

**Local hot-air treatment in rheumatism and allied affections
(Tallerman-Sheffield) / by W. Knowsley Sibley.**

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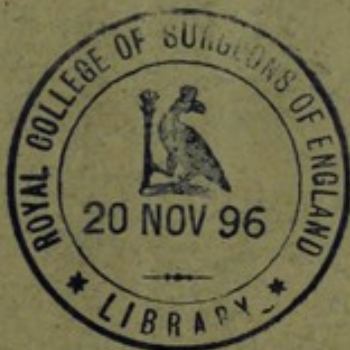
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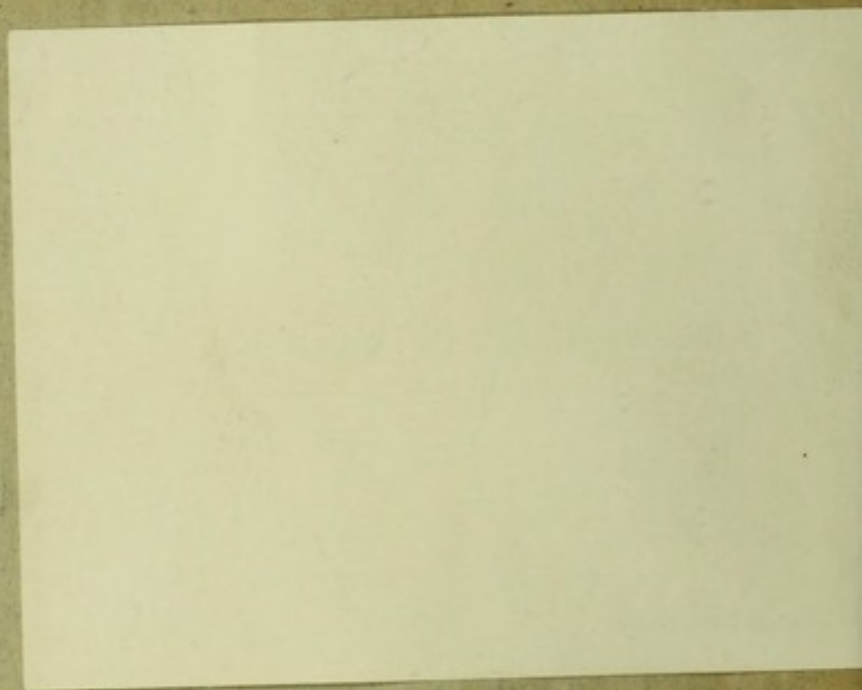
LOCAL HOT-AIR TREATMENT
IN
RHEUMATISM AND ALLIED AFFECTIONS
(TALLERMAN-SHEFFIELD)

BY

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SENIOR PHYSICIAN TO OUT-PATIENTS AT THE NORTH-WEST LONDON HOSPITAL.







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PHYSICIANS have shown a marked tendency of late to treat many complaints by what may be termed local or external methods, in contradistinction to treatment by the exhibition of drugs and internal remedies. Even many cases of heart disease are now much improved, if not occasionally cured, by regulated exercises and baths (Schott treatment). In many cases this improvement has taken place without the assistance of drugs of any kind. Undoubtedly many heart cases which had failed to show any permanent benefit by a carefully regulated course of internal medicines have been greatly improved by the Schott treatment. It is not wished in any way to depreciate the value of internal remedies, which still prove of great use when combined with external methods; but the object of this paper is to emphasise the fact that the external method is often the most powerful and effective means of dealing with disease. Rheumatism in its various forms has from times of ancient history been treated by external applications, such as blisters, cupping, leeches, hot sand, friction, warmth, and more recently by massage, electricity, and the like. A large number of baths and moist hot-air methods are at present in vogue; in fact, every fashionable health resort has its own particular kind of charm in the form of a bath, with or without an electrical current. But the one feature which at once appears fatal to satisfactory results is that in all forms a moist and not a dry heat is applied to the affected part. As the result it is impossible to obtain a really high temperature, as moist heat of from 115° to 120° F. is unbearable, and much above this produces scalds. So with all these older methods what seems to be the important element in the treatment—namely, heat of from 200° to 300°—cannot be applied, or at any rate not for a sufficient length of time.

The dry hot-air method about to be described was first brought under my notice in August, 1894, when an apparatus was supplied to the North-West London Hospital and left for the use of the staff. I have tried the treatment in a large variety of cases ever since and now wish to publish some of the results. This period of two years has enabled me to form a definite opinion that the value of the treatment is not merely a temporary one, but is of a more or less permanent nature. The "Tallerman-Sheffield localised hot-air apparatus" consists of a copper chamber, generally cylindrical, of various shapes and sizes, so that the hand, elbow, the arm, whole or in part, and with the lower extremity the foot, knee, thigh, or even the pelvis, can be

inserted and treated locally, as previously described in THE LANCET of Jan. 12th, 1895. The contained air is prevented from becoming moist and is maintained in a dry condition during the whole time the treatment is being administered. The temperature is varied at will, and either raised or lowered as the comfort of the patient or the exigencies of the case may require. The temperature is indicated by a thermometer, the bulb of which is passed into the chamber to the level of the part under treatment, and the scale is read on the outside. It is possible to admit medicated vapour, and to detect any increase of atmospheric pressure in the chamber. The heating agency used is gas or oil, as is convenient. The difficulties of suspending or resting the part during the treatment have been met by an arrangement of asbestos, which in no way interferes with the free circulation in the limb or of the superheated dry air around. The patient, suitably clad in flannel to encourage free perspiration and prevent too much radiation of heat from the body, whether seated on a chair or lying in bed, suffers no inconvenience or discomfort from the high temperature. The treatment lasts usually from fifty minutes to an hour, and it is to this prolonged application that the therapeutic effect to be described is to my mind mainly, if not solely, due. When the part is first put into the chamber the temperature is usually about 150°, and this is gradually raised to 220°, and thence upwards, in some cases to as high as 300°. When the treatment is required to act quickly as an anodyne the temperature is rapidly raised to 260° or 280°. But under ordinary circumstances such as those described below it is gradually raised and a general free perspiration breaks out over the whole body; at the same time the body temperature is temporarily raised from a half to three degrees, a physiological effect hitherto regarded as impossible to be obtained. Also the pulse increases in frequency and to a less marked extent the respiration. A few minutes after the operation is completed the pulse, respiration, and temperature return to the normal or previous condition. Usually about an hour after the pulse is found to be slower and stronger than it was before treatment; this was especially noticed in some cases of weak and enfeebled hearts. In cases accompanied with much pain this is almost at once relieved, and under the influence of the heat the parts soon become more lax and supple. When the limb is first removed there is often a transient erythematous blush. After the bath the whole body is

briskly and lightly rubbed down with a dry towel and the limb sometimes gently massaged with olive or other oil. The patient then waits until quite cool before going out of the room in order to avoid the risk of a chill.

It will be seen that this method differs materially in the following points from a Turkish bath. 1. The temperature is higher. 2. The application of this temperature is continuous for nearly or quite an hour. 3. The patient breathes the air of the room and not that of the heated chamber. 4. The application of the heat is only local, the most affected part being treated. It may here be remarked that this local treatment has a general effect, and it is

out of the question. 6. The portable character of the apparatus enables it to be taken to the sick-room and used by the bedside in cases where it would be impossible to move the patient. 7. The local bath gives far more successful results as a method of treatment.

The following cases are briefly described in the order in which they came first under my treatment at the hospital, not necessarily in the order in which they were subjected to the hot-air method. Many were for some time previously treated by the ordinary drug routine, and only after failure by this were they submitted to the new one. If there has been any selection of cases it will be at once apparent that



Case 1, Arthritis Deformans, taken in June, 1896 (twenty months after treatment), showing free movement of all extremities and permanency of benefit obtained in 1894.

evidenced by the result that, although the particular part treated receives the greatest benefit, other parts of the body affected, but not actually immersed in the chamber, also much improve both with regard to pain and to increase of movement. 5. The treatment does not tend to produce cardiac depression even in the very feeble, or those conditions of exhaustion which are in some cases apt to occur when heat is applied to the whole surface of the body and at the same time inspired. A Turkish bath is less stimulating in its effects, and this local treatment may be confidently recommended in cases in which the former would be quite

it has been on account of their chronicity or severity. Most of the notes are taken from my hospital notebook made on the dates as reproduced and with regard to symptoms more or less in the patient's own words.

CASE 1. *Arthritis deformans*; duration four and a half years.—In January, 1894, a single woman aged sixty-four years came under treatment. The patient's father died at the age of sixty-six years from bronchitis; a sister, since dead, suffered from rheumatism. The patient had suffered from bronchitis for twenty years. About four years ago she had a

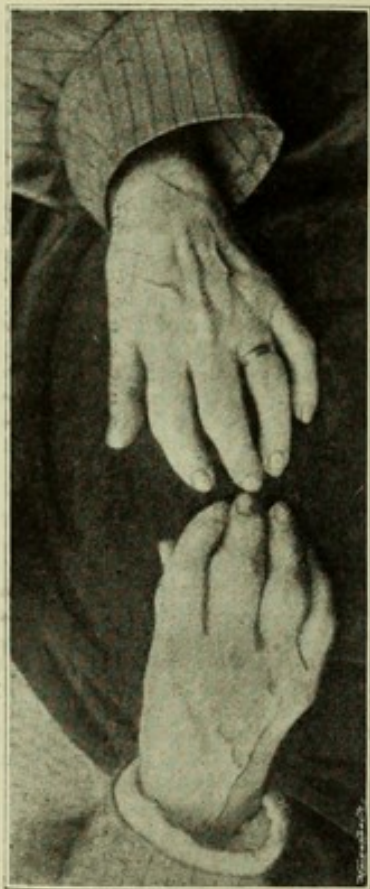
good deal of trouble and then influenza, and ever since this time she had suffered from rheumatism, which came first in the ankles, then in the knees, and finally in the hands. This had gradually become worse. There was no cardiac murmur, but there was a good deal of general bronchitic rhonchi. She had been under private treatment and had been attending University College Hospital for four months and then came to the North-West London Hospital, at which place she attended regularly from January till August, when the baths were first tried. During this time the following drugs were prescribed in the order given: colchicum, salicylates, iodide of potassium, guaiacum, gentian and rhubarb, salines, strychnia and iron, salicin, antipyrin, exalgin, and lithia, together with various liniments, &c., but nothing seemed to give the patient any relief from the constant pain or produced any amelioration of the gradually progressing disease; in fact, she was daily becoming worse and more crippled. On Aug. 4th, 1894, the following note was made: "All the finger-joints of both hands are now greatly enlarged, very painful, and tender; there is hardly any movement of the fingers and the patient is quite crippled and unable to use the hands at all, it being impossible to close or separate the fingers. The movement of the wrists is also very limited and any attempt at flexion causes great pain. The right elbow is fixed at a right angle. Both the knees and shoulders are enlarged and painful, with very distinct grating and considerable disorganisation of the joints. The patient is very anæmic and looks ill and worn out with constant pain. She cannot dress or even feed herself, being unable to get her hands to her mouth." On Aug. 10th the medicines were stopped and the hot-air treatment commenced. After the first bath the patient said she had less pain than she had had for months; the joints showed some improvement, the fixity not being quite so complete. After the fourth operation the patient, who for a year and a half had not been able to do any work, was again able to use her needle a little. After the fifth bath the right arm could be fully extended without pain, and with a little assistance all the fingers could be flexed on the palms. The left hand, although it had not yet been placed in the cylinder, also showed considerable improvement. On Aug. 24th after the ninth bath the patient reported that she had resumed her former occupation as a dressmaker, and was able to walk up and down stairs with comparative ease and without pain. On Sept. 9th the patient had had twenty baths and considered herself practically cured, but as the apparatus was still at the hospital she had an occasional bath up to the end of October, 1894. From this time to November, 1895, she continued at her work, and although she had some other ailments (uterine) she suffered no inconvenience from the joint affections. At this time she again complained of some stiffness and pain in the right hand, so three more baths were prescribed and she again rapidly recovered and continued well for some months. On July 2nd, 1896, she has had an occasional bath recently and is practically well. All the movements of the fingers are quite free, and the joints, which were formerly considerably enlarged, are now but very slightly swollen. On July 20th the patient was suffering from headaches, but otherwise she continued to be quite free from pain. She stated that her bronchitis was better than it had been for many years, and the patient had continued uninterruptedly at her work since August, 1894.

CASE 2. Sub-acute articular rheumatism; aortic regurgitation; psoriasis.—On Sept. 10th, 1894, there was seen a married woman aged nineteen years, with two children. The patient's father was living, but suffered from chronic rheumatism and bronchitis. No other family history of importance was elicited. She had had psoriasis on the knees and elbows since seven years of age, but she had never been treated for it. She had rheumatic fever at fifteen years of age and again at eighteen and a half years, complicated with heart disease. She now had a sub-acute attack of rheumatism, with much pain, especially in the right shoulder and the left knee and leg. She looked ill and had an aortic diastolic murmur; the heart was not much

enlarged. Salicylate of soda was prescribed and continued to Oct. 4th. Not making much progress, and the patient still suffering much pain and inconvenience, the hot-air treatment was tried, the salicylates being omitted. On Oct. 4th the right shoulder was placed in the cylinder and the next time the left leg. On Oct. 16th the pain had nearly all gone, and she was able to run to catch the tram, a thing she had been unable to attempt for weeks. On the 22nd all pain had gone; the psoriasis appeared to be slightly more extensive. On the 25th she had had six baths at a temperature of about 220° F., the duration of each being forty minutes. The heat brought out an irritable eruption, which, however, soon subsided. On Nov. 11th she had been quite free from rheumatism since the previous date. After this she was for a time under the care of an obstetric physician for some uterine displacement. On Nov. 7th, 1895, there had been no more rheumatism. The patient was rather anæmic; the condition of the heart and the psoriasis were much the same. The pulse was 90. Strychnia and iron were prescribed. On July 23rd, 1896, the patient said she had her third child in May; she was very ill during the greater part of the pregnancy. She was now very pale and worried, the infant being ill. The psoriasis was possibly not quite so extensive as it was formerly. The pulse was 88. The condition of the heart and the aortic murmur had not changed. She had much dyspnoea on quick movement. No more rheumatism had occurred. She was given strychnia and iron.

CASE 3. Chronic rheumatism; duration eight years.—The patient, an unmarried woman aged sixty-one years, came under notice on Oct. 29th, 1894. She had had two attacks of rheumatic fever some years previously. For the last eight years the fingers, especially of the right hand, had gradually become stiff. She continued at her work till a recent date, when the pain and stiffness appeared in the right shoulder and she was unable to raise her arm, and so was discharged. The right shoulder was very painful and more or less fixed; the right leg was also swollen and painful. There was considerable deformity of the hands and enlargement of the middle phalangeal joints and bones. She was given an alkaline gentian mixture. On the 30th the right hand was placed in the hot-air apparatus. On Nov. 11th the patient had had two baths, the right shoulder was much freer, and there was less pain. (She did not come to the hospital again, and I have been unable to find out what became of her.)

CASE 4. Arthritis deformans; duration eight years.—The patient was a married woman aged sixty-nine years, and she came under observation on April 22nd, 1896. Her father suffered from rheumatism and died at the age of ninety-seven years; her mother died, aged fifty-one years, from hernia; she also suffered from rheumatism. Four brothers and three sisters had died from old age; of these one brother and one sister were rheumatic subjects. The patient was the youngest of her family; she had had one daughter, who died in an asylum at the age of thirty-nine years. The patient had suffered from rheumatism and bronchitis on and off for the last eight years, but was especially worse in the winter. There was no cardiac murmur. The hands were especially affected and greatly deformed. All the fingers were enlarged and very painful; for eight months she had been unable to use them for anything, although she had been all this time under medical treatment. The knees and ankles were also stiff and swollen and she had great difficulty in getting about. On the 22nd the right hand was treated with the hot-air bath, and she was photographed before and after the bath to show the improvement. By May 21st the patient had had fifteen baths and had very considerably improved; she was then able to flex her fingers and had free movement of the arms and shoulders. The knees and ankles were both much less swollen and painful. Her cough and general nervous condition had much improved. By the 26th she had had seventeen baths, was able to touch the tips of all the fingers with the thumb, and had done some needle-



Case 4, taken April 24th, 1896, after second operation, showing some separation of fingers.



Case 4 taken August 7th, 1896, showing result of treatment.



Case 4, Arthritis Deformans, taken April 22nd, 1896, before treatment, fingers fixed in above position.

work. By July 1st the patient had had twenty-four baths. The hands were quite free and comfortable and she could do anything with them. There was still a good deal of pain in the left foot and ankle; the varicose veins of this leg were rather prominent; there was also a small and very painful ulcer over the back of the lower part of this leg, which was cedematous. As she was unable to lie up at home, she was taken into the hospital and remained till the ulcer had healed on July 22nd. She was then quite free from pain except in the left leg, which still kept swollen, notwithstanding her three weeks' rest. She complained of general weakness from lying in bed, and some strychnia and iron were prescribed and she left the hospital. On Aug. 6th she had much improved in general strength and had had no more pain in the hands, the movements of which were quite free and comfortable. She still had pain in the left leg from the varicose veins, which prevented her from getting about.

CASE 5. Arthritis deformans; duration thirty years.—On June 2nd, 1896, a woman aged fifty-one years came under treatment. Her mother died aged eighty-two years after being for six years confined to bed with rheumatism. The patient had never been seriously ill, but she had had a mild attack of rheumatic fever when she was twenty years of age, lasting about a fortnight, and she had suffered from rheumatism on and off ever since. The pain had been especially in the knees and hands. Two years ago she had an injury to the left knee from a fall. Since January of this year the pains had become much worse and had prevented her following her occupation. She had been under the care of several medical men, and, getting no better, she was recommended by her medical attendant to come to the hospital. The hands, shoulders, and knees were especially affected, being much swollen and very painful; the patient suffered a great deal of pain and was unable to do any work. She could only get about with the greatest difficulty on account of the pain and swelling in the knees. There was no cardiac murmur, but the sounds were rather feeble. She was given salicylate of soda and digitalis for the pain. Until the 17th the patient had been gradually getting worse and was then unable to raise the right arm or to close her hands, and could only walk or rather drag herself about with the greatest difficulty. On the 19th the first bath was given, the right arm being placed in the cylinder. She was photographed before and after the operation. By the 23rd the patient had had three baths, and there was considerable general improvement, the pain and stiffness having quite left the hands and arms. On July 2nd there was no pain in the hands or arms, but the legs, especially the left knee, continued weak and painful, keeping her awake at night. She was put on guaiacum and an opium pill at night. On the 10th she had her tenth bath, and with the exception of the knees was comfortable. The fact that the patient lived on the top of the house and had several flights of stairs to mount, was very detrimental to the progress of her case, so she was admitted into the hospital on the 23rd of July. She felt much better and only had very occasional pain in the hands. On Aug. 4th the knees had become better, but great difficulty in standing still continued; there was slight pain in the hands first thing in the morning, otherwise these were quite comfortable. The temperature was usually between 99° and 100° F. Strychnia and iron were administered, and the knees were strapped with Scott's dressing.

CASE 6. Chronic rheumatism, duration ten years.—The patient, who came under treatment on June 6th, 1896, was an unmarried woman aged fifty-nine years. Her grandfather on her mother's side died aged eighty-two years; her father died aged forty years from a "chill"; her mother died aged seventy-six years, and suffered slightly from rheumatism; two sisters and two brothers died from phthisis at the ages of nine, fifteen, seventeen, and twenty-four years respectively; and another sister died from cancer of the breast aged thirty-six years. The patient had congestion of the lungs when twenty years of age and had suffered slightly from bronchitis ever

since. She had a mild attack of rheumatic fever when aged thirty-eight years, which was followed by some left hemiplegia, from which she soon recovered. She had rheumatic fever again when fifty years of age and another severe attack when aged fifty-two years. At that time she was in bed for five months and the heart was said to have become affected. She had been a constant victim to rheumatism ever since that time, the pains being especially severe in the legs and feet. The patient had been obliged to walk with a stick for many years. There was no cardiac murmur, but the first sound of the heart was not clear. An alkaline mixture was prescribed. On July 20th, not getting any better, she was ordered a hot-air bath. After the first bath all the pain had gone; she was rather tired the following day. On the 23rd she was much stronger, the movements were freer, and she slept better. On the 24th there was a slight return of the pain in the left knee and toes and a second bath was administered. On the 27th she had had some pain all over her, but this became better. After the third bath she could walk much better and could put her foot flat on the ground, which she had been unable to do for many years on account of the contraction of the toes. On the 29th there was some return of the pain, which was relieved by another bath. On the 30th the patient reported herself well.

CASE 7. Chronic rheumatism.—On June 15th, 1896, a married woman aged sixty-one years came under observation. Her father's mother suffered from rheumatism. Her father died at the age of forty-nine years from asthma. She had three brothers and three sisters living and well, and had lost three brothers and two sisters, probably some of them from phthisis. The patient had had six children, and her eldest daughter suffered from rheumatism. The patient had never been confined to bed, but about a year and a half ago she suffered from rheumatism in the knees and other joints, and this had continued ever since. For the last six months it had been getting worse. She had now to be up some hours in the morning before she was able to use her hands even to dress herself. There was no cardiac murmur, but the pulse was rather small. All the fingers and hands were swollen and painful; there was marked wasting of the muscles on the back of the hand. She was given mistura guaiaci. On July 6th the patient was becoming worse; she was unable to raise the left arm and the metacarpophalangeal articulations of both hands were more swollen and tender. On the 21st the first bath was given. The left shoulder was very stiff and the arm could only be raised a very little and she was unable to close the hand. The pulse was very small and feeble. The right arm and hand were placed in the cylinder, and after a short time the pulse much improved in character and in fifty minutes the left arm could be fully extended and the hand closed without much difficulty. On the 24th there was still some pain in the left shoulder, but otherwise she was very much better. On the 27th she had had four baths and was able to do a little work. On the 30th she had had six baths. All the pain had gone from the hands and the right shoulder, but she had occasional pain in the left shoulder when in bed and the first thing in the morning. Strychnia and iron were prescribed. On Aug. 6th all the movements of the fingers, hands, and arms were quite free, there was still some pain, or rather what she described as "numbness in the muscle" of the left arm; she slept well.

CASE 8. Sub-acute rheumatism; mitral regurgitation.—On July 9th, 1896, a married woman aged thirty-two years was seen. The patient's father suffered from rheumatism for many years. She was the youngest of six and the only one who was rheumatic. She had rheumatic fever when sixteen years old and was then in St. Bartholomew's Hospital for about sixteen weeks. After this she was free from rheumatism till two years ago, when she had two attacks of inflammation of the lungs, followed by a mild attack of rheumatic fever, with which she was laid up for three weeks; after this she went to Buxton. She felt better on her return and kept well till July 6th of this year, when she woke up in the morning

with pain in the feet and legs, and then it extended to the arms and shoulders and she became quite crippled. The patient was anæmic, the pulse was 120, and there was a faint systolic apex murmur. Salicylate of soda and digitalis were prescribed. She continued under treatment, but was not much better on July 20th; there was still a good deal of pain. The salicylates were stopped and strychnia and iron prescribed. On July 21st the first bath was

from pain, and also felt much better in herself. On the 24th there was some return of pain in the left shoulder; she attributed it to having slept in a draught and having eaten meat the previous day for the first time. After another bath the pain again was all gone. On the 27th she had a return of pain generally. Salicylates were again prescribed. On the 30th the pain had all gone except a little in the left shoulder. Strychnia and iron were given, and salicylate of soda at



Case 5, Arthritis Deformans, taken June 19th, 1896, before treatment, showing (I.) highest point hand and arm could be raised; (II.) inability to flex the fingers; (III.) expression of pain.

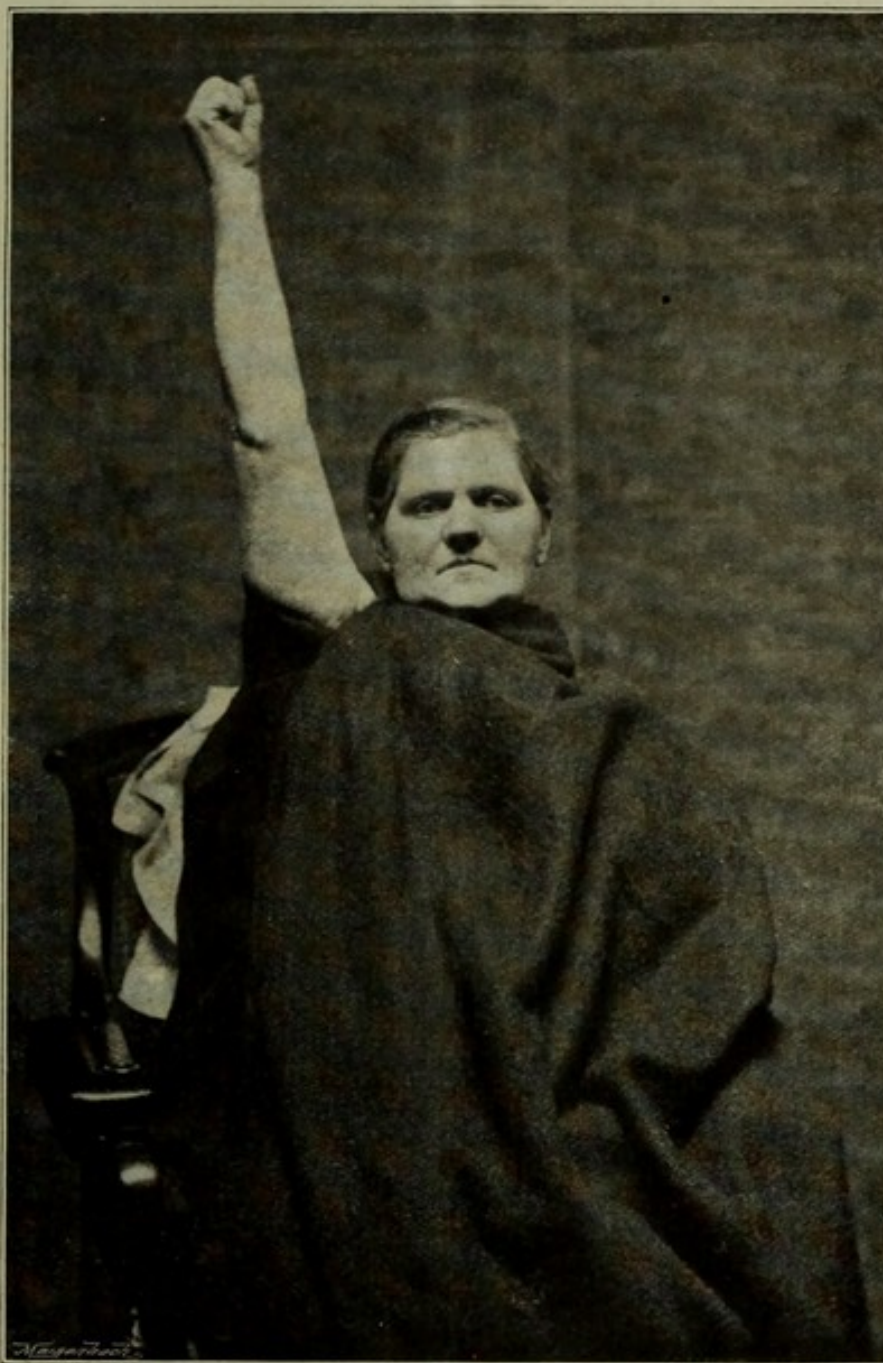
given. She could not raise the left arm or close the hands, she had had but little sleep at night for more than a week, and she was very depressed in herself. After the first bath the arm could be fully extended over the head and the hands clenched, and all pain and feeling of depression were gone. On the 23rd she was able to walk home after the first bath, a thing she had not been able to do since the commencement of the attack. She had now had two baths, was quite free

night. On Aug. 6th she felt much better, the pulse was 80, she slept well, but still had slight pain in the shoulder. (This case is still under treatment.)

CASE 9. *Lumbago and sciatica; duration six weeks.*—On July 9th, 1896, a man aged twenty-six years came under observation. There was no family history of rheumatism, but there was phthisis on his father's side. The patient had

had hip-joint disease and excision was performed on the right side when he was eighteen years of age. He had now had sciatica and lumbago for six weeks and was prescribed an alkaline mixture. On July 16th the pain was much the same. On the 20th the right leg was placed in the cylinder, after which the pain was much better. On the 21st the bath

man fifty-nine years of age was seen on July 16th, 1896. For six months he had suffered from persistent pain in the right shoulder, which prevented him following his occupation, as he was unable to raise this arm above the horizontal. The pain was worse at night and kept him awake. On April 15th he went into the Greenwich Infirmary, where he



Case 5, Arthritis Deformans, taken June 19th, 1896, after the first treatment, showing full extension of arm and forearm, flexion of hand, absence of pain.

was repeated with a completely satisfactory result. On the 23rd the patient had had no pain since the last bath. On Aug. 6th he continued to be quite free from pain and had returned to work.

CASE 10. *Chronic rheumatism; duration six months.*—A

remained till June 2nd. When he came out he was a very little better. On July 16th he appeared to be in pain and unable to raise his right arm above the horizontal. A hot-air bath was given. On the 22nd he had had three baths. He reported that he had had much less pain and had been able to do some work. He had slept much better.

CASE 11. *Sciatica*; *duration seven months*.—The patient was a man aged fifty-six years, who came under observation on July 16th, 1896. His father, who died aged seventy-five years, suffered from "rheumatic gout." The patient's

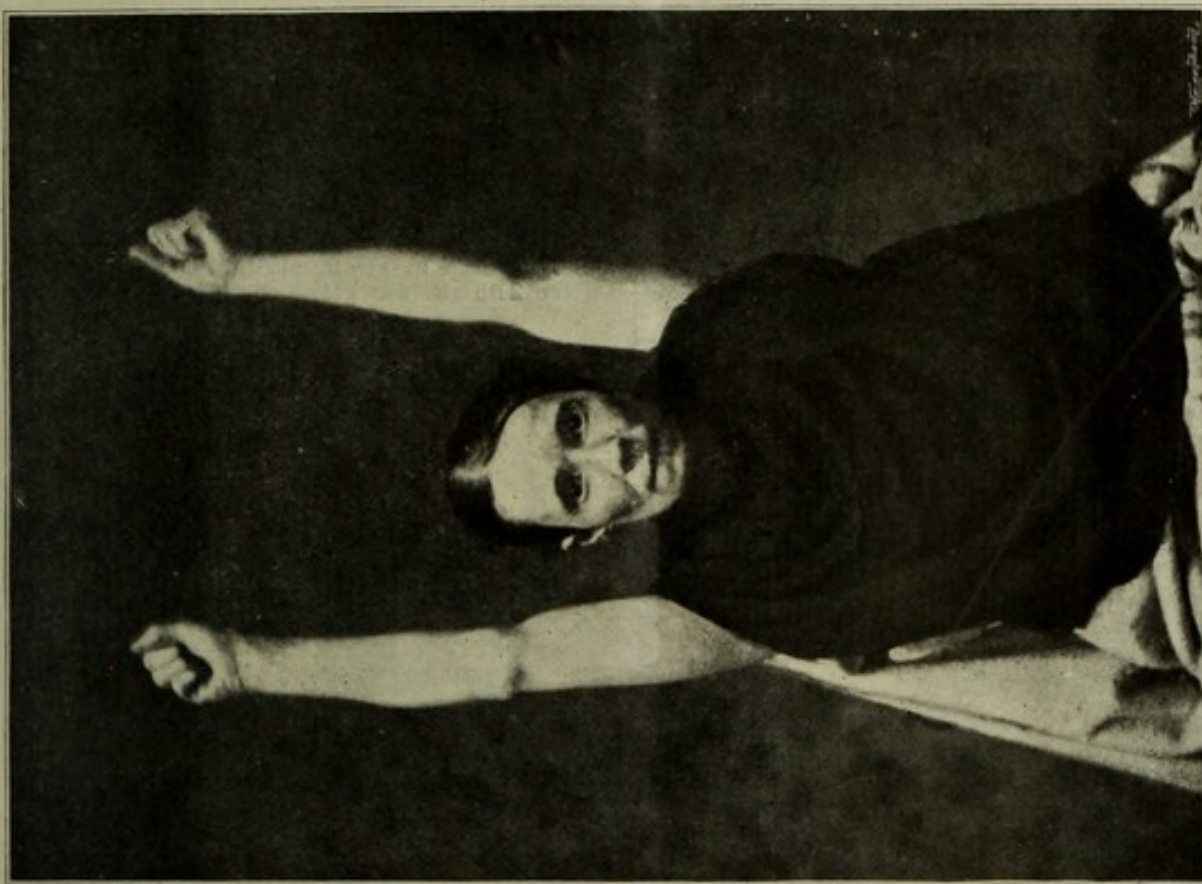
thirteen weeks in 1887 with nephritis and dropsy and afterwards was an out-patient. For the last seven months he had had sciatica in the right leg which had prevented him following his occupation. He was under a private practitioner for



Case 8, Sub-acute Rheumatism, taken July 21st, 1896, before treatment, showing highest point arm and forearm could be raised, with pain.

brother also suffered from rheumatism. The patient had had "rheumatic gout" in his toes when twenty years of age, and had had muscular rheumatism occasionally ever since, but never very severely. He was in St. Thomas's Hospital for

five weeks and then became an in-patient in University College Hospital for a fortnight, but derived very little benefit; he had been attending as an out-patient till three weeks previously, but had gradually become worse. There was



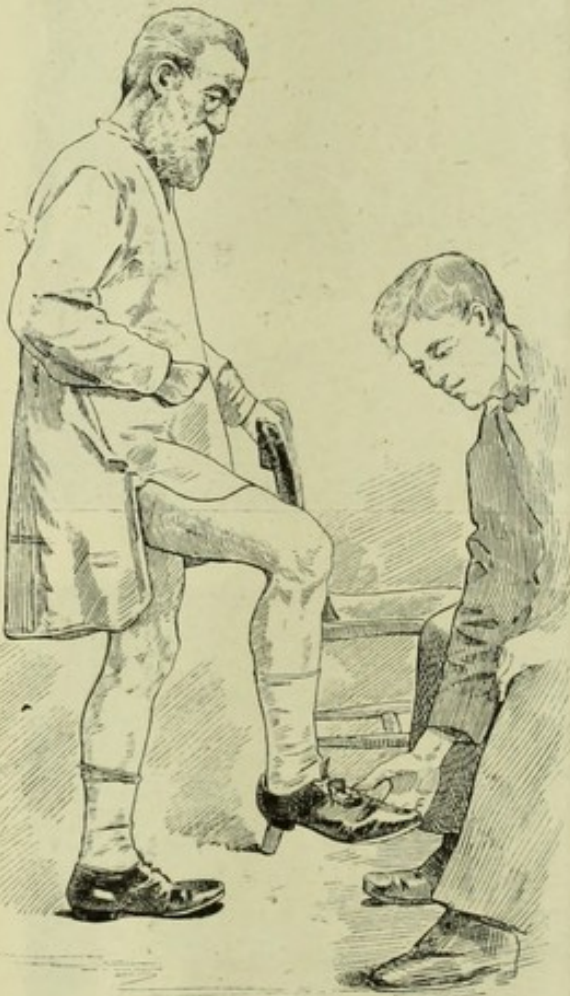
Case 8, Sub-acute Rheumatism, taken June 21st, 1896, after first bath, showing full extension of arms and forearms and flexion of fingers, without pain.



Case 8, Sub-acute Rheumatism, taken June 21st, 1896, before treatment, showing inability to flex fingers on palm.

no albumin in the urine. He could walk a little, but with great pain and difficulty, and was able to raise the right leg but a few inches off the ground; there was much tenderness over the course of the sciatic nerve on pressure. On the 16th the right leg and part of the thigh were immersed in the cylinder for an hour at a temperature of 240° F. He was photographed with the leg raised as high as possible before and after treatment. The pain was much relieved and he slept well that night, which he had not done for weeks. On the 17th the patient walked nearly five miles for treatment without much difficulty, and the hip was placed in the apparatus for forty-five minutes at a temperature of 250°

FIG. 1.



Case 11, taken July 16th, 1896, before treatment, shows limit of patient's ability to move. This is the highest point to which the limb could be raised, and the movement was accompanied by pain.

and the patient felt much better afterwards. On the 20th, after the third operation, he reported that there was a little pain above the right knee, the rest of the pain had quite gone, he could kneel, and he slept well. The treatment was stopped. On the 28th the patient had had no more pain, he had walked without a stick for the first time for six months, and he could flex the right thigh as high as the left. There was some stiffness about the knee, probably from having walked with a stiff joint for so long.

CASE 12. *Neuralgia following herpes.*—The patient, who came under notice on July 13th, 1896, was a woman aged

sixty-five years. She was stated to have had influenza two years ago, which was followed by dropsy in the hands and feet, with which she was laid up for twelve weeks. Ten days previously to her coming under treatment an eruption came out over the left side of the neck, which followed three days' throbbing in this region. The case was rather a severe one of herpes, the blebs were unusually large and confluent over the left side of the neck, extending on to the face in front of the ear, up behind the ear just into the hairy scalp and slightly over the clavicle. She was given some starch and boracic powder to dust on and a quinine mixture to take internally. There was albuminuria. On the 20th she was going on well, the eruption having

FIG. 2.



Case 11, taken July 20th, 1896, shows patient's ability to move after the third bath. It is a return to the normal. No pain.

nearly disappeared. On the 27th it was noticed that for the previous five days the patient had suffered severe neuralgic pain all over the region of the eruption; this had prevented her from sleeping at night; she was apparently in great pain and much depressed, and was crying. On the 28th the pain was just the same. The left arm up to the shoulder was placed into one of the hot-air cylinders. In forty minutes all the pain had gone and although some returned the same evening she had a very fair night. On the 29th there was still some pain, but not so bad; the bath was repeated, during which process the pain again quite disappeared. On the 30th there had been little or no pain since the bath on the

29th, and the patient felt much better and had had a very good night's rest. On Aug. 6th there had been no return of the pain.

CASE 13. Sciatica.—On July 27th, 1896, a man aged fifty-one years came under treatment. He was a native of the West Indies. He had attended the Royal Free Hospital for debility a year previously and had suffered from pains in the back and thighs since. Fourteen days before he had had a sharp attack of sciatica on the right side, and after a week he was compelled to give up work. He rubbed the part with embrocation, which had taken the skin off without giving any relief from the pain. An alkaline mixture and aperient pills were prescribed. On the 28th the pain being no better the patient was put into the hip-bath cylinder, after which the pain was much less. By the 30th he had had two baths. All the pain had gone from the hips and thigh, but there was still some pain in the front of the right tibia. On the 31st there was no return of pain in the thigh, but some in the lower part of the right leg. Another bath was given, and this time the right leg was put into the cylinder, after which the pain quite disappeared.

It must be admitted by those who have had much practical experience of severe cases of arthritis deformans such as cases Nos. 1, 4, and 5, how very hopeless these have generally been considered and what little chance of permanent good medical treatment offers, that this treatment by hot air at a very high temperature meets a general want. I must add I have never seen results so immediate and satisfactory produced by any other treatment. It is now two years since treatment by the local hot-air bath was commenced in the first case and yet the patient continues comparatively free from the complaint and even the deformity of the fingers has greatly disappeared. Very intractable cases of sciatica such as Case 7 usually pass into the hands of the surgeon, who performs nerve stretching, often with very little good result. It seems likely that these cases will likewise in future be cured by this less drastic means. Another possibility of much importance may be the prevention of many cases of the morphia habit. Judging from the general physical improvement that all of the patients showed after undergoing treatment it would appear that this method will be found beneficial for cases of chronic bronchitis and for some cases of chronic heart mischief. Many of the patients have stated that their bronchitis was better than it had been for years. I possess also evidence of the undoubted value of this hot-air treatment in acute and chronic gout and hope shortly to publish a series of cases.

With regard to the physiology of the processes. Locally—(1) the heat produces dilatation of all the cutaneous vessels and free circulation through the parts—it is impossible to say how deeply into the tissues this extends, but from the results it may be judged to be some distance—and at the same time there is a marked stimulation of the nutrition of the cutaneous nerves; (2) there is free perspiration of an acid sweat; and (3) relief from pain, however produced, is almost at once apparent. Generally—(1) there is profuse perspiration and dilatation of vessels; (2) increase of the rate of the pulse and force of the heart's action; (3) increase (slight) of the respiratory movements; and (4) an increase in the body temperature often of two or three degrees Fahrenheit. The treatment appears to lower the blood pressure of the body, and in some way to increase the alkalinity of the blood which enables it to dissolve the uric acid from the tissues and joints and get rid of this substance through the various excretory organs. This is evidenced by the relief from local pain and the removal of the frequent uric acid nerve depression. Hence the treatment is of a tonic nature and bestows an increased general vitality upon the patient.

So far, although it is now two years since this new treatment was brought under my notice and tried by myself, I am not cognisant of any unsatisfactory result following it, notwithstanding the fact that many of the cases have not been very promising ones to do much with; many were old

Table giving particulars of Cases.

No. of case.	Date.	Pulse before bath.	Temperature before bath (in degrees Fahr.).	Pulse during bath.	Temperature during bath (in degrees Fahr.).	Temperature of bath (in degrees Fahr.).	Part treated.
1.	Nov. 11th, 1895.	72	98.0	88	99.4	240	Right hand.
	Nov. 14th, 1895.	76	98.4	90	99.6	240	" "
	Nov. 16th, 1895.	76	98.2	92	99.8	248	" "
	May 23rd, 1896.	80	98.0	92	99.6	240	Right leg.
	May 26th, 1896.	88	98.6	92	99.8	240	" "
	May 28th, 1896.	80	98.4	92	100.0	260	" "
	June 1st, 1896.	80	98.2	96	99.8	250	" "
	June 4th, 1896.	76	98.2	88	99.0	250	" "
4.	April 22nd, 1896.	96	99.0	100	99.6	238	Right hand.
	April 24th, 1896.	88	99.2	96	100.0	240	" "
	April 25th, 1896.	92	99.0	116	100.0	250	" "
	April 27th, 1896.	92	99.0	100	100.0	250	" "
	April 28th, 1896.	96	99.4	104	100.0	240	" "
	April 30th, 1896.	88	99.0	96	100.0	250	" "
	May 1st, 1896.	92	98.6	100	99.6	250	" "
	May 5th, 1896.	84	98.2	92	99.4	250	" "
	May 6th, 1896.	84	98.4	96	99.2	240	" "
	May 8th, 1896.	92	98.4	104	99.2	270	" "
	May 11th, 1896.	92	99.0	104	100.0	260	" "
	May 13th, 1896.	92	99.0	108	100.4	260	" "
	May 15th, 1896.	96	98.6	108	99.6	260	" "
	May 18th, 1896.	92	98.6	100	99.8	270	" "
	May 20th, 1896.	92	99.0	108	100.0	260	" "
	May 22nd, 1896.	92	99.0	104	100.0	260	" "
	May 26th, 1896.	80	99.0	92	100.0	260	" "
5.	May 28th, 1896.	92	99.0	104	100.0	260	" "
	June 1st, 1896.	88	99.0	100	100.0	260	" "
	June 3rd, 1896.	88	99.0	100	100.2	230	Left leg.
	June 5th, 1896.	88	99.0	96	100.2	240	" "
	June 8th, 1896.	92	99.0	104	100.2	240	" "
	June 16th, 1896.	99	98.4	104	99.4	250	Right arm.
	June 22nd, 1896.	92	99.0	108	100.0	240	Left arm.
	June 19th, 1896.	78	98.4	92	100.0	220	Right arm.
	June 22nd, 1896.	78	98.4	92	100.0	200	Left leg.
	June 23rd, 1896.	84	98.2	90	100.0	220	" "
6.	June 25th, 1896.	84	99.0	100	101.0	230	" "
	June 26th, 1896.	88	98.0	92	100.8	230	" "
	June 29th, 1896.	96	99.6	104	101.0	230	" "
	June 30th, 1896.	92	99.2	100	100.6	240	" "
	July 1st, 1896.	88	98.0	96	101.0	240	" "
	July 3rd, 1896.	92	99.4	100	101.0	240	" "
	July 10th, 1896.	84	98.6	102	99.4	220	" "
7.	July 20th, 1896.	70	98.0	88	99.2	230	Left leg.
	July 24th, 1896.	76	98.4	84	99.0	220	" "
	July 27th, 1896.	72	98.0	88	99.2	230	" "
	July 29th, 1896.	76	98.6	88	99.4	200	" "
8.	July 22nd, 1896.	88	98.2	92	99.2	240	Right arm.
	July 24th, 1896.	92	98.6	100	99.6	240	Left "
	July 27th, 1896.	88	98.0	100	99.6	260	" "
	July 28th, 1896.	88	98.6	96	96.6	230	" "
	July 29th, 1896.	80	97.6	92	99.2	230	" "
9.	July 21st, 1896.	88	97.2	100	100.0	240	Left arm.
	July 22nd, 1896.	72	98.0	88	99.2	240	" "
	July 24th, 1896.	72	98.2	84	99.0	250	" "
10.	July 20th, 1896.	72	98.4	100	99.2	235	Right leg.
	July 21st, 1896.	80	99.0	96	100.0	230	" "
	July 16th, 1896.	76	97.4	—	—	240	Right arm.
11.	July 20th, 1896.	80	98.4	100	99.2	230	" "
	July 22nd, 1896.	80	98.0	96	99.0	260	" "
	July 16th, 1896.	76	98.4	88	99.4	230	Right leg.
12.	July 17th, 1896.	72	98.2	92	99.0	230	Hip.
	July 20th, 1896.	68	98.0	84	99.2	240	" "
	July 28th, 1896.	100	99.0	112	100.0	220	Left arm.
13.	July 29th, 1896.	92	98.6	100	99.4	230	" "
	July 28th, 1896.	80	98.0	92	99.2	250	Hips.
	July 29th, 1896.	74	98.2	80	99.2	240	" "
	July 31st, 1896.	72	98.4	84	99.2	210	" "

Note.—In Cases 6, 7, 12, and 13, and corroborated by isolated observations in several other cases, it was found that the pulse about an hour after treatment was usually slower than before the bath. Occasionally it was of the same rate, but in no instance was it found to be more rapid.

and debilitated people, and in some cases the objective disease was attended by heart and other visceral complications. And what is of all importance with regard to satisfactory treatment, the patients were in every case treated as out-patients and so there was no control over their habits. In a clinical lecture delivered at St. Bartholomew's Hospital, in which this new treatment was first introduced to the profession in this country, the lecturer described it as one that was "not only quite painless," but might be "almost called that of luxurious ease." My experience fully confirms the soothing effect in this process of relieving disease accompanied with pain. Patients worn out through prolonged suffering will frequently, if permitted, fall asleep whilst under the operation. One of the most important therapeutic effects is the sleep which usually follows the treatment, particularly in cases of patients who have been prevented by pain from getting any rest for long periods.

It does not come within the province of this article to enter into the various surgical conditions in which this treatment has been found efficacious. Papers on this subject have already been published by Mr. Willett in the above mentioned lecture;² in "The Deformities of the Foot," by Mr. W. J. Walsham; in an article by the same writer in the Transactions of the American Orthopaedic Association, 1895; and also reports of cases treated at the North-West London Hospital which were published in THE LANCET of Jan. 12th, 1895. At the present time the above cases may be of interest to those engaged in this treatment and to those anxious to try it. Undoubtedly the writer's experience points to the conclusion that the chronicity of a case is by no means a bar to a successful issue. With regard to rheumatoid arthritis many forms of rheumatism with chronic joint mischief, sciatica, lumbago, and one might add some cases of neuralgia, neuritis, and

chronic bronchitis, there can be no question as to the great benefit of the treatment. The record of the remarkable results previously published obtained by this apparatus at the North-West London Hospital³ alone embraces such a wide field that this localised hot-air bath must be reckoned upon in the future to play an important part in the relief of pain and the cure of disease. Especially is it likely to prove of great use in those forms of very chronic disease which have hitherto yielded but little to any known medicine, the sufferers from which are commonly sent in search of continental hydrothermic establishments, and usually, sooner or later, fall into the hands of the quack.

In conclusion, I take the opportunity of thanking the proprietors of the Tallerman-Sheffield Apparatus for the very courteous manner in which they placed their appliances at my disposal and the facilities they afforded me to thoroughly test the method as a therapeutic agent, both at the North-West London Hospital and at their Institute in Welbeck-street. I desire also to acknowledge my indebtedness to Mr. Lewis A. Tallerman, the inventor of the apparatus, for having kindly afforded me the advantage of his personal assistance in supervising and carrying out the treatment.

Appended is a table giving particulars of the cases—namely, the number of the case; the dates on which the baths were administered; the pulse-rate before, and during, treatment; the temperature at the same times; and the temperature of the hot air and the description of the part treated. It is much to be regretted that the earlier records have been mislaid and so are only given in the more recent cases.

Upper Brook-street, W.

² Clinical Journal, May, 1894.

³ See THE LANCET, Jan. 12th, 1895: Sprained ankle; Acute gout with sprain of ankle; Chronic rheumatoid arthritis; Old tuberculous knee-joint; Chronic ulcer of the leg; and Severe sprain—two cases.