

Tarasp and its mineral waters / from the French of Dr. Killias ; compiled and edited by N. B. Whitby.

Contributors

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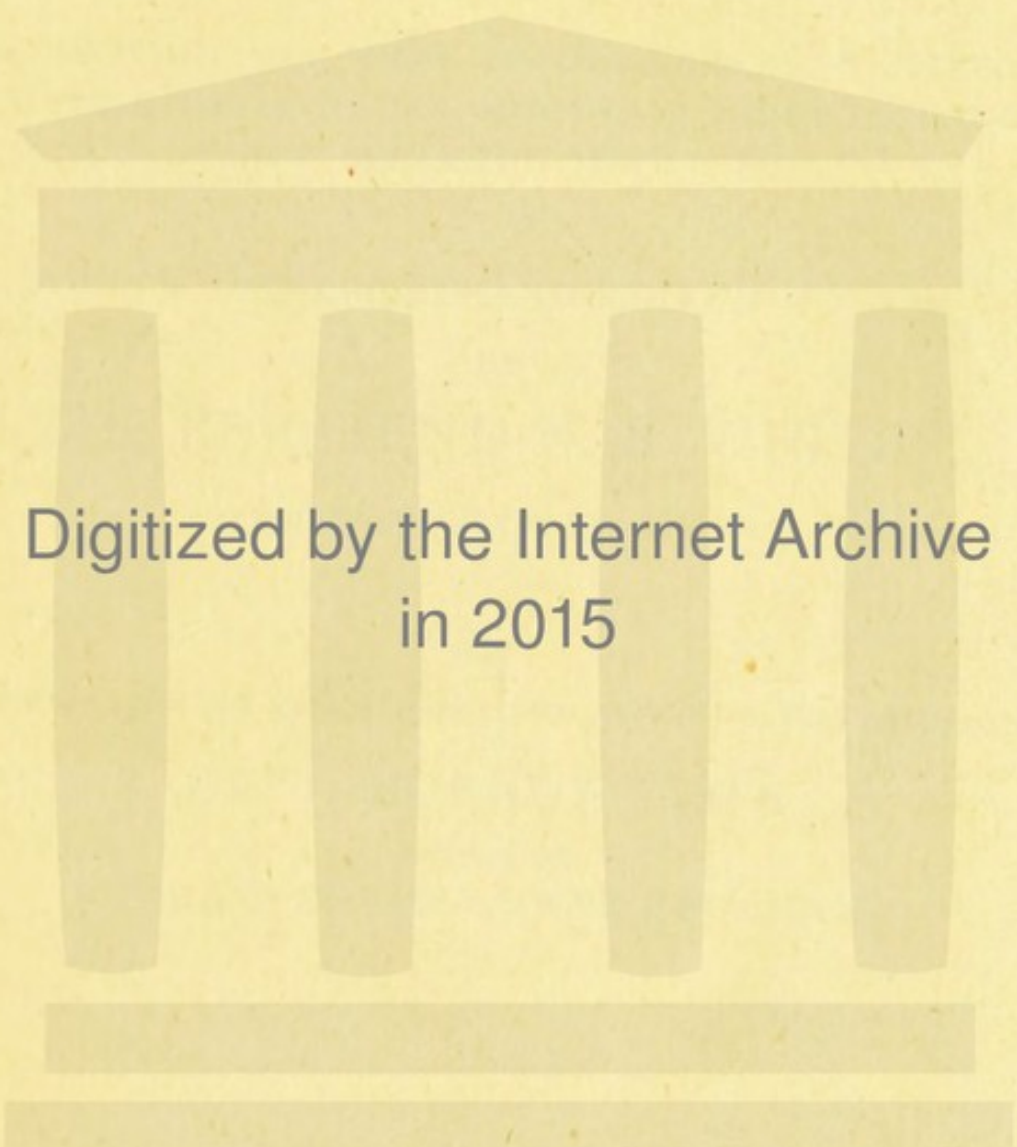
TARASP,
and its
MINERAL WATERS.
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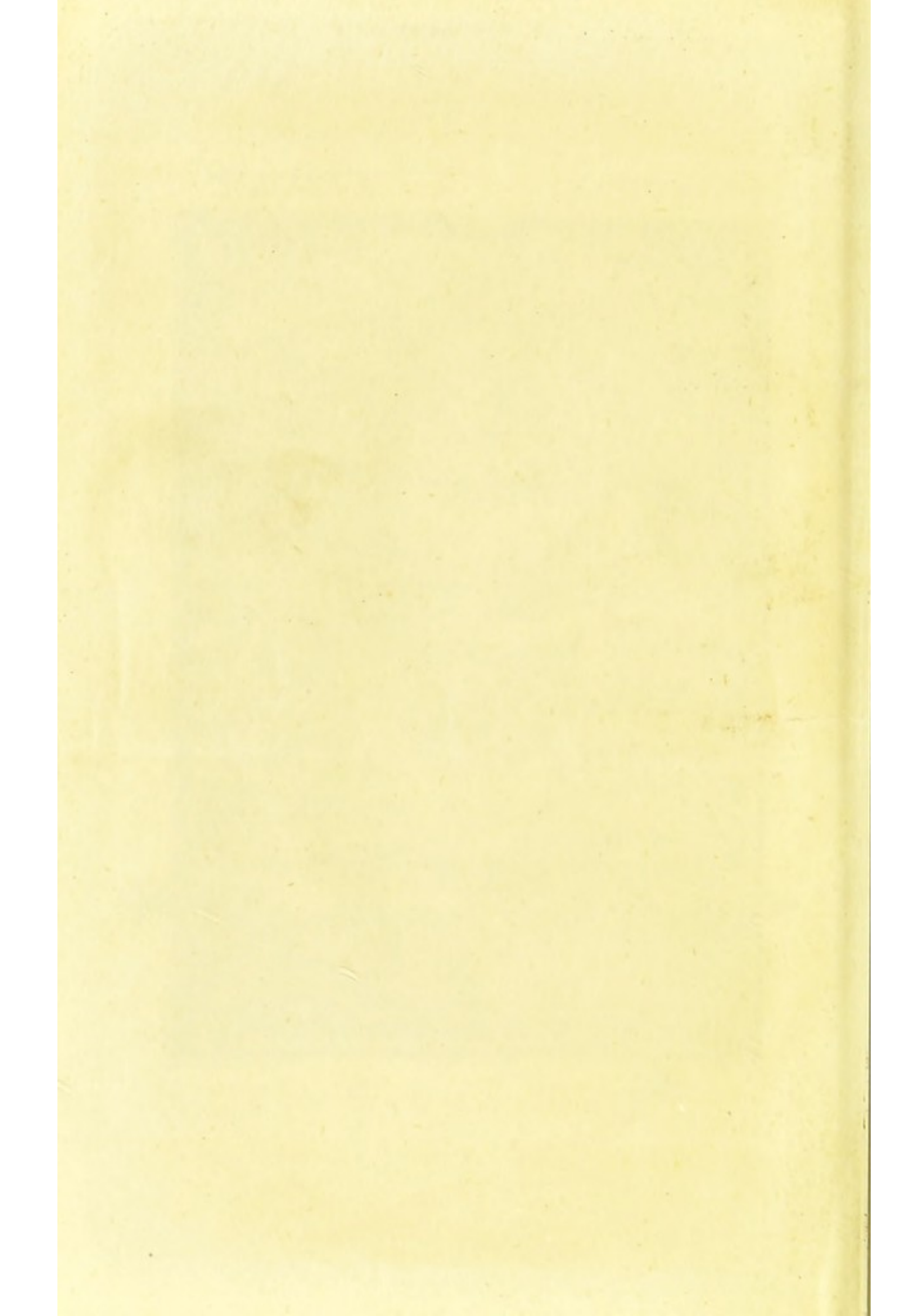
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TARASP

AND ITS MINERAL WATERS.

FROM
THE FRENCH OF DR. KILLIAS.

SECOND EDITION, WITH TOPOGRAPHICAL, CLIMATIC,
AND PISCATORIAL NOTES, MOUNTAIN ASCENTS, EXCUR-
SIONS, SKELETON TOURS, ETC.

COMPILED AND EDITED
BY
THE REVEREND N. B. WHITBY,
(ENGLISH CHAPLAIN AT TARASP.)

ALSO,
REPRINTED FROM THE MEDICAL TIMES AND GAZETTE OF APRIL 23RD, 1870,

DR. J. BURNEY YEO'S
ARTICLE ON
"TARASP IN THE LOWER ENGADINE."

LONDON: THOMAS BOSWORTH,
198, HIGH HOLBORN, W.C.;

PARIS: GALIGNANI; COIRE: J. A. PRADELLA.

1870.

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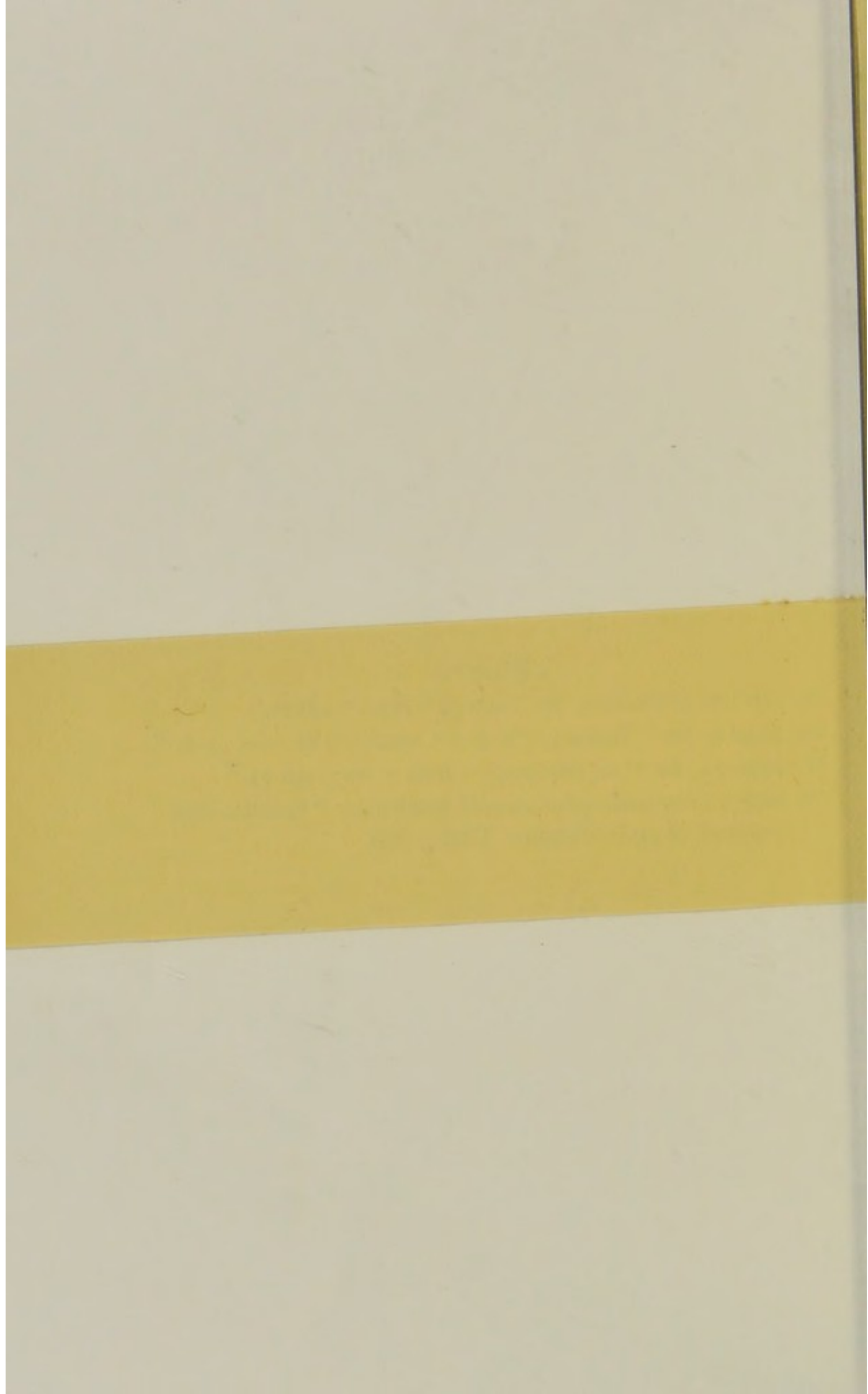
ERRATA.

In 4th line of Preface, for "adopt" read "adapt."

On page 9, for "Rooms 2 fr. 3 c." read "2 fr. — 3 fr."

On page 10, for "on title page" read "on page 71."

On page 53, the semi-colon should come after "Scaletta pass"
instead of after Dischma Thal.—ED.



PREFACE.

THE 1st edition of "Tarasp," which was written in 1866, by Dr. Killias, of Coire, the resident physician, having been exhausted, I was asked last year if I would adopt and edit for English readers the new French edition about to be published by Dr. Killias in Switzerland, together with some topographical notes, skeleton tours, &c., a request with which I had much pleasure in complying, both on account of the uniform kindness and courtesy which I had experienced at the hands of the Managing Director and other officers of the company, and because I was fully convinced, from my own personal experience last season, not only of the great natural advantages and attractions which the place possesses, as a health resort, but also of the immense value of its mineral waters, and consequently of the propriety of bringing its claims before the notice of my countrymen; for which I considered that I had one very important qualification, viz., my not having any pecuniary interest either in the Tarasp company or the sale of this book.

What I have done has been a gratuitous labour of love, for those to whom I owe a debt of gratitude for much *comfort* and attention during a very pleasant sojourn, and for liberal treatment of the church of which I am now the official representative at Tarasp, having been desired by one in authority, and to whose opinion and wish I felt bound to pay great deference, to undertake the chaplaincy ; at the same time I only took the office of editor on condition that I was to use my own discretion as to the suppression of anything which I might consider misleading, or the insertion of any explanatory matter which I might judge to be necessary ; in pursuance of which understanding I have printed Dr. Yeo's article *verbatim*, although the error as to the iodide does not appear in this edition, having been rectified as soon as it was brought under the cognizance of the Tarasp authorities.

It only remains for me to add, that I am fully sensible of the many imperfections of my editorship ; all I can plead in extenuation is the fact, that the imperious calls of engrossing parochial work have left me but little leisure to bestow ; still, however inelegant the composition or faulty the arrangement may be, I believe that I can at any rate vouch for the accuracy of the information.

THE EDITOR.

Cosham, May, 1870.

TARASP.

The springs of Tarasp-Schuls rise in the lower part of the Engadine, that long Rhaetian valley, which, in length about 60 miles, forms the South-Eastern frontier of Switzerland, on the side of the Valteline and the Tyrol. Dr. Papon, in his account of the Engadine, published 10 years ago, describes it as "an unknown Alpine Country," but this term can no longer be applied, as for several years the Engadine, owing to its grand mountain scenery and to the considerable numbers of visitors of the Baths of St. Moritz and Tarasp, has attained a rapidly increasing celebrity.

The villages of Schuls and Tarasp, on the territory of which our springs rise, are half a day's journey from St. Moritz and 9 miles from the Austrian frontier near Martinsbruck; their elevation above the sea is from 4000 to 4500 feet. The aspect of this valley is of a less severe character than that of the Upper Engadine; mountain peaks of majestic formation surround a valley which widens in a circular form through which flows the impetuous Inn; the vegetation exhibits a greater richness and variety of form than in the upper valley: the extensive cultivation of rye and flax, the orchards near Schuls,

as well as the characteristic luxuriance of the Flora in general are so many proofs of a milder climate. The latter we do not hesitate to count among the greatest advantages of the Bath: it is an Alpine climate with all its bracing elements, but the sudden changes of temperature, and unexpected snow falls, which for weak and delicate constitutions are proverbially dangerous, are quite exceptional. The mild but not dry character of the air recommends itself especially to convalescents; and to anemic or highly nervous individuals, with whom the severe and exciting, though otherwise most enjoyable and invigorating climate of the Upper Engadine, with its frequent accompaniment of heavy fogs and raw mists does not always agree.

Observations made at the Establishment and compared with those of the neighbouring stations show for the months of July and August a mean temperature of from 13—15 (centigrade) with a mean daily variation of from 8—9. In the two last seasons, which were rather unfavourable, we noted for the months of July and August as maximum 26,5 and 28,3, as minimum 3,0 and 6,0. The direction of the valley excludes almost entirely the North and the North-East winds while the South-East and North-West predominate.

The snow melts in the valley in the month of April: Summer, as is generally the case in the mountains, arrives rapidly, so that the season commences in June, and lasts to the end of September, and considering its altitude, is par-

ticularly remarkable for its genial and constant weather, and equable temperature.

The soil, in which the numerous mineral springs of Schuls-Tarasps rise, is an excavation (inlaid in Gneiss) of gray, decaying, calcareous clay-slate, frequently interrupted by serpentine stone and diorit, with numerous interspersions of gypseous earth.

The direction of the excavations is generally from S.W.—N.E., and according to researches made by Professor Theobald all the mineral springs rise in one crevice which follows the same direction. The abundant efflorescence of sulphuric Magnesia on the slate rocks, the numerous banks of ochre, the exhalations (remining one of volcanic phenomena), of carbonic acid and sulphuretted hydrogen called mofettes, naturally lead to the supposition, that those springs must be particularly rich in mineral elements, and indeed on an extent of not quite three miles in a straight line there is an immense number of mineral springs, most of which are very powerful.

They are principally the following (the springs with new reservoirs being marked with *) :

I.—SALINE SPRINGS.

*St. Lucius.

*The Emerita.

*The Ursus.

*The New Bath Spring (all these are beside the establishment).

2.—ACIDULOUS CHALYBEATE SPRINGS.

*The Bonifacius spring (rises 20 minut. above the establishment) beside it rises another acidulous spring.

*The Carola Spring, close to the establishment (formerly called spring du Pont).

The Wyh spring, with an older reservoir.

The Suotsass spring.

The Runna spring.

The Talur spring.

The Rimmas spring (the five latter are near the village of Schuls).

The Baraigla spring, near the establishment.

3.—SULPHUROUS SPRINGS.

The spring of Val Plafna, behind the village of Tarasp.

*The spring of Val Dragun, near Schuls.

4.—MOFETTES (near Schuls).

The Felix Mofette (exhaling carbonic acid).

The Dragun Mofette (exhaling sulphuretted hydrogen).

The gaseous exhalations of these Mofettes are instantly destructive to the lower forms of animal life; their strength is quickly felt on stooping over the cavities which are invariably surrounded by insects, birds, field mice, &c., victims to the mephitic influence of the vapours.

If we consider further that smaller isolated springs are not included in this enumeration and that for instance on the territory of the village of Sins, contiguous to Schuls, there rise perhaps above a dozen strong acidulous chalybeate springs; we may say that the territory of the mineral springs of the lower Engadine, considering not only the number but also the variety of the mineral waters, is probably the richest in the whole of Europe. It must, therefore, appear very strange that such rich natural gifts should, with few exceptions, have been comparatively neglected till quite lately, and

that only a very small number of physicians had any knowledge of so rare a combination of different mineral springs. However, physicians and travellers of note (Gessner, Wagner, Ebel) have long ago mentioned the extraordinary power of the Tarasp saline springs; about the year 1830 this was done by the celebrated Schonlein, who twice visited our springs, being struck with the very favourable effects they had had on some of his own patients. Quite lately the Tarasp-Schuls waters have been warmly recommended especially by Lebert, Professor Ditt-rich, Meer-Ahrens, and by Doctors Yeo, McPher-son, Lee, and other English medical men of eminence. Also the physicians of this country, particularly Dr. J. A. Kaiser, have spoken very highly of the sanative powers of the Tarasp water. We do not intend giving a history of the springs, we only repeat that it was owing to the very indifferent means of communication, and to the unfavourable circumstances and conflicting interests of the various communes, *i.e.*, local vestries in whom the proprietorship of the various springs was vested, that Tarasp has not acquired much sooner, and in more extensive circles, the fame which it deserves. But owing to these circumstances nothing was done till towards the year 1860, when, commissioned by the great council of the Grisons, Dr. Ad. de Planta-Reichenau made a thorough analysis of the twelve larger springs;* soon a

* The former analysis of Capeller, Casselmann and Löwig had only extended to three springs.

joint-stock company was formed which, disposing of a very considerable capital, took a lease of all the springs on the territory of Tarasp-Schuls, bought for the construction of the establishment of the farm of Nairs, situated on the Inn between the villages of Schuls and Vulpera, made there an embankment on the river and constructed a bridge and a carriage-road leading to Vulpera. Now that the postal road from the Upper Engadine has been finished as far as the frontier of Tyrol, by which the new bath has been made perfectly accessible to visitors from Italy and the south of Switzerland; also the interesting route over the Fluela pass from Landquart station, which places London within three and Paris at two days' journey of Tarasp (see *Bradshaw's Continental Guide*), we may nourish the confident hope, that the number of visitors, which of late has visibly increased, may soon attain proportions corresponding to the very considerable sacrifices which have been made for the embellishment of the place, and the development of its resources, and that Tarasp will take its legitimate position in the very front rank of European spas.

On the left bank of the Inn, opposite the drinking springs, and connected with them by a convenient covered bridge rises, with the principal front towards the south, the new establishment, (3930 feet above the sea) a building remarkable from its architecture as well as from its grand proportions (500 feet in length, and 50 feet in

height), and which, with respect to its whole structure, and to the richness of its accommodations not only ranks with the first public establishments of Switzerland, but is the very first of the Swiss bathing establishments.

The building offers accommodation for 300 persons. The rooms are, without exception, spacious, and elegantly furnished; in the central part there are private sitting rooms, with balconies, &c. and the sleeping apartments are lofty and well ventilated.

In the left wing of the building are fifty-six bath cabinets, divided into a ladies' and gentlemen's compartment. Every baignoire can be filled through separate pipes with saline water, acidulous chalybeate water, or *simply with sweet water*; the water enters cold, and is within a few minutes brought to the requisite degree of heat by the means of steam. There are also douche cabinets connected with these bath rooms.

In the right wing is the spacious dining room, remarkable for its rich decoration and the beautiful ceiling in the renaissance style, admitted to be the finest *salle a manger* in Switzerland. In the basement of this wing is the chapel, at present used for the English service.

In the ground-floor of the central building are the different rooms for social recreation, coffee-rooms, billiard-room, reading-room, ladies' saloon, with the necessary requisites of amusement, as pianoforte, *the leading English and Continental magazines, secular and religious*

newspapers, &c. In front of the building is the garden planted in the English style, extending to the bank of the Inn, with a fountain throwing a jet of upwards of 40 feet. *Also a well rolled and turfed croquet ground a l'Anglaise*, two ornamental Belvideres for the *orchestral band*, spacious sweep for promenade, &c. Behind the building on the slope of the mountain there is a large promenade ground with terraces and plantations, Belvidere, &c. (commanding a magnificent panorama). On each side of the covered bridge leading to the right bank is a small symmetrical building, that of the left bank contains the apparatus for the warming of the baths by steam, the suction pump, and the reservoir of the saline waters; the building on the right bank covers the recently discovered Carola spring and its reservoir. Along the postal road up the valley, at about five minutes distance is the coach-house with the stables (equipages, horses, and *donkeys, which are so suitable for invalids and children*).

In crossing the bridge to the right bank we arrive, going up the river, after a few minutes' walk, at the *shady park*, with numerous winding paths, benches, &c., in a dense alder wood, from which a zig zag path leads up through the hanging woods of the side of the cliffs, by which we may reach the old Schloss and the lake, in which there is capital *fishing* (the fish run up to 4 lbs.) which is strictly preserved for the use of the visitors, boats on the lake, coffee, petit lait, &c.

In the principal building are for the commu-

nication in the interior, and with the dependencies, a telegraphic apparatus and electric clocks. The physician dwells in the establishment, and has his own well furnished pharmacy.

The board is thoroughly calculated for patients without being too scanty; of course, the diet of individuals is regulated by the prescriptions of the physician. A special 5 o'clock *table d'hôte* will be established if twenty persons or more desire it. Dinners countermanded before 10 a.m. will be deducted from the price of pension* in the case of guests who may be going to spend the day in excursions, &c.

A hairdresser is constantly in attendance in the hotel; there are also shops to satisfy the various wants of the visitors. The stage-coaches stop at the Kurhaus to take up and set down travellers, and the telegraph and postoffices are in the establishment.

If we leave the hotel in order to take an easy walk, the landscape immediately surrounding the establishment offers a great variety of views, which strike the beholder by their grandeur and the richness of their colours. The picturesque Chateau of Tarasp, with the quiet lake and the old Capuchin Cloister at the base of its hill, the plateau of Schuls with its beautiful slopes and alpine pastures, the park-like, hilly environs of Vulpera, the solitary hamlet of Avrona, all these different spots, surrounded by magnificent towering mountain peaks, from 10—11000 feet high, offer the lover

* Pension, 4 fr. 50 c. — 6 fr. per day.
Rooms, 2 fr. 3 c.

of nature ever new recreations and ever varying enjoyments.

We may here observe, that the environs of Tarasp are also distinguished by their richness in objects of natural history. The mineral kingdom offers local rarities and the Flora is considered one of the richest and most interesting in Switzerland; the student of zoology likewise will find ample rewards for his studies especially in the entomological branch,* the beetles and butterflies being particularly beautiful, and of very rare and numerous varieties. We now pass to the composition and the action of those of the Tarasp mineral springs which are at present applied to therapeutic use.

I. GROUP. NATRON SALINE WATERS.

The natron saline waters of Tarasp rise close to the banks of the Inn, a few minutes beneath the establishment. The most important of them are the two drinking springs on the right bank and the bathing springs on the left bank. The drinking springs, called in honour of the native saints St. Lucius and St. Emerita, rise close to each other. These are properly the springs of Tarasp, of ancient fame, which formerly were used almost exclusively and were accessible only by a steep foot-path while now a very spacious way leads from the bridge to the springs.

* For details of topography, excursions, skeleton tours, &c., see appendix; and for more detailed information see Dr. Yeo's book referred to on title page, and lists of medical works, page 33.

THE ST. LUCIUS SPRING.

The St. Lucius spring, which for its superior strength has ever been a favourite, shows a continual strong ebullition in consequence of the very considerable development of carbonic acid gas. The water is clear, sparkling, and if drunk fresh, of a piquant taste; but if it is allowed to repose or if the carbonic acid is caused to escape by warming the water, there appears an intense alkaline saline taste, at the same time the water for a short time gets strongly troubled.

Supply of water: 990 Cub. Quintals per minute.

Temperature $5\frac{1}{2}$ — $6\frac{1}{2}$ Centigrade.

Specific weight 1012.9.

Fixed residuum of the evaporated water: 12,1610 p.m.

According to the analysis made by Dr. A. de Planta, the spring contains in 1 pound of 16 ounces=76, 80 grains the following fixed substances:—

1. The carbonic acid salts calculated as simple carbonates:

Analyse St. Luce, 1 livre.			
Carbonate of lime	.	.	12.4323
„ magnesia	.	.	5.0764
„ protoxide of iron	.	.	0.1520
„ protoxide of soda	.	.	27.2294
Muriate of soda	.	.	29.4013
Iodide of sodium	.	.	0.0015
Sulphate of soda	.	.	16.5473
Sulphate of potass	.	.	2.9975
Silex, phosphoric acid, &c.	}	.	0.2465
		.	0.0023
		.	0.0015
		<hr/>	
			94.0880

Gaseous Constituents:

Free and half-free carbonic acid	.	.	34,8871
Carbonic acid quite free	.	.	15,3984

Calculating the volume in one pound (32 cub. inches), the temperature of the spring being 6,2° C. and the normal pressure 0,76.

Free and half-free carbonic acid	.	73,91 cub. in.
Carbonic acid quite free	.	33,36 „

Finally, the analysis of the gas bubbles boiling up directly in the springs shows—

Carbonic acid	.	.	993,44 C. quint. m.
Nitrogen	.	.	4,27 „
Oxygen	.	.	2,29 „
			<hr/>
			1000,00

THE ST. EMERITA SPRING.

This spring, which from a traditional prejudice has been rather less employed, closely resembles the former. There is less sparkling and ebullition in its reservoir, and having less carbonic acid it tastes more of salt. In the reservoir there is deposited a thick layer of oxide of iron. Of iodine it contains hardly a vestige.

Supply of water: 366 C. Quint.

Temperature: 62° C.

Specific weight: 1012,9.

In 1 lb. = 7680 grains, or 16 ounces, there are the following substances:—

The carbonic acid salts being calculated as simple carbonates):

Fixed substances :

Carbonate of Lime . . .	12,4016
Carbonate of Magnesia . . .	4,9766
Carbonate of Protoxide of Iron . . .	0,1397
Carbonate of Protoxide of Soda . . .	28,5350
Muriate of Soda . . .	29,3813
Sulphate of Soda . . .	16,4167
Sulphate of Potass . . .	3,3369
Silex . . .	0,0921
Vestiges of Phosphoric acid, Clay, Iodine, Brome Flurin, Manganese	

Total 95,2729

Gaseous constituents :

Free and half free carbonic acid . . .	33,2712
Carbonic acid quite free . . .	13,3009

Calculating the volume in one pound (=32 C. inches) the temperature of the spring being 5° R. (=6,2° C.) and the normal pressure 0,76 M.) :

Free and half free carbonic acid . . .	70,49 C. inch.
Carbonic acid quite free . . .	28,84 „ „

The gas bubbles boiling up in the spring consist of

Carbonic acid . . .	992,13 C. C. m.
Nitrogen . . .	5,33 „
Oxygen . . .	2,54 „

1000,00

THE ST. URS SPRING.

The spring is situated opposite to the drinking springs on the territory of Schuls, therefore it was formerly known as the "Schuls saline water." Formerly it was a good deal employed

for drinking; but it now serves, as in the case with the "new bath spring," almost exclusively to supply the baths.

Through pipes the water is pumped directly from the engine house in a reservoir, from where it flows in the pipes of the baths.

The St. Urs spring differs in quality little from the drinking springs, but it is not quite so rich in fixed substances.

Specific weight: 1,0104.

Temperature: 8, 1° C.

Supply of water: 1000 C. Quint per min.

In 1 pound—7680 grains or 16 ounces are contained:

(The carbonic acid salts being calculated as simple carbonates):

Fixed substances:

Carbonate of Lime	. . .	10,8702
Carbonate of Magnesia	. . .	4,3415
Carbonate of Protoxide of iron	. . .	0,1036
Carbonate of Soda	. . .	22,6222
Muriate of Soda	. . .	22,1752
Sulphate of Soda	. . .	11,9769
Sulphate of Potass	. . .	2,1719
Silex	. . .	0,1843
Vestiges of Phosphoric Acid, Clay, Fluorin, Iodine, Manganese.		

Total of fixed substances 74,4458

Gaseous constituents:

Free and half free carbonic acid	. . .	29,5218 Gr.
Carbonic acid quite free	. . .	13,1627 "

Calculating the volumes in 1 lb. (=32 C. inches), the temperature of the spring being

8,1° C. and the normal stand of the barometer (0,76 M.) :

Free and half free carbonic acid	.	62,56	Cub. inch.
Carbonic acid quite free	.	28,71	

The New Bath Spring, rising quite close to the former has the same chemical composition, but its supply of water is more abundant.

Lersch calls the Tarasp waters one of the most powerful and most precious mineral waters of Europe,* which expression is amply confirmed by a comparison with other celebrated alkaline springs.

* On Mineral Springs II (page 1576) out of which the following table is taken.

There are contained in 10,000 parts—

SPRINGS.	Fixed sub-stance.	Carbonic acid.	Muriate of Soda.	Car-bonate of Soda.	Sul-phate of Soda.	Sul-phate of Potass.	Magnesia (CO ₂ e SO ₃)	Jodur. of Sodium.	Carbonate of Protoxide of iron.
Tarasp . (Lucas)	122.51	45.426	38.283	35.455	21.546	3.903	6.61	0.0023	0.198
Kissingen . (Racoczy)	85.54	24.78	58.216	—	—	—	6.113	—	0.316
Vichy . (Grande Grille)	52.49	26.65	5.43	36.54	0.168	3.362	2.0	—	0.02
Karlsbad . (Sprudel)	59.68	10.123	11.36	11.8	19.48	12.2	0.52	—	0.04
Bilin . (Josepsquelle)	51.04	23.62	3.811	31.182	7.212	2.462	2.537	—	0.079

Whilst then the springs of Tarasp surpass all others known with respect to the amount of fixed substances, and of carbonic acid gas, they are almost identical with those of Vichy, as regards the quantity of carbonate of soda which they contain. As respects the alkaline sulphates, they resemble most those of Carlsbad, and next to the Kissingen springs, they contain the largest proportion of muriate of soda and iron. They are, moreover, distinguished from all the others by their containing iodide of sodium.

ACTION AND USE OF THE WATERS.

The action of the Tarasp water on the organism corresponds exactly to the principal groups of its constituents; it manifests itself as a solvent, and in promoting the secretions and in strengthening. It acts first through the carbonate of soda locally on the digestive mucous membrane, by dissolving, absorbing the acids and promoting the secretion; at the same time the activity of the liver and the gastric salivary gland is stimulated; it penetrates speedily in the blood, where it manifests its action of dissolving and promoting the secretions by abundant diuresis, and according to circumstances also by augmenting the secretion of the mucous membrane of the lungs. In this action the alkaline carbonate is essentially aided by the more stimulating salt and, in the altering process, by the iodine.

The alkaline sulphates manifest themselves directly through their relaxing action. Yet it would be a great mistake, to consider the Tarasp water only as a laxative; although it must act as such, its real importance is in the action which it manifests having penetrated in the blood, on the whole process of formation of blood and absorption of abnormal fatty depositions and resorbable pathological neoformations. At the same time the action of the iron is to be considered, to which we must partly ascribe the bracing, strengthening action of the Tarasp

water; indeed it is this action which forms one of the principal advantages of our spring. The abundant carbonic acid acts directly as an animating and stimulating element on the mucous membrane and glands; it also essentially aids the action of the carbonates. Not unfrequently the effect of this gas causes symptoms of intoxication, with giddiness, heaviness of the head, humming of the ears and still more unpleasant symptoms; or else the gas stops the excretive function of the bowels, wherefore in such cases the mineral water must not be drunk immediately, but only after having been for some time exposed to the air.

The baths, besides unmistakably furthering and promoting the process of altering the blood and glands, which has been begun by the internal use of the mineral water, manifest their action still more particularly by the beneficial calming and strengthening of the nervous system. They are particularly serviceable for *chronic rheumatism* and certain diseases of the skin.

The abuse which was formerly made of the saline water, in drinking unreasonable doses and observing an injudicious diet, has often been very severely punished. But even in using the water properly dietary prescriptions and eventually the more violent effects of the water must be carefully observed. This is the case especially in the beginning of the course when sometimes loss of appetite, indigestion, disturbed sleep and general excitation are expe-

rienced, which symptoms, however, do not always require special medical treatment, but may render necessary a change of system in the course. It also happens that after some weeks the system becomes saturated, the blood surcharged with alkali which is manifested by increasing loss of appetite, strong diarrhoea, palpitation, bad looks, nervous debility, etc. in which case the course must be suspended at once. This, however is decidedly the exceptional. In most cases the animating and strengthening action of our mineral spring manifests itself very soon, by a peculiar sensation of relief, which stimulates even lazy persons or such as are little accustomed to walking, to take exercise; the appetite increases rapidly, and with it the strength and the good looks of the patient. This animating action has a remarkably favourable influence in cases of *mental depression*.

The dose of the saline water is in general, beginning with from 2—3 glasses (at 6 ounces) and gradually increasing, 6—8 glasses (Lucius or Emerita) to be drunk in the morning before eating, with a continual easy motion, in pauses of 15 minutes). Several fluid stools follow generally before breakfast, (which may be taken a half hour after the last glass) or immediately afterwards, wherewith the action of the water in this respect is closed for the day. The augmented diuresis however shows itself more in the afternoon and evening. In cases where the water does not act sufficiently on the bowels, or where its carbonic acid produces congestions,

etc., which may happen in the beginning of the course or when the stools are slow in arriving, the water is allowed to settle or the glass is put in warm water, by which means the superabundant gas partly escapes. It is also convenient to drink late in the evening, or early in the morning in bed 1—2 glasses of water, which has settled. Patients with very sensitive stomachs, with whom the low temperature of the water (6 centigrade) does not agree, must warm the water a little, the water may also be taken with a small addition of warm milk or whey.

The baths, which very essentially promote the effect of the course are warmed to 25—28° C. and are taken, according to circumstances daily or every second day, the patient remaining in the bath from 30—40 minutes.

With respect to diet in many cases, especially when weakness results from atony of the digestive and assimilative functions, it is less abstinence from food which in mineral water courses is often carried too far that is necessary, than that the patient while avoiding of course surfeits of any kind, absolutely abstains from food which is directly opposed to the intended sanative effect; for instance, fat and acid food, cheese, heavy pastry, salad, raw fruit, beer, &c., and secondly that he observes rigorously the fixed hours for his meals, and takes in the *intervals* as little food as possible. Usually also wine, Valteline or old Margraviat, can be permitted. The food, however, must principally consist of light coffee with milk,

fresh soups, fresh meat and poultry, and boiled vegetables. Breakfast and supper must be as frugal as possible.

A matter of very great moment, besides the diet, is also moderate but frequent exercise, for which Tarasp with its delightful environs and delicious air offers the most desirable opportunities. Fatiguing excursions, to which some patients are tempted, must however be avoided, for experience shows, that a bad cold or a great fatigue may have a very detrimental influence on the success of the course.

With respect to clothing, light woollen stuffs are here, as generally in the mountains, most adapted; warm upper garments are necessary for exceptionally cooler days, and during the journey for crossing the alpine passes.

The duration of the course is in general from 3—5 weeks.

For the after course we recommend, according to circumstances, St. Moritz (chalybeate springs), Le Prese (sulphurous springs, fine climate, beautiful country), Davos (whey, delicious air), Alveneu (sulphurous springs), Bormio and Ragatz (thermal waters), all of them only 1—1½ day's journey distant from Tarasp.

During the after course the saline water itself is also often drunk in small doses for about a fortnight. The saline water is also exported in cases of large or small bottles.*

* In the year 1864 there were exported above 30,000 bottles, this year 47,000 bottles.

INDICATIONS & CONTRA-INDICATIONS.

ACCORDING to the experience of many years the Tarasp saline waters have proved beneficial, especially in the following diseases :

1. General fattiness, corpulence, hypertrophical symptoms, especially of the glandulous organs, concretion of the fat in them, light neoplasmes (so striking in goitres), scrofula.

2. Chronic diseases of the liver, and especially chronic (bilious) swelling and hyperemia of the liver, accompanied with icterus fatty liver, as consequence of free living, gall-stones.

3. Diseases of the digestive organ.

a. Dyspepsies, chronic gastric catarrh, chronic vomiting, excessive formation of acid, being consequences of frequent errors in diet, free living and want of exercise, and being combined with disease of the liver.

b. Chronic catarrh of the intestines, obstinate constipation, especially if resulting from general atonic condition of the intestines, or from frequent abuse of laxatives.

c. The numerous diseases comprehended as hemorrhoids, which often result from irregular and torpid circulation of blood in the hypogastric organs, and from defective physiological action of them, also the abdominal plethora, and especially disposition to hypochondriasis.

d. Helminthiasis (the occasional expulsion of *tœnia* during the use of the Tarasp water has often been observed).

4. Diseases of the spleen, especially chronic tumours consecutive to attacks of intermittent

fever, if they are not yet advanced into a hydremic state.

5. Diseases of the Lungs, especially chronic bronchial catarrh, milder forms of bronchiectasy, short breath (in consequence of great corpulence) chronic laryngeal catarrh and hoarseness*).

6. Diseases of the urinary passages. Catarrhal affection of the kidneys and bladder, disposition to the formation of concretions (gravel, sand, stone).

8) Diseases of the uterus and the ovaries. Chronic infarction of the uterus and incidental anomalies of menstruation, blenorrhoeas, swelling and tumours of the ovaries.

8. Chronic gout and rheumatism.

9. Chronic diseases of the skin, especially eczema, particularly where they are related to disorder in the formation of blood and to abnormal functions of the digestive and assimilative organs.

The Tarasp saline waters are contraindicated in the following cases:—

1. Decidedly hydremic and cachectic febrile

*) How far the Tarasp water may be employed against incipient pulmonary tuberculation, must yet be more exactly demonstrated by careful observation. There is a general strong belief in the efficaciousness of the water in such cases and even some physicians affirm having observed decidedly beneficial results. (The combination of the saline water with our vigorous chalybeate springs might prove beneficial for certain affections of the lungs as is the case with diseases of the spleen and affections of the female genital system.)

affections in general (gangrenous cachexy, decided tuberculosis, albuminury) cases of great weakness and falling away, in which cases the use of the Tarasp saline water may have very serious consequences.

2. Disposition to inflammation of the affected organs (stomach, liver) and dispositions to loss of blood, to cerebral congestions and apoplexy.

3. Tumours and abscesses in the digestive organs, amyoid, cirrhotic and other deterioration of the liver parenchyma.

4. Decided diseases of the heart (especially defects of the valves).

5. Epilepsy and pregnancy.

II. GROUP. ACIDULOUS CHALYBEATE SPRINGS.

The acidulous chalybeate springs of Tarasp-Schuls have hitherto much less than the saline waters enjoyed the consideration which is due to them from the therapeutical point of view. Yet one glance on the analysis shows, that they are very remarkable with respect both to quality and quantity, and that with more favourable means of communication than we have had until quite lately, they would have been sufficient in themselves for creating a highly frequented bath.

At present, being arranged for drinking and for bathing courses, our chalybeate springs recommend themselves as well for being used

alone and separately, as in combination with the saline water, for after-courses and in general where a special tonic action is to be attained. The combination of our springs permits *also the joint use of them by patients related to one another, who suffering from dissimilar affections would otherwise not be able to visit, as they might desire, the same bath.*

THE ST. BONIFACIUS SPRING.

This spring rises at twenty minutes distance above the establishment, on the right bank of the Inn; a small bridge leads to it from the postal road on the other side. It is the most vigorous chalybeate spring in our territory and of a composition as excellent of its kind as are the saline springs of theirs. The water is brought to the establishment every morning, freshly bottled so as to conserve the carbonic acid gas, but is of course usually drunk at the spring; the company provides carriages to convey the guests at the Kurhaus to the source free of charge; it has a particularly vigorous and distinguished taste.

To the following analysis of the Bonifacius spring we add for comparison that of the celebrated chalybeate spring of St. Moritz (new spring) also made by Dr. A. de Planta.

Bonifacius spring :	St. Moritz :
Specific weight : 1002,9.	1002,39
Temperature : 7,5° C.	4,3° C.

In 1 pound = 7680 Gr. or 16 ounces are contained.

(The carbonic acid salts being calculated as simple carbonates.)

<i>Fixed substances:</i>	<i>Bonafacius spring:</i>	<i>St. Moritz:</i>
Carbonate of Lime	14,609	6,844.
Carbonate of Magnesia	2,585	1,216.
Carbonate of Protoxyde of Iron	0,253	0,253.
„ „ Manganese —	—	0,033.
„ „ Soda	7,929	1,593.
Muriate of Soda	0,437	0,310.
Sulphate of Soda	1,648	2,673.
„ Potass	0,733	0,157.
Silex	0,142	0,380.
Phosphoric acid	—	0,005.
Clay	—	0,003.
	Total: 28,336	13,467.
		(Vestiges of Iodine, Bromine, Fluorine.)

<i>Gaseous constituents:</i>	<i>Bonifacius spring:</i>	<i>St. Moritz:</i>
Free and half-free carbonic acid	28,581	23,787.
Carbonic acid quite free	17,412	19,369.

Calculating the volumne in the pound (= 32 Cubic inches) with the temperature of the spring and normal stand of the barometer:—

Free and half-free carbonic acid	62,23	62,88 C. in.
Carbonic acid quite free	37,91	51,20 „

Immediately opposite the St. Bonifacious spring, on the left bank of the Inn, is a chalet belonging to the establishment where *Petit lait*, coffee, &c., are served.

THE CAROLA SPRING.

This vigorous spring, which a few years ago was quite unknown, was accidentally discovered on blasting the rocks for the construction of the

right tete-de-pont. It is at few yards distance from the establishment, it is much employed in drinking and affords at the same time the chief supply of water for the chalybeate baths. The water is perfectly clear, sparkling, of an agreeable, first piquant then characteristically inky taste.

The analysis made last year by Dr. Ad de Planta has given the following result:—

Specific weight 1001.10.

Temperature: 6,5° C.

Supply of water 29064 C. Quint. M. per minute (about 20 federal pots).

In one pound = 7680 Gr. or 16 ounces are contained:

(The acid carbonic salts being calculated as simple carbonates.)

Fixed substances:

Carbonate of Lime.	.	.	.	4,2071
Carbonate of Magnesia	.	.	.	0,8094
Carbonate Protoxide of Iron	.	.	.	0,1259
Muriate of Soda	.	.	.	0,0168
Muriate of Magnesia	.	.	.	0,1466
Sulphate of Soda	.	.	.	0,2825
Sulphate of Potass.	.	.	.	0,4992
Silex	.	.	.	0,0737

Total of fixed substances 71612

Gaseous constituents:

The acid carbonic combined with the carbonates to bicarbonates, &c.

Carbonic acid quite free

2,3224

27,5872

Calculating the volume in 1 pound (= 32 C. inches) with the temperature of the spring and 0,76 M. normal-stand of the barometer.

Free and half free carbonic acid . . .	42,86 C. inch.
Carbonic acid quite free . . .	37,86 „

Compared with springs of a similar composition this spring is most approximated in its nature to that of the old spring of St. Moritz, and to the Pauline of Schwalbach, and also resembles the springs of Rippoldsau and Pyrmont. Considering the favourable proportion existing between its iron and its dissolving saline constituents, it may justly occupy an intermediate place between the above-mentioned springs. (Planta.)

THE WYH SPRING

(also called Campells Spring.)

This spring, which (as Schuls acidulous chalybeate water) was long ago known and much employed in drinking, rises in the meadows near Upper-Schuls. The water is clear, colourless, and pretty sparkling, it has a very refreshing, agreeably acidulous and markedly chalybeate taste.

Specific weight: 1002,0

Temperature: 8,7° C.

Supply of water: 10870 C. Quint per minute.

In 1 pound = 7680 G. or 16 ounces are contained.

(The carbonic acid salts being calculated as simple carbonates).

Fixed substances :

Carbonate of Lime . . .	9,4671
Carbonate of Magnesia . . .	0,6481
Carbonate Protoxide of Iron . . .	0,2035

Carbonate Protox. of Manganese	0,0130
Carbonate Protoxide of Soda .	0,0284
Muriate of Soda . . .	0,0161
Sulphate of Soda . . .	0,0867
Sulphate of Potass . . .	0,0837
Silex	0,1474
Phosphoric acid	0,0015
Clay	0,0007

Total fixed substances 10,6962

Gaseous constituents:

Free and half free carbonic acid .	22,1498
Carbonic acid quite free . . .	17,5526

Calculating the volume there is in 1 pound (=32 cub. inches) the temperature of the spring being 7° R. (=8,7° C.) and with the normal stand of the barometer:

Free and half free carbonic acid .	48,42
Carbonic acid quite free . . .	38,37

ACTION AND USE OF THE WATER.

The action and the use of our acidulous chalybeate springs agrees, as far as we have hitherto observed, so much with other well known, analogous waters, that in this short treatise we may restrict ourselves to a few observations. With the specific action of the iron, which reforms the blood and strengthens the nervous and muscular system is combined the agency of the dissolving salts on the digestive functions and the secretions of the intestines and the nerves; the effect is increased by the well known animating and stimulating

action of the carbonic acid gas and its beneficial influence on the functions of the stomach. During the use of the chalybeate waters the appetite soon increases, the general looks and the tone of the muscles improve. The secretions of the intestines is rarely interrupted, the diuresis constantly augments; persons disposed to congestions and giddiness sometimes even feel the intoxicating action of the carbonic acid.

The waters are drunk, not too hastily, in the morning before eating, in pauses of from 15—20 minutes, beginning with three glasses, which are gradually increased to six; patients disposed to cough, laryngeal catarrh, gastrodynia etc. add a little warm milk to the dose.

The baths, very analogous in their strengthening action to those of St. Moritz, are generally taken daily. In the beginning they are rather exciting, in that case they are better attenuated by adding sweet water. The carbonic acid gas abundantly contained in them directly covers the body of the bather with numberless bubbles of the size of millet-grains; an expressly made analysis has besides shown that Iron and acid carbonic gas are even contained in water which has been employed in bathing, and has remained in the baignoire.

With respect to diet more freedom can in general be granted to the patients, than in the saline water course. Although the above indicated rules for avoiding certain kinds of food, being "contrary to the course" must also be observed, yet in the individual case regard may

be paid to the increased appetite as being a natural consequence of the more bracing climate and the greater impulse given to the process of assimilation. With respect to climate and exercise the same remarks apply which we made in the earlier part of this treatise.

INDICATIONS AND CONTRA-INDICATIONS.

A beneficial action of our acidulous chalybeate waters may be expected in the following diseases.

1. After loss of blood (in consequence of delivery etc) in cases of convalescence and weakness without fever.

2. Particularly in cases of irritation and weakness of the nervous system, in consequence of dissolute life, *excessive head work*, especially in persons who were formerly strong.

3. In chlorosis, anemia, disorders of menstruation, leucorrhea.

4. In hemicrania, gastralgical disorders.

5. In chronic merely catarrhal irritation of larynx and the bronchi.

The acidulous chalybeate waters are of course contra-indicated in cases of plethora, disposition to phlogistic congestion, apoplexy and active bleeding.

Herewith we terminate this succinct survey of our mineral waters springs, of which we are persuaded, that being now organized in con-

formity with the wants of our time, and being made easily accessible, they will attract a rapidly increasing number of visitors, and will acquire everywhere the fame due to them among the first baths of Europe, from the richness and variety of the mineral waters joined to all the charms and advantages of natural scenery the very first order, and a bracing alpine climate.

DR. KILLIAS.

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—— The mineral springs of Tarasp. Coire, 1847.

v. Planta A Dr. Chemische Untersuchung der Heilquellen zu Schuls und Tarasp im Kanton Graubunden. Chur, 1859.

—— Chemical analysis of the mineral springs of Schuls and Tarasp in the Canton of Grisons. Coire 1859.

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—— The Mineral Springs of Tarasp and Schuls. Separately printed from his work: "The mineral springs and baths of Switzerland." Zurich 1860.

Lebert H. Professor. Das Engadin, seine Mineralquellen. Oeffentlicher Vortrag. Bres'au, 1861.

—— The Engadine and its mineral springs. Public lecture. Breslau, 1861.

Balardini L. Dr. Le fonti minerali di Tarasp e di Scollia. Brescia 1862.

—— The mineral springs of Tarasp and Schuls. Brescia, 1861.

Hasse K. E., Bad-Tarasp, Sendschreiben an die Deutsche Klinik (Jahrg 1866 nr. 4)

Lippert H. Bad und Kurhaus Tarasp im Unter Engadin (Weiner Medic, Wochenschrift 1866, Nos. 75 and 79)

Herngott. Excursion dans l'Engadine, Bains, etc. (Extrait de la Revue d'hydrologie medicale). Strasbourg, 1868.

Yeo J. Burney, M.B., "A season at St. Moritz, and a visit to the Baths of Tarasp; and notes medical and general of an autumn vacation in the Upper and Lower Engadine." London: Chapman and Hall, Piccadilly, 1870.

Lee, Edw. M.D., "Baths of the Engadine." 2nd Edition. London, 1870. Churchills, New Burlington-street.

Murray's Hand Book to Switzerland and Savoy. New edition of 1870.

DIRECTIONS.

Managing Director: Monsieur De Planta Wildenberg, Kurhaus, Tarasp-Schuls, Engadine Basse, Canton des Grisons, Switzerland.

Resident physician : Dr. Ed. Killias (resident at Coire when the season is closed, i.e., from September to June)

Hotels at Schuls : The "Belvedere," The "Piz Chiampatsch," "The Helvetia."

Hotels at Vulpera : "Steiner," "Carl" Belvedere, "Pension Tell."

Physicians : Dr. Vonmoos at Vulpera, Dr. Berta at Schuls.

Exportation of the mineral waters : Depot of the Tarasp-Schuls Mineral Waters at Messrs. Salis and Co.'s Coire.

The waters (saline and chalybeate) are exported in chests of 30 large or 30 small bottles.

APPENDIX TO SECOND EDITION.

NOTES ON TARASP.

(Communicated.)

TARASP is the natural centre for excursions in the lower Engadine and neighbourhood, a tract of country hitherto but little traversed, having had but scant justice at the hands of compilers of guide-books, &c., though abounding in scenery of the most attractive and varied description, as well as possessing much to interest the antiquarian and historical student, it having been the seat of a Roman colony; indeed, the Etruscan remains which have been discovered would seem to point to its having been originally settled by a still older people. The immediate neighbourhood of Tarasp itself is rich in picturesque rides, walks and drives, and, what is of the utmost consequence to invalids, a large proportion of them are completely shaded even in the middle of the day; the extensive pine forests clothing the slopes of the mountains on the right bank of the Inn for many miles, being cut

up with rides and foot-paths, with occasional open spaces of mossy turf, something like a very extensive English park. The chain of mountains which separates the Engadine from the Valtelline of North Italy and the Tyrol, is also pierced by numerous cols or valleys of the wildest and most romantic character, allowing the pedestrian to go by one and return by another parallel valley. I mention one particularly fine walk: from Tarasp through the woods and over the plateau of S. Jeân by the Val Lischanna, leaving the summit of Piz Lischan to the left; then across the magnificent Lischanna glacier, descending by Piz Cornet to the Val Seswenna, and returning by the Scarl Thal, through a sublime gorge between Piz Pisoc and Piz S. John, whose hoary summits are some 6000 feet overhead; then by a path escarped on the side of the precipice many hundred feet above the furious torrent beneath, affording as it winds through and under the sweet-smelling pines, now a glimpse of some exquisite "bit," half pastoral half wild, then a ruined castle and saucy-looking village perched on the top of the opposite alp, varied occasionally by more extensive views of the valley of the Inn, with the peaks and glaciers of the Silvrettas and the mountains of the Voralberg in the background.

The neighbourhood also abounds in "view points," *e.g.*, Piz Chiampatch (between 9000 and 10,000 feet), a very easy ascent of three to four

hours, practicable for ladies on horseback to within a short distance (half-an-hour) of the summit; Piz Müncher and Piz Cotschen, also easy. Each of these mountains present remarkably fine views of the Ortler and Bernina groups, and of the Silvrettas, with a vast expanse of glaciers and snow-fields. On the opposite bank of the river Piz Lischan and Piz Pisoc will well repay A. C.'s and other adventurous cragsmen, as will many others on that side of the river between Zernetz and Martinsbruck. Piz Linard, the queen of the Silvrettas, may also be ascended from Tarasp and return the same evening; also the Swartzhorn, perhaps the finest and most extensive "view point" in all Switzerland, by sleeping out one night at Sus. Then the Silvretta group, with its numerous, extensive, and beautifully-formed glaciers, rivalling the Bernina, and abounding in scenery of the grandest description and unexplored tracts, lies within the compass of a few hours' walking, as does the Vorarlberg also on the one side and the Valtelline and the Tyrol on the other.

There are few neighbourhoods, even in Switzerland, so well calculated to gratify the lover of *landscape drawing and sketching*, there being almost every conceivable kind of view, from the wintry grand, or the romantic and wild, to the pastoral and park-like woodland, within easy walking distance even for ladies and invalids. The ruined Schloss, the ancient residence of the Austrian governors (the frescos of the Austrian double-

headed eagle still remain on the walls), towering defiant over the whole valley from its rocky height, with the mirror-like lake of Tarasp, the Capuchin cloister with its trim gardens, the peaceful-looking village clustering round the ancient church below; the yellow corn, verdant meadows, and dark-hued pine woods, with the picturesque costumes of the peasantry; the glorious effects of light and shade, and rich warm tints of the evening sunlight, with the giant weird-looking peaks of the Pisoc and Plafnar groups, and their glaciers forming a semi-circular background, with the wild Val Plafnar opening to the right, as seen from neighbouring heights, or the Fettan Alp, is a bit worthy of a Claude or a Poussin.

The immediate neighbourhood too abounds with rock scenery of unrivalled grandeur in a setting of nature's loveliest foliage; the grotesque dolomite peaks contrasting with the many-hued woods on their slopes and the green valley at their base. In the very midst of all this is situated Tarasp Kurhaus, with its ornamental gardens and shady park, through which a woodland path leads up to the Chateau with its wonderful views through the old embrasures, each one differing from its neighbour, so that the old strong room resembles a huge kaleidoscope.

There are beautiful drives in the immediate vicinity of Fettan, Steinsburg, Guarda, Sins, and other places, from each of which the scene may be

viewed in all its beauty, though under a different aspect. Then the temperature is so equable, though fresh and invigorating, with an almost complete absence of erratic and sudden atmospheric changes or evening damps, so that English ladies were able last season to sit and walk in the grounds till bed time; and as the views from the Kurhaus grounds are among the finest of the valley, the effect when heightened by the gorgeous tints of the southern sunset, or bathed in a flood of moonlight, is grand beyond description; all this necessarily exercising a beneficial influence on the invalid.

As regards accommodation there is the Kurhaus in the valley or rather widened gorge of the Inn, sheltered from the north and east winds, yet noted for its coolness and freshness even in the middle of the day: then on a plateau some 300 to 400 feet above the spring, from which it is distant five to ten minutes, stands the commanding hamlet of Vul-fira with its numerous pensions, at present patronized principally by Germans, though an Irish gentleman who tried the Belvidere last season spoke in very eulogistic terms of the cleanliness, civility and general accommodation; at Schuls, which is about twenty minutes to half-an-hour's walk (the hotels send patients to the baths morning and evening in carriages free of charge), there are two good hotels, one especially (the Belvidere) being very much patronized and very highly spoken of by the English people, both as regards comfort

and moderation of charges; so that there is ample accommodation for all classes, from the poorest to the wealthiest. Living in Vulpera or Schuls being of the cheapest, while at the Kurhaus, which is not only externally one of the finest buildings of its class in Switzerland, but also replete with every elegance and *comfort*; persons can either live 'en pension' at a reasonable fixed sum or 'en Prince,' if they prefer it, and whichever plan they take they will not be subjected to *the annoyance of having their 'bills' withheld till the moment of their departure, as they are rendered unasked for with the regularity of clock work every week, so avoiding many mistakes and much unpleasantness.* Many of the first English families visited Tarasp last season, several of whom remained for the "cure," and expressed themselves in the most eulogistic terms of the place and its surroundings. There is an English chaplaincy in connection with S. P. G., the chaplain (whose appointment is a *permanent* one) while avoiding anything unnecessarily pronounced in the manner of conducting the services, wishing to do the church's work in the church's way, by providing early celebrations of Holy Communion weekly, besides once or twice in the month after morning service, daily services, and in other ways giving frequent and extended Church privileges for all, and reasonable ground of offence to none: the bath company has given a building (about 100 yards from the Kurhaus on the other

side of the river, over which there is a covered bridge), capable of accommodating upwards of 100 people, for an English Church, besides subscribing 2,000 francs towards its internal fitting and embellishment, it can be considerably enlarged at a comparatively small outlay. The place has also been visited last year by one or two London physicians, who have been very favourably impressed; indeed all that it needs to secure a great reputation amongst English people, as a health resort, is to become a little better known to the medical profession and general public, when it cannot fail to become as popular with the English as it at present is with the faculty in most continental cities (its reputation already reaches even to Spain and Russia), but especially in Berlin, Vienna and Florence.

One cannot help feeling surprised that such a place is not more generally known to the profession in England, while there is such a general acknowledgment, both by medical and laymen, that too sudden changes from low to the highest altitudes, and vice versa, are ordinarily most injurious, and so great an outcry is made for "endroits," where mountain air in all its freshness is to be found combined with equality of temperature, where one may go early in the summer (the latter end of May or beginning of June, for instance) to become acclimatized, so to speak, for the higher altitudes, and even more especially in the autumn, where a person is not fitted for an

immediate descent to the somewhat enervating climate of Italy at that period of the year, yet, who having derived strength and benefit from the air and exercise of the high Alps during the height of the summer, seeks a place where his newly found strength may be, as it were, set into his constitution.

For the spring and early summer there are almost numberless walks, from the stereotyped "*watering place zig-zag*" to the "*arduous Alpine climb*;" but especially does it abound in walks (and "things of beauty" to appeal to the mind and imagination) between these two, peculiarly suited to two classes of persons. 1st. Those who are constitutionally precluded from attempting high Alpine ascents, yet who require something more invigorating and enlivening than the aforesaid conventional zig-zag. 2ndly. Those who having suffered from over much brain work, &c., have been recommended to try Alpine climbing and glacier air, but require preparatory training, after which they can if they like go on to St. Moritz or Ponteresina for the Bernina group, though for that matter they may find all they want of that kind of thing in the immediate neighbourhood, as there are still unscaled mountains almost overhanging the Kurhaus. For the height of summer too it has great advantages, not only in the possession of invigorating chalybeate springs, combined with the freshness of the air without the sudden and erratic

atmospheric changes of the Upper Engadine, but particularly in the immense number of walks and rides in the shade of the extensive pine forests which clothe the lower slopes of the mountains, descending not only into the Unter Engadine itself, but also into the wonderfully beautiful lateral valleys and passes between it and northern Italy and Austrian Tyrol on the one side, and the Vorarlberg on the other; valleys which combine Pyreneean beauty with Alpine grandeur, and passes traversed by rich mossy paths teeming with wild flowers, affording now lovely glimpses through the vistas of the forests, as the road occasionally emerges from the woods, then sudden bursts of grandeur such as I have seldom seen equalled, though it has been my lot to travel in nearly every quarter of the world.

Then in the beautiful month of September, the time of the '*Fall*,' when the rocks are covered with red lichens, and the Alpine grasses are of a russet hue, there is a sort of '*Indian Summer*,' such as is seen in North America (only there it is so very short and capricious), the sky is without a cloud, and the atmosphere is so rare and clear that the mountains fairly seem imbued with life and motion, to approach the observer, and in the evening are lighted up with the after-glow of the sunset as if they were illuminated by pyrotechnic art; all this combined with the delicious coolness, yet not coldness of the temperature, renders a mountain ascent, such as I enjoyed in the last week of September,

one of the most pleasurable events of a person's life. Nothing can efface the memory of my sensations as I gazed from the dizzy summit of Piz Lischan, with its magnificent glaciers in immediate proximity, upon the mighty Ortler group snow-clad from summit to base, and the huge white battlements of the Bernina, Monte Pasquale, and other snowy giants connecting the two groups into one grand semi-circle of ice mountains, flanked by the vast snow-fields of the Weisskugel on the east, and the Sur Sura and Grialetsch glaciers on the west; then as I turned I saw lying at my feet the beautiful green Unter Engadine, with its old feudal castles and towers, peaceful looking villages, yellow patches of late corn, and the blue and silver Inn winding in and out like a precious thread in some glorious woof, and on through the defile of the Finstermünz, like the living stream of humanity flowing through the valley of time into the ocean of eternity.

EXCURSIONS, &c.

Mountain ascents and excursions in immediate neighbourhood.

PIZ CHIAMPATCH.—Cross the bridge of the stream in Upper Schuls, then take the path on the left bank of the water-course, which is well defined and keeps pretty *close to the stream*, bearing to the left of the Peak apparently (so avoiding much broken ground) till within three-fourths of an hour of the summit, when the path leads up over a steep bit of Alp for twenty minutes, then over rocky ground (*rich in Edelweiss*) to the summit—magnificent view, especially noted for its groupings of peaks and glaciers together ; ascent 3—4 hours.

PIZ MUNSCHEN.—Mount the slope behind the Kurhaus to the Fettan Road, which follow till near the village which you leave to the left, striking a water-course near a small group of houses, then follow a path up the side of the stream till you emerge from the woods, then make for the summit of little Piz Munschen, till you come to a stone chalet, (thus far there is a path more or less well defined), skirt the base of little Piz Munschen into the valley to the left, thence scramble on to the bridge ; to the right of which is the summit of Piz Munschen—splendid view, especially of the Silvrettas and the mountains of the Vorarlberg.

PIZ COTSCHEN, behind Steinsberg (Ardetz), commands a very fine view, and presents no difficulty.

PITZ LISCHAN.—Cross the bridge to Vulpera, follow the path through the hamlet to the left, cross the stream rushing out of the Scarl Thal (the Clemgia) by the bridge at the saw mill, then immediately take the zig-zag up the bank on your right through the woods to the Plateau S. Jean (a good guide will be the stream which comes down the Val Lis-channa through the woods, and which you must *not* cross till after you have passed the Plateau), which cross into the woods at the south-east corner, where you will find a path leading to the water course which it follows crossing the stream occasionally, follow this path up to where the valley forms a huge step of rock covered with stunted pines and brushwood, up which the chamois hunters have made a serpentine track; from hence the valley is too narrow for any one to miss his way. But experience and judgment in choosing the best ground and easiest climbing will of course have the best of it; keep up the left side of valley till nearly up to the glacier, when you will see a long and arduous stone slope, up which climb, keeping close to the rocks on the left is much the easiest, and if a good cragsman much fatigue may be saved by climbing nearly all the way over the rocks; when you come to the head of the slope turn to the left and scramble (ten minutes) over rocks to the summit, which is a ridge about two feet wide, and is six hours good climbing from the Kurhaus. The view, which is very extensive, embraces the

Ortler group, the Bernina, Monte Pasquale, and other ice-mountains flanked by the snow fields of the Weisskugel on the east, and by the Sur Sura and Grialetsch glaciers on the west, while close at hand is the beautiful Vadret di Lischanna, and its numerous offshoots, with the green Unter Engadin below, the Inn Fluss meandering through the many devious windings of the valley, till lost to sight in the defile of the Finstermunz. Piz Pisoc, the lofty dolomite Peak, immediately opposite the Kurhaus, is a very fine ascent, but is only practicable for thorough cragsmen with good guides, it is only known to have been ascended once in 1865.

One of the most usual walks is to the old Schloss, either by the river path or the road via Vulpera (practicable for carriages). In the lake by the castle there is very good fishing, the water being strictly preserved for the use of the visitors. There are also trout in the Inn, though last season the fishing was unusually poor, owing to the floods of the previous year having swept away immense numbers of fish, but they were beginning to work their way up the stream again last autumn, so that this season good sport may again be anticipated.

A delightful excursion is to the Plateau S. Jean, an oasis of mossy turf, surrounding an old ruin in the dense pine woods, which are here cut up in all directions with rides and foot paths, *teeming with wild flowers, and abounding in shady nooks, the beau ideal of a pic-nic ground*—1½ hour's walk, and about the same time by carriage.

One of the favourite drives is to the village of Sins, from where there are superb views, besides which it is perhaps the cleanest, and with its massive many-windowed old houses, adorned with heraldic blazonry in fresco, much of it of considerable artistic merit, and curiously wrought richly gilt iron grilles, the most interesting village in the Engadine; return by Weiss Haus and Schuls. Another beautiful and shady drive is to Steinsberg—fine views from the old Schloss.

MODERATE EXCURSIONS, WITHOUT MUCH CLIMBING.

(1) TOUR OF PIS PISOC, by the gorge of the Clemgia and Scarl Thal, leaving Plateau S. Jean to the left up the Val Minger (good Edelweiss ground) to the Col (thus far can be done on horseback), which cross on foot, descending into the wild Val Plafna, and return by the village of Tarasp. This walk of 6—8 hours presents a great variety of interest to the botanist and geologist, *and superb views for sketching*; it is well shaded, and you get to a considerable altitude, about 8,000 feet almost, without knowing it, the ascent is so gradual. (2) By Tarasp village, thence through some lovely woods to Aschera; from whence by the high path (it is some 700 feet above the river, and only 12—18 inches wide in some places, but perfectly safe for steady

heads) to Val Sampuoir, a wonderful high valley; it is a sort of "Devil's Punch Bowl" among the mountain summits; return by the river-path (right bank), or cross the bridge at the mouth of the Val Sampuoir to Steinsberg, whence take the Cantonal road. (3) By Vulpera and Pradella to Val Uina, keep up the valley by a wonderful path or stairway, pinned into the face of the rock, as far as Uina da Doura, thence up the valley to the right to the Col, then skirt the Lischanna glacier, and descend by Piz Cornet into the Val Seesvenna, and return by Scarl Thal. (4) Over Fettan Alp to Val Tasna, one of the wildest and most interesting in the Grisons.

(5) By Schuls and Weisshaus, crossing the river opposite to Remus to the Val d'Assa, at the entrance to which, but shrouded in the pine woods in the most picturesque and secluded situation, is (to my mind) the loveliest waterfall I have ever seen; it is a great height, some 700 to 1000 feet I should think, and while I watched it for half an hour or more it appeared to be continually changing its shape and appearance, then the surroundings enhanced the effect, a sort of small amphitheatre of high moss-covered pine-clad rock, a patch of blue sky over head, and the death-like stillness only broken by the plash of the falling water or the scream of a mountain eagle sailing over head in the calm ether. The Val d'Assa resembles one of the Pyreneean circles, and combines Swiss grandeur with Pyreneean beauty. About five miles up the

valley the is Fontana Christaina, an intermittent spring, which only flows at 9 a.m., noon, and towards the evening; it is situated in a cavern some 300 feet deep. (6) By Schuls to the castle of Tschanuff (Canities), situated near Remus on the profound gorge (Wraunka-Tobel) of the Val Sinestra, thence up this savagely grand valley to the Schweifel Quellen, returning over the Alp, via Sins to Schuls. (7) Val Spadla, behind Sins, is well worth a visit. (8) By Schuls Martinsbruck* and Nauders (in Tyrol) to Hoch Finstermuntz, returning, if on foot and in possession of a steady head, and having daylight, by the defile of the Finstermuntz. *These excursions are within the compass of a day's walk, and mostly in the shade of the sweet-smelling pine woods.*

MORE DISTANT EXCURSIONS.

(1) By Scarl Thal via Cierfs to Sta. Maria (5—8 hours), in Münster Thal, thence to Bormio via Val Forcola and Val di Fraele (5—6 hours), or by the Umbrail Pass, to 4th Cantoniera near the summit of the Stelvio Pass ($2\frac{1}{2}$ to 3 hours from Sta. Maria), a capital place as head

* The Austrian minister of public works has given positive assurance to the Tarasp authorities that the bad piece of road ($2\frac{1}{2}$ miles) between Martinsbrüche and Nauders shall be made thoroughly good this summer, so that the Austrian and Swiss systems may be in perfect connection.—ED.

quarters for explorations among the magnificent glaciers, ice peaks and vast snow fields of the Ortler and Cristallo groups. Nowhere in Switzerland, or Tyrol, is it possible to explore the ice world in all its grandeur with so little fatigue or danger as at this point, the Cantoniera itself being almost 9,000 feet; then cross the summit of the Pass to Trafoi (3 hours), and return to Tarasp either by Mals (5 hours), Schlinig, and the Val Uina, or if a good mountaineer (with guide) by the Val D'Assa; both passes are interesting routes, and command fine views, and occupy a fair day from Mals to Tarasp. (2) By Scarl Thal as far as the village of Scarl, thence bear to the left into the valley of the Cruschetta over the Scarjochl, (here you hear the roaring of a subterraneous torrent under your feet for a considerable distance, which combined with the desolate grandeur of the Col, produces a strangely weird effect), to Münster, from whence a path leads over the ridge of mountains to the east,—(get a boy to point out the commencement of the path), from the summit of which the views of the Ortler group and the Cristallo glaciers are simply unrivalled—to Trafoi on the Stelvio route (keep the *right hand* side of the valley, descending from the ridge to Trafoi), thence over the summit of the Pass to Bormio, whence either take the path ($1\frac{1}{2}$ mile before reaching Bormio), by the iron works to the right hand at the entrance to the Val di Fraele, and by the Val Forcola to Sta. Maria, whence return to

Tarasp either by Cierfs and Scarl Thal, or by Buffalora Pass and Zernetz; or go on from Bormio (cross the river below the new baths) by the iron works at the entrance of the Val di Dentro to Semogo, whence either by Trepalle and Livigno to Ponte on the high road from Samaden to Tarasp, or go on from Semogo by Val Viola, which comes out on the Bernina Pass about 2 miles below La Rosa Inn (very decent refreshments at moderate prices), and thence over Bernina Pass to Samaden, and return to Tarasp by Cantonal road—sleep at Münster or Trafoi then (unless you stay at 4th Cantoniera for excursions), at New Bath Hotel, Bormio, and the next night at Sta. Maria Ponte or Samaden, according to which route you take from Bormio, (I did this country last summer *without guide*, but of course it would not be safe for a novice.)

Most interesting tours of from two days to a week can be made by taking any of the numerous passes to the north of Tarasp leading into the Vorarlberg, *e.g.*, go by Val Tasna and Val Urschai over the Futschol Pass to Galthur in the Pitznaum, and return by Mathan, Fossil Thal, Val Choglias, Val Sinestra and Remus.

But of all glacier tours commend me to the tour of the Silvretta. Starting from Guarda, follow up the Val Tuoi over the magnificent Silvretta glacier to Klosters, returning by the Suser Thal and Lavin, (the ascent of Piz Linard (10,516 ft.) may be made from here—most interesting ascent, wonderful

view), or the excursion may be extended by returning from Klosters, by Davos *Dorfli*, the Dischma Thal, and Scaletta pass ; from Durhenboden, at the bottom of the Dischma Thal ascend the Schwartzhorn, said to be the finest view point in Switzerland, returning cross the magnificent Ghialetch and wonderful Sur Sura glaciers (splendid view from Sur Sura), descend (with guide of course) by Val Sur Sura into the Cantonal road between Zernetz and Süs, at a point about four hours' walk from Tarasp.

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ON TARASP, IN THE LOWER ENGARDINE, AS A WATERING-PLACE.

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TEN years ago St. Moritz, in the Upper Engadine, was almost unknown to English physicians, and consequently to English invalids. Now, in the height of the season there is scarcely house-room and food enough for the crowd of visitors who annually throng to it and fill it, and overflow into the hotels of the neighbouring villages. Tarasp, in the Lower Engadine, is scarcely better known at the present time to the medical profession in England than St. Moritz was nine or ten years ago ; yet Tarasp, like St. Moritz, *will, most undoubtedly, acquire a deservedly high reputation with us when its claims to our consideration, which are very considerable, become more generally known.*

It is only of late years that English physicians have commenced to investigate with something like system and interest the influence of the different

Continental spas in the cure or amelioration of chronic maladies, and it must be admitted that the better we have become acquainted with their action and uses the more freely have we followed the Continental system of sending our patients to drink these health-restoring springs, which our pharmacy cannot rival or imitate. The additional circumstance that many of the most efficacious mineral springs of Europe arise in the neighbourhood of magnificent scenery and in localities favoured with a salubrious and invigorating climate has further commended them to the increased attention of the practical physician.

A curious reflection continued to recur to my mind during a visit to some of the most frequented of European watering-places in my autumn vacation of last year. It was to the effect that homœopathy and what the homœopathists *will* call allopathy (although I am not aware that *we* desire to be ticketed with any dogma) meet at these places on common ground. It is, indeed, remarkable, considering how widely we are supposed to differ on theoretical grounds, that practitioners of both schools should be found coinciding in the nature of the cases which they send to the iron springs of Schwalbach and St. Moritz, to the sulphur springs of Aix and Bagnères, and to the saline springs of Carlsbad and Vichy. It shows clearly enough that the true art of healing, founded on advanced physiological and pathological knowledge, aided by

careful observation and cautious induction, is rapidly rising, superior to speculations and dogmas which often obscure rather than elucidate the true nature of disease.

After spending a month in the Upper Engadine, I took the opportunity, on my return homewards in the beginning of last September, to visit the baths of Tarasp, which are situated between thirty and forty miles from St. Moritz on the main road leading, through the valley of the Inn, to the Austrian Tyrol, *a most delightful drive of five or six hours through the grandest scenery.*

Arrived at Tarasp, thanks to the kind offices of the English Chaplain, the Rev. N. B. Whitby, and those of the resident physician, Dr. Killias, I was enabled to make the best use of the limited amount of time I had at my disposal. *I do not know of any place which has impressed me so favourably as a health resort.* Its natural advantages are very great, as I am about to show, believing that those members of our profession who are unacquainted with the merits of Tarasp as a watering-place will be glad to learn the results of my own personal observation. The information I have to give will naturally arrange itself under the three following heads:—1. The nature, composition, and therapeutic effects of its mineral springs. 2. The nature of its climate. 3. Some topographical and general details.

No fewer than twenty mineral springs rise very

near each other in the neighbourhood of Tarasp—some alkaline and aperient, some chalybeate, and others, in the Val Plafna, behind Tarasp, sulphurous. The springs to which Tarasp chiefly owes its repute are the saline-alkaline sources which rise close to the banks of the Inn, and in the immediate vicinity of the Kurhaus. Those that are used for drinking are situated on the right bank of the river; there are others on the left bank, which are used for bathing purposes.

The drinking springs are named the St. Lucius and the St. Emerita; they rise quite close together, and are almost identical in composition. The St. Lucius is somewhat richer in mineral constituents, and contains more carbonic acid. I give the composition of the St. Lucius source. In a pint (sixteen ounces) of the water there are 95·6225 grains of mineral substances, made up of

Carbonate of lime	. . .	12·4323 grains
Carbonate of magnesia	. . .	5·0764 „
Carbon. of protoxide of iron	. . .	0·1520 „
Carbonate of sodium	. . .	27·2294 „
Chloride of sodium	. . .	29·4013 „
*Iodide of sodium	. . .	1·5360 „
Sulphate of sodium	. . .	16·5473 „
Sulphate of potassium	. . .	2·9975 „
Silica, phosphoric acid, &c.	. . .	0·2503 „

The carbonates are here calculated as simple carbonates, but they are all contained in the water, combined with some carbonic acid in the

form of bicarbonates. There are also 33·86 cubic inches of free carbonic acid contained in a pint of this water. It will be seen, then, that this spring contains a large proportion of chloride of sodium, very nearly an equal quantity of carbonate of sodium, a large amount of the aperient sulphate of sodium, the alkaline carbonates of lime and magnesia, and an appreciable quantity of iron. As to the amount of iodide of sodium* which appears from the above table to be present in this spring, I must observe that there is clearly a mistake here in the calculation. It would be a very important constituent indeed, did it exist in anything like the proportions herein stated, but on comparison of other percentage analysis, I find there is but a mere trace of this substance—viz., 0·0002 in a thousand parts. This very inaccurate statement has been carelessly copied into English works on the Swiss baths and watering-places. Compared with other European spas, the St. Lucius and St. Emerita springs of Tarasp resemble most nearly the waters of Vichy and Carlsbad.

The differences are chiefly these—the Vichy water has much less carbonic acid, very much less chloride of sodium, scarcely any sulphate of sodium,

* The mistake arose from a printer's error, viz., the transposition of a *decimal point*, one figure to the right hand in Dr. A. De Planta-Reichenau's original analysis, which was copied verbatim into the first edition of this brochure, the error not having been discovered (*Vide Preface to this edition*).—ED.

less magnesium salts, and a mere trace of iron. The quantity of carbonate of soda is nearly the same in each. The relative quantities of their chief constituents are shown in the following table.

In 10,000 parts.

	St. Lucius, Tarasp.	Grande Grille, Vichy.
Carbonate of sodium . .	35.455	36.54
Chloride „ . .	38.283	5.43
Sulphate „ . .	21.546	0.168
Sulphate of potassium .	3.903	3.362
Salts of magnesium . .	6.61	2.0
Carbonate of iron . .	0.198	0.02
Carbonic acid . . .	45.426	26.65

It will be seen, then, that the Tarasp water is as alkaline as the Vichy water, but that it contains a much larger proportion of aperient salts, and that it is also mildly chalybeate.

The Carlsbad water has, again, much less carbonic acid, less chloride of sodium, less carbonate of sodium, less magnesium salts, nearly the same quantity of the aperient sulphate of sodium, a much larger quantity of the aperient sulphate of potassium, scarcely any iron, and it has a much higher temperature, probably a not unimportant difference. The springs of Carlsbad vary from 125° to 165° Fahr., those of Tarasp from 40° to 45° Fahr. The following table will show clearly the extent of these differences:—

In 10,000 parts.

	St. Lucius, Tarasp.	The Sprudel, Carlsbad.
Sulphate of sodium .	21.546	19.48
„ potassium	3.903	12.2
Chloride of sodium .	38.283	11.36
Magnesium salts . .	6.61	0.52
Carbonate of soda .	35.455	11.8
Carbonate of iron .	0.198	0.04
Carbonic acid . . .	45.426	10.123

It will be noticed that the Carlsbad water contains more of the aperient alkaline sulphates; the Tarasp spring, on the other hand, contains three times as much chloride of sodium, and nearly three times as much carbonate of soda. We find, therefore, that the Tarasp water combines the alkaline character of the Vichy and the aperient character of the Carlsbad springs, while the presence of so large an amount of carbonic acid renders it *more agreeable as a beverage*, and promotes the absorption of its constituent salts. The presence of an appreciable quantity of iron renders it also a blood restorative.

There is scarcely a spring in Europe that is known to possess so many important qualities.

But Tarasp has the additional advantage of possessing several very important acidulous chalybeate springs of a purely tonic character. The one most commonly drunk is the St. Bonifacius spring. It is situated on the right bank of the Inn, about a mile distant from the Kurhaus. It contains quite

as much iron as the *stronger* spring at St. Moritz, but rather less carbonic acid. In the table which follows, the constituents of these two springs are contrasted:—

In 1000 grammes

	St. Bonifacius quelle. Tarasp.	Paracelsus quelle. St. Moritz.
Carbonate of lime . . .	1.9023	0.8911
„ magnesium . . .	0.3366	0.1583
„ protoxide of iron . . .	0.0330	0.0329
„ manganese . . .	—	0.0043
„ sodium . . .	1.0325	0.2074
Chloride of sodium . . .	0.0570	0.0404
Sulphate „ . . .	0.2147	0.3481
„ potassium . . .	0.0955	0.0205
Silica	0.0185	0.0495
Phosphoric acid . . .	—	0.0006
Alumina	—	0.0004
	<hr/> 3.6901	<hr/> 1.7535

Of free carbonic acid there are 37.91 cubic inches in 32 cubic inches of the St. Bonifacius well, and 51.20 cubic inches in the same volume of the Paracelsus well. This spring has a slightly chalybeate taste, which is not unpleasant, owing to the large amount of carbonic acid it contains.

A milder chalybeate spring rises close to the Kurhaus, the Carola spring; it contains only half as much iron as the Bonifacius, but it has to my thinking, the great advantage of containing only

one-fourth the quantity of carbonate of lime, a mischievous ingredient in many cases where iron waters might otherwise be useful.

There are several more iron springs in the district of Tarasp, but the only other to which I shall now call attention is the Wyh Spring, which rises out of the ground, quite unprotected and unenclosed, in one of the meadows on the hillside above the village of Schuls, and about twenty minutes' walk from the Kurhaus. This spring contains a considerable quantity of iron, rather more than the Alte Quelle at St. Moritz, and its water, as it streams down the mountain side, deposits an abundant red ferruginous covering on the soil it flows over. It rises in a most picturesque and somewhat out-of-the-way spot, and is one of the pleasantest mineral waters to drink I have ever tasted. It is not, however, much frequented. We found a tumbler hidden under an adjacent bush, which had been left there by a benevolent fellow countryman for the use of those who might subsequently find their way to this delightful spring. We made use of it and returned it to its hiding-place.

Of the sulphur springs in this locality the one in Val Plafna and another in Val Dragun, on the way from the upper village of Schuls to the village of Fettan, are the most important. They are both impregnated with sulphuretted hydrogen. The Dragun spring appears to be an acidulous chalybeate spring saturated with sulphuretted hydrogen. These sources have not yet been closed or utilised.

I have now a few words to say as to the therapeutic action of these waters.

It will not be difficult, bearing in mind the composition of the mineral springs, to analyse briefly their action on the human economy.

The primary effect of these alkalo-saline springs must be an ant-acid action on the gastric mucous membrane. After absorption of the saline constituents, we naturally get increased activity of the secreting organs, by which these salts are eliminated from the blood. If the waters be taken early in the morning, as is generally ordered, with gentle walking exercise, several fluid motions from the bowels are commonly obtained before breakfast, or immediately afterwards. The diuretic action of the water is manifested later in the day. It is further reasonable to conclude that when a considerable quantity of a strongly alkaline and saline fluid is taken into an empty stomach, from which it must at once pass into the portal system of veins and thence through the secreting structure of the liver, that the condition of this organ and the character of its secretion may be greatly modified thereby. We know that sodium is the base with which the acids of the bile are found combined, and there can, I think, be but little doubt that the internal administration of dilute solutions of the carbonate of sodium exert an important influence in modifying the character of this secretion.

One of the most useful remedies in cases of

jaundice associated with congestion of the liver, as well as in cases of obstruction from biliary calculi, or from the presence of inspissated bile in the duct of the gall-bladder, is large draughts of warm water containing carbonate of sodium in solution. What is the Carlsbad water, which is found to be so efficacious in the relief of biliary concretions and in the reduction of fatty and congested livers, but a warm dilute solution of carbonate of sodium with some additional saline purgative constituents? Doubtless the warmth of the water, in this instance, favours its action. *The Tarasp water is much richer in the alkaline carbonate of soda, and very nearly as rich in aperient salts.* We are therefore quite prepared to hear that these waters are found especially useful in visceral congestions and obstructions, as, for example, chronic affections of the liver, hyperæmia of that organ and the fatty liver arising from errors in diet, certain cases of jaundice, and gall-stones: congestion of the spleen after intermittent fevers; *dyspepsias*, especially those associated with excessive formation of acid and with vomiting, and originating in *want of exercise*, improper or irregular feeding, or obstinate constipation; general corpulence; *chronic gout and rheumatism*—conditions especially associated with increased development of acid substances in the blood or with defective action of the eliminatory organs. Tapeworms are said to be occasionally expelled during the use of these springs. Some

forms of catarrhal affection of the kidneys and bladder, and disposition to the formation of *renal calculi*, are also relieved here, just as, indeed, they are by the use of the Vichy water. Disorders of menstruation, associated with a chronically congested state of the uterus and ovaries, are reputed to be relieved in a very remarkable manner by a course of the waters at Tarasp. Some cases of chronic eczema have also been greatly benefited here. It is further stated that persons suffering from chronic laryngeal or bronchial catarrh with hoarseness are relieved by drinking these waters, *and some Physicians believe them to be useful in the incipient stage of pulmonary tuberculosis.* It is, however, very probable that the pure and invigorating mountain air has more influence in producing the improvement observed in cases of pulmonary disease than the use of the mineral springs.

As to the quantity of water that is usually taken, patients begin with two or three glasses (each holding six ounces), and increase gradually to six or eight. These are drunk in the morning before eating, at intervals of a quarter of an hour, gentle walking exercise being taken all the time. It not unfrequently happens that persons with weak digestions suffer considerable inconvenience from headache and flatulence if they drink any quantity of cold water before breakfast. When such is the case it is better to take an early light breakfast, and drink two or three glasses of the water two or three hours

afterwards. If necessary, a glass or two more may be taken late in the evening. A common practice also is to warm the water before drinking.

It is very obvious that a powerfully alterative aperient and alkaline water should not be taken continuously for a long time. There are very few cases in which its use should be prolonged without interruption for longer than a fortnight; and many cases would probably derive much greater benefit *from a combination of the saline and the chalybeate treatment than from either singly*—the saline water for three or four days, then the chalybeate for a similar period, and so on. I am thinking especially of those cases of anæmia in females, associated with obstinate constipation and disorder of the generative system, in which we know, as a matter of common observation, that preparations of iron are rarely useful unless combined with an aperient, and that frequent aperients are injurious unless combined with some tonic remedies. *Tarasp*, with its *saline aperient water on the one hand*, and *its bracing chalybeate springs on the other*, seems to be exactly suited to such forms of disease.

2. In the next place, I would desire to say a few words on the climate of Tarasp. This district, situated at an elevation of between 4,000 and 4,500 feet above the level of the sea, possesses *all the invigorating characteristics of an Alpine climate*, while it has the advantage of being much less severe and vigorous than that of the Upper Engadine. There

are here fewer sudden changes of temperature, and an unexpected fall of snow in the summer months, by no means an uncommon occurrence at St. Moritz, is at Tarasp quite an exceptional event. The milder character of the climate is indicated by the much greater luxuriance of vegetation; rye and flax are extensively cultivated in this district, and fruit orchards flourish near Schuls, while the local Flora is exceedingly rich and diversified.

As well as being milder, the air is not so dry and rare as in the Upper Engadine—a condition which occasions frequently most uncomfortable excitement and irritation in many cases of functional nervous disorders which have been of late years sent in considerable numbers to these high Alpine stations. Unpleasant and troublesome herpetic eruptions about the face are very commonly produced in persons with delicate skins by the dry stimulating air of St. Moritz. These are not so frequently observed in the milder climate of the Lower Engadine. *This part of the valley is almost entirely protected from the north and north-east winds, the prevailing winds being the south-east and north-west.*

The snow begins to melt here in April. The spring is short, as in all mountain districts, and in June the summer is so far advanced that on the 15th the bath season commences. This continues to the end of September, a month generally remarkable for constantly fine genial weather, the only drawback being the shortness of the days. The

mean atmospheric temperature in the months of July and August ranges from 56° F. to 60° F. The maximum and minimum temperatures noted in the same months were 82° F. and 37·5° F. *It will thus be seen that the climate of Tarasp especially commends itself to those cases in which it is thought desirable to try the influence of mountain air without incurring the risk which certainly attaches itself to an exposure to the sudden changes of temperature, the highly rarified air, and often the continuous cold of the Upper Engadine.*

Also, on leaving the Upper Engadine, Tarasp offers an admirable intermediate point where patients may break the suddenness of their descent into the plains of Italy or Switzerland, which to many persons proves very trying, and the presence of chalybeate springs of a precisely similar character to those of St. Moritz offers facilities for continuing or prolonging the course of steel waters if it be thought desirable to do so.

3. This account of Tarasp would be very incomplete if I were to omit to add to the preceding remarks on its climate and mineral springs a few topographical and general details.

The quickest way of getting to the Lower Engadine from England is through Paris and Bale to the Landquart station on the railway between Zurich and Coire—it is the next station but one after Ragatz. A little distance from this place, the beautiful and picturesque valley of the Prattigau

opens. The road ascends through this valley to Davos, in the Davos-Thal, which is reached in about six hours by diligence or by posting. From Davos a new carriage road crosses the Fluela pass to Sus in the Lower Engadine, and by this route Tarasp may be reached in about seven hours from Davos, so that the whole journey between Landquart and Tarasp may be accomplished in one rather long day, and the entire distance between London and that place in three days, sleeping one night at Ragatz or Landquart.

I have heard it remarked that "Tarasp is in a hole," and an impression of this kind is certainly produced upon one when, coming from the Upper Engadine, the diligence drives down to the left bank of the river and deposits one at the Kurhaus, which is built at the bottom of the somewhat narrow gorge through which the Inn here flows. But although it has pleased the proprietors to build the *Établissement des Bains* at the bottom of this gorge in order to be close to the principal mineral springs, it does not follow, nor is it true, that "Tarasp is in a hole." Tarasp is the name of the district, *and a spot more beautifully situated or with greater natural advantages it would be difficult to find.* It forms a small plateau, around which spreads a hilly country covered with meadows, corn-fields, and wooded slopes in charming variety, crowned on each side by mountain summits of singularly bold and striking outlines. Beautiful lateral valleys,

the sides of which are covered with shady and fragrant pine woods, penetrate deeply into the recesses of the Alpine chain, and afford a great variety of singularly attractive walks. For mountain climbers there is every kind of work, from rugged hitherto unscaled peaks to those lower points of view which may be described, in guide-book phraseology, as "easily accessible for ladies;" while the largest glacier fields in this part of the Alps—the *Vadret-Lischana*—can be readily reached in a few hours. *One of the great charms of the place is the number of pleasant shady walks over the wooded park-like hilly slopes in the immediate vicinity of the springs, which can easily be prolonged into more ambitious efforts as the strength of the invalid returns.*

Those who object to the situation of the Kurhaus can obtain excellent accommodation at the Belvédère Hotel at Schuls, which is admirably placed, and distant about a mile from the springs, to which, however, residents at the hotel are conveyed in carriages daily free of charge. But commend me especially to the little hamlet of Vulpera, containing some homely, but good *pensions*, where most assuredly the Kurhaus ought to have been erected; it is placed in a sunny and pleasant open spot about 300 feet above the bath establishment on the opposite bank of the Inn, and from it a good zig-zagged path leads in about seven minutes to the mineral springs.

Those who do not mind being "in a hole"—though, at an elevation of 4000 feet above the sea, it is obvious that such an expression *can only have a relative significance*—will find extremely pleasant quarters at the Kurhaus. *No effort has been spared to make it as comfortable and complete as any of the best hotels in Europe.* English is spoken by the manager and by the waiters, and there is an English chaplain resident in the Kurhaus, who, it may be of interest to many to know, is desirous of establishing *a daily service and an early celebration of the Holy Communion.* The proprietors have with great liberality offered the use of a convenient building adjacent to the Kurhaus for the English church service, and at the same time placed a sum of money at the disposal of the chaplain sufficient to fit it up appropriately for that purpose.

Consideration for your valuable space, which I fear I have already too greatly trespassed upon, prevents my adding many interesting details connected with this locality which I may probably have an opportunity of describing elsewhere.*

60, S. James' Street, W.

* For more detailed information *vide* "A season at St. Moritz, and a visit to the Baths of Tarasp," by J. Burney Yeo, M.B. London: Chapman and Hall, Piccadilly.—ED.

COMMUNICATIONS.

From London, via Paris, Mulhouse, Zurich, to Landquart; thence run diligences daily over the Fluela pass to Tarasp. The 1st (in 14 hours) leaves Landquart station at 7 a.m., and arrives at Tarasp the same evening; the other, which stops all night at Davos, leaves later. The journey from London to Tarasp (resting one night) can be done a little under three days.—Expense by Tidal train and Express, 1st class, £7 6s. 3d; 2nd class, £5 10s. 8d. By Havre, Dieppe, or the Belgian and Rhine route, the expense is little more than half. From Italy, diligences via Samaden, from the Valtelline over the Bernina pass. From Milan and Lake Como, over the Maloja Pass. Also from the Valtelline and North Italy, over the Stelvio via Nauders and Martinsbruck.

From Geneva, Lucerne, and South of France, either by Landquart and Fluela pass, or by Coire and over the Albula or Julier passes.

From Rhine and Germany, by Zurich, Landquart, and Fluela pass. From South Germany, Vienna, Munich, &c., either by Landquart and Fluela pass, or more direct still via. Innsbruck, Landeck, the Finstermünz, Nauders, and Martinsbruck.*

* The Austrian minister of Public Works has given positive assurance to the Tarasp authorities that the bad piece of road ($2\frac{1}{2}$ miles) between Martinsbruck and Nauders shall be made thoroughly good this summer, so that the Austrian and Swiss systems may be in perfect connection.

Nach J.M. Ziegler. Karte von Unter Engadin.

UMGEBUNG VON TARASP-SCHULS

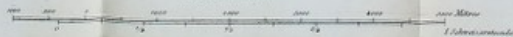


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———— Quartärzeit
 ———— Paläozoica
 ———— Juraen, Kreidezeit u. Tertiäre
 ———— Quartäre



* Berge
 * Exelle
 * Triangulationspunkt
 M. Mineralquellen

