sists of three principal parts—viz. (1) a double tram, (2) a travelling pulley on each tram, and (3) a strongly webbed hammock.

The trams are placed about two feet ten inches apart, and are six feet six inches long. Each consists of a stout bar of wrought iron, with a squared section of two inches vertical and half an inch transverse diameter. The bars are bent at right angles, on the flat at each end, where they are firmly secured by nut-screws into the joints, leaving a space of three inches between the horizontal tram and the ceiling.

Depending from the bar is a Y-shaped hanger, consisting of flat iron straps which clasp the bar, with small solid rollers fixed between the same to run on the bar. Upon this hanger is hooked one of "Weston's patent pulleys", which are fitted with endless chains instead of ropes, and which possess this advantage, that the chain locks itself at every pull, and thus saves any strain upon the person pulling.

The hammock, which should be somewhat longer than the height of the patient, is made of double ticking or of stout sailcloth, and strength-

ened by bands of broad webbing, placed six or eight inches apart, and sewn to the ticking throughout. The sides of the hammock are pierced with nine iron eyes, through which pass the hooks of the "crowsfoot" or leash of cords, which are gathered on each side into an iron ring.

As the patient lies in bed the hammock remains spread under him, with a small blanket (and, if necessary, a waterproof sheet also) between. When he is to be taken out of bed the "crowsfeet" are hooked on; and the rings of the opposite sides are connected by an iron bow, similar in construction to a large bucket-handle, with a loop or ring in the centre. These bows are attached to the hooks of the pulleys, and the apparatus is complete.

It is astonishing with what ease and comparatively slight exertion a person weighing eighteen or twenty stone is raised in this manner, run along the tram, and lowered into a chair or couch, without the least jolting or discomposure. I have found it convenient to have two hammocks, so as to afford a change occasionally.

CASES SUCCESSFULLY TREATED BY BROMO- IODINE WATER OF WOODHALL SPA, HORNCASTLE.

By ROBERT CUFFE, M.R.C.S., Woodhall Spa Villa.

CASE I. Chronic Rheumatism.—Notes of this case were supplied by Dr. F. Weber. Mrs. T., aged 50, of full habit, had had six children. Eleven years ago, she became paralytic, in consequence of a fall. She gave birth four months after the accident to a healthy child. She was unable to walk until two years ago. Seven years ago, the catamenia ceased. For the last two years she had been subject to severe rheumatism, suffering with profuse perspirations, and symptoms of abdominal hyperæmia with hæmorrhoids. The left knee and ankle were chiefly affected. In February 1872, the left knee became swollen, hot, and painful; then the right; and for many weeks she was unable to walk. In May last, the left wrist became affected in like manner. When she came to the Spa in July 1872, the left wrist was swollen, and she was unable from pain to use it. The left knee was stiff and swollen, but there was no increase of temperature. Crepitation was perceptible on motion. The heart's action was irregular, but without bruit of any kind. The urine deposited lithic acid and lithate of am-

monia. A Spa water-compress was applied to the wrist, and support and general bath treatment were employed. She left at the end of the month; the wrist was quite restored; she was able to walk comfortably, and was otherwise well.

CASE II. Rheumatism.—The Rev. W. D., aged 71, a martyr to indigestion all his life, had had great mental application for twenty years. He had travelled in pursuit of health, and visited all the foreign watering places. Ten years ago, he had an attack of gout; his mother was gouty. For the past four months he had had neuralgia, and had been unable to dress himself or rise from his chair without assistance. He had been attended by the most eminent physicians here and in Paris; at the latter place, the actual cautery was applied to his shoulder with little or no relief. On his arrival at Woodhall Spa on August 9th, 1870, he walked with the greatest difficulty from muscular pain in both legs. The right wrist was painful, but there was little swelling. He had pain in the right shoulder. The tongue was clean and his appetite very good. The urine was of specific gravity 1018, and deposited lithic acid and lithate of ammonia. He was ordered to have baths at 95 deg., and to drink the Spa water sparingly. On the 15th, he discontinued drinking the water, as it apparently disagreed. The pains were but little relieved. The treatment was continued. On the 23rd, the right wrist was painful, but there was little swelling. He was much improved on the whole. On August 28th, all the pains had disappeared, and he could take long walks without fatigue. On September

17th, he felt so well that he returned to London. On the 24th, fearing a relapse, he paid a second visit to Woodhall, and took the baths again. On October 6th, he left in good health, without pains of any kind; and on the 28th, he reported himself quite free from any traces of rheumatism.

CASE III. Acute Gout with Effusion into the Joints.—This case was treated by Dr. Tom Robinson of the London Hospital, to whom I am indebted for the following notes. The patient was M. C., aged 37, a greengrocer. His family history told a tale of rheumatism and gout on both sides. At the age of fourteen he had rheumatic fever, since which any change of weather brought back pains in his joints and muscles. On January 3rd, 1872, he came under treatment. A month previously, pain settled in the right knee, which laid him up; then pain and swelling in the right shoulder followed; afterwards the left knee was affected. During this period he was not under treatment. When he came under treatment, the right wrist, knee, and dorsum of the right foot were red, very painful, and pitted distinctly on pressure. There was extensive effusion into the knee-joint. He was short and stout, and had worn-down teeth. His urine contained uric acid, oxalates, and urates, and was of specific gravity 1022. He passed sleepless nights; had no perspiration. Pulse 98. Temperature 99.2 deg. Bromo-iodine water was applied to the joints with compress, and four ounces ordered to be taken three times a day; the diet to be fluid. On January 5th, he had slept well. The effusion into the knee had nearly disappeared; the redness was gone, and he was free of pain. On January 8th, he could walk with a little limp. The urine was clear; it still contained uric acid and oxalates. He had solid food, and continued the bromide water. The external application was discontinued. On January 12th, he had returned to business quite himself. He continued taking the bromo-iodine Spa water every morning.

CASE IV. Syphilis with Rheumatism.—A. B., of middle age, was sent to me by his medical attendant. He had been married many years, and had several children, all healthy. Seven years ago, he had gonorrhoea, which lasted six weeks, and was followed by rheumatism of the right knee and ankle. This lasted four months, and he never completely recovered. Two years afterwards, he was much out of health, and had swelling of the ankles and feet. He tried Buxton with but little advantage. In 1869, he had a chancre, which rapidly took on a phagedænic character with great destruction of tissue; the ulcerative condition lasted about nine months. He was admitted at Woodhall in 1870. There were red papulæ over his face and body, and a larger copper-coloured patch five inches in diameter on the nape of the neck, and a similar patch on the right breast. He was unable to masticate food, the muscles of mastication being rigid, and was compelled to live upon fluids. The second phalangeal joint of the middle right finger was red, hot, and swollen; and he had paroxysms of pain all over his body. He was unable to rise without assistance from the recumbent position, from intense lumbar pain. The right knee was swollen, stiff, and painful, also the right shoulder. He could get no sleep. Cicatrices were observed on the penis. The urine was retained with difficulty; it deposited lithic acid. His treatment consisted of soup, beef-tea, small amounts of stimulants, the application of compresses with tepid Spa water to the nape of the neck, breast, loins, and fingers, the use of daily baths, and he drank ten ounces of water daily. On the third day, he slept well; his appetite was improved, and he was able to move more easily. He continued liquid food. The urine was of specific gravity 115; it contained no albumen, and was less acid. Two ounces of brandy were given after food. On the fifth day, the crust of the neck and chest came off, leaving the skin red and ulcerated. He was able to raise himself more easily, took solids for the first time, and walked better. On the eighteenth day, his appetite was good. The neck and breast were nearly healed. The knee and finger were less swollen. He was ordered three ounces of whiskey daily. He occasionally took a night sedative. On the twenty-first day, symptoms of iodism were appearing. The skin of the neck and breast was healed, except one small spot near the axilla, where healing was prevented by the movement of the arm. He took long walks. One month after residence, he dressed himself at the baths for the first time. There was now but little discoloration of the skin; his appetite was excessive; he was slightly lame; the swelling of the finger was reduced; and the papulæ on the face had disappeared. He left after seven weeks of residence in good health. His medical man reports: "I must say that I was much struck with the great benefit which he derived from being at Woodhall."

CASE V. Secondary Syphilis.—This case was treated by Dr. Skaife, to whom I am indebted for the following particulars. M. D., aged 34, had syphilis about fourteen years ago, since which he had had good health until 1865, when, from overwork and loss of rest, great nervous depression with debility came on, followed by ulceration of the fauces,

flying neuralgic pains generally, but more especially pain in the left hip and thigh. In 1866, he had in addition a severe attack of jaundice, great debility, with loss of appetite. These pains, particularly at night, continued more or less until 1869, when, in consultation with Dr. Dobell, he was ordered the Woodhall water. Iodide of potassium was tried on several occasions, but could not be borne, even in the smallest quantity; it produced swelling of the eyelids with intense pain, catarrhal symptoms, dryness of the fauces, and pain in the frontal sinuses. Iron checked the secretions, and mercury could not be borne in any form, through irritability of the mucous membrane of the bowels. On July 29th, 1869, he was ordered two ounces of Woodhall water three times a day, one hour after meals. On August 5th, he took twelve ounces of Spa water daily. The nocturnal pains were greatly relieved. He slept better. His digestion was improved. His stools were more natural. The water invariably produced a soothing effect after a short time. On September 1st, he had had no return of pain, and slept well. His digestion was vastly improved. He had increased considerably in weight, and his general health was in every respect better. He was able to resume his professional duties. Dr. Skaife says it is remarkable that no preparation of iodine, however small, could be borne, and yet the iodine water, persevered with for a considerable time, was easily digested, although his patient had taken a far greater quantity of the mineral in its natural state than he ever had of any compound. On March 9th, 1872, Dr. Skaife reported that his patient "had had no return of the specific pains since he took the bromo-iodine water."

CASE VI. Phthisis.—G. T., five feet ten inches in height, well-developed, who had been discharged from the army, acted as bath-attendant at Woodhall Spa from May 2nd, 1864, to July 31st, 1870. This was a very laborious undertaking, and obliged him frequently to descend the well at various depths, sometimes between 200 and 300 feet, to adjust the machinery, and remain there an hour or two. The following notes, obligingly supplied to me by Surgeon Trotter on October 11th, 1869, will furnish the history of this case. Private G. T., aged 27, seven years in the service, was admitted into hospital at Windsor on August 7th, 1862. On August 11th, he complained of cough; he had slight expectoration tinged with blood; some mucocrepitant râles were heard below the right clavicle; there was prolonged expiration. On September 2nd, there was only slight cough in the morning; his appetite was indifferent. On September 14th, he had passed an extremely restless night, feeling as if he would be choked; towards morning he began to expectorate dark blood-stained clotted masses. He was very nervous; his pulse was quick; there were dulness and some crepitation below the right clavicle; expiration was prolonged. On the 15th, there was no return of expectoration, and he felt better. On the 29th, he spat a little more blood; dulness and crackling were heard below the right clavicle after cough. On the 30th, the expectoration was less flocculent; there was no return of blood. On October 10th, he continued much the same; dulness was more marked below the right clavicle. There were whispering pectoriloquy, intense vocal resonance, and gurgling on cough. On the left side the breathing was almost puerile, and free from any crepitation. Pulse only 92. It was decided to invalid him. On November 25th, his general health appeared, if anything, rather better. On December 1st, he was invalided. His treatment consisted of iodine paint below the clavicles, cod-liver oil, steel, gallic and sulphuric acids. Parrish's compound of phosphates was tried, but was abandoned, as it caused continued sickness. Anodynes were given at night at intervals. During his residence at Woodhall, he took sole charge of the bath establishment. He gradually improved in health and strength, and left in July, 1870, to take charge of the Folkestone Baths, in good health, able to do an ordinary day's work. On his leaving, below the right clavicle there was dulness on percussion, with considerable falling in, and but little air. The left side was normal. He had occasionally a little cough, but of no moment. The arrest of lung-disease, and restoration to health, must be attributed to his prolonged residence at the Spa, constantly inhaling the air highly charged with iodine, occasionally taking baths and drinking the water. He wrote on April 22nd, 1872, that he had needed no medical attention since he left Woodhall, and that he was quite well and able to give from 8,000 to 10,000 baths a year.

CASE VII. Uterine Fibroid Tumour.—Miss G., aged 60, of full habit and good general health, had had a large uterine fibroid tumour for many years. For a considerable period she had sciatica on the right side. During twelve months, she had been under treatment with no relief. She was admitted in July, 1868, very lame from pain in the hip, unable to walk without the assistance of an attendant. The treatment consisted of daily baths, a compress of Spa water over the pubes, a douche *per vaginam*, and ten ounces of Woodhall water daily. After some weeks of residence she left but slightly lame, and was able to walk without assistance. The local treatment and drinking of the Spa water

continued. Her medical attendant informed me in February, 1869, that "the tumour was reduced one-half."

CASE VIII. *Fibroid Tumour of the Uterus, with Displacement*.—The particulars of this case are communicated by Dr. Sieveking. "Mrs. M. came to me at the commencement of 1866, suffering from anteversion of the uterus, caused by a large fibroid tumour springing from the anterior surface of the body of the uterus. There was much leucorrhœa, cœccygodynia, and menorrhagia. She improved somewhat under bromide of potassium, an abdominal belt, rest, and occasional tonics and anodynes. Two visits to Kreuznach caused some amendment of general health, but no diminution of the tumour. In 1870, she went to Woodhall, where she spent, at two intervals, seven weeks. The treatment at Woodhall caused a considerable reduction of the tumour, and a corresponding improvement in the position of the uterus. In the summer of 1871, no tumour could be felt, and the uterine functions were duly performed. The improvement continued; and towards the end of 1871 all trace of tumour had disappeared, and the patient was well."

CASES IX and X. *Lupus Erythematosus*.—Mr. Nunn, in a paper read before the Clinical Society on October 18th, 1871 (*vide* BRITISH MEDICAL JOURNAL, vol. ii, 1871, p. 484), stated that two cases of this variety of lupus, known as superficial, were treated by him with the bromo-iodine water. The family history afforded no clue to the nature of the disease. Both cases had been treated for years before coming under him, with mercury, iodine, arsenic, etc. "The first patient, a male, aged 34, had (October 1870) suffered during thirty-two years, the second during twenty-one years, with lupus erythematosus of the cheek. The bromo-iodine water of the Woodhall Spa, in doses of a wineglassful three times a day, was given. This case was to all appearance cured at the end of six months. The second case was still continuing the treatment with advantage, having only commenced it in May last." On February 28th, Mr. Nunn reported that the first case continued well. The second was progressing satisfactorily the last time he presented himself (April 1st, 1872).

CASE XI. *Chronic Eczema*.—J. B., aged 70, had been delicate up to thirty years of age. He had gout at forty, and one attack subsequently. In 1866, he had some eczema on the legs for several months. He was of decided gouty diathesis, and by inheritance. He came to the Spa on October 12th, 1871. There were chalky deposits on the first and second phalangeal joints of both hands. The skin was thin and delicate. There was an extensive patch of chronic eczema on the back of the left hand, of several weeks' duration. The left forearm had several small patches of the same character. Pulse 86, full and regular. The urine was of specific gravity 1020, and deposited uric acid and urates. He was ordered to have a spa-compress applied to the back of the hand, and to have baths, etc. On the 20th, the crust had come off. The surface was red and ulcerated. On October 26th, he left the Spa, the hand healing fast. On April 10th, 1872, he writes: "My hand healed beautifully, and no return since of the eruption."

THERAPEUTIC MEMORANDA.

ATROPISED CASTOR-OIL AS AN APPLICATION IN SOME CORNEAL AFFECTIONS.

IN the treatment of irritable ulcer of the cornea, and of abrasions of the epithelium, it is generally desirable to use some application of a viscid nature, which may fill up the inequality of surface and reduce the irritation caused by the movements of the eyelid to a minimum. For this purpose no remedy is so fit as castor-oil; and if to the oil be added the sulphate of atropia in the proportion of from one to four grains to the ounce (to which extent at least it is soluble), a convenient agent is obtained, which combines the beneficial effect of atropia with the mechanical advantages of the oil.

In these especial instances, castor-oil is to be preferred as a vehicle before either gelatine or glycerine, since it is not, like glycerine, painful when applied to the surface of the eye, nor, like both, readily washed away by the tears.

D. C. LLOYD OWEN,

Surgeon to the Eye Hospital, Birmingham.

SUBCUTANEOUS INJECTION OF ATROPIA.

FOR some months past I have been in the habit of daily injecting morphia subcutaneously for a lady suffering from cancer, in whom morphia administered by the mouth had always produced most distressing vomiting. The dose had been gradually increased up to two-thirds of a grain; and this after some time began to produce vomiting. I

then noticed in the *London Medical Record*, of March 19th, an account of Dr. Lente's experiments with a mixture of morphia and atropia in solution. I tried it in this case, with the result that there has been no more sickness nor any bad effects excepting a slight dryness of the throat occasionally, while the pain is as much relieved as by the morphia alone.

I have now used the mixture every night, with one exception, for nearly six weeks. It now contains one-twenty-fourth of a grain of sulphate of atropia, and two-thirds of a grain of acetate of morphia.

ARTHUR R. GRAHAM, M.A., M.B. Cantab.

CHRONIC CYSTITIS WITH PUTRESCENT URINE TREATED WITH CARBOLIC ACID INJECTIONS INTO THE BLADDER.

A FEW notes of a case of chronic cystitis which I have recently treated with carbolie acid injections may be interesting, especially as the result was a most marked relief to the sufferings of the patient.

J. M., aged 71, had suffered with prostatic disease for ten years. During the last two winters the catarrhus vesicæ had been extremely severe. Opium was of no service, and rest could only be procured by large doses of chloral. The urine contained large quantities of pus, was strongly ammoniacal, horribly offensive, and caused such burning in the urethra that he had to walk about in the night for hours tightly grasping the penis to relieve his sufferings. He said in his own words—"What with the pipe being so hot, and the stench of the water, I shall go mad if you don't do something to relieve me." He had been at different hospitals, and I believe all ordinary remedies had been tried without avail. Thinking it probable that carbolie acid might modify the action of the mucous membrane of the bladder and prevent the ammoniacal decomposition, which was evidently the principal cause of the pain, I determined to inject the bladder with it.

On February 6th, 1873, a pint of warm water containing half-a-drachm of carbolie acid (1 in 233) was thrown into the bladder through a double catheter. After remaining a few minutes, it was allowed to run off again. No pain was experienced at the time. Two hours after, he had great abdominal pain, with urgent desire to micturate, and the water forced itself through the urethra in such quantities that he avowed he must have passed two or three gallons in the night. When I saw him next morning he still complained of the abdominal pain which was evidently caused by distention of the bladder. I introduced a catheter and drew off a pint and a half of clear amber-coloured urine, free from smell of any kind, with complete relief to the pain. Excessive diuresis continued for a few days. The burning pain and putrid urine have been entirely absent now for three months. I have seen the patient to-day, and he says he has had one or two indications of a return of the old symptoms, and he is afraid he may soon require a repetition of the operation.

W. HENRY DAY, L.R.C.P., M.R.C.S.

CLINICAL MEMORANDA.

A SOURCE OF MERCURIAL POISONING.

THE following case may prove of interest to the readers of the JOURNAL. On February 10th, 1873, Fred. B., aged 42, a poorly nourished man, who described himself as a tanner and wool-cutter, applied for relief from the following symptoms. For some years past he had noticed a gradually increasing loss of strength in his upper extremities, together with great muscular tremor. On several occasions during that period he had been forced to leave his occupation for awhile, resuming it when he found his symptoms relieved, and this result generally occurred after he had withdrawn himself for a few days from his work; latterly, however—that is, within the last six months—he found the symptoms so aggravated in extent that he had been unable to do any work for that period. Upon examination, I found the palsy confined to the muscles of the head and upper extremities—the latter being chiefly affected; the muscles of the forearms (especially the pronators) were also considerably wasted. When he attempted to check the agitation voluntarily, it was greatly increased, as occurred in one of the cases of shaking palsy detailed by Dr. Handfield Jones (JOURNAL, March 1st, 1873). Upon minutely cross-questioning him upon the details of his trade, I learnt that he was occupied in making and mixing a solution of mercuric nitrate, in which the wool was steeped upon its removal from the skins, and preparatory to its undergoing the process of felting. He had been accustomed, whilst at work, to stand for several hours daily over this saline solution. Upon looking at the gums, I found them spongy and retracted from the teeth, and the latter much decayed;