

## **On the employment of the baths of Kreuznach in syphilitic affections.**

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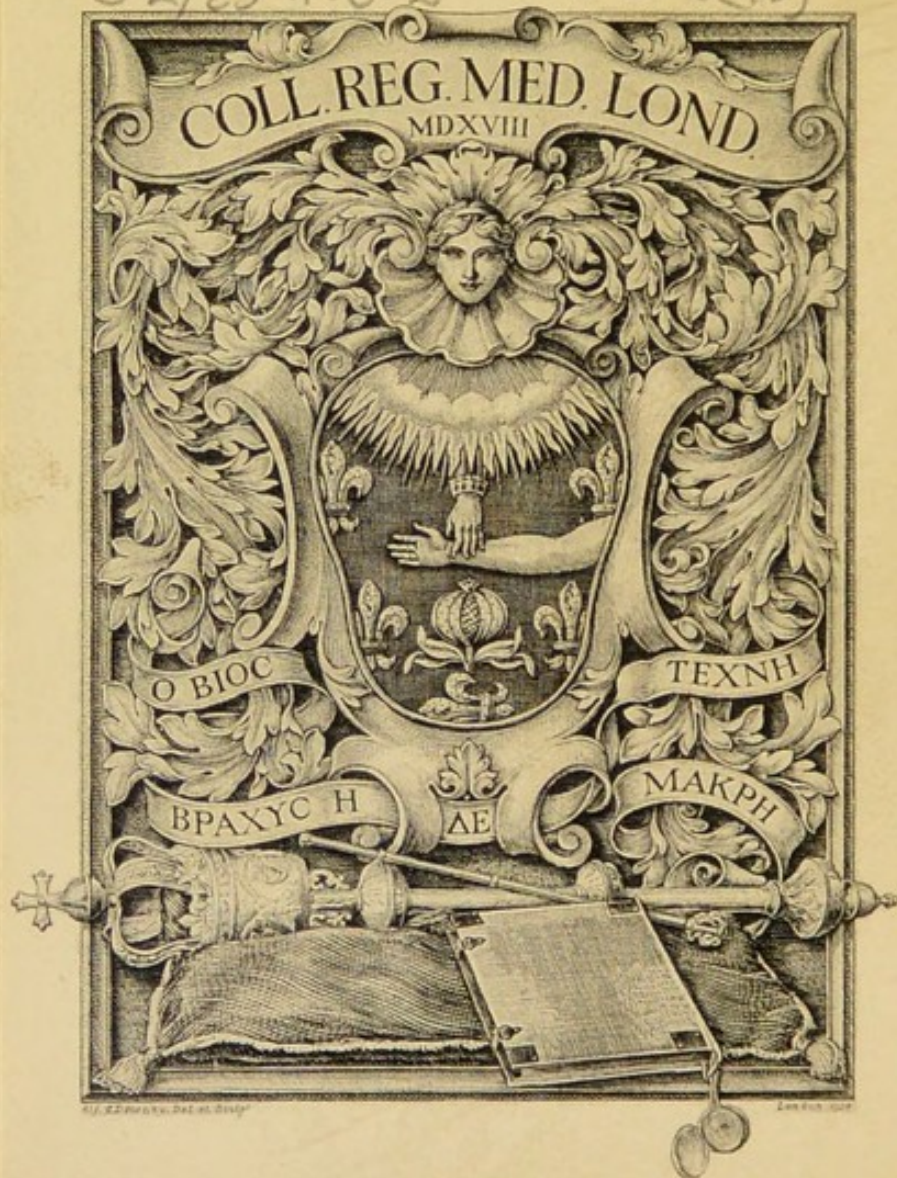


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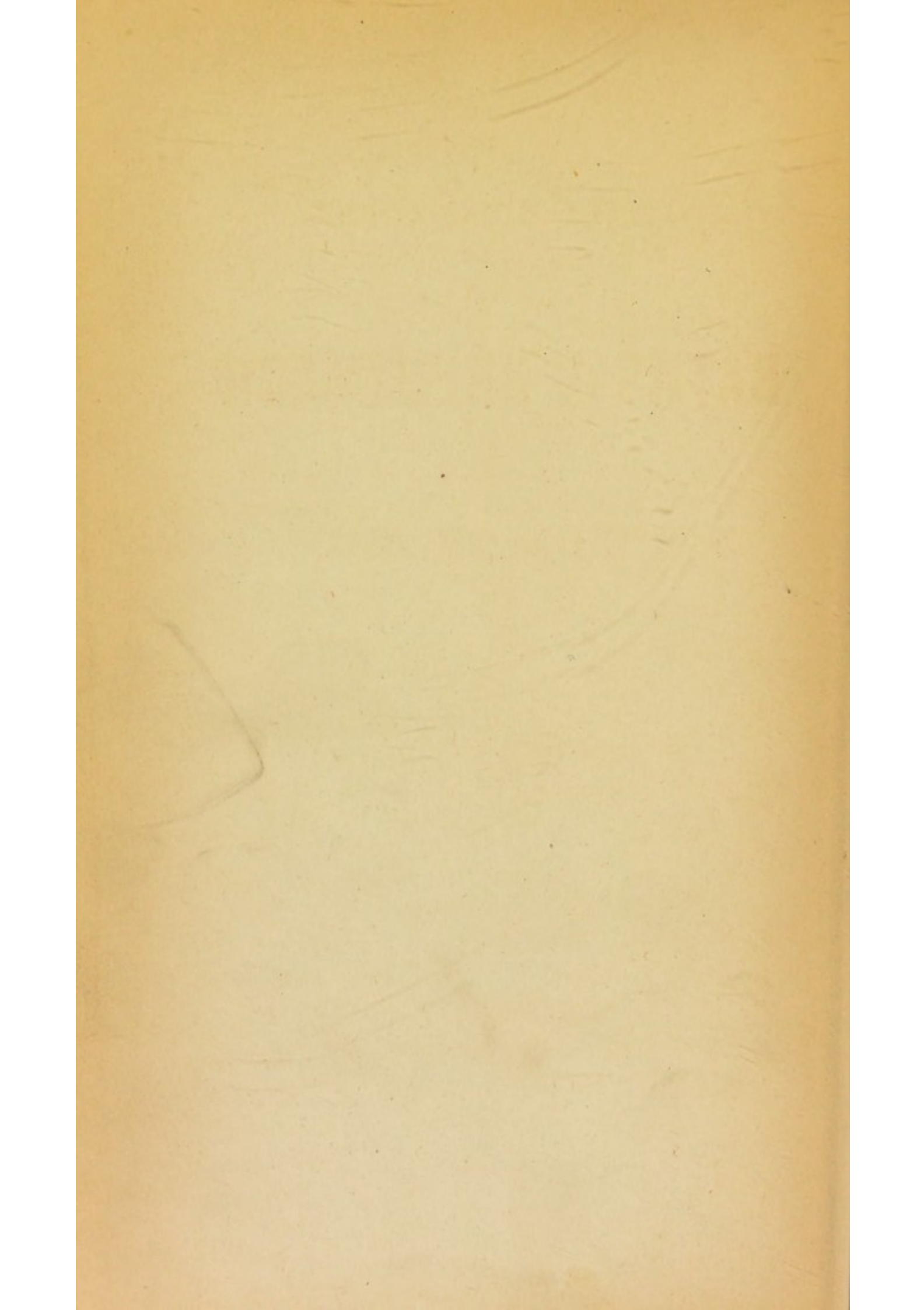
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ON THE EMPLOYMENT  
OF THE  
**BATHS OF KREUZNACH**  
IN  
**SYPHILITIC AFFECTIONS**

BY  
  
**Dr. C. ENGELMANN,**  
PHYSICIAN AT THE BATHS OF KREUZNACH.



**FRANKFORT o. M.**  
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More than 20 years ago, — before Kreuznach, by the discovery of the Elisabeth spring (Elisen-Quelle), had taken its place among the most frequented Baths of Germany, and had proved highly efficient in scrofulous cases \*) in several

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\*) For my professional brethren in Great-Britain who may not have had experience of the effect of the Kreuznach waters, or are not acquainted with the special works on this subject (The baths of K. by Dr. Engelmann 1840, and the baths of K. by Dr. O. Prieger 1849). I here give a short account of the operation of our mineral-springs, and indicate the diseases in which they have proved efficacious.

The waters rise close by the town of Kreuznach and also in the adjacent valley of the Salines (salt-works), and issue from volcanic formations, principally consisting of porphyry. Some of the springs are cold, others luke warm, up to 83 Fahrenheit.

The analysis of the water, which specifies the principal ingredients as common salt, muriate of lime, iron, brome, and iodine, will enable every physician to judge for what disorders the springs may be adapted.



forms of cutaneous disease, as also in maladies of the female organs of generation, — Dr. Kopp of

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The forms of disease in which the curative effect of a treatment with the Kreuznach waters has been established by experience, are the following:

1) All the forms of Scrofulous disease, whether of a torpid or an erethic character. Swellings of the glands, chronic inflammations of the eyes, chronic affections of the periosteum and bones, affections of the mucous membranes etc., can be removed by a single course; but it will be possible only by repeated courses, to remove from the constitution the taint of scrofula.

2) Chronic cutaneous diseases, when they are the consequences of an haemorrhoidal disposition proceeding from a lymphatic constitution during the period of youth; among these we must number the forms of eczema, especially in women, and of psoriasis. This latter form of eruption is very frequently sent to Kreuznach, and the cases are mostly of very long standing, and in which all other remedies, even arsenic included, have been exhibited either fruitlessly or with but momentary success. In such cases a cure may confidently be expected from a bathing treatment at our waters, but not till after repeated courses, combined with the strictest diet.

3) Swellings and indurations of the female organs of generation, of the ovaria, of the orifice of the uterus, in hypertrophy of the uterus, in non-malignant indurations of the breast-glandule. Real scirrhus and carci-



Hanau, mentioned the Mutterlaugen-baths \*) of Kreuznach as most excellent seconders of the regular treatment in cases of Syphilis, and the application of which, in instances where, after

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noma are as little cured by our waters as by every other remedy. A number of female patients with scirrhus of the breast are, however, sent to Kreuznach immediately prior to operation, in order that the morbid disposition may be annihilated and a relapse avoided.

With regard to the method of treatment, the water is employed internally and externally. For drinking, the Elisabeth spring is used; grown up persons take from 6 — 12 ounces in the morning, seldom more, and never so much as to have a purgative effect. The baths are taken warm, — between 87° and 90° F. The duration of the bath varies from  $\frac{1}{4}$  hour to  $\frac{1}{2}$  hour (where there is great insensibility of the skin). According to circumstances, particularly when, as in indurations and swellings, a resolvent effect is aimed at, Mutterlauge is added in gradually increasing quantities. The increase is modified by age, constitution, obstinacy of the disease, and irritability of the skin. The treatment is continued till either a cure is effected, or symptoms of saturation prescribe its conclusion. The duration of the course varies from 6 to 8 weeks.

\*) This is the name of the fluid residue remaining in the boilers, after the salt, has, by means of sufficient evaporation of the water, been crystalized and taken out. It is a transparent brown yellow liquid, of



chancres or gonorrhœas, — glandular organs, inner pituitous membranes or the skin had become the depositories of remaining specific acrimony, he had frequently observed to be attended with the most beneficial effects. This opinion he supported by numerous reports of cases, which reports he has communicated in his memoirs. His example was soon imitated,

a consistency little less than that of oil. According to Professor Osann, 16 oz. of this liquid contain:

	grains.
Muriate of calcium. . . . .	1577,71
Bromide of calcium . . . . .	338,72
Bromide of potassa . . . . .	92,82
Muriate of magnium . . . . .	38,44
Acid crenical and slight indications of Iodine . . . . .	216,13
Bromide of Soda . . . . .	154,10
Muriate of Soda . . . . .	60,34
Muriate of Potassa. . . . .	17,30
Alumine together with Protoxide of iron . . . . .	35,66
Water contained in the salts, and loss	44,50
	<hr/> 2575,72

According to the analysis of 4 other Chymists, the quantity of Iodine in 16 oz. of Mutterlauge differs from 17 to 26 grains.

For conveniency of transport, the Mutterlauge is



and ever since the period referred to, numbers of patients have resorted to the Kreuznach baths as a remedy against Syphilis. A variety of such cases have come under the immediate observation of the author of these lines in his capacity of physician at the baths in question, and, in the following pages, he has taken the liberty of communicating the experience of a series of years, to his professional brethren.

evaporated till nearly dry, and exported under the name of Mutterlaugensalz.

The Elisabeth (Elisen) spring contains in 16 oz.

	grains.
Muriate of Soda . . . . .	72,88
„ „ Potassa . . . . .	0,62
„ „ Lithia . . . . .	0,61
„ „ Lime . . . . .	13,38
„ „ Magnesia . . . . .	4,07
Bromide of Magnium . . . . .	0,27
Iodide of Magnium . . . . .	0,03
Carbonate of Lime . . . . .	1,69
„ „ Baryta . . . . .	0,01
Hydrate of Magnesia . . . . .	0,10
Oxyde of iron . . . . .	0,15
Phosphate of Alumina . . . . .	0,02
Silica . . . . .	0,12
Solid substances . . . . .	94,02

There is no stage, no form, no complication of Syphilis, for which the baths of Kreuznach have not been employed, sometimes as the principal, sometimes as the intermediate or the after treatment, and sometimes as a remedy deemed capable of thoroughly eradicating every latent principle of the malady.

Experience having proved, that Iodine is in primary syphilis, if not inefficacious, yet in certainty and rapidity of effect inferior to other remedies, physicians naturally decline sending patients with primary syphilitic affections to Kreuznach for the purpose of using the waters. Patients of this description who have been found here, either came to try the baths on their own responsibility, or had been sent by their physician in order to undergo a course of regular but different treatment, in privacy and quiet. With similar views Kreuznach has sometimes been recommended in cases of secondary ulcers. A few baths were taken to save appearances, while the cure was conducted according to the usual antisyphilitic treatment. On the other hand, relief has been expected in secondary diseases of the skin from our Mutterlaugen-baths, when a



variety of other remedies had been exhibited without effect. Such cases are frequently sent hither, and in all those which I had an opportunity of observing a cure was obtained; in the milder instances—within a period varying from 5 — 7 weeks, but in the more obstinate cases, not till after a repeated course of the waters. Whether or not, some of these patients ever experienced a relapse, I cannot state, not having remained in correspondence with all of them.

As a rule, the only remedies employed were the baths, and the water taken internally. Only in one case, in which ulcers arising from ecthymapustules existed on the back, and when forty baths had produced no visible amelioration, did I resort to the intermediate use of Zittmann's decoction; I afterwards prescribed twenty additional baths, and at last a cure ensued \*).

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\*) My adoption of this mode of treatment was grounded on the opinion, that a remedy operating with such vigour on the intestinal canal and on the skin simultaneously, must considerably augment the effect of the drinking course and the baths, by greatly increasing the absorbent capability of these organs. That the operation of the decoction in question is more indirect than direct, appears to me incontestable, from the fact that during



The strength of the patient, the duration of the disease, and the resorbent capability of the skin, must furnish the criteria for the strength of the baths. At the beginning of the course, the bath, which contains about 200 quarts of liquid, consists of Kreuznach mineral water; with this Mutterlauge is subsequently mixed, and the strength of the bath is increased by an additional pint daily, until a pricking sensation ensues. A pause is now made, and the bath continues stationary in its composition, till its effect is no longer felt on the skin; thereupon the additions of Mutterlauge are to be resumed, till the prickly sensation returns, and this system is to be pursued, till either a cure is effected, or the appearance of symptoms indicating a saturation of the body with the ingredients of the

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its exhibition, no perceptible alteration of the symptoms took place, or at least improvement was not more speedy than in the days immediately previous to the intermediate treatment; while, after resuming the baths, the progress towards cure was strikingly accelerated. I have, therefore, even in cases in which the decoction had already been repeatedly exhibited without favourable effect, not allowed myself to be deterred from employing it again during the bathing-course.



bath, prescribe a termination of the course. In the latter case a cure takes place during the after-effect of the baths, or after some weeks' repose, a fresh course is entered upon, in order to complete the sanative process. When the skin is particularly insensible, the additions of the Mutterlauge may be given in larger quantities at the outset. In regard to the duration of the bath, it should be of 20 — 30 minutes at the commencement, gradually increasing the time to 1 hour or even  $1\frac{1}{2}$  hour in cases of great cutaneous insensibility. The temperature of the water should be 90 — 93 Fahr. and I make a point of seconding the course by a strict and spare regimen.

All cases of exanthema of the mucous membranes that came under my observation professionally, had become chronic and obstinate through irregular management, or by a non-perseverance in the use of the proper remedies, accompanied with a continual change of physicians. In several, symptoms of constitutional syphilis had manifested themselves. Of maculous exanthemata of the mucous membrane of the fauces and tonsils, the angina syphilitica, only two decided cases



have occurred to me, but these had stubbornly resisted various modes of treatment. The cure was operated by means of strong baths combined with an intermediate course of Zittmann's decoction. I observed vesicular exanthemata in the angles of the mouth and on the inner surface of the cheeks, likewise in two patients. Both were cured within five weeks. In some cases, pustulous exanthemata of the mucous membrane of the mouth and nasal cavities were combined with symptoms of constitutional syphilis, than which last they were naturally much easier to heal. Even in the instance of a patient in whom the mucous membrane of the larynx was attacked and all the symptoms of phthisis trachealis were already formed, I observed a similar yielding to medical treatment. 20 strong Mutterlaugen baths having been taken and followed by 3 weeks' exhibition of Zittmann's decoction, on resuming the baths, the curative process commenced by a gradual disappearance of the copper-coloured spots on the soft palate, and by the cicatrisation of several ulcers on the same, and on the tonsils. The burning pain in the larynx diminished, the hoarseness was relieved, the dry spasmodic



cough became more rare. Now it was that the ulcers on the septum narium began to grow less, and after the Zittmann treatment and the resumption of the bathing-course and when the affections of the mucous membranes were almost entirely healed, the tophi of the shin-bone and occiput began to disappear. After 55 baths the cure was complete, nor has there till now, a period of 6 years, been any relapse. A similar case attended with similar results, came under my observation 5 years ago.

The class of tertiary syphilitic affections offered the greatest variety both in form and degree. Generally speaking, several systems were simultaneously attacked by the disease, and the whole constitution more or less debilitated. With the majority there existed complication with scrofula, especially in those patients in whom the periosteum and the bones were affected. Without complication or simultaneous suffering of other systems, there was, in two cases, a seizure of the tendon of Achilles. The tumor extended over the whole space between the tendon and the bone; as a consequence, great difficulty was felt in walking, and particularly in ascending stairs. In



the one case, the complaint arose 6 years after the healing of a primary sore; in the other, a still longer period had elapsed between the primary appearance of syphilis and the present disorder. During this interval, slight rheumatic pains were the only manifestations of the slumbering poison, and as these were attributed to simple rheumatism, they had been disregarded. With a third patient, both the Achillean tendon and the flexors of the right arm were affected with distinctly palpable ganglions, by which the motion of the limb was considerably impeded. In all these instances a perfect cure was effected by a bathing-course of seven weeks.

With regard to inflammatory affections of the exterior periosteum and their consequences, tophi, exostoses and swellings in the bones, the influence of the baths was first manifested by an alleviation of the nocturnal pains. Two cases of exostosis were in the highest degree inveterate, but were unaccompanied by any considerable local inconvenience, or a derangement of the general health. During the course of several years, no farther attempts at dispersion had been made, and the waters of Kreuznach were



tried, without the previous advice of a physician, in order to ascertain whether remnants of syphilis were latent in the system. The baths, however, took as little effect on the swelling of the bones, as the remedies which had been formerly employed.

Cases of syphilitic Sarcocoele, that fell under my observation here, were in proportion rare, when compared to the multitude of scrofulous indurations of the testis, directed to our waters. I have only noted three cases, in all of which only one testicle was affected, whilst the other, together with the spermatic chord, was in a healthy state. One of the patients had been for four years afflicted with an enlargement and induration of the right testis. He had undergone a variety of treatment without success and a course of bathing had been resorted to, as the last hope of escape from an operation. Very strong baths were seconded, day and night, by a topical application of cloths steeped in diluted Mutterlauge, and the whole treatment was carried out to the point of saturation, without exercising the slightest influence on the tumor. In the two other cases, which were less inve-



terate, and in which the tumid testicle had the appearance of a benignant hypertrophy, the swelling was considerably lessened during the course.

The fact, that iodide of potassium is a sovereign remedy in cases where an immoderate or imprudent exhibition of mercurry has produced the well-known symptoms, served as an inducement to try the operation of the Kreuznach Mutterlaugen-Baths in similar instances. The majority of these complications presented long-standing ulcers of the skin, or affections of the mucous membrane of the mouth. In such cases, I always assisted the operation of strong baths by a strict diet and the greatest circumspection in regard to the functions of the skin. The results of this treatment were always favorable; its duration of course depended on the aggravation of the malady and the strength of the patient.

It is well known that with no other disease does syphilis so frequently form complications as with scrofula. As Kreuznach enjoys a repute principally for the cure of scrofulous diseases, hopes were entertained that, in choosing these waters, two ends might be answered, and both



the dyscrasies be extirpated at the same time. Hence it arose, that in most of the cases of syphilis directed to our baths, some complication with scrofula was to be found. Very frequent opportunities were thereby offered of observing the reciprocal influence of the two dyscrasies on each other, — of noting the existence of their separate symptoms in the commencement, and how these gradually lose their characteristic stamp, — how the latter at length dissappears entirely and gives way to a new peculiar disease, formed by the union of the dyscrasies, in which all that was formerly specific is completely obliterated. That a reciprocal action of the two dyscrasies takes place from the first moment of their coming into collision, is highly probable; but at what time their coalition manifests itself, is not so easily to be determined. In all cases, in which tertiary symptoms had made their appearance, these last had already lost their characteristics; in secondary forms this was not always the case. In general, however, the experience was confirmed, that the syphilitic virus in a scrofulous body, even when the fusion of the diseases has not yet taken place, opposes much greater



resistance to the curative process, than in a system exempt from this dyscrasy. This was evident even in those instances, where a scrofulous inclination had never developed itself to morbid phenomena, or where in early child-hood scrofula existed, and in riper years had formed a venous lymphatic constitution. Not only was the cure in such cases much more difficult than in simple syphilis, but the transition from the primary to the secondary form was much more rapid, and even by the speediest exhibition of remedies, it was not always possible to prevent this transition. The secondary ulcers on making their appearance, were equally malignant and obstinate. There was, moreover, in many cases a confirmation of the fact, that scrofula in conjunction with syphilis augments its intensity. The previous morbid manifestations became aggravated, glandulous swellings grew larger and harder, ulcers spread with greater rapidity, herpetic eruptions quickly increased in size, and even in those instances where a scrofulous disposition in child-hood seemed to have been completely eradicated by puberty, the latent inclination revived, and swellings of the glands, ulcerations of the tarsi,



etc. were the consequences. Scrofulous tumors of the inguinal glands, that had existed at an earlier period, assumed a syphilitic hue very soon after infection, and vice versâ, cases occurred in which syphilitic buboes, after having, in common with the other syphilitic symptoms, lost their distinguishing character in obedience to the curative process, continued to exist as scrofulous ulcers, and required an additional course of baths before they could be healed.

In cases presenting ulcers of the mucous membrane, I have always employed Zittmann's decoction previously to commencing the bathing-course. On account of the rapid progress of such ulcers in a scrofulous body, the main object of the physician must be, to arrest the destructive agency as speedily as possible. In such contingencies baths alone operate much too slowly.

I proceeded in a similar manner with ulcers of the bones, where there was danger in delay, and where, as in caries of the bones of the nose, incurable disfigurement was every moment to be apprehended. In all other cases I began immediately with the bathing-course, and this was continued without interruption till a cure was



effected, or till symptoms of incipient saturation demanded a cessation of the treatment. In particularly obstinate cases I sometimes prescribed Zittmann's decoction during the course of the bathing treatment, which latter was pursued till a perfect cure took place. With the success of this method I had every reason to be satisfied. Where a want of perseverance did not induce the patient to discontinue the treatment prematurely, a cure ensued either after using the baths for 6—10 weeks, or when saturation was manifested before extirpation of the disease, by a repetition of the baths after a pause of some weeks. Only one very inveterate case of caries of the bones of the head, with tophi on almost all the long bones, and which had been most improperly treated abroad, resisted a double course of baths accompanied by the intermediate exhibition of the decoction. On the other hand, the general health, which before the use of the baths had been greatly prostrated, was so strikingly ameliorated, that on the patient's return from Kreuznach the home-physician was enabled to venture on a treatment by mercury; it was crowned with success, and no relapse has taken place



up to the present time (a period of nine years). Of those cases in which a cure was effected, I shall give the details of one only, in order to communicate the method of treatment adopted. In all the others, the curative proceeding was the same, modified in respect to strength and duration, by the state of the individual, the standing of the malady, and the resorptive capability of the skin.

A man, aged 35, of an evidently scrofulous habit, presented the following symptoms on his arrival at Kreuznach: body in a very impoverished state, muscles relaxed, colour cachectic; digestion often disturbed; diarrhoea alternating with costiveness; dejection of spirits; apprehensions as to the possibility of a cure; tickling, sometimes increasing to burning, sensations in the fauces and larynx, in consequence of which a continual short cough; hoarseness; in the cavity of the nose constant sense of pressure and frequently lancinating pains, which extended up to the fore-head; secretion of a bloody mucus from the nose, of insupportable fœtor; unremitting, boring pains in different parts of the head; nocturnal pains in the bones of the lower extremities; stiffness in both knees and in the joints of the hips,



producing pain and difficulty in walking. On examination the nose was highly sensitive to the touch; inside on the septum narium were several round ulcers with a lardy ground; similar ulcers on the visible parts of the conchae of the nose; on the velum palati and the tonsils several ulcerated places intermixed with copper-coloured spots; the larynx painful when pressed; swelling of the knee, not particularly sensible to pressure; on the head several topi corresponding to the seat of the pains; several topi were likewise on both shin-bones; and the jugular glands were greatly swollen. The patient had in his youth suffered from scrofula and rachitis; numerous scars from glandular ulcers on the neck attested the fact. On his attaining the age of puberty, the morbid phenomena of scrofulous disease retired into the back-ground and the body was developed in health and vigor. The patient, although he often exposed himself to the danger, had only once been infected with syphilis (in his 20<sup>th</sup> year). The small ulcer which at that time appeared, was removed by cauterization, unaccompanied by any internal treatment. He enjoyed good health, with the exception of inconsiderable hæmorrhoidal



complaints, till his 28<sup>th</sup> year, at which period, the jugular glands again began to swell, as the patient supposed, in consequence of a cold. An angina supervened, which extended to the windpipe and became chronic. By degrees, rheumatic pains, habitual catarrh, violent pains in the head and inflammation of the knee-joints made their appearance. Mineral baths of the most opposite nature, were for several years resorted to without success. It was not till the tophi on the head and tibia, conjointly with the excretion from the nose, presented themselves, that suspicion was directed to syphilis. Iodide of potassium was now administered, and in strong doses. After three weeks' exhibition, however, pains in the stomach and disturbance of the digestive functions commanded a discontinuance of this medicine, before any considerable improvement could be effected. Several fresh trials were made with the iodide, but they were all attended with the same result. A hydropathic treatment of four months was equally fruitless. In the following years the patient was sent to Kreuznach. Here the treatment commenced with baths of simple mineral water at 93 F. At first the patient remained in the bath only



half an hour, which period was, after a time, gradually prolonged to a whole hour. After a few baths Mutterlauge was added, in the proportion of 1 quart to 200 quarts of water and every day increasing that quantity, so that the 18<sup>th</sup> bath contained 20 quarts of Mutterlauge. Immediately after bathing, the patient went to bed and laid compresses, steeped in diluted Mutterlauge, on the swelling of the knee. In the evening fresh compresses were applied likewise for several hours. During the greater part of the day, if the temperature was warm, the patient passed his time in the open air; but if the weather was in the least unfavorable, he was recommended to keep his room. On account of the great weakness of the digestive powers I did not prescribe the waters internally. The diet consisted of a cup of milk with a small roll in the morning and evening; at dinner-time, of a plate of soup or a little fowl and rice. Up to the 20<sup>th</sup> bath no very perceptible change had taken place, excepting that the digestion was a little better, the pains in the bones no longer so violent, and the stiffness of the knee somewhat diminished. But the hope of recovery had now revived in the patient's mind.



During the following fortnight the bathing-treatment was suspended, and Zittmann's decoction used in its stead. The patient bore it very well, and after a pause of a few days resumed the baths, which were composed in the same proportion as at the first treatment, and continued the same without interruption for four weeks, till symptoms of saturation were manifested. The results hitherto obtained were as follows: the pains in the head and limbs had entirely departed, the tophi and swelling of the knee were lessened by the half; the hoarseness was gone, the ulcers and maculous exanthemata in the mouth were healed, the ulcers of the septum narium half cicatrized, whilst the glandular swellings of the neck had but imperceptibly decreased. During the course of the following four weeks the treatment was confined to a generous regimen and, as the weather was warm, to the enjoyment of the open air. On renewing the bathing course, the plan already mentioned was again pursued. The skin now exhibited far greater energy than before; the prickly sensation (which in the first treatment had never been felt) began at present, when only 10 quarts of Mutterlauge had been



added. After the 10<sup>th</sup> bath a pustulous eruption on the breast and abdomen broke out. The cure, which even during the four weeks' pause had advanced most favorably, now made steady progress, and after the 14<sup>th</sup> bath the patient could be dismissed as relieved from his syphilitic complaint. Only a portion of the glandular swelling still remained, and this did not disappear till some months later, after the use of cod-oil. A relapse has till now, an interval of seven years, not occurred.

The intimate relationship between scrofula and syphilis is exhibited very decidedly by the course of the two diseases, by the great similarity of the morbid formations and principally by the metamorphosis that syphilis undergoes, after having been permanent in a system during a course of years. The longer the disease has continued, the more does it lose its original characteristic; it continues degenerating into a condition strongly approximating to that of scrofula. After a shorter or longer series of years, when the most different modes of treatment, either from improper application or owing to unknown constitutional causes, have effected only



an apparent, not a radical cure, — the event is, notoriously, a condition of chronic disease, to which the name of syphilitic cachexy has been given. The whole mass of fluids becomes depraved, the appearance cachectic; the functions of the digestive organs, especially of the liver, are morbid; the skin is dry and flaccid; its excretion fetid; the hair falls off, the nails become thicker, etc. etc. It is seldom that these symptoms exist alone; diverse affections of tertiary syphilis, the original character of which had for the time vanished, have passed over into this period of the disease. Even where, in such cases, dropsy has not yet manifested itself, few physicians will, at the present day, be inclined to have recourse to mercurial treatment. Preference is given to sarsaparilla, to Zittmann's decoction, to preparations of gold, and of late, above all, to the iodide of potassium, while, in the intervals of the treatment, efforts are made to invigorate the system by a meat-diet, wine, and a residence in the country. Since the institution of hydropathic establishments, relief has been sought in that direction, though with greater confidence on the part of the patients than of their medical



advisers; yet, it is undeniable that numerous instances may be adduced which testify the efficacy of this method of treatment. The writer of these lines has had personal experience of several cases of inveterate syphilis that were radically cured in Graefenberg, or other establishments; the only draw-back was, that the curative process lasted not merely months, but years. On the other hand, there have been at Kreuznach several patients, who had previously undergone a cold-water treatment for a lengthened period, without attaining any favorable results whatever. To the different systems of treatment just mentioned, we may confidently associate the Mutterlaugen-baths of Kreuznach.

Their relative value I leave to be determined by those practitioners who, in conjunction with other modes of treatment, have also subjected these baths to the test of experience. As a result of my practice I can only state, that, in the stage of syphilis already referred to, and in proportion to the stubbornness of the disease, their effect appeared to me more intense than in the earlier periods of the dyscrasy, even when complicated with scrofula. One advantage over the



cold-water treatment they certainly possess, and this is, that a cure may be performed in a much shorter time.

On employing the baths in these later stages of syphilis, I generally followed the rules given above as adapted to the earlier periods of the disease. Very large proportions of Mutterlauge were always necessary, for it is not easy to produce irritation on a flaccid skin. It is therefore possible to augment the quantity of Mutterlauge at a much more rapid rate, and to persevere in so doing till the prickly sensation ensues, or till the appearance of the skin denotes greater energy and consequently increased resorptive activity. Should the feeling of irritation on the skin, while bathing, occur before its flaccidity is removed, it will be advisable to make a pause in augmenting the supplement of Mutterlauge, and not to continue the additions till every trace of the prickly sensation has disappeared. As soon, however, as the skin obtains more energy, the strength of the baths may, in proportion, be diminished. It is evident that a spare regimen must essentially tend to heighten the effect of the baths, but, of course, the strength of the



patient will have to be taken into consideration. Should this be much prostrated, it must, on the contrary, be our object to assist the *vis naturæ* by a nourishing, easily digestible and unstimulating diet. The intermedial employment of Zittmann's decoction is, in such cases, seldom or never to be recommended, inasmuch as the functions of the digestive organs, and with them the whole system of nourishment, are greatly deranged. The frequent enjoyment of a pure and warm air naturally promotes the attainment of a cure, and, in this respect, the salubrious and open situation of most of the lodging-houses at Kreuznach deserves favorable mention. In some cases, the bathing-course brought out a pustulous eruption on the hairy parts of the body; this was, however, entirely without a critical character, and never coincident with the appearance of the symptoms of saturation. The course suffered no interruption; the heightened irritation of the skin only called for a decrease in the additions of Mutterlauge.

But, on the other hand, there have been not a few instances of syphilitic cachexy and tertiary syphilis, in which the appearance of primary



and secondary chancrous ulcers was of critical importance. They occurred either towards the end of the bathing course, or after the treatment had been obliged to be given up on account of saturation. In all these cases I received the most solemn assurances, that there had been no opportunity for fresh infection. Previously to the formation of these new ulcers, a considerable retrogression of the pre-existing syphilitic affections was, in every instance, to be observed. In those cases in which it was possible to continue the baths, the ulcers were accompanied with the signs of a more rapid progress towards recovery, whilst the sores themselves grew very slowly. The bathing-course being terminated, Zittmann's decoction was immediately prescribed, and the ulcers healed in a very short period; the remnants of tertiary syphilis disappeared at the same time. With two patients, in whom the ulcers broke out after their return home, a cure was effected by mercurial treatment. In these cases, therefore, the disease had given up the disposition in the tertiary period, of throwing itself on the deeply seated parts, and had resumed a primary character. I have, however,



been unable to discover any reason why, with similar forms of disease and similar constitutions, in the one case, ulcers broke out, while in the other, a cure was effected without their appearance.

Syphilis is often transmitted to a child, by the father's having been affected with inveterate or latent lues at the period of generation. The disease appears in the child, sooner or later after birth, in the form of syphilitic cachexy, and furnishes those cases, which under the name of „most obstinate forms of scrofula,“ are sent for treatment to Kreuznach, in no small numbers. The most stubborn cases of tinea capitis, of eczema on other parts of the body, of blennorrhœa of the eyes, but especially of affections of the bones, are attributable to the cause mentioned above. Where simultaneous condylomata do not exist, the diagnosis is not always easy. But it is of importance with regard to the strength of the baths, as, in the cases referred to, far stronger ones are requisite than in simple scrofula, and from such, favorable results may with confidence be anticipated. Suitable diet and country air are, of course, essential accessories.



Some of the syphilitic patients under my care, had been recommended to go through a course of bathing, because the state of their digestive organs did not allow the exhibition of internal remedies. The weakness of the stomach either existed antecedently to the disease, or had been produced by the antisyphilitic treatment. This had been particularly the case with one of my patients, who had taken enormous doses of iodide of potassium at home, by which, however, the syphilis had only been corrected, while the digestive function was in a high degree impaired. It was impossible to support any but the lightest food, and the smallest dose of the iodide was followed by the most violent spasms in the stomach. In this, and in similar cases, the employment of the baths was attended with gratifying results; the digestive disorder, when it was the consequence of improper syphilitic treatment, yielded to dietetic regimen without requiring the aid of medicines.

The baths of Kreuznach are, moreover, very frequently resorted to, as a supplementary treatment in those cases, where after other methods of cure all apparent symptoms of syphilis have

vanished. Different reasons actuate such a course of proceeding. In some instances the advice is given with a view to a more rapid restoration of the general health, which had been impaired by the antisymphilitic treatment. If the state of debility stands in connexion with previously existing scrofula, or a revival of it by syphilis, — then the choice of Kreuznach must be considered as fully justified. But, where simple weakness exists without a specific disorder, undoubtedly, if baths are to be employed at all, chalybeates should be preferred. It is, however a well known fact, that patients in whom the syphilis has been thoroughly extirpated, recover their strength, by means of a suitable diet and the enjoyment of pure air, so speedily, as generally to render the assistance of medicaments unnecessary.

Another motive for prescribing Kreuznach as an after-treatment is, that the probability of thorough cure after antisymphilitic treatment is thereby supposed to be enhanced. As, in the present state of the therapeutics of syphilis we must confess, that we are not able positively to guarantee a syphilitic patient, even when every



symptom of the evil has been eradicated, from a possibility of a relapse, — a remedy that afforded us such certainty, — that might be able to extirpate every remnant of this disease, however deeply seated, would indeed be invaluable.

Among the non-medical public the opinion has for many years prevailed, that a specificum of this nature was to be found in the baths of Kreuznach; but upon what data this opinion is grounded, I am unable to state. As far as I am aware, the physicians of Kreuznach have neither occasioned, nor countenanced the propagation of such views. The majority of those who have visited our bathing-place for the purpose of assuring themselves that they were radically cured, were such as intended to form a matrimonial connection; only the smaller proportion had come to Kreuznach by professional advice.

Nevertheless, where remains of the syphilitic poison are slumbering in the system without manifesting themselves for the moment by symptoms, and yet awaiting only a combination of favorable circumstances to begin their operation on the organism, in such cases, a course of strong Mutterlaugen-baths is sure not



to be without effect ; perhaps it would not be going too far to presume that such a treatment is capable of entirely destroying the virus. But considering the difficulty of recognising or even of conjecturing the presence of the latent poison, it might easily occur, that persons, in whom there was no longer any vestige of the malady, should be subjected to a course of bathing. Now Mutterlaugen-baths are never indifferent in their operation; consequently, in such cases, they must be looked upon as absolutely hurtful. Yet it may be urged, that the importance of being assured of a radical cure might warrant the incurring of the minor evils resulting from an unnecessary treatment, particularly when we take into consideration the immense advantage which would accrue from the discovery of latent poison. Experience has shown, that strong Mutterlaugen-baths, in cases in which no indication for them exists, if not persevered in too long, are less pernicious than weak baths continously employed; moreover, that where syphilis is present, these strong baths are borne, without calling forth any of those symptoms, that indicate an injurious effect, but which



symptoms are remarked in similar constitutions when free from syphilis; these circumstances may serve as guides in conducting the treatment. In those instances, in which no morbid condition requiring a use of the baths exists, in the first two or three weeks if large additions of Mutterlauge are made, orgasms, congestions to the head, and palpitations of the heart etc. come on, even before any irritation of the skin is manifested, while in latent or inveterate syphilis, though the constitution may be debilitated, baths of equal strength produce none of these symptoms, or at least not till the commencement of saturation.

In cases, therefore, in which it is only presumed, that syphilis still remains, it will be advisable in using the baths, to proceed quickly to large additions of Mutterlauge, and as soon as the symptoms referred to above show themselves, immediately to desist from the treatment. In thus acting we must not overlook the fact that the strength of a bath is relative; a certain arbitrariness is hardly to be avoided, inasmuch as a universal standard is here wanting. I am equally far from asserting, that,



from the early occurrence of palpitations of the heart the conclusion of there being no latent syphilis is to be formed, as from assuming that, where those symptoms do not appear in the first fortnight, syphilis must necessarily exist.

In several cases belonging to this category, where all symptoms of syphilis had vanished in consequence of mercurial treatment, and in which the baths of Kreuznach had been prescribed only to remove every doubt as to the existence of latent virus, primary ulcers made their appearance during the course, but were healed by the exhibition of the decoctum Zittmanni. In none of these cases has, till now, a relapse taken place, although in one instance 9, in another 7 years have elapsed since the bathing treatment. Notwithstanding these results, I should not consider myself justified in concluding positively on the total annihilation of the poison; a long series of cases can alone furnish certainty on this point.

As a curative treatment for the multifarious forms of disease comprehended under the name of gonorrhœal cachexia, the baths of Kreuznach are very frequently employed. In the cases that



have fallen under my observation, the issue of the treatment completely corresponded to the opinion pronounced by Kopp many years ago, that the Mutterlaugen-baths of Kreuznach in cases of this description were to be preferred to all other remedies. The form of malady, in those cases that came under my treatment, manifested itself in the most various shapes. Sometimes it was an irritation of the pituitary membrane of the fauces and larynx, with cough and difficulty of swallowing; sometimes it was an inflammation of the organs of hearing combined with some degree of deafness; or a swelling and induration of the testicles, induration of the prostata, and sometimes pityriasis-like eruptions on the head and the *regio pubis*. In most instances there was only one of these symptoms; but it was always accompanied with rheumatic affections, especially of the ligamentous parts surrounding the joints. There had always been preceding gonorrhœas which, by the fault of the physician or more frequently by that of the patient, had become chronic and were generally accompanied by strictures of the urethra. Some cases were of very long standing. One patient who



was under my hands, two years ago, for general gonorrhœal gout with considerable swellings of the joints at the knee and foot, had been a sufferer, excepting short intervals of improvement, during 20 years. In all the cases, several remedies had been tried without success, more particularly mercurial treatment, the dec. Zitm., preparations of sarsaparilla, the cold-water-cure, the mineral baths of Wiesbaden, Ems, Wildbad and Gastein. In some instances, most of these remedies had been employed successively during a course of years. Those patients suffering from gonorrhœal gout, whom I had an opportunity of observing, did not derive the slightest benefit from the Wiesbaden waters, which in cases of true gout are so efficacious; the same result attended cold-water treatment though persevered in for months together.

With regard to the mode of treatment adopted in these cases, strong baths of Mutterlauge were always indispensable. Whenever the strength of the patient allowed it, I prescribed as strict a diet, as in other syphilitic affections. The same attention was also paid to



general regimen; rooms exposed to the sun were recommended, and the patient was carefully guarded from the influence of any unfavorable change in the weather.

With respect to the success of the course, the opinion of the practitioners by whose advice Kreuznach had been resorted to, was in all cases that came to my knowledge, favorable, though in the majority of instances the treatment had to be repeated. The evident amelioration consequent on the first course, warmly encouraged its repetition. In one case of gonorrhœal gout, in which the baths had not sufficed for perfect recovery, the cure was completed by means of cod-oil.

The pronouncing a judgment on the relative efficacy of the Mutterlaugen-baths of Kreuznach and that of the different modes of treatment usually adopted in syphilis; whether, in general, or in what forms and stages of the disorder, these baths may be preferable to other remedies, is a task for which I cannot consider my own experience as sufficient. I can only collect the materials for such a judgment from the written and oral communications of other professional men,



particularly of those, who have not only had personal experience of the effect of these baths, but who also in their private practice, or as heads of large hospitals, have enjoyed frequent opportunities of instituting comparative observations on the treatment of syphilis. And by this course of proceeding it is, that I have arrived at the conviction, that the Mutterlaugen-baths in secondary syphilis, even in exanthemata, when they appear as secondary affections, present no advantage over other methods of treatment; that they act neither more rapidly nor with greater certainty, and that, on account of the strictness of the diet and the general regimen, even the preference in point of the *jucunde* cannot be given them. The same holds good with regard to the complication of the secondary forms with scrofula, so long as the two dyscrasies exist independently of each other.

Those cases form an exception, in which, either originally or in consequence of the exhausting effects of previous treatment, the digestive powers are considerably impaired. In such contingencies, our baths evidently deserve a preference over internal remedies. But it



seems to me, that no particular advantage is to be derived from the Kreuznach waters, in tertiary syphilis, when neither inveterate, nor complicated with other dyscrasies. Respecting the employment of the baths as an after-treatment in order to prevent a relapse, I have nothing to add to what has already been stated. On the other hand, relying on experience, I consider myself warranted in recommending the baths of Kreuznach as a pre-eminent remedy in the following forms of syphilis:

1) in tertiary syphilis with complication of scrofula, where the syphilitic character has disappeared and both dyscrasies are combined;

2) in inveterate tertiary syphilis, even without complication with scrofula, when the former approaches, or has already passed into, that stage of disease comprehended under the name of syphilitic cachexy;

3) in gonorrhœal cachexy.

In conclusion I have still to observe, that, though in the fore-going lines I have spoken of the bathing treatment here, yet that I am far from confining the employment of the Mütterlaugen-baths to the locality of Kreuz-



nach. On the contrary, they may be administered at any other place, with equal efficacy, by means of the exportable Mutterlauge already referred to. In scrofulous complaints, indeed, and generally speaking, whenever the effect of the water treatment, whether internal or external, would be enhanced by climatic influences so favorable to scrofulous disease as those of Kreuznach \*), it is certainly most advisable to employ the treatment at the place itself, and this opi-

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\*) The town of Kreuznach is situated at the extremity of a romantic valley formed by lofty ranges of porphyry mountains. It is named after the salinen or salt-works which it contains, and, at its outlet, expands into a plain, surrounded with hills. These hills are covered with vines affording an excellent and somewhat fiery wine. There are no marshes in the neighbourhood. The climate is warm and rather dry; wet summers are a rarity. West winds prevail, but seldom become tempestuous. The soil is in the highest degree fertile; even the fruits of the South thrive here, as for instance, almonds, of which great quantities are produced. The climate is in general very healthy; epidemics are extremely uncommon, and intermittents are unknown. In fact, the climatic circumstances are particularly favorable to that class of disease, which, more than any other, is sent to our waters, namely, scrofulous affections.



nion I think I may express, without laying myself open to the charge of pleading *pro domo*. But in the cure of syphilitic maladies, in which the immense additions of Mutterlauge play so conspicuous a part, the ingredients of the simple mineral water must, when put in comparison with that powerful agency, take up but a very subordinate position.

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The Kurhouse, the numerous hotels and lodging-houses, are all in open situations without the town; some are in the neighbourhood of the Elisabeth spring while others are dispersed about the plain that leads to the Salinen valley. They are all in the midst of gardens, and exposed to the sun during the whole day. The diversified nature of the scenery affords a great variety of walks and excursions.

