

## **Saline baths in Graves' disease / by Claude Wilson.**

### **Contributors**

Wilson, Claude.  
Maude, Arthur  
Royal College of Surgeons of England

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Wellcome Collection  
183 Euston Road  
London NW1 2BE UK  
T +44 (0)20 7611 8722  
E [library@wellcomecollection.org](mailto:library@wellcomecollection.org)  
<https://wellcomecollection.org>

hypodermic needle is inserted to ascertain the condition of its contents. If these prove to be solid, the sinus is opened along the whole of its exposed length, and the decomposing adherent blood-clot scooped out with a Volkmann's spoon. This cleansing is persevered in until a gush of blood denotes that all the clot has been removed. The hæmorrhage, which may be at first alarming, is easily controlled by plugging the sinus with thin strips of iodoform gauze, or the use of an antiseptic wax such as that introduced by Mr. Victor Horsley.

The internal jugular vein should at the same time be ligatured in the neck. If it is evident before operation that the septic thrombus has already spread down this vessel, this may be done before exposing the sinus, but is, in any case, best done before the sinus is opened. The vein should be exposed in a healthy part of its course, beyond the thrombosed portion, ligatured in two places, and divided between. The object aimed at in so ligaturing the vein is to arrest if possible the progress of the thrombus along its most common course, and to prevent portions of infective clot being carried along it into the general circulation.

8.

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### SALINE BATHS IN GRAVES'S DISEASE.

BY CLAUDE WILSON, M.D. EDIN.,

*Tunbridge Wells.*

THE treatment of obstinate Graves's disease is admittedly so unsatisfactory that no apology is needed for bringing before the notice of the profession any method which seems to offer a fair prospect of affording relief and promoting recovery; and while it would be rash to argue that a plan of treatment which does good in one case will prove equally efficacious in another, yet I venture to think that the results which I submit are sufficiently remarkable to be of very considerable interest, and to justify a more extended trial of the method under which they have been obtained.

The patient is an unmarried lady fifty years of age, who

until the spring of 1894, though showing for many years some enlargement of the thyroid gland, had always enjoyed excellent health, and could not recollect spending a single day in bed since her childhood. In April, 1894, she developed an attack of croupous pneumonia, from which she recovered rapidly, though not completely, being left in a comparatively weak and unsatisfactory state of health. A change to the sea picked her up for the time, but she soon sank back into her previous weakly condition, and three months after her illness, when I returned from my annual holiday, I found her more feeble than when I left home. This state of things led to a careful investigation, when it was discovered that she was suffering from marked Graves's disease, with prostration, enlarged thyroid, tachycardia, and tremor. Exophthalmos has never been present in marked degree, though a slightly staring appearance of the eyes was noted during the early months of the present year. Prostration, nervousness, insomnia, anorexia, and loss of subcutaneous fat were prominent features of the case; but perhaps the most distressing symptoms were: (1) the tremor, which was so pronounced as to make sewing or knitting impossible; and (2) the bumping and throbbing arising from circulatory disturbance. The pulse varied between 120 and 160, but was rarely less than 130. The temperature and the urine have always been normal, and the catamenia, though showing some tendency to irregularity such as might be expected at the patient's age, do not seem to have influenced, or been influenced by, the course of the disease.

As to treatment: Complete rest in bed, rest with carefully regulated carriage exercise, nerve sedatives, general tonics, strychnine, digitalis, and strophanthus, have all been tried; and belladonna, alone or accompanied by counter-irritation to the thyroid, has been pushed to the limits of tolerance, and kept up for three months at a time. Thyroid extract, though occasionally reported as doing good in Graves's disease, would seem much more often to do harm, and consequently it has not been employed; neither has electricity nor the new treatment by extract from the thymus yet been tried; but a trial was given to the suprarenal extract, suggested

by Dr. George Oliver as of possible service in this disease. None of the remedies used has seemed to be of any use at all.

The patient's condition varied through the winter—sometimes rather better, sometimes rather worse—but, with the exception of *rest*, without which she got rapidly worse, nothing has seemed to have any influence upon the steady maintenance, if not progress, of the disease. The exhaustion, the tremor, the cardiac symptoms, and the pulse-rate remained unaltered and unaffected; and at the end of April, 1895, the patient's condition was no better than it had been six months previously.

On the 30th of April, 1895, the first bath was tried, and in a month all this was changed, as the subjoined table shows :—

| APRIL 30TH.                    | MAY 30TH.                        |
|--------------------------------|----------------------------------|
| Looks and feels ill and weary. | Looks and feels well and bright. |
| Exhaustion on slight exertion. | Bears slight exertion well.      |
| Getting thinner.               | Gaining flesh.                   |
| Sleeps badly.                  | Sleeps excellently.              |
| Appetite very poor.            | Appetite good.                   |
| Tremor very marked.            | Tremor quite gone.               |
| Palpitation very trying.       | Palpitation much less.           |
| Pulse-rate—                    | Pulse-rate—                      |
| Highest, 160.                  | Highest, 130.                    |
| Lowest, 120.                   | Lowest, 80.                      |
| Usual, about 130.              | Usual, about 95.                 |
| Thyroid enlargement.           | Thyroid enlargement.             |
| (15½ in. round neck.)          | (15½ in. round neck.)            |
| No exophthalmos.               | No exophthalmos.                 |

That such results are remarkable will, I think, be generally allowed; and seeing that during the month of May no drugs were administered, and that the general surroundings and habits of the patient remained absolutely unaltered, it is, I think, fair to conclude that the improvement noted was directly attributable to the beneficial influence of the baths, which were administered almost daily throughout this period.

The treatment of chronic heart disease at Nauheim by the "Schott Methods"—that is, by saline baths and prescribed exercises—has of late been frequently referred to in current medical literature; and it will be sufficient for me to say that, while the whole system appears to promote the general well-being of the class of patients for whom it is deemed suitable the most striking features may be briefly summarised thus :—

(1) The exercises have the effect of bracing up a dilated heart, and so causing the displaced apex-beat to approach its normal position; (2) the baths have a direct influence in increasing the volume, and diminishing the rapidity, of the pulse. This latter consideration led me to try the effect of artificial Nauheim baths upon my patient, hoping that the pulse-rate might be reduced and some of the distress relieved, but without in any way anticipating the general improvement which has supervened.

The effect of baths in diminishing the rapidity of the pulse appears to depend primarily upon the temperature at which they are employed; and, whether plain or saline waters are used, the immediate effect in this direction is very much the same; but while at 90° F. a fresh-water bath is apt to produce a sense of chilliness, and is unaccompanied by any sense of exhilaration or refreshment, a similar immersion in a bath rich in saline constituents, besides producing a much more durable effect upon the pulse, is followed by "a glow of warmth extending to the extremities, and imparting to them a heightened colour, and by an enduring sense of refreshment and invigoration." \*

The stronger the salinity the more marked are these effects, which are further increased by the addition of free carbonic acid to the baths, thus imitating more closely the natural waters of Nauheim. These waters have a very complex chemical constitution,† but, as Drs. Aug. and Th. Schott, the originators of the system, have pointed out, similar therapeutic effects may be obtained by artificial saline waters of very simple character. Chloride of sodium and chloride of calcium, with or without the addition of sodium bicarbonate and hydrochloric acid for the production of free carbonic acid, are the only ingredients required. Patients at Nauheim are at first given diluted baths from which the free carbonic acid has been removed, the temperature being about 95° F., and the duration six minutes. As time goes on the strength and duration of the baths are increased, while the temperature is gradually lowered, until eventually full-strength baths at

\* Dr. W. Bezly Thorne, *British Medical Journal*, March 9th, 1895, p. 524.

† "The Schott Methods," Dr. W. Bezly Thorne (Churchill), 1895, p. 8.

about 85° F., containing free carbonic acid, and lasting for ten or twelve minutes, are employed. The full saline strength of the Nauheim waters is imitated artificially by a bath containing 3 per cent. chloride of sodium and 3 per thousand chloride of lime, while the weakest or initial strength is represented by 1 per cent. and 1 per thousand respectively. It is convenient to call this last a No. 1 bath, and to increase the strength gradually through No. 1½ to No. 2 (2 per cent. NaCl and 2 per mille CaCl<sub>2</sub>), and so on to No. 2½, or perhaps to No. 3, as may seem desirable. Directions for making these artificial baths, as well as a complete bibliography of "Schott" literature, will be found in a paper by Dr. John Broadbent, which appeared recently in this journal;\* but what I have called a No. 1 bath means 1 lb. of common salt and a liberal 1½ oz. of chloride of lime to each ten gallons of water. The addition of free carbonic acid appears to have advantages in heart disease which are possibly of less importance in functional cases. With my patient the presence of the gas caused considerable cutaneous irritation, and as there seemed no special object in pressing its employment, it was only used for a limited number of days.

The chief rules for the administration of these baths in heart cases would appear to be the following:—

1. Begin with weak baths free from carbonic acid, and slightly below blood-heat.
2. Gradually increase the strength and duration, and lower the temperature.
3. Add free carbonic to the stronger baths.
4. Lie down for an hour after each bath.
5. Never give baths for more than four consecutive days without an interval.

These rules, with the exception of the third and fifth, have been adhered to in my case. We began very cautiously with a bath every third day, but soon got to every second day, and, finally, daily baths were taken. Further, as the patient seemed to miss them when they were omitted, and as no evils appeared to ensue, they have been employed daily for considerable periods without a break. Now, as I write (August 10th), there

\* THE PRACTITIONER, May, 1895.

is some pain and swelling of the ankles,\* and it is evident that we must omit the baths for a time, or gradually reduce the number, and perhaps it would have been better to have adhered to the four-day rule.

The present condition of the patient, as compared with that noted at the end of May, shows a further improvement. She continues to eat and sleep well, and is steadily putting on flesh, having gained 11 lb. since the end of April. She feels and looks better: indeed, according to her own statement, she feels quite well; and this in spite of leading a very much more active life than has been possible since the onset of her illness. During May her day was divided into three equal portions—eight hours for sleep, eight hours' rest in bed, and eight hours up; carriage exercise and a little gentle walking in the garden being alone permitted. Now, though not allowed to over-tire herself, she leads the life of a healthy individual—getting up and retiring to bed when she likes, receiving visitors, paying calls, and often going walks of three to four miles' length without fatigue. The pulse has several times been at or below 70, and its usual rate may be fairly stated at 80 or 85, though slight mental impressions still send it up to 100 or 110, while anything like excitement or surprise will run it up temporarily to 120 or 130.

How far these results will be permanent, and what will be the effect of discontinuing the baths, are still matters of conjecture. I am in hopes that a large measure of the improvement may prove stable, or, at any rate, that she may maintain her present condition with much fewer baths than she has hitherto been taking. This, however, remains to be seen.

As to the *modus operandi* of the baths in producing this change, I fear I can say but little. The effect of baths in slowing the pulse has been carefully studied by Drs. Schott and Thorne, and in their writings they endeavour to explain the mechanism by which this result is brought about. That mere slowing of the pulse should remove and correct the tremor, the prostration, and the wasting of Graves's disease was, however, hardly to be anticipated; and if it be true that these symptoms depend essentially on the circulatory

\* See Dr. Thorne's "Schott Treatment," p. 11.

disturbance, a new light may be thrown upon the pathology of this singular disease. If this be not the explanation, the difficulty in accounting for the improvement becomes increased; but in any case we may be glad, should other cases derive like benefit, to have found a valuable aid in treating a formidable disease, and may well rest satisfied to leave matters of speculation for the future to decide.

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## THE BRITISH MEDICAL ASSOCIATION MEETING OF 1895.

It is now twenty-two years since the British Medical Association met in London, and in commencing a *résumé* of the work done on the present occasion one must be forgiven for looking backward, and comparing and contrasting the state of affairs medically then and now. Sir William Fergusson, the President, was at that time approaching the end of his distinguished career, and Lister's influence was only just beginning to be generally felt. The most important address was that on Surgery, delivered by the late Professor John Wood, who dealt amongst other subjects with the treatment of wounds by the antiseptic method, to which he accorded only a half-belief, as from his experience it was scarcely to be trusted when erysipelas had manifested its presence in the wards, and he was urgent in demanding statistics in support of the Listerian claims. Mr. Callender and other surgeons also expressed the opinion that hygiene and suitable medical treatment had as much to do with the improved results of surgical operations as the use of antiseptics. Things are indeed changed at the present day, when the bacterial origin of infectious diseases is everywhere firmly established, and the anti- or a-septic treatment of wounds is universally practised. One disease after another is being proved to be due to some specific microbe, and bacteriology reigns supreme in the pathological world. Those, then, who had the privilege of being present at King's College Hospital, at the presentation of a testimonial in the shape of his painted

portrait to Sir Joseph Lister, felt that it was a good and fitting commencement to the engagements of the Conference week on the present occasion. Sir John Erichsen paid a most graceful and fitting compliment to his former pupil in making the presentation, and the account given by Sir Joseph of the way in which he had been led on from one thing to another in the perfecting of his system was fascinating and memorable. His concluding remarks, when he strongly urged them not to be misled by the attractive but misleading, promises of asepsis, may well be laid to heart by practical surgeons.

The excellent, though inaudible, Presidential address on "The Power of Life in Life," coming from the lips of so experienced a physician as Sir Russell Reynolds, was an apt illustration of the direction in which all our chief advances have been made of recent years. The influence of glandular secretions on the metabolism of the body, the discovery of microbiology, and the installation of serum-therapeutics as a means of treating specific diseases, were alluded to by him as the chief manifestations of the fact that in living matter itself we have one of the most potent means of prolonging life and treating or preventing disease. The address on Medicine by Sir William Broadbent was retrospective in character, passing under review the well-worn topic of the advance of medical science from the time of Hippocrates and Galen down to bacteriology and antitoxins. Mr. Jonathan Hutchinson took much the same line in his surgical address, reviewing the practice of surgery for the last century and a half. Though the subject-matter comprised much old and well-known history, several points of interest were brought out, and perhaps not the least of these was the frank admission that his own statistics in operating for stone by crushing, and in ovariectomy, had improved immensely since he had entrusted the performance to other hands; and on this ground he based a plea for the maintenance, and even extension, of specialism. Again, his well-known views on the subject of museum arrangements were brought to the front, and a more or less correct complaint lodged against the authorities of the College of Surgeons that they do not transform their magnificent museum into one suited for the teaching of clinical surgery,

instead of allowing it to remain a resort for students learning elementary anatomy, and a "Golgotha of Anthropology." The last general address, that on Physiology by Prof. Schäfer, was a welcome departure from the general antitoxic chorus, in that it dwelt with the other side of the President's address—viz., the effect of internal secretions. Surely there is much truth in the assertion often made, that we as a profession are swayed to an undue extent by fashion in therapeutics. A year or two back nothing was talked of but thyroid juice and other similar vital preparations. Now this subject is thrust almost entirely into the background, and but for Prof. Schäfer's notice would have gone almost without mention during the Conference. Certainly his address should be carefully read and studied by every medical practitioner who would keep abreast of recent advances in physiology; and, fortunately, it is as lucid and interesting in composition as it is suggestive and practical in substance. It is impossible here to do justice to its claims, and therefore we shall not discuss it, beyond saying that it is the most admirable dissertation published on a subject which has a most brilliant and useful future before it.

Bacteriology and its offspring Antitoxins formed almost the sole topics of discussion in the **Section of Medicine**. Diphtheria, pneumonia, and acute rheumatism were the subjects selected by the authorities for the formal debates, and in each of them the iniquitous and ubiquitous microbes were held responsible as the causative factors, although with some difference in the degree of guilt. Thus no doubt was expressed as to the influence of the bacillus diphtheriæ in originating that malady. The activity of the pneumococcus was held by many, but not by all, to be responsible for the second complaint, most speakers agreeing that other conditions were also present; whilst as to rheumatism, the microbic origin of the disease is inferred, and extremely probable, although at present not proven. Perhaps the chief point of interest in connection with the latter affection is the diversity of manifestations which are now ascribed, and apparently with justice, to a rheumatic origin. Thus, not only are the joint affections considered of this nature, but also many cases of tonsillitis, chorea, erythema, as well as the peri- and endo-cardial

inflammations so often seen. The generally expressed opinion was that whilst some of these were caused directly by the microbe—*e.g.*, the arthritic conditions—others, such as chorea, were induced by the action of the toxins of the theoretical organism. Further investigations will be most anxiously awaited to ascertain whether this interesting conjecture is true or false. One voice was certainly raised against it in the most emphatic manner—viz., that of Dr. Haig, who, as is well known, maintains that all such conditions can be just as well explained by the theory that they are due to an abnormal formation of uric acid. It has been objected to his ideas that no evidence as to the existence of an undue amount of uric acid in the blood can be found. "Quite so," he replies; "it is not in the blood, because it is causing mischief by its presence in the joints, or elsewhere." Then, too, he emphasises the influence of diet on the disease, all those food stuffs being harmful which tend to increase the amount of uric acid in the system. Turning now to the therapeutic side, nothing of an antitoxic nature can be suggested in rheumatism until the organism, if one exists, has been isolated; and hence the use of salicin and its derivatives has not been superseded. In pneumonia an antitoxin was talked of by one or two speakers, but nothing very definite has as yet been accomplished along these lines. Salines are to be depended on as a general rule, and in certain conditions other drugs, such as caffeine, strychnine, antipyrin, etc., must be employed for the treatment of symptoms. Really the chief interest of the section centred around the discussion on the use and value of the diphtheria antitoxin. In opening the discussion Dr. Martin stated that one of the chief aims of physicians in the past has been to discover some means of loosening the false membrane, and that comparatively little notice had been taken of the general symptoms. Since the discovery of the true nature of the disease—viz., that toxic bodies are produced and absorbed from the false membranes which act directly on the nerve centres—and since it has been demonstrated that bacilli in their growth produce substances capable of restricting their own activity, or of counteracting the effects of their own growth, micro-pathologists have been working at the means

of producing and separating these valuable bodies so as to render them accessible to the practitioner. The success of the treatment of diphtheria by this means is on all hands admitted to have been very great, and perhaps no better evidence of this can be adduced than the statistics brought forward in the course of the discussion by Prof. von Ranke of Munich. He stated that in 1892 his hospital mortality was 52·2 per cent., in 1893 46 per cent., whilst in 1894 up to September it was 57 per cent. Since the introduction of the antitoxic serum in that month his death-rate has been reduced to 17·7 per cent. Prof. Baginsky of Berlin was able to report a similar diminution in his mortality, which had fallen from 41 to 15·6 per cent. No evident evil effects had resulted from the injection of the serum in the experience of most of the speakers, and thus this reagent received from international testimony a most commendatory *imprimatur* and its value must henceforth be appraised at a high standard.

The proceedings in the department of **Surgery** were on the whole of a high order of merit, and became distinctly interesting when the President, Sir William MacCormac, was describing the effects of the new-fashioned conical bullets in gunshot injuries; and even more so when Murphy of Chicago came upon the scene and gave an admirable demonstration on the cadaver of his intestinal button and its method of application. The presidential address was of a somewhat exhaustive character, and well illustrated with lantern slides and by wet and dry specimens. The effects produced by the conical bullet are usually of the most disastrous character, although the apertures of entry and exit may be comparatively small and insignificant. The current opinion that it causes less damage than the old round projectile hardly seems to be well founded. Certainly it was devised with no humane intention, and it seems admirably capable of throwing out of action, if not of killing, as many men as possible in the shortest possible time. Wounds involving only the soft tissues often heal with remarkable rapidity, and septic conditions are not necessarily induced by the passage of the bullet through the body. Cancellous bone can be penetrated without splintering, but compact tissue is much comminuted,

whilst visceral lesions are always extremely severe. Fracture of the upper end of the femur was the first subject set down for discussion, and Sir William Stokes, who introduced it, almost took away the breath of his audience by claiming in the most matter-of-fact way that eleven different varieties of fracture of the neck of the femur should be enumerated, but how to distinguish between the several forms did not appear. Fortunately most, if not all, the speakers who followed were quite content with grouping them under two headings, the impacted and the unimpacted, and were willing to consider other modifications as interesting facts to be demonstrated in the museum, and not to be thought of at the bedside. Sir G. M. Humphry declared most emphatically that the non-union so much talked about, and unfortunately so often seen, was due not so much to the lack of blood supply, or to the defective general vitality of the patients, as to want of apposition of the fragments, and maintained that in any part of the body, if the fragments could be brought into close contact and kept at rest, union of a fracture was certain to occur. Mr. Bryant fully agreed as to this, and stated that, of forty-two consecutive cases of this nature treated by him in Guy's Hospital, the average age of the patients amounting to seventy years, all left the hospital with useful limbs, and scarcely any of them had suffered from bedsores. He, as well as other surgeons, thought that there should be no attempt at forcibly breaking up the fracture, which was generally of an impacted nature, so as to restore the limb to the same length as that on the opposite side, except in the case of young and vigorous adults, and in such it should always be attempted. On Thursday there was perhaps less of general interest in the work of the section. Mr. Howard Marsh pointed out and illustrated the well-known fact that ankylosis can occur without suppuration. Mr. Buckston Browne showed how, in patients with enlarged prostates projecting into the bladder, calculi could find a resting place beside the intravesical projection, and thus elude the search of the surgeon, even when armed with the sound or the cystoscope. This was followed by a consideration of the treatment of cysts and tumours of the thyroid body, Mr. Butlin leading the way in a most