very little difference what name the exported water bears.

It follows from this that it would be quite sufficient to export simply the water of the cooler springs. The reasons for exporting all springs in use here are: that there is an enormous demand for the waters, and that it is desirable to execute the orders that call for the waters of specified springs.

The mineral water itself, when exported in well-corked bottles, and gradually heated to the required temperature, will in all important respects possess the same healing influence as the waters when drawn immediately from the respective springs. The greater efficacy of the waters when taken at their original source may be ascribed to reasons accessory rather than paramount, as that the constitution of the patient is prepared for the action of the waters by the salutary effect of the journey and the change of air, and that the use of the waters is directed by the local medical attendant, who is familiar with their different actions. To this again may be added the greater faith generally placed by the patients in the waters when consumed at their source.

Their beneficial influence in many cases is further enhanced and accelerated by bathing in the same water, which, of course, is only possible at the place itself.

Although for these and other similar reasons the use of the waters on the spot is advisable to all those patients who have leisure and means to repair to Carlsbad, we do not for a moment hesitate in recommending the use of the exported mineral waters to those who for one reason or another cannot make the journey to Carlsbad.

There are cases, moreover, in which the exported waters serve a most valuable purpose, namely, when the illness does not admit of delay in treatment, the season of the year, however, not being suitable for a long journey, and also when the debility of the system necessitates a mild preparatory use before undergoing the restrictions attendant upon the regular cure at Carlsbad.

Among such cases we may mention:—*Gallstones* and *gravel*, the violence of the attack demanding prompt action; *gout*, *diabetes mellitus*—in short, all disorders where the delay in the use of the appropriate mineral waters might be attended with the worst consequences.

Should these waters, as it frequently happens, be taken when cold, the selection of any particular spring is of no importance whatever; if, however, they should be consumed in a lukewarm state, then the cooler springs must be gradually heated, so as to acquire the desired temperature; regarding the Sprudel, however, it might easily happen that when heated it will become decomposed and rendered unfit for drinking, containing, as it does, only a very small quantity of carbonic acid.

When taken cold, the mineral waters, principally if some Sprudel salt is added, will cause light and

pulpy evacuations of the bowels, unaccompanied by any excitement of the circulation or derangement of the digestion.

When taken lukewarm, thus imitating their use at Carlsbad itself, they have the same salutary effect as at Carlsbad. But the accessory influences which contribute so greatly towards the attainment of the good results that are seen after a cure at Carlsbad, are necessarily absent in these cases.

In accordance with these remarks, the exported Carlsbad mineral waters are used :

A.—As a preliminary treatment before going to Carlsbad. Such preliminary cures, combined with sufficient exercise in the open air, and with a corresponding diet, cannot be too strongly insisted upon, and it will hardly be deemed necessary in this place to enumerate all the advantages dependent thereon.

This preliminary treatment, *i.e.*, the daily use of one to two tumblersful of the cold mineral water, with some slight addition of Carlsbad salt, is especially indicated :

1. In cases which do not permit the immediate use of the warm springs on account of congestive disorders. These require first a depletion, by means of repeated evacuations, of the system in general, and of the respective congested organs in particular.

2. In cases of habitual constipation, so as to clear the mucous membrane of the intestinal tract of all faecal accumulations, thus facilitating the power of absorption with regard to the warm springs to be used later.

B.—As an after-cure in case the patients are not enabled to stay at Carlsbad until the termination of the regular course.

C.—As a regular drinking-cure for the great number of those who, although their cases indicate a cure at Carlsbad, are unfortunately prevented from complying with such demand.

In cases *B.* and *C.* the water is to be consumed in a lukewarm state, the precise temperature required being accurately determined by the attending medical man, and changed as he thinks fit.

As to the artificial waters used in remote places as a substitute for the natural mineral waters, their value as an addition to our curative treasures is unquestionable; their use is a blessing to thousands of those who are unable to obtain the natural waters. But it would be unwarrantable to assert that their action is equal to that of the natural mineral waters, however scientific the composition, and however successful the imitation of the artificial waters may be. For although they may contain all the "known"

ingredients of the former, as discovered by chemical analysis, yet they do not contain those constituents, hitherto "unknown," which, as we have no doubt, greatly contribute towards the attainment of the salutary effects which result from the use of the natural mineral waters.

There was at first the same agitation against the exportation of the waters which we mentioned with regard to the Carlsbad salt, arising from the same motives. In consequence of this opposition, and also of the lack of railroads, the exportation of our mineral waters was, until recently, carried on in a very slack manner.

During the last thirty years, however, all this has been much improved, and our mineral waters are now sent to all civilised parts of the world, the quantity at present already amounting annually to three millions of bottles.

The exportation of the Carlsbad mineral waters and the Carlsbad salt has, since January 1st, 1877, been transferred to the firm of Mr. L. Schottländer.

For a "drink-cure" at home the same directions should be followed as for one in Carlsbad. I would, however, recommend still greater care, especially as regards the quantity and temperature of the water,

both of which must be determined by the physician, and should be altered if circumstances demand it.

The simplest way of heating the water is to hold a glass of it in a vessel full of boiling water until the thermometer in the glass indicates the required temperature.

The colder the water is taken the more it acts on the bowels, and the warmer it is taken the better it is absorbed and the more it accelerates the circulation of the blood.

It is best to begin with a temperature of from 110° to 122° F., and then, if the disease demands it and the constitution of the patient permits it, to rise gradually in the course of the cure to 162° F.

A stronger purgative action is obtained by adding Carlsbad salts (one or two teaspoonsful to a bottle of water). The action of the artificial Carlsbad salts is insignificant and uncertain as compared with that of the natural, and is not so easily borne.

Physicians who have patients that are using the waters at home may be interested in the following observations, gathered from my experience of many years, in regard to the general and special prescription of this water.

1. In determining the temperature, the condition and working power of the heart and the constitution

of the patient should be considered first of all, and not the disease itself.

2. Weak patients, or those whose vascular system is easily excited and who are injured by an accelerated activity of the heart, should drink our waters luke-warm only; and high temperatures, such as are mentioned in the following special directions for special diseases, are not to be allowed in such cases.

3. Those who suffer from diseases of the stomach, especially dilatation of the stomach, should drink only moderate quantities.

Special Directions.

1. *Chronic Catarrh of the Stomach.* In the morning two or three glasses (of 5 to 6 ounces), at intervals of half an hour, temperature at first 122° F., rising 11–12° F. every four days, till it reaches 160° F. Should the third glass be too much in the morning it can be taken with quite as much benefit an hour before the midday meal.

2. *Dilatation of the Stomach.* In the morning, two to three half glasses; at noon, two half glasses, at intervals of half an hour; temperature, 133° F., gradually rising to 160° F.

3. *Cramps in the Stomach.* Two to three glasses, 145–160° F.

4. *Ulcer in the Stomach.* Two to four half glasses at intervals of half an hour; in fresh cases, and when there is danger of hæmorrhage in the stomach, 100–122° F.; if there is no such danger, and the ulcer has already healed, higher temperatures are advised, 133–145° F.

5. *Chronic Intestinal Catarrh.* a. With obstinate constipation. In the morning, at first one glass, cold, then two to three glasses, 122–133° F., at intervals of fifteen minutes. To increase the purgative effect one or even two teaspoonsful of Carlsbad salt may be added to one of the glasses.

b. With frequent slimy watery evacuations, three glasses the first three days, 122° F., then daily an increase of 11–12° F., until 160° F. is reached.

In diseases of the liver, the bile-passages, the kidneys, and the bladder, moderate temperatures, 133–145° F., and larger quantities, four and even five glasses, are advised. Furthermore, for these last-mentioned diseases, as also in cases of gout, at the same time the use of warm baths, 90–97° F., with Carlsbad soap, or soda and mud-baths are to be recommended.

Gout and Diabetes. Three to four glasses, 133–167° F.

Malaria. Two to three glasses, 122–133° F.

What is said above applies especially to the Carlsbad cures that are carried on at home and are not limited in time. The treatment ought to be continued as long as the physician thinks it necessary.

XII.

THE USE OF THE CARLSBAD SALTS.

THE Carlsbad Sprudel salt, for a long time a well-known remedy, has gained in the last fifteen years such a remarkable reputation and recognition that now, although a second "boiling-house" has been built, the production scarcely keeps pace with the consumption, and in many cases the artificial Carlsbad salt is used, especially in practice among the poor.

According to the quantity taken it works either as a gentle aperient or as a purgative, and may either be added to the Carlsbad mineral water or dissolved in common water.

The latter way of using it is by far the more general and requires special mention.

The daily dose varies, according to the disease and the constitution of the patient, from 10 to 20 grams (about $\frac{1}{3}$ to $\frac{2}{3}$ of an ounce) in $\frac{1}{4}$ to $\frac{1}{2}$ a pint

of water. The quantity of water corresponds to the amount of salt taken, and must be exactly determined by the family physician. It should be heated in a well-glazed dish to the boiling-point, and then the salt should be dissolved in it. The solution should be allowed to boil for five minutes, and then to cool to 110–122° F. before it is taken.

The use of the Carlsbad salts has a lasting effect only when it is taken regularly for quite a long time (two to four weeks). Its effect is sensibly increased by a well-regulated diet and plenty of exercise in the open air.

If the use of the salts is too long continued it weakens the whole system, and is to be avoided.

The salt is sent out originally in bottles of 125, 250, and 500 grams, and can be had of any druggist. I advise every one to whom the use of the salt is recommended to buy one of the original bottles, of the size needed. The original packing and the trade-mark stamped on the tin cap and on the label protect the public sufficiently against spurious preparations.

In connection with this I will also mention the Sprudel pastilles. They are prepared in the same way as the Vichy pastilles. They contain the most important ingredients of the Carlsbad mineral water,

and are especially to be recommended for acidity of the stomach, sour eructations, bad and sticky taste in the mouth, and frothing of the saliva.

XIII.

THE DREAD OF CARLSBAD.

It would hardly be thought possible that in our time, the time of culture and enlightenment *par excellence*, there could exist an actual fear of a particular Spâ. Such a fear, however, does exist; for there are still people enough who believe that the advice to go to Carlsbad for a cure is an indirect way of being recommended to draw up their wills. This "dread of Carlsbad" is very old; so old that it seems at last to be dying of old age. For no one can fail to see that this prejudice, based upon nonsensical and untrue stories, is fast disappearing before the better knowledge of the public and the spoken and written* statements of physicians. It is to be hoped that it will be soon gone for ever.

Furthermore, this altogether unfounded fear of

* Gartenlaube, 1876, Seite 802. Das gefährliche Karlsbad. Ein Protest gegen die Vorurtheile über Karlsbad, von Dr. Hlawaeek.

Carlsbad is met with not only among laymen but sometimes among physicians too, who certainly are acquainted with the constituents and effects of our waters, and are aware that the Carlsbad springs, in all those diseases for which they are recommended, will certainly benefit and can never injure a patient.

Whence then this fear of a mineral water whose constituents and effects are known with exactness, and which can be given even to children with good results? I have already mentioned that the reason is to be found in part in nonsensical and untrue stories, which, told perhaps only in jest, have been taken for true by credulous audiences and scattered abroad; for the improbable and the mysterious always finds credulous hearers. Passing over as doubtful many other sources of such stories, I will only mention a very obvious one, for which the guests themselves are responsible.

Some of the guests, and unfortunately not the greatest part, follow with scrupulous exactness the directions of the physician, both at Carlsbad during the treatment and elsewhere during the after-cure, and by so doing obtain a most satisfactory result. Patients of this sort become, even when they have come here with a certain anxiety, most enthusiastic apostles of Carlsbad.

A second and very large part of the guests are less careful about the directions of the physician and allow themselves many variations, especially in regard to diet, both during the cure and still more during the after-cure. Is it not natural that now and then one of these should have to repent bitterly his imprudence (to put it mildly), and occasionally pay for it with his life? The sad thing is that in such cases it is not the disobedient patient that is blamed, but the Carlsbad water.

The rest of the guests use the waters without any medical guidance. It is quite natural that such ill-ordered cures should seldom have good results, and very often, on the contrary, decidedly bad ones; but again it is the Spâ that is held responsible.

The dread many physicians have of sending their patients to Carlsbad, in spite of the fact that they consider it advisable, finds its explanation for the most part in the above-mentioned drawbacks. Just as the Spâ is held responsible for the unreasonable behaviour of certain patients and the unfavourable consequences of it, so the family physician as a rule is not spared reproaches. The patient who ought to have followed the advice of his physician and attempted a cure in Carlsbad years ago, but has postponed it so long that a good result is scarcely

to be expected; the patient who through his own fault, whether it be disobedience or imprudence, makes the cure of his disease an impossibility; the family that loses a member in Carlsbad, or even after the stay there;—all these make the family physician responsible in the majority of cases. Naturally he avoids sending patients to Carlsbad as much as possible.

How powerful and elsewhere unattainable the effect of our springs must be, if, nevertheless, in spite of the prejudices mentioned, and many other similar ones, the number of visitors to Carlsbad increases every year. And it is pleasant to be able to state that as the number of guests increases the prejudice against the place diminishes.

There exist, as already stated, many other erroneous opinions and prejudices in regard to Carlsbad, its springs, and the way of using them. It would overstep the limits of this book to bring forward and controvert all of them, but I will refer, in concluding, to one or two of the most important.

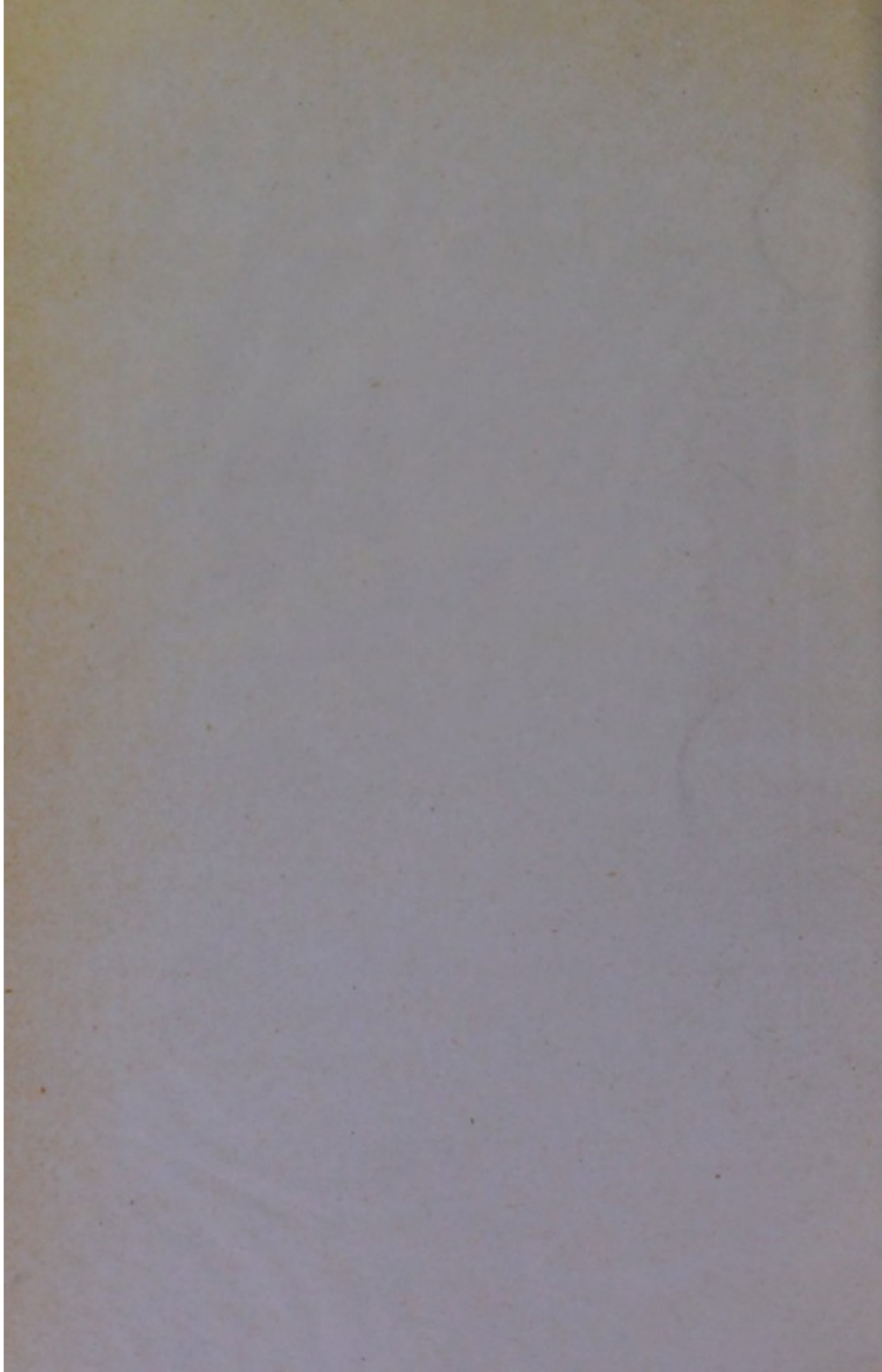
There is an often accepted but quite erroneous opinion that *Carlsbad water works successfully only when it purges thoroughly*. This is, as I have already said, an erroneous, because unscientific opinion. This *visible* effect of the waters, which many look for

so eagerly, often fails to appear during the whole time of the cure. "Everything is just as it was before" is the stereotyped complaint of such patients, and yet their cure will be followed by the best results.

If the purgative action is desired but does not appear, it suffices to drink a glass or two more, or to use a *warmer* spring. Occasionally, however, this is not enough; and then it is advisable to drink, either in the evening only, or in the morning too before going to the spring, one or two glasses of cold Schlossbrunn or one glass of Hungyadi János, or to add one teaspoonful of Carlsbad salt in the first glass. Sometimes it is also necessary to use injections.

I have already referred to the error of an excessive use of the Carlsbad waters; that "much helps much" is the opinion of some, and accordingly they drink double the quantity prescribed by the physician and even more. It is not necessary to point out the injurious consequences which sometimes follow such an inconsiderate act.



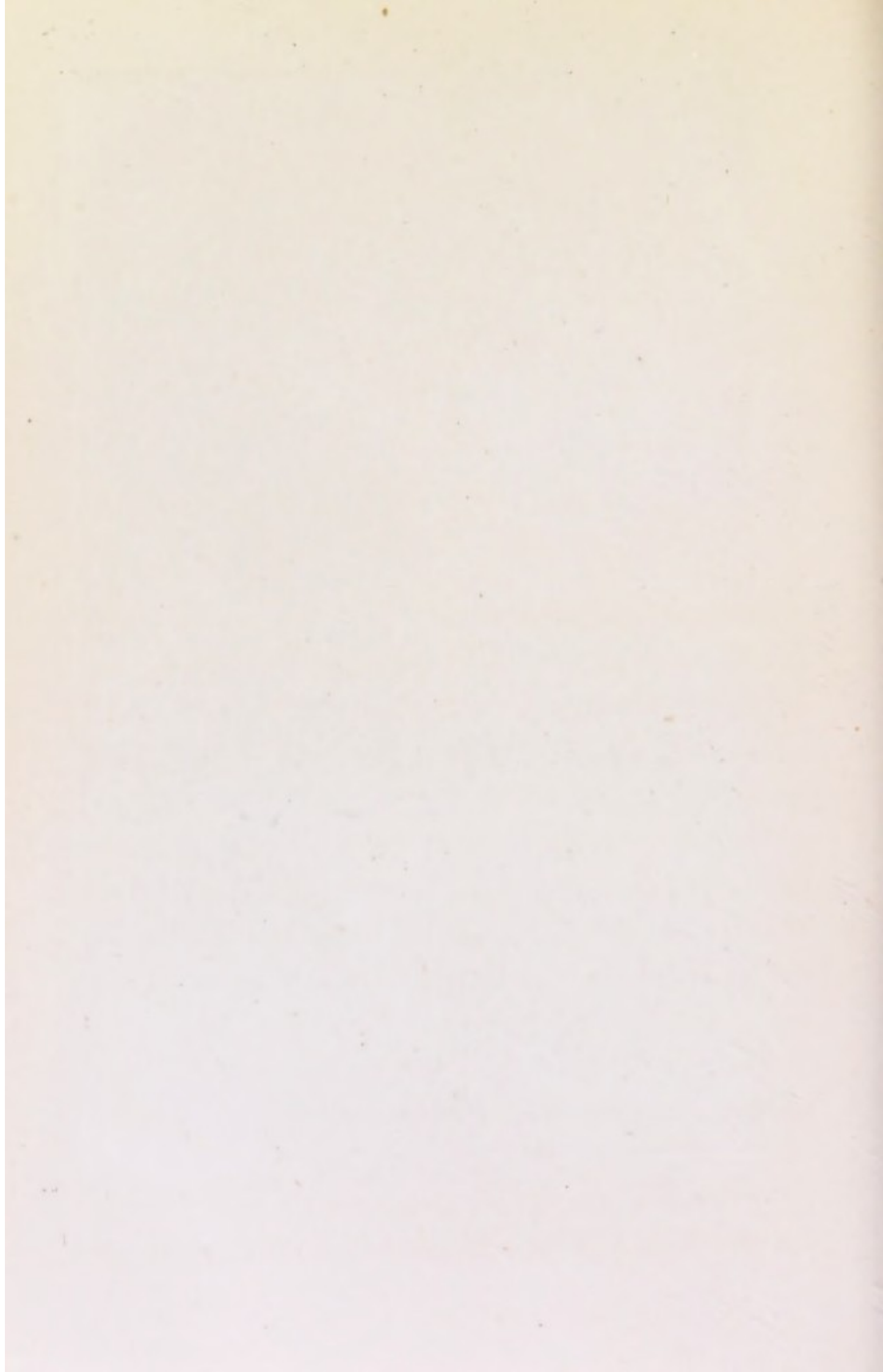




Pietzner phot.

J. B. Obernetter, München impr.

The English Church.



APPENDIX.

*HINTS, LOCAL AND ECONOMICAL INFORMATION
FOR THE VISITOR TO CARLSBAD.*

THE stranger arriving for the first time in Carlsbad is often in need of information about the usages, the accommodations, and the comforts of the place.

I note in the Appendix such points as are likely to be most useful to him.

The town Carlsbad station is on the Eger-Prague line. It can be reached from Munich, Leipsic, or Dresden in eight hours, from Vienna or Berlin in twelve, from Paris in thirty, from London in thirty-two hours.

The place itself is charmingly situated, and has magnificent surroundings with well-kept shady promenades.

When the weather is unfavourable, and during the winter months, the Mühlbrunnen colonnade and

the handsome new Sprudel colonnade afford space for walking or sitting, with protection from the tender mercies of the weather.

The mineral baths are in the "Sprudel bath-house," in the "Mühlbad," the ground-floor of the "Kurhaus," and in the first floor of the "Neubad." The steam- and douche-baths are in the "Kurhaus," the mud-baths in the "Kurhaus" and the "Neubad."

The prices of rooms vary greatly, according to the situation and the time of year. As regards situation, the prices on the Schlossberg, Alte Wiese, Marienbader Strasse, and Marktplatz are higher than elsewhere, as these are the best parts of the town; the Neue Wiese, Park Strasse, Gartenzeile, Kaiser Strasse, Mühlbadgasse, Sprudelgasse, and Kreuzgasse, rank second.

In April, September, and October, and during the winter months, rooms are very cheap. As the number of visitors increases, that is, from the middle of May till the middle of August, the prices become correspondingly higher. The average price for single rooms is from five to fifteen florins a week; for suites, up to four rooms, from thirty to seventy florins a week, and even more.

Of café-restaurants there are more than enough; the best known are: the Café Pupp, Elefant, Stadt-

park, Sanssouci, Schönbrunn, Posthof, Schweizerthal, Freundschaftssaal and Kaiserpark.

As there are prejudices in other matters against Carlsbad, there is also one as to the cooking. This is adapted indeed to the necessities of the patients, but it is nevertheless nourishing and palatable; to the wants of epicures even sufficient attention is paid.

During the season the "Kurorchester" (band), under the direction of Labitzky, plays from 6 to 8 o'clock in the morning at the Sprudel and at the Mühlbrunn; from 4 to 6 o'clock in the afternoon there is a regular concert either at Pupp's or at the Posthof, or at the Stadtpark. Besides, there are evening concerts either outside if the weather allows, or inside of the concert halls if the weather is unfavourable.

In the "Stadt theater" there is a performance every evening.

In the great hall of the Kurhaus there is a *réunion dansante* every Saturday.

Post and telegraph (the latter with uninterrupted day and night service) are in the post-office building on the Marktplatz.

Comfortable reading-rooms, one for ladies and two for gentlemen, with an abundant supply of newspapers from many countries, are in the Kurhaus.

There are four book stores : (1) The bookseller to the Imperial Court, Hans Feller, on the Alte Wiese ; (2) a branch of the same ; (3) Bernhard Knauer's, both on the Markt ; and (4) Rudolf Stark's, near the Mühlbrunn. There are also three circulating libraries, namely, those of Hans Feller, on the Alte Wiese and on the Markt, and Franieck's on the Marktplatz.

During the season two newspapers appear in Carlsbad : the *Fremdenblatt* and the *Carlsbader Badeblatt*. Two others appear during the whole year. Carlsbad has five churches (Catholic, Protestant, Jewish, English, Russian), two apothecaries, a general public infirmary, and two hospitals for poor visitors.

In the *Fremdenblatt* (price ten kreuzers) may be found the price of baths, fiacres, droschkes, donkeys, the Dienstmann Express, &c. This is useful for those who wish to protect themselves against imposition.

CURE-TAX—HOTELS AND APARTMENTS.

EVERY stranger who stays longer than one week in Carlsbad, whether he uses the waters or not, has to pay the cure-tax. This is of grades according to the means of the visitor—16 or 9 or 6 Austrian florins. Children under fourteen years and servants are taxed one florin each.

I have already said that visitors make a mistake, both on the score of economy and of health, when they start out immediately after their arrival to hunt for lodgings, instead of going first to an hotel and resting from the fatigue of the journey. The stranger, unacquainted as he is with the way of letting and hiring apartments, takes rooms that sometimes are not suitable to his needs and soon has perhaps to change, doubling his expenses, not to speak of the contention and vexation which such a change is likely to bring. The hotels in Carlsbad are well fitted up. Prices are higher than in lodging-houses, but not excessive.

The following points regulate the agreement usually made in hiring rooms :—

1. The visitor who comes here to take a course can hire an apartment for a definite or an indefinite time.

Any agreement that is made in regard to hiring rooms, or in regard to conditions under which rooms are hired, is decisive and final for the time the visitor remains at Carlsbad.

2. If the apartment is hired for a definite time—for example, a week, a month—or, in general, up to a fixed date, the agreement holds for this expressly fixed time, requires no previous notice, and expires at the end of the fixed period unless in the meanwhile an extension of time under the same or different conditions is decided upon by mutual agreement, in which case this extension is regarded as being made a new one.

3. The fact that the rent is paid weekly, which is in accordance with the usual custom, has no effect on the agreement.

4. During the definite period for which the apartment has been hired the price cannot be raised.

5. If an apartment is hired for an indefinite time, it is taken for granted in doubtful cases where no special conditions have been made that the guest has taken the apartment for the usual time of a cure, four weeks; and during this time the rent originally agreed upon may not be raised.

If the tenant intends in such a case to leave the apartment at the expiration of the four weeks, or

the landlord wishes to rent it to another person, a week's notice must be given. If this is not done, the agreement holds good for a further indefinite time, and may be dissolved at any time after such a week's notice.

6. If, however, the apartment is hired expressly by the week or by the day, there must always in the former case be a week's notice, in the latter one of twenty-four hours. Notice may be given by both tenant and landlord.

7. The week's notice must be given at the exact close of a week for which rent is paid, and such week is reckoned from the day on which the obligation to pay for the apartment begins.

If notice is given in the course of a week, it is regarded as if it were given at the end of the week. The week is reckoned at seven days.

8. If, in case an apartment is hired for an indefinite time or by the week, the guest gives notice on the very day of his entering the apartment, he need pay only for the current week.

9. If a guest wishes to leave an apartment that he has hired for an indefinite time, or by the week, he must pay, in addition to the rent for the current week, the amount of another week's rent as indemnification. He has, however, no claim on

the apartment so left and cannot let it himself to another.

When the apartment is hired for the day, the indemnification consists of the rent of one day.

10. Every landlord has a right to demand of the person to whom he lets an apartment a payment in advance, but this payment need not exceed the rent of the apartment for one week. Such advance payment is forfeited if the person who hires the apartment neither moves in during the first week nor gives the proprietor a satisfactory guarantee that he will nevertheless keep his agreement. If he fails to give such guarantee, the proprietor may dispose of his apartment otherwise after the expiration of the first week.

11. In hotels and public-houses the stranger has a right to leave his room at any time and to pay only by the day.

If, however, a stranger hires a room in a hotel for a definite price that is not to be reckoned by the day, whether for a definite or an indefinite time, the above-mentioned conditions hold good just as in the case of private houses.

12. If the conditions of the bargain are not fulfilled by the proprietor—if, for example, the tenant does not receive the stipulated or necessary furni-

ture ; if it is proved that the apartment is unclean, damp, or unhealthy in any way ; or if after a time defects are discovered which could not be known when the agreement was made, and by which the rights of the tenant are prejudiced, and which cannot be removed by the proprietor—in all such cases the tenant has the right to leave the apartment without further notice and without indemnification, upon simply paying the rent for the time of actual occupation.

13. In such cases it is for the tenant to prove the conditions agreed upon and the defects alleged.

In like manner the burden of proof lies with the complainant whenever a dispute arises over the question whether the apartment was hired for a definite or an indefinite time.

If there is no written agreement at hand, and an oral agreement cannot be proved, then the “announcement-sheet” of the police, which contains a blank space for the intended duration of the stay, is taken as proof ; and proprietors are accordingly advised to have these sheets filled out by the strangers themselves, for otherwise a denial by the tenant of the statements made on them must be accepted.

14. When a furnished apartment is hired there is

no special indemnification to be paid for the ordinary wear of furniture and linen. But

a. In case anything is damaged or broken, compensation must be made.

b. In cases of long and severe illness, when more linen is used than usual, a suitable recompense must be made; and if anything is rendered unfit for further use, a sum corresponding to its value must be paid.

15. Every guest is at liberty to take his meals and baths where he chooses, and he also has a right to have his washing done wherever he likes.

No limitation of this right that may be imposed upon a guest as a condition when he hires his apartment, holds good. No complaint on the part of the proprietor can be founded on such a stipulation, and the attempt to impose on a tenant in this way gives him the right to cancel his agreement at once without notice.

16. As a rule "service" is not included, except when it is proved that the apartment with "service" was hired for this or that amount. With the exception of such cases the sum to be paid for service is to be left to mutual agreement or to be arranged in accordance with the customs of the household.

If, however, a certain fixed amount for service

to be paid with the weekly or monthly account is demanded by the person who lets the apartments, and this demand is acceded to by the tenant, the servants have no right to claim fees, and the guest is under no obligation to give them.

Under the head of service are to be understood the usual duties of servants, such as keeping the rooms clean and orderly, by bringing water and other things that are necessary, as well as all small matters of this kind; but serving, washing, ironing, cleaning shoes and clothing, and caring for the sick are not included.

17. If disagreements arise between landlord and tenant they should be carried before the "K. K. Bezirkshauptmann" (in the Amtsgebäude, second floor, on the Neue Wiese), whose duty it is to act as mediator between the parties, to bring about a peaceable settlement if possible, and if not to direct the parties to the courts.

If both parties request it, it is the duty of this officer to act as umpire and pronounce a final decision.

TABLE OF VISITORS.*

THE following chronological table of the number of visitors to Carlsbad from year to year may be of interest to readers. The actual number of visitors is about one-fourth greater than the number of parties given below :—

Year.	Parties.	Year.	Parties.	Year.	Parties.
1765	247	1828	2127	1857	6,068
1770	322	1829	2302	1858	5,776
1775	294	1830	2448	1859	4,545
1778†	59	1831	1785	1860	6,366
1780	225	1832	2063	1861	6,615
1785	445	1833	2933	1862	7,324
1790	368	1834	3287	1863	7,363
1795	635	1835	2737	1864	4,070
1800	744	1836	2499	1865	7,969
1805	725	1837	2772	1866†	3,009
1809‡	113	1838	2580	1867	9,119
1810	1255	1839	2637	1868	9,385
1811	1334	1840	2882	1869	10,030
1812‡	782	1841	2809	1870	9,722
1813‡	629	1842	2829	1871	12,671
1814	1227	1843	2952	1872	13,650
1815	1302	1844	3202	1873	14,076
1816	2019	1845	3234	1874	14,616
1817	1911	1846	3438	1875	15,642
1818	2147	1847	3435	1876	15,411
1819	2017	1848§	1778	1877	15,636
1820	1641	1849§	2987	1878	16,158
1821	1559	1850	4227	1879	17,980
1822	1485	1851	4626	1880	19,502
1823	1454	1852	4591	1881	19,692
1824	1618	1853	4620	1882	20,307
1825	1660	1854	4146	1883	20,692
1826	1871	1855	7414	1884	21,546
1827	2018	1856	6031	1885	20,815

* Parties or families. † Wars with Prussia. ‡ Wars with Napoleon.
§ Revolutionary years. || War with Italy.

WALKS.

1. To the Posthof, Freundschafts-Saal and Kaiser-Park.
2. Findlater's Temple (erected by Lord Findlater).
3. To the Hirschensprung, Petershöhe.
4. To Findlater's Pyramid (erected 1804 by the town of Carlsbad to the memory of Lord Findlater), Helenensitz and Belvédère.
5. To Franz Joseph's Hill.
6. Frederic William's Place and Belvédère.
7. To Aberg, St. Leonhard's Church, the Echo, Rusell Sitz, and Jägerhaus.
8. To Hammerberg and Ecce Homo Chapel.
9. To Dreikreuzberg (Three Cross Hill), King Otto Hill, and Ewiges Leben, with its beautiful tower called "Stefaniewarte," erected in 1889.
10. To the Wiener Sitz, Helenenhof and Laurentius Chapel.
11. To Schönbrunn.

DRIVES.

1. To Giesshübl-Puchstein. Easily reached by 'Bus or Fiacre. The famous King Otto Spring, Hydropathic Establishment, Kurhaus, Excellent Restaurants, The Dwarves' Holes.
2. To Dallwitz Park, with the Körner's Oak, the China Factory, and Three Oaks.
3. To the Red Säuerling.
4. To Pirkenhammer and Mecseryhöhe.
5. To Aich and Hans Heiling Rock.
6. To Castle Hauenstein (Chapel) and the Eichelberg.
7. To Schlackenwerth.
8. To Joachimsthal, Castle Freudenstein, and Sonnenwirbel.
9. To Engelhaus and Castle Giesshübl.
10. To Eger, Franzensbad, Marienbad.

WALK

The first part of the walk was through the park. The children were very happy and played for hours. They saw many beautiful flowers and trees. The weather was perfect for a walk.

After the walk, we went to the picnic grounds. We had a picnic under a big tree. The children ate their sandwiches and drank juice. They were very happy and enjoyed the picnic very much.

REVISED

The second part of the walk was through the woods. The children were very curious and asked many questions. They saw many interesting things and learned a lot about nature.

At the end of the walk, we returned to the picnic grounds. The children were very tired but very happy. They had a great day and enjoyed the walk very much.



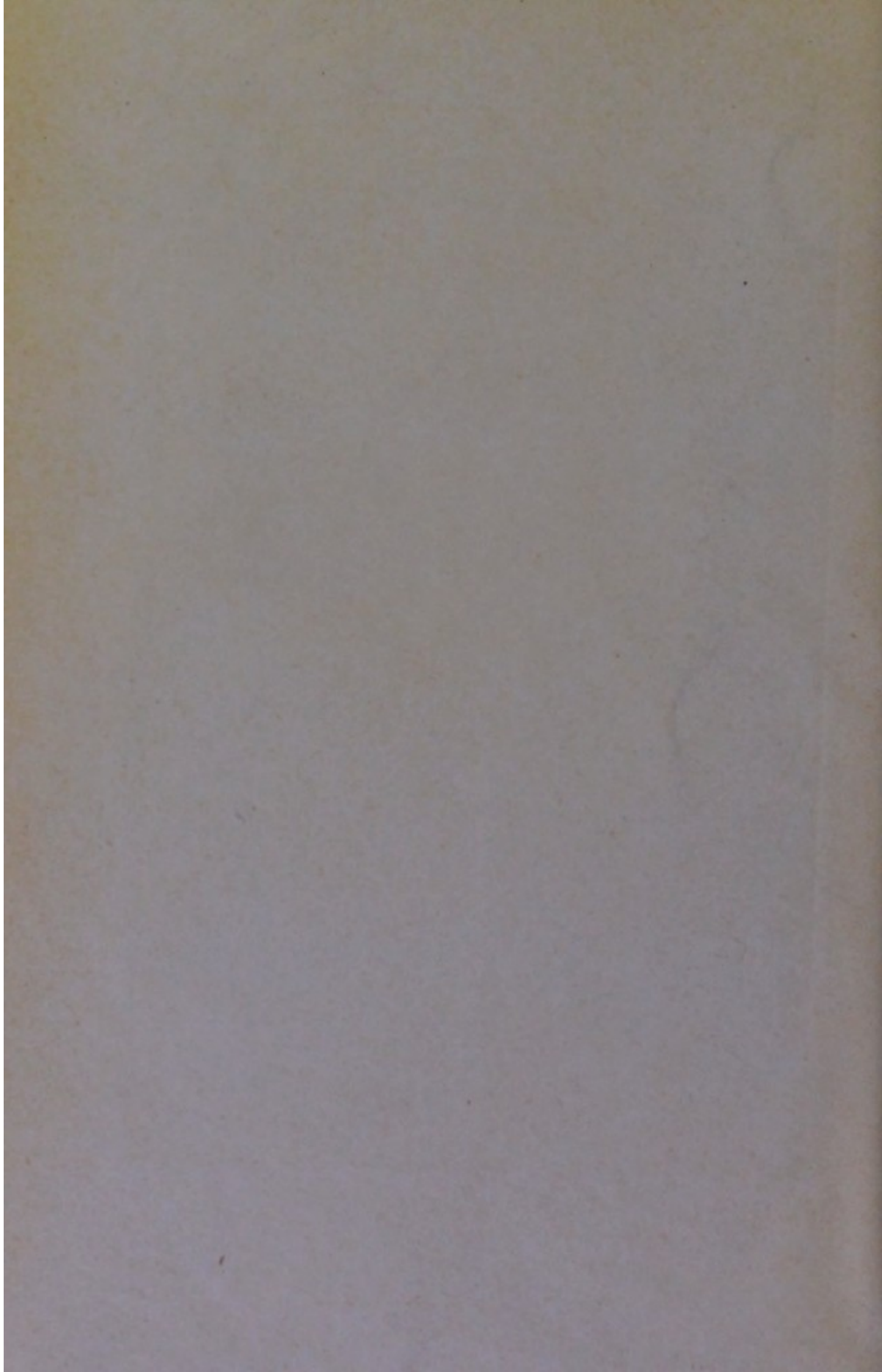
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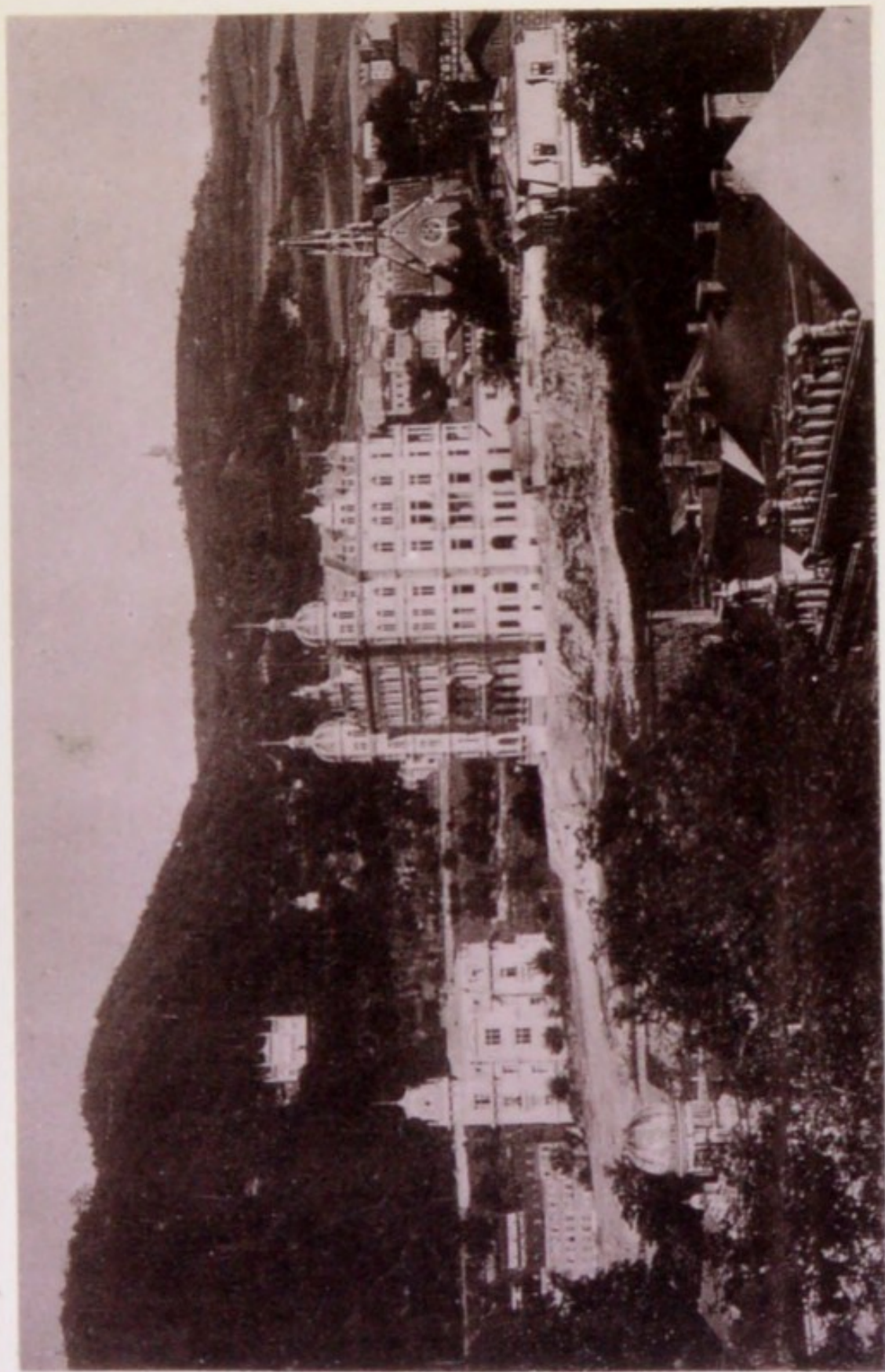
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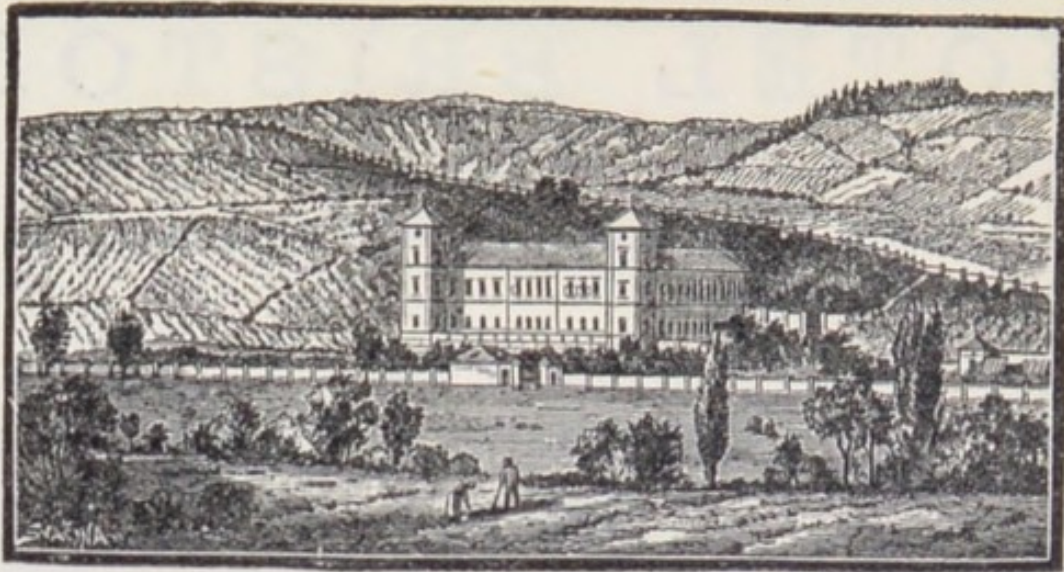
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