

Richard Metcalfe, hydropathist : the man and his work / by an old patient.

Publication/Creation

London : Bemrose, [1894?]

Persistent URL

<https://wellcomecollection.org/works/c2aucygp>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



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

RICHARD METCALFE

HYDROPATHIST

THE MAN AND HIS WORK

— BY —

AN OLD PATIENT

SECOND EDITION.

PRICE TWO SHILLINGS.

(2)

IPR.41.AA8

1PR.41.AA8 (2)

X106870



22101394255



RICHARD METCALFE

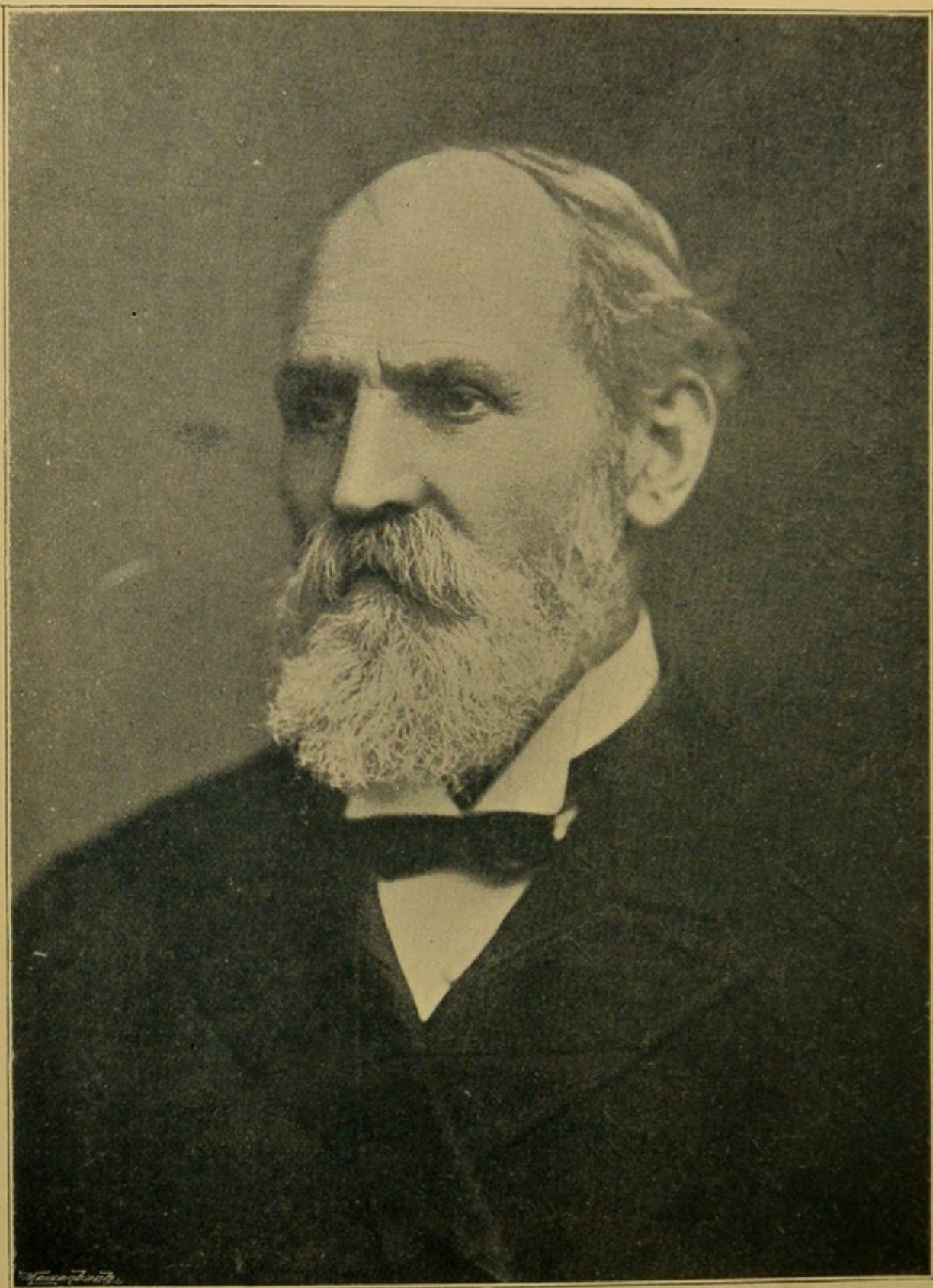
HYDROPATHIST.

LONDON :

PRINTED BY WILKES & Co.,

88, WALWORTH ROAD,

S.E.



yours faithfully
R. Metcalfe

RICHARD METCALFE

HYDROPATHIST

THE MAN AND HIS WORK

— BY —

AN OLD PATIENT

SECOND EDITION.

London:

BEMROSE & SONS, LTD., 23, OLD BAILEY: AND DERBY.

METCALFE, Richard [1831-]

HYDROTHERAPY Great Britain: 1831-1832

FE 51
RICHMOND: N - 19 cent.

14204

IPR. 41. AA8



INTRODUCTION.

DURING the leisure of a short sojourn at the Hydro, now one of the features of the far-famed Richmond Hill, I have amused myself by putting together a few notes, memoranda, etc., the gradual accumulation of the many years that I have known Mr. Metcalfe, the Medical Superintendent of the establishment; thinking that they may be useful to persons situated like myself, that is, tied very much by business to London, yet occasionally wanting the tonic and stimulus of a little hydropathic treatment. How often I have benefited by such hygienic aid during the upwards of twenty years that have elapsed since I first became practically acquainted with hydropathy, need not be said.

My first experience goes back to the early days of Paddington Green, where Mr. Metcalfe settled down in his early manhood with the courageous resolve to bring hydropathy from the hills and moorland regions, to the doors of those who could not leave their businesses to go and seek it in its native haunts. There I witnessed the success with which his experiment was crowned, I could not detail a tithe of the almost numberless cases of men and women, broken down by ill health, who were cured under Mr. Metcalfe's hands, and went forth to rejoice in renewed strength and fresh vigour to do their work in the world.

Many a worn out business man overdone with worry and the ceaseless strain of London life, has finally made his way to the Hydro, almost hopelessly, as a last resource, and to his great surprise and endless gratitude, has soon found health returning. Clergymen, lawyers, literary men, school masters and mistresses, military and naval officers, doctors even, tired of drugs and potions, and numberless others of all sorts and conditions, have gone through the mill—the water mill—one might call it, and not one have I known but thankfully blessed the day that he set foot in the Hydro and submitted to its methods of re-invigoration. I could tell of one dear to myself who broke down under the strain of over study—one of the increasing evils of our wrong-headed civilization—and was, under the beneficial sway of hygienic treatment, gradually restored to a normal condition. As for myself—well, the record will be seen elsewhere in these pages.

I might refer to case upon case that has come under my own personal notice, and also interest the reader by recollections and reminiscences of famous and notable men whom I have met and spent many pleasant hours with under Hygeia's roof. But the more profitable thing here will be to keep to my programme and tack together memoranda that have come under my notice, and for the accuracy of which I can vouch from personal observation. I will preface my sketch of the man and his work by mentioning two or three cases as fair samples of the class of patients that come under his treatment. Commencing with Miss Yates, sister-in-law of Mr. Wall, a Baptist missionary who has long been resident in Rome. The treatment was for Bright's disease, and took place in 1881, the following notes being dated September 6th.

THE MAN AND HIS WORK.

An unmarried lady, aged 38, suffering from an effusion of serous fluid all over the body for about three years previous to coming under treatment, the patient underwent the ordinary treatment without benefit, she was recommended to try hot sitz baths, and to take in conjunction with hot ablutions, juniper and broom tea. For some time the dropsical effusion was kept under but inasmuch as the serous effusion returned again with greater violence, it was self-evident that the decoctions and hot ablutions had lost their effect. Mr. Opie Rodway, recommended her to try Mr. Metcalfe's treatment. When the patient arrived at his establishment, the dropsical effusion in the legs and stomach were such as to prevent the patient walking even on level ground, and she had to be carried. Mr. Metcalfe felt a little incredulous as to whether the treatment would prove of much service in such an advanced case of Bright's disease. The treatment consisted of local and wet sheet packings wrung out of liquid sulphur water, liquid sulphur and mild Turkish baths, highly nutritious diet and skimmed milk to drink. After two months of this treatment the patient was able to walk a mile or two and at the end of three months, the patient returned home and afterwards joined her sister in Rome. On leaving the establishment the specific gravity of the urine was normal. Mr. Metcalfe saw the case again after eighteen months, perfectly well, the urine normal. In confirmation of the above statement I append two letters, one from Dr. Wheeler, who was the family doctor who saw Miss Yates when she came up from Stroud, and one from Mr. Rodway who recommended the patient and who is also a resident of Stroud, Gloucestershire, where Miss Yates's father was a Baptist minister for many years.

STROUD,

May 27th, 1881.

DEAR SIR,

In common with many others in this town, I feel very grateful to you for your kind and unremitting attention to our friend Miss Yates whilst in your establishment at Paddington Green. The complaint (Bright's disease), from which she suffered, and for which she had been

for several months under the best medical treatment here, continued to make rapid progress. She was recommended a change to Weston-super-Mare, at which place she consulted a doctor of considerable experience and reputation, but he, after a patient and careful diagnosis and without avail, pronounced the case hopeless. As a last resort I urged her to put herself under your care, but before doing so, she consulted a supposed great London authority in such cases. That physician confirmed the opinion of the other medical gentlemen and thought the case too far gone for anything like permanent relief. Under these circumstances it was with but little hope I recommended her to you; but I rejoice to say that after being at your establishment for about two months she began to improve, and at the end of three months was able to take gentle walking exercise. Since leaving you in January last, she has been visiting her friends, who are all delighted at what they deem almost a miraculous restoration. She is now able to resume her former active life, and I understand, means shortly to go to Rome, to assist her sister, Mrs. Wall, in her noble mission work in that city. I feel that so remarkable a cure deserves publicity, and you are at liberty, with Miss Yates's consent, to make what use you please of this letter.

Thanking you also for the benefit I have myself again and again experienced under your judicious treatment, and by means of which I have been repeatedly aided in carrying on the evangelistic work, in which I have been engaged for more than twenty years past.

I am, dear Mr. Metcalfe,

Yours faithfully,

(Signed) OPIE RODWAY.

1, PORTLAND PLACE,

CLAPTON, E.

27th July, 1881.

MY DEAR SIR,

I have been hoping to see Miss Yates, but I fear she has left England. This is a very striking case of the value of hydropathy although I knew very little of Miss Yates, having only seen her once or twice (she was never under my care). This was a very clear case of Albuminuria with general *Anasarca*, much advanced. There is no doubt that the effect of the treatment was to cause a total disappearance of the dropsy and great improvement in her general symptoms, but I have not been able to test the absence or otherwise of Albumen in the urine. I could not speak of this as a cure, until this point was cleared up, but I can speak of it as a very marked case of the beneficial effects of the treatment, enabling the patient to go about with comfort, and even has ventured upon a visit to Italy, I believe. I have no hesitation in saying that medicine alone would never have effected such a result.

I am, yours truly,

R. METCALFE, Esq.

(Signed) HENRY WHEELER, M.D.

That case may very fittingly be followed by one of the cure of Diabetes under the care of Mr. Metcalfe—

"April 8, 1880.—Mrs. M., aged fifty-six, has complained of pain in the back, great thirst, loss of strength and flesh, memory affected, with impaired hearing on the left side; suffers from prurigo pudendi, bowels obstinately constipated, pulse 88, tongue indicative of atonic dyspepsia. Two years ago had great anxiety about her husband's illness. Urine tested by Fehling's solution and liquor Potassæ. Showed the presence of sugar. Specific gravity 1.036.

Ordered a Turkish bath in the morning, and mustard pack over the region of the liver and kidneys in the evening, with a tablespoonful of glycerine in hot water at bed time to relieve the constipation, and a strict diabetic diet.

April 9.—Bowels acted freely; ordered a Turkish bath twice a day, hot spinal bath with cold effusion, and dry mustard rubbed into the back, tepid ascending douche graduated to cold. Wet body bandage worn constantly.

April 10.—Bowels acted twice; specific gravity of urine 1.028. To continue the baths as usual.

April 11.—Specific gravity 1.030.

April 14.—Specific gravity of urine 1.028; less sugar. Had a full wet sheet pack yesterday, and one Turkish bath, with spinal application. Linseed meal poultices and mustard over kidneys.

April 16.—Specific gravity 1.028; sugar still present.

April 17.—Specific gravity 1.023. No sugar detected. Two Turkish baths daily again.

April 19.—Specific gravity 1.015; trace of sugar; has a good deal of pain over left kidney; thirst gone, bowels act well.

April 21.—Specific gravity 1.022. To continue; two Turkish baths and wet sheet pack daily, with spinal rubbing, and ascending douche; looks very well, and feels strong, and quite altered in all respects.

April 26.—Specific gravity 1.016; no sugar. Looks quite well.

May 3.—Returned home, and became an out-patient at Priessnitz House. Treatment: Turkish baths in connection with cold spouting douches to spine, sitz bath and spinal manipulation for three weeks, at the end of which period all traces of sugar had disappeared. The patient went to Bournemouth for the summer, feeling better than she had felt for months."—*The Modern Physician, July, 1880.*

I give these two cases as specimens of Mr. Metcalfe's successful treatment of disease in its most aggravated form, often, after they have been given up as incurable by the regular practitioner. These cases might be accompanied by numberless others; but though the highest test of a treatment is in the cure of disease in its worst form, yet the physician is best employed in preventing disease, and in checking it in earlier stages. Hence the value and importance of an early resort to hydropathy, when, by diminished vigour in any—no matter what—function, nature gives her warning that the bow is being kept stretched too long—the system overwrought. I must give one more case; it is perhaps the most astonishing cure that Mr. Metcalfe has effected. I cannot do better than introduce the case, which was one of gout, by giving a letter received from the sufferer, and following that by Mr. Metcalfe's notes on the case.

ST. MARY CRAY, KENT.

16th June, 1866.

DEAR SIR,

In reply to your communication, I have no hesitation in stating that I have been under your care several times, and I believe I owe my life to your instrumentality.

Yours respectfully,

Mr. METCALFE.

(Signed) W. JOYNSON.

This gentleman had the very best medical attention allopathically for two or three months, previous to his consulting me he had been under Dr. Starten, an eminent specialist on skin disease. The patient was suffering from atonic gout with intense skin irritation of gouty diathesis. The irritation during the night was usually so severe that he could not sleep, and this had been going on for months. The skin disease was of six years' standing, unmitigated by any of the remedies tried. He had been afflicted with gout intermittently for many years, but for the preceding two or three he had scarcely ever been free from it. For the preceding five years he had been in a state of ceaseless torture, suffering either from violent pain or irritation, so that, to use his own words, life was a misery, and his constant prayer was that he might be removed from it. The medical man consulted pursued an original method of treating skin eruptions by means of mercurial preparations, which in the present case he administered largely, both internally and externally. This treatment extended over some two months, with no result but an increase of the irritation and debility. At this juncture, the state of the patient's health became so alarming that two other physicians of eminence were summoned for consultation, the result of which was that the treatment was discontinued. The patient remained under the joint care of the three medical men for about a fortnight without any material alteration in his condition. Great anxiety was now felt amongst the relatives, one of whom (the patient's son-in-law), after making some inquiries of an old patient of mine respecting the probability of hydropathy proving of service in the case, resolved that it should be tried. The first week's treatment consisted in full and partial wet-sheet packs followed by tepid ablutions, a warm bath at bed-time, and a hot air bath every other day. This prepared the patient for more powerful appliances. The sweating processes were gradually increased until they reached the number of three hot-air baths daily, in addition to two or three wet-sheet packs, followed by watery applications under 80 degrees, and some of them cold. The result was that within a month the patient was brought from death's door, enabled to walk with comparative ease, and to use his arms, which had been partially paralysed for some time. The irritation was much allayed, he could eat and digest his food, and his bowels acted without aperients.

The rapid recovery of this case astonished all, especially the physician (one of the three mentioned), who undertook to watch its progress for the satisfaction of the patient's relatives.

He made no secret of his amazement that any one could have passed unscathed through such a formidable course of treatment, much less have visibly improved under it. I dare say the reader will also be astonished at the amount of treatment to which this gentleman was subjected, as well as at the result obtained. The virulence of his disease, however, demanded vigorous measures; and where there is sufficient latent vital stamina such measures may be ventured upon with safety and success. Four months' treatment removed every vestige of gout, and so far mitigated the skin disease, as to render its removal certain by perseverance, with a milder form of the treatment specified.

(FROM *Tinsley's Magazine*, Nov., 1891).

It is a truism that there are heroes in everyday life as worthy of admiration as ever were those whose deeds of heroism are displayed amid the excitement and turmoil of war. In some respects they are more admirable, because the courage which is shown in cool blood is of a higher character than that which is the result of the excitement and danger of the moment. However, all courage, physical as well as moral, is praiseworthy when manifested in a good cause, and it is, perhaps, invidious to draw comparisons. Nor would the comparison have been drawn here but for the fact that, while true moral courage is rarer than its physical counterpart, it is still more rare for it to get its due mead of praise. Nor does public spirit always secure the recognition which it deserves. It is for these reasons, as well as for others connected with public enlightenment, that we give, this month, the portrait and biography of Mr. Richard Metcalfe, the veteran hydropathist.

Richard Metcalfe was born at Barnard Castle, Yorkshire, in the year 1831. His father, who was a farmer, had a business acquaintance with Dr. McLeod, of the Ben Rhydding Hydropathic Establishment, and the son, not having a taste for agricultural pursuits, and being desirous, moreover, of following a more studious occupation, entered Dr. McLeod's service. This was shortly after the opening of Ben Rhydding, some forty years ago, and young Metcalfe remained there as an assistant for two years, gaining experience and practically testing the efficacy and effects of all the various forms of water treatment on his own healthy body, albeit occasionally with unpleasant results, as he was not then in need of such heroic remedies being applied to himself as were practiced by Vincent Priessnitz, the father of hydropathy. Soon after this Mr. Metcalfe entered a locomotive engineering establishment, in which he made good progress, and

engaged to go to Italy for an English firm constructing a railway there; but had to return in haste owing to the revolutionary troubles of that period.

Finally, in 1859, he settled down at Paddington Green (after a brief residence in Berkeley Street, Edgware Road), and commenced, in good earnest, to apply himself to the practice of hydropathy, undergoing, at the same time, special Hospital training in physiology and therapeutics. During this period he was intimately associated with the late Dr. Barter, of St. Anne's, Cork, to whom we are indebted for the re-introduction of the Roman, or Turkish, bath into this country. The Turkish baths at Paddington Green were about the second erected in England, and during the last thirty years Mr. Metcalfe has treated many of the most noted men of the day, including the late Lord Lytton (who wrote one of the best essays on the water-cure ever penned), Lord Napier of Magdala, Lord Frederick Cavendish, Lord Kinnaid, Earl Besborough, Sir Francis Ashley, Admiral Sir James Denham, Admiral Sullivan, Admiral Fishbourne, and several members of the late Mr. John Bright's family.

The following is a letter to Mr. Metcalfe from Mrs. Duncan McLaren—sister of John Bright, dated 1871.

EDINBURGH.

DEAR SIR,

I cannot help saying that I think you occupy a most useful position in having your establishment in town. It is indeed a very great boon to be able to avail one's self of the advantages it offers in London. If medical men professed an enlightened love for truth, they would examine into your system, and never rest until such establishments were multiplied by hundreds over the great metropolis, and in all other towns, until bath men and women, thoroughly instructed in hydropathic treatment, were organised so as to attend invalids in their own homes; thus teaching householders the best means of curing disease as well as promoting health. I can only hope some other Peabody may arise who will either give or leave money to establish some day a large hospital to be constructed on hydropathic principals; although, perhaps, this is not the wisest wish, as it is being acknowledged now by medical men that large hospitals are not so beneficial as smaller establishments, or, what is still better, *home care*. If I had not long since been alive to the benefits of hydropathy, I should ever have felt most grateful to it, and to *you* for applying it in the house in Gower Street where we were then staying, in the case of my youngest son, who was so sadly afflicted with scarlet fever; and I can never feel grateful enough to the physician who called you in, at my request, and quite in accordance with his own judgment—for I believe, under providence, it was the means of saving his life. Would that all other physicians who do not practise hydropathy themselves, could be liberal-minded, *nay, benevolent enough*, to call in similar aid when their own medicines can avail so little, how many parents might be spared the sorrow of losing precious children in these fever cases. It was Dr. Wilkinson who conferred this boon upon *us*, and I honour him for it. It is difficult to describe the effect of your establishment upon my feelings during the last *intensely* hot summer in London—it showed what extreme cleanliness can effect. Having occasion to take your baths for my own health, I felt, the moment I

entered your gate, as if I had suddenly been transported to the country—the very flowers in the little pathway to the house seemed to hold up their heads as if they recognised nothing of town life, and all felt fresh and pure and sweet, as though all the oxygen of the surrounding neighbourhood had gathered into your premises to give life to those who entered them. This is no imaginary description, for many of my friends made the same remark to me; your baths are faultlessly clean, and the attention is of the kindest and most careful nature. I only wish your premises were larger, and your attendants more numerous, so that many more might enjoy and benefit from your efforts to place the best means of preserving health before the public. You may do what you like with this letter.

Yours very truly,

P. McL.

Mr. Metcalfe was for a number of years a member of the Paddington Vestry, and in that capacity he was ever found promoting schemes and proposals for the public benefit. He was the originator of those important metropolitan improvements, the widening of the Edgware Road end of the Harrow Road, and the laying out and planting of Paddington Green. During the time Dr. Hardwicke was Medical Officer of Health for the district, at Mr. Metcalfe's suggestion the parish was divided into block sections, for the purpose of systematic sanitary inspection. Large numbers of houses occupied by the working-classes were personally visited and inspected by Mr. Metcalfe, who became impressed with the manifold disadvantages under which the people labour. He therefore, set himself to work to enquire into the Baths and Washhouses Acts, with a view to their application to districts really needing such institutions. He urged the adoption of the Acts in the parish of Paddington, and when it was resolved to do so he was appointed one of the commissioners entrusted with their administration. He advocated the introduction of a system of hot-air lavatories, and took pains to collect data, showing his colleagues the sanitary and financial advantages of the proposal; but although at first they favoured the suggestion, they afterwards determined to adhere to the old system, and Mr. Metcalfe withdrew from the commission in consequence. He also strongly disapproved of the site chosen for the baths, which is surrounded by the residences of the well-to-do and wealthy, instead of being in the vicinity of the poor, for whose benefit the Acts were intended.

In pursuing his enquiries into the extent to which the Baths Acts had been adopted throughout the country, Mr. Metcalfe collected a mass of valuable, statistical and sanitary information, which he afterwards, at considerable labour and expense, issued in a volume entitled "*Sanitas Sanitatum et omnia Sanitas*," a work giving a succinct account of the rise and progress of the Baths and Washhouses movement, with elaborate statistical information regarding the cost and financial results of baths wherever erected,

with some valuable suggestions for their improvement, including a modification of the Turkish bath, or the hot-air-lavatory-system. No where else can so much information be found upon the question as is embodied in "Sanitas." The Press was unanimous in acknowledging the value of the book, which we should be glad to see brought up to date, reduced somewhat in bulk, and issued at a cheap rate, so as to be within the reach of Municipal and County Councillors of all degrees. It would be invaluable to them.

While pursuing his public work, Mr. Metcalfe was not neglecting his professional duties. For many years he had a branch establishment at New Barnet, Herts, but this has long been given up, and now, Mr. Metcalfe being a man of the most restless activity, he apportions his time between Priessnitz House, Paddington Green and the Hydropathic Establishment, Wellington Square, Hastings. Mr. Metcalfe has discontinued attending Hastings Hydro, he now devotes the whole of his time to the Richmond establishment. Many clergymen and persons of note of the present time, including "General" Booth and his family, with many officers of the Salvation Army and professional men, avail themselves of the recuperative effects of Mr. Metcalfe's hydropathic treatment in cases of overwork, brain fag, feverish colds, &c. Among his notable cures is that of the late Mr. Wm. Joynson, of St. Mary Cray, (whose case I have already quoted) a noted philanthropist, who had been pronounced incurable by the medical faculty when Mr. Metcalfe was called in, and his course of treatment restored the patient to health and prolonged for many years his career of usefulness and beneficence.

Not only may Mr. Metcalfe claim to have been the pioneer of hydropathy in London, but he has successfully applied it in overcrowded neighbourhoods, where smallpox and typhoid fever have raged, thus practically showing that he has the courage of his convictions. "His efforts to bring Hydropathy within reach of the poor man," writes Christopher Crayon, in the *Christian World*, "were ably seconded and encouraged by Mrs. Bayley, the well-known worker for the moral and spiritual elevation of the masses, and authoress of 'Ragged Homes and How to Mend them.' Then jointly established at Mrs. Bayley's far-famed workman's hall an hydropathic dispensary, where, for a time, the poor were treated without charge, and thus taught to realise the blessings of cold water as a means of hindering or removing disease."

In connection with this interesting experiment, Mr. Parfit, the then City Missionary for the district, gives us a glimpse of the sort of work which Mr. Metcalfe was called upon to do. Mr. Parfit says: "In this neighbourhood (the Potteries) there is a large house inhabited by *thirteen families* (many of them with a number of children), *occupying thirteen little rooms*, and even there Mr. Metcalfe treated successfully a child who was ill of the

fever. As he was about recovering, the father fell ill of typhoid fever, and was attended by the medical gentlemen provided by the parish. . . Mr. Metcalfe was sent for, and when he arrived the man was so weak that there was little hope of his recovery. However, he at once gave him a bath, and after he had it the man slept four hours, and his skin, which before was like a hot brick, felt soft and moist. When he awoke he began to ask for bread and cheese, and in a short time got about. This man was fifty-six years of age, and in five weeks he was able to go to Covent Garden and bring home a great basket of apples. Before he recovered, his wife fell ill of the same disease, and, to his great surprise, came through it even more rapidly than he did. I think it right to mention this, as in these cases there was no advantage of fresh air."

Three or four years ago, when the hydrophobia scare was rampant, and M. Pasteur's anti-rabic inoculations came into public notoriety, Mr. Metcalfe—at the instigation of an influential society who believed in the sweating cure of Dr. Buisson, of Paris (who is said to have cured himself of the disease in 1825), was asked if he would undertake to treat any case of hydrophobia. He consented, and three cases were sent to him. All had been bitten by rabid animals. One was a notable case from Bradford, another was a boy who was brought all the way from Wicklow, in Ireland. The latter developed symptoms of hydrophobia while undergoing treatment at Paddington. Mr. Metcalfe's bathman and assistants were terrified, and fled the place. He was, therefore, obliged to strip and go into the hot room (in order to superintend the sweating process) with the patient himself. "I thought now surely my hour was come," said Mr. Metcalfe, speaking of the affair afterwards; "but there was no help for it; I had taken the matter in hand, and I was determined to go through with it, come what would." He did go through with it, and cured the boy.

After a lapse of two years, seeing the cases were so successful, he wrote a work on the subject of hydrophobia in opposition to M. Pasteur's inoculating theory. Collecting information from all ancient and modern authorities on the nature and treatment of hydrophobia, he compiled material for a volume of 400 pages, in which he proved beyond doubt the superiority of the method of external treatment. The MS. was placed in the printer's hands for publication; but unfortunately a fire broke out on the premises, and thus the result of years of laborious research was destroyed. It is a matter of deep regret that no second copy was kept, as competent authorities, after careful examination, pronounced it the most rational and exhaustive work that had been produced on hydrophobia. It is to be hoped that the author will yet find the necessary time and strength, for the benefit of

mankind, to reproduce the work, thus emulating the example of Thomas Carlyle in regard to the first volume of his famous "History of the French Revolution."

In addition to the above work, and the "Sanitas Sanitatum" before mentioned, Mr. Metcalfe is the author of various other works, besides numerous magazine articles on hygienic subjects, including "Hydropathy in London" (Leath and Ross, 1862), "Medical Opinions on the Efficacy of Hydropathy," (J. Burns), "A Plea for Hydropathic Dispensaries" (Tweedie), "Hot-air *v.* Hot-water Bathing for the Working Classes" (National Temperance League), "The Turkish Bath in Heart Disease, Obesity, and Atrophy," and lastly a pamphlet entitled "Testimonies to the Efficacy of Hydropathy in the Cure of Disease."

Mr. Metcalfe is yet in the prime of life, and to all human appearance has still many years of work in him. It is earnestly to be hoped that he will long be spared to carry on the good work he is now engaged in, spreading the knowledge of hydropathy and hygiene, and bringing the means of treatment within the reach of all. The writer in the *Christian World*, from whom citation has already been made, says:—"There is no doubt in my mind that a hydropathic establishment does you more good than you get by swallowing any amount of doctor's draughts, and that in proportion as we have them multiplied over the land the health of the community will increase. Already England contains a hundred of such institutions, and it will be soon thought a disgrace to a locality, even the poorest, to be without one." So we think, and in helping along the day when such will be the case, Mr. Metcalfe is doing a national service.

(FROM *The Christian World* Nov. 3rd, 1893).

What generations of men and women from all parts of the world have loved to repair to Richmond to enjoy its fine air—to revel in its sylvan charms, which even the builder cannot entirely destroy. In the letters of Motley, the accomplished author of that charming history of the Dutch Republic—which ought to find a place in every library—we have many allusions to Richmond. On the occasion of a visit he paid to the venerable Earl Russell, he writes: 'There was the usual sauntering and receiving in the gardens, looking out on that unmatched Richmond-hill prospect, which is the perfection of English scenery—itsself, of its own kind, a perfection too. I always think when I look upon it of the "Allegro":—

Straight mine eye hath caught new pleasures,
As the landscape round it measures.
Meadows green with daisies pied,
Shallow brooks and rivers wide,
Towers and battlements it sees,
Bosomed high in tufted trees.

Nothing can surpass this bosky, bowery, verdurous, deeply foliaged, riotous yet placidly luxuriant nature, beautified by art, and hallowed by history.' What a tale the Star and Garter could tell of lords, ladies, statesmen, and wits, and beauties, actors and actresses, who have come there to dine, and feast the eye as well as the body. London has magnificent country all round, but neither Hampstead Heath, nor Shooters hill, nor Greenwich park, can compare with Richmond—as fresh and fair now as when the Maid of Richmond Hill became famous in song, and its Maids of Honour are still dainties to be indulged in by the young, careless of the horrors of dyspepsia. Our grandfathers used to drive there in carriages. We moderns are content to use the humbler 'bus, or the more expeditious rail. In our time Richmond has attained the dignity of having a Corporation and rejoicing in a Mayor, and one who, in the person of Sir Whittaker Ellis, is a credit to the office. Richmond still grows; what it may become in time no one can tell. It bids fair to flourish, at any rate till the advent of Macaulay's New Zealander on London Bridge.

Into this beautiful spot, the very place for a health resort for the feeble in body of the distant city, hydropathy has found its way at last. Mr. Metcalfe, the veteran Professor of Hydropathy, who has spent the best years of his life in its advocacy, and who has brought back many a useful life by means of it from the jaws of death, and more to health and strength, has removed his establishment from Paddington Green to Richmond Hill. Perhaps it was time that he did so. Paddington Green is losing all its ancient charms, owing to the advent of the builder, and really Richmond is as accessible from all parts of London as Paddington Green. Omnibuses, steamers, railways, all aim for Richmond. Priessnitz House, as the new Hydropathic Establishment is called, is a very handsome building, capacious, and admirably fitted up. It stands on the brow of the hill overlooking the Terrace Gardens, and directly opposite the main entrance to them. Standing in its own grounds, it commands a delightful outlook over the gardens and the famed terrace, as well as the far-winding reaches of the Thames, the charms of which are known all the world over. It is to be questioned whether anywhere in England that glorious landscape can be surpassed. From the house there are such drives and walks to be reached that may well occupy the visitor a month, and as we all know, charming scenery, by tempting the invalid out of doors, is no unimportant agent in effecting the cure of disease and the restoration of the patient to health. Another recommendation of the place is that it is quite as much a winter as a summer resort. The grounds of the park and the parts adjacent are all elevated, and abound in pure air. Richmond has long enjoyed the reputation of being one of the healthiest towns in the kingdom. Kew Gardens are close by. Ham House, which remains just as it

was in the days of the Cabal, with its art treasures, is within an easy walk. Hampton Court is at the very door as it were, and the far-famed chesnuts of Bushey Park. Then there is Pembroke Lodge, long the residence of Lord John Russell—he is better known as Lord John than Earl Russell—which is still occupied by his widow. In 1886 the town acquired the private grounds attached to the mansion of the Duke of Buccleuch, and now they form a public garden, such as few other towns can boast. All around us are Royal associations. In fact, it has been a Royal residence since Saxon times. In its Palace, built by Edward III., many a monarch has lived. Henry VIII. spent much of his time here with the ill-fated Anne Boleyn. It was a favourite residence of our great Elizabeth.

In the recovery of health, good scenery, as I have said, plays an important part. At any rate, most of our leading hydropathic establishments are wisely planted in the most lovely sites. In this respect hydropathy at Richmond is exceptionally fortunate. The recent mode of battling with disease and regaining health as far as London is concerned, was initiated at Sudbrook House, (forty years ago), just under the shadow of Richmond Hill, and for a time flourished greatly under Dr. Ellis, who was a great power in the Temperance world at the time of Mr. J. B. Gough's first visit to his native land as a temperance orator. Sudbrook Park is no longer a Hydro, but is now rented by a golf club. Mr. Metcalfe's reputation is mainly due to his work in London, Paddington Green being no longer suitable, he selected the most beautiful spot he could find on Richmond Terrace. It is to be questioned whether in all England there is a spot rivalling it in beauty. It is certain that no spot can be dearer to the student of our national annals. The house is a handsome modern white brick building, approached by a flight of steps, and very capacious, with a fine bit of pleasure garden at the back. The rooms are lofty, and mostly embracing magnificent views. The living is strictly in accordance with hygienic laws, and the baths are of the most perfect description. I find people linger there longer than they do at most establishments of the kind. I have spoken to none who, according to their own admission, are not the better for their visit, and they are in no hurry to bring it to a close. We are of all sorts and conditions, including Mr. Bramwell Booth, who is often a patient here. Some are too stout, and fain would be thinner, some are mere skeletons, and would fain put a little flesh on their bones; some are lame, and would fain take up their beds and walk. In old times we read how one was bidden, 'Go and wash seven times in the Jordan, and thy flesh shall recover health, and thou shalt be clean.' Well, the Jordan is far off, and so Mr. Metcalfe bids us to Richmond, which is easy of access; an invalid may carry on his business in town, and yet place himself under Mr. Metcalfe's treatment,

and if he can stop there all the while till he be cured, so much the better, for a graceful hostess does the honours, and the establishment keeps a good cook. Affliction, it is said, is a blessing in disguise. It may be so, I am not going to contradict the statement, but all will agree with me, a sound mind in a sound body is better. It is for this reason that I go to hydropathic establishments myself, and recommend my friends to do the same. Our churches need men, not invalids, in the pulpit and the pew, if the Gospel is to triumph in our midst.

(FROM *The Christian Million*).

Physically the General of the Salvation Army is a wonder to many. Those most opposed to his work wonder at the greatness of his toil, the indefatigable endurance, sprightly energy, and overflowing good spirits which this veteran possesses.

No less remarkable is the wonderful facility with which General Booth has repeatedly recovered from sickness and from fatigue "fit to kill a horse." The secret of this latter trait is an open one. When the General of the Salvation Army feels ill or overdone he resorts to hydropathic measures, and at once chartered a cab, if in town, for the abode of Mr. Richard Metcalfe, a doctor not less successful in bodily healing than General Booth has been as a missionary to the souls of men. The two are about the same age, and resemble each other in disposition, height, and build. Mr. Metcalfe came—so long ago as 1862—to baptise Londoners with water as a practical hydropathist. General Booth would probably claim not to baptise with water, any more than did his Master and Paul. "Blood and Fire" are the emblems of the soul-saving work of the Salvation Army, but as regards the body, not in the three kingdoms will there be found a more enthusiastic advocate of the water-cure, and, we may add, a more illustrious example of its benefits, than General Booth.

The Booth family and leading officers are among the patients who sing the praises of Mr. Richard Metcalfe and his water-cure. One of the first to do so was the late Lord Lytton.

"DO NOT CONSULT YOUR DOCTOR,"

advised the author of "The Caxtons," in his "Confessions of a Water Patient," "whether you shall try hydropathy, but find out some intelligent persons in whose shrewdness you can confide, who have been patients at a hydropathic establishment. . . . I have no eye to fees, my calling is but that of an observer—as an observer only do I speak, it may be with enthusiasm, but enthusiasm built on experience, and prompted by sympathy—to such, then, as may listen to me I give this recommendation:—Pause if you please, inquire if you will; but do not consult your doctor. I have no doubt he is a most honest, excellent man, but you cannot expect a

doctor of drugs to say other than that doctors of water are but quacks." In a printed Note which he attaches to the fourth edition of the "Confessions," Mr. Metcalfe says: "That Lord Lytton's interest in the question never abated is evidenced by the letter which I received from him a week or so before his death, and which is published in 'Sanitas sanitatum, et omnia sanitas.'"

The majority of Mr. Metcalfe's patients have been poor; for this hard-working toiler has given fifteen or sixteen hours a day during the past forty years to his much-loved profession and has not reaped a golden harvest of fees. When a member of Paddington Vestry, to which body he belonged for several years, his chief thought and act was for the amelioration of

THE SANITARY CONDITION OF THE POOR.

In conjunction with Mrs. Bayley (author of "Ragged Homes, and How to Mend them,") Samuel Gurney, and others, before the Prince Consort's death, he established a free dispensary for the poor with Turkish bath and other hydropathic appliances in the basement, treating successfully over

THIRTY CASES OF TYPHOID FEVER

at the time that the disease was rife in the Kensington Potteries. Moreover he has been known to take patients suffering from small pox—and to cure them too—in his own home. And thus to-day he gives advice and treatment to the very poor without fee or reward. Suffering and poverty never fail to touch his heart. At Paddington his name was, and is still, held in honour. Trusted and loved, by the industrial classes and the poverty-stricken, he was at the same time esteemed by his co-labourers in public work for his unselfishness and his unostentatious courage. Mr. Metcalfe, say his friends, would have been a rich man long before this had he studied himself as much as he studied others.

Whether he will ever again attempt the establishing of hot lavatories and Turkish baths for the working classes depends, I am inclined to say, upon his finding some person or persons of means as interested as himself in the promotion of the health and the comfort of the people, and who, possessing means, are willing to use a portion of his or their substance for this purpose. He holds, however, still firmly to the opinion that it is possible to maintain an institution of this kind at a charge of not more than fourpence, or at the outside sixpence, to each bather. Hospital reform is becoming a burning question, and the County Council is obtaining more powers to watch over the public health. Whether Mr. Metcalfe lives to see it or not, the day in which his ideas are carried out will mark a new era in the health and prosperity of urban populations.

Mr. Metcalfe is now the medical superintendent of a company which promises to become a highly flourishing one, and of

AN ALMOST PALATIAL "HYDRO,"

situated on the summit of Richmond Hill, whence are obtained some of the most exquisite views that eyes have ever looked on. Had we space for the purpose, we would revel in attempting the word-painting of that splendid panorama unfolding itself before the windows of Priessnitz House, a panorama of undulating woodland, through which the Thames meanders like a thread of silver, and the roofs of many goodly mansions and farmhouses peep through deep, arboraceous foliage—a panorama of unparalleled beauty, spreading away uninterruptedly in its many lights and shades from the Terrace Gardens to Windsor Castle, the towers of which can be plainly seen, some fifteen miles distant. May the increased prosperity of the "Hydro" be equal to its present advantages of site!

HOT-AIR LAVATORIES OR ROMAN BATHS.

In 1878, the Birmingham Town Council consulted Mr. Mecalfe regarding their proposed baths, etc., in Kent Street, and in the same year he was presented with a resolution of thanks from the Municipal Committee, for, as the minute set forth, "the valuable information he had afforded them in connection with the hot-air baths at the Kent Street Bathing Establishment, and also for the gift of twenty-five copies of his work, 'Sanitas sanitatum, et omnia sanitas.'"

(FROM *The Christian World*).

"In 1863, Lord Houghton wrote to a friend: 'I find the use of the so-called Turkish and really Roman baths very beneficial. They are a kind of artificial exercise without the bore of perpetual motion. I doubt their succeeding as a general practice in this country from the length of time they take; and an Englishman does not think that he can spend two hours in this way, but wishes to misuse his time in some way in busy idleness.' What a blunder his lordship made; surely, instead of decreasing in popularity, the Turkish bath is more popular than ever. There is no disease with which in connection with hydropathy it cannot grapple, and the time is rapidly approaching, I believe, when every town will have its Turkish bath.

Mr. Metcalfe has treated successfully influenza by hydropathic treatment. We are all talking of influenza; its ravages have been fearful this winter, and surely the veteran hydropathist may claim to be heard on the matter. The present is an age of nostrums, and the public is bewildered as it reads of quinine and eucalyptus and saline; to say nothing of Bovril and port wine and oranges, and preserved pineapple, and other delicacies, all strongly recommended by the Faculty. The French have gone further, and have discovered a soap which heals the malady

and restores the patient to health. Mr. Metcalfe is nearer the mark, as he packs the patient till the evil is expelled and the sufferer is free. All that is required are a couple of sheets, two or three blankets, and some water; and the beauty of it is that the remedy works as quickly as effectively. After the first packing the patient will become so hot that in twenty-five or thirty minutes he will want to be taken out; then he is transferred into another wet sheet; and then, after another thirty minutes, the pack should be repeated a third time. Then he is taken out, rubbed briskly with a towel, put to bed between blankets with a hot bottle to his feet, a wet towel to his head, and a wet compress about the stomach. Then he falls into a refreshing sleep, which lasts from four to eight hours. Afterwards he is fed on mutton or chicken broth, and presently 'Richard is himself again.'

'I have had a good many cases,' said Mr. Metcalfe to me, 'several of which were of a severe nature.'

'And you succeeded in curing them? How long were the cures being effected?'

'If I had the case the first day of the attack, I generally subdued the fever in six hours; if on the second day, twelve; on the third, eighteen. I do not mean that the complete cure was effected in that time. It takes some time to reduce the high temperature of the body. Mostly in three days the patients were convalescent. The pack is the most powerful febrifuge—perhaps the most powerful in existence. The pack acts in a similar way on the body that water does on hot iron. Water will more quickly equalise temperature than anything else. In influenza the normal temperature of the body is raised, and the skin feverish; by enveloping the whole body in a wet sheet, you lower the temperature of the skin and promote its free action; thus internal congestion is at once relieved.'

'I claim,' continued Mr. Metcalfe after referring to the treatment generally followed by the Faculty, 'to cut the disease short by the packing process. By reducing the fever within eighteen hours, I avoid the dangerous consequences often following on a fit of influenza.'

'Then you regard influenza as a fever?'

'Yes, as a malarial fever.'

'Then you would interdict the use of medicine altogether in influenza?'

'No; I do not say that at all. Where the value of medicines have been tested by practical experience they should be used in conjunction with the pack—that is to say, in small doses, for the wet sheet pack makes the patient more susceptible to the influence of medicine. I have at this time a dozen very severe cases under treatment.'

'And what is the general result?'

‘Out of fifty cases, we in a comparatively short time restore forty to their normal condition, the other ten being constitutionally weak, the recovery is somewhat tardy, often needing a change of air.’

‘Then you have special confidence in the treatment of the present epidemic by hydropathy?’

‘Yes, for the reasons I have given.—The internal remedy only produces an effect through the stomach, whereas the pack acts upon the whole of the body, and leaves the stomach unvitiated. You must bear in mind that in a case of fever, when the temperature of the body is high, the medical Faculty is obliged to use very powerful medicines, in order to check the fever, which must act deleterious on the stomach.’

‘I should think so,’ I replied, as I left Mr. Metcalfe, almost persuaded, though, as Lord Chatham said, ‘Confidence is a plant of slow growth in an aged bosom.’ But I cannot conceal from my mind the terrible mortality which seems to accompany ordinary medical practice with regard to influenza. There is scarce a family circle in the kingdom which has not had its victims. There is no one who has not lost a relative or friend. To day all England is clad in mourning on account of the ravage of the disease, and it still lingers as winter is said to linger, in this uncertain climate of ours, in the lap of spring. If Mr. Metcalfe can cure influenza, and the doctors can’t, the least I can do is to make his system known, and to ask for it from the unprejudiced a fair trial.”

The establishment at Paddington Green was visited by a very large number of M.P.’s. The late Mr. Goulding, and William Saunders, were patients of his for years.

The following is a letter dated twenty-five years ago from M is Ann Saunders, which I think may be of some interest to my readers.

BATH, SOMERSETSHIRE.

For many years I was liable to occasional attacks of giddiness and faintness, a condition exactly resembling the dreaded one of seasickness. These most distressing visitations lasted for some days. After a time they became more frequent and severe. At times, also, I experienced a variety of sensations well-known as decided premonitory symptoms of congestion of the brain. Frequently on awaking at night I found one of my limbs quite dead; I experienced pricking sensations in the extremities, and a general numbness or torpor, which was often, however, from the smallest cause, broken up by a visitation of great excitement—a curious flight of imagination, or a sudden dash of unusual power for comprehending or achieving. The Allopath and Homœopathic remedies administered gave me but little relief. The torpor increased upon me, and I feared I might soon be to all appearance quite dead, and might be buried alive. *My hearing was almost gone.* For several years I never heard any general conversation, only that immediately addressed to me in a raised voice. I sometimes could scarcely make myself heard when I attempted to speak. In fact I was threatened with the extinction of all my senses and faculties; a kind Providence ordered it

otherwise. A lady who was receiving treatment at Mr. Metcalfe's establishment, persuaded me to accompany her. My case was immediately and thoroughly discerned by Mr. M. After a few days' treatment I felt convinced that the course of Hydropathic treatment, and general alteration in my habits prescribed by Mr. M., would, *with time and patience*, rescue me from my sufferings. The result, I thank God, has proved the correctness of my opinion. The attacks of giddiness—which were killing me, every one of them leaving an increase of torpor—came at intervals now, and more distant, and at length entirely ceased. Relieved from these attacks, to my unspeakable satisfaction. I at length, as I anticipated, gradually recovered my hearing. It has continued invariably good during the whole of the last winter, and my general condition is one of much comfort—a great contrast to that of one of my aunts, who, at my age, was suddenly seized with congestion of the brain. Helpless and unconscious, she lived for twenty years a living death. There are many sufferers from a tendency to this kind of disorder. I earnestly recommend them to adopt the course I have found so beneficial—*Author of "Egypt."*

This lady is still alive, close upon 80 years of age.

Mr. Metcalfe is a great believer in Electricity, and uses it very extensively in connection with Hydropathic measures in cases of chronic diseases. Some 30 years ago Dr. Caplin introduced the Electro Chemical Baths into England, and opened an establishment in Baker Street, London. This gentleman published a work on the subject, in which he stated, that he could extract mercury from the body by his electric bath, which drew the attention of the medical faculty to the subject.

Mr. Metcalfe being always on the alert for new hygienic discoveries made his acquaintance with Dr. Caplin, and for a short time attended his establishment and obtained a thorough knowledge of the application of the bath and electricity in diseases generally, but soon found that so far as extracting crude mercury from the body was concerned it was mere quackery, and discontinued attending the establishment.

I now add the following article on Jennerism and Pasteurism by R. Metcalfe, which appeared in a monthly journal five years ago.

Pasteur's system of inoculation for hydrophobia has frequently been compared to that of Jenner for small-pox, and Pasteur himself has more than once been likened to a "second Jenner."

The Rev. Robert Francis Clarke, writing in the *Tablet* of December, 1885, says:—

"The researches of Pasteur on anthrax, which led to those on hydrophobia, were suggested to him in the first instance by reflection on the rationale of vaccination."

For myself, I fail to see that any sound analogy can be drawn between the two systems. Jenner is said to have mitigated

the severity of small-pox by inducing the disease in a milder form,—but Pasteur sets up *no disease whatever*, one of the boasts of his admirers being that not an abscess, not a swelling, no sort of pain or feverish symptoms are induced by his inoculations.

Dr. Sir B. W. Richardson, in criticising Pasteur's system, says:—

“Vaccination induces a train of symptoms—fever and local irritation,—in fact a definite disease. But this inoculation against hydrophobia induces no disease, general or local.

“In these inoculations—the assumed cure for hydrophobia—several hundred persons have had injected under their skin and into their cellular tissue, a portion of diseased spinal chord from a dead rabbit, in a solution of what is called ‘sterilized broth.’ Some of these persons have been inoculated ten times or more, so that we must assume that between three and four hundred injections of dead animal matter have been made into the cellular tissue of living human beings. Yet in no case has there been any appearance of abscess, sympathetic irritation, or of fever. It could hardly be imagined that so many injections of even distilled water could be made with so much impunity. The injected matter must be sterilized indeed, to reach such perfection of general and local inactivity.

“On the hypothesis set forth, it is assumed that if a person, who has not been bitten by a rabid animal, is subjected to inoculation by an artificially prepared virus, he is safe from hydrophobia synthetically induced by the operation. But several hundred persons have been inoculated, and none have suffered the disease from the synthetical experiment. We are therefore made to infer that amongst all those inoculated persons not one has escaped contracting hydrophobia from the bite of an animal. Is that a probable, not to say possible, event?

“Although perhaps, the potency of virus taken directly from a person dying from hydrophobia would be different from that of Pasteur's attenuated vaccine, yet surely this vaccine, in order to be effective, must be of sufficient strength to produce some visible effect on the body of a person who is undergoing daily treatment by inoculation.”

Jenner injected pure lymph, taken directly from the cow,—a *clean* animal,—but Pasteur injects poisonous virus from an *unclean* animal, artificially prepared by having been passed through a series of animal organisms, and mixed with veal broth before it is injected into the human system.

Neither is there any analogy to be drawn between the two diseases in question. Small-pox is a natural disease, an infectious disease, and a malady of the skin, whereas hydrophobia is an un-natural and a non-infectious disease, and one that only affects

the human being after absorption of virus by means of a bite or a scratch from a rabid animal.

Dr. Lallier, one of the leading medical men in Paris, although he thinks highly of Pasteur's talent, and has implicit belief in his good faith and honesty, lately declared his doubts as to the efficacy of his treatment of hydrophobia, saying that there was "an obscure point that rendered it a mystery." "When," he said, "a person is vaccinated against small-pox, a virus is introduced into his system which gives him the disease in an attenuated form. The vaccine, to use the word commonly employed, 'takes,' and the vaccinated person has a certain amount of fever."

In the case of persons vaccinated against small-pox when already attacked by this disease, Dr. Lallier affirms that "there has been no proof forthcoming to shew that the intensity of the attack of small-pox is diminished by the vaccination. M. Pasteur's treatment therefore puzzles him, for, when inoculated by M. Pasteur, the patient not only has the germ of hydrophobia in his system, but the liquid substance which is introduced into his body has no apparent effect; that is to say, the patient is not in the *least ill*, and does not suffer from even the *attenuated symptoms* of hydrophobia. By vaccination the patient is given the small-pox in a mild form, when he has not the germ of that disease; whereas, when a person is inoculated against hydrophobia, he has already the germ of that disease, and is not given it in any form whatever." (Quoted from an article in the *Evening News*, July 30th, 1886.)

Assuming that, although we see no external evidence of its effects, as in the case of vaccination, Pasteur's system is really a prophylactic against hydrophobia, it is nevertheless open to some of the chief objections raised against the system of Jenner. One of the strongest objections to vaccination with so-called small-pox lymph is the fact that the person inoculated has a poisonous virus introduced into his system. It will not be denied, even by the most ardent supporters of vaccination, that small-pox virus has sometimes sown the seeds of scrofulous and other diseases. Now, if inoculation with the milder virus of vaccinia has worked such mischief in the human body, what is likely to be the effect of inoculation with the far more virulent poison of rabies, combined with organic matter taken from the lower animals, and what insidious and fatal diseases, even more dangerous than those resulting from inoculation with small-pox lymph, may not possibly be imposed upon human beings under the pretext of curing them?

The nature of the lymph used in vaccination for small-pox is so well known that it needs no comment, but the preparation of Pasteur's "vaccine" is shrouded in a good deal of mystery. For my own part, I incline to the belief that the virus injected by

Pasteur is utterly inactive in its effects, and that probably, if he were to inject an equal quantity of pure water into the human body, he would get identical results. T. M. Dolan, M.D., who is a competent authority on this subject, in a letter to the *British Medical Journal*, September 25th, 1886, wrote as follows:—

“ Pasteur’s prophylactic has been applied (1) to persons not bitten by a dog at all; (2) to persons licked by dogs; (3) to persons bitten by healthy dogs; (4) to persons bitten by dogs presumed to be rabid. It acts equally well on them all, that is to say, it has no effect as far as we can see. If given to counteract a virus already in the system, the theory fails. Mr. Horsley does not offer us any explanation. Can it be possible that if this *bouillon* contained a virus more virulent than that of the rabid street dog, that all would have escaped, especially in view of the danger of the irregularity of the injections, seen in the instance of Meister?” *

Very similar ideas were expressed by “Dubitans,” in the following letter to the *Medical Press*, July, 1886. Referring to Pasteur’s inoculations, he wrote:—

“ The ‘vaccinated’ human beings present ‘*absolutely no symptoms* whatever.’ Evidently, then, the rabbit vaccinations are utterly *nil* in their effects, for we cannot assume that the patients were all exempt from symptoms because their bodies were all impregnated with the rabid virus from the dog’s bite. Some of them must have been uncontaminated with canine rabies. We must therefore conclude that the rabbit vaccinations are utterly powerless, as they produce no effect whatever on the human subject.”

I was very much struck by some remarks that appeared lately in the *Pall Mall Gazette*, respecting several cases brought from America by Dr. Billings. Dr. Billings was interviewed by a humourist, who asked him how he knew that these persons had been bitten by a mad dog? The reply was, “I do not know, and M. Pasteur does not know what he is doing, and what he injects into them ain’t stronger than pure rain water, and ain’t nearly so dangerous as ordinary vaccine.”

M. Pasteur himself might say that these assumptions as to the innocuousness of his vaccinations are contradicted by the fact that he has tested them on rabbits, and that those rabbits have died with symptoms of rabies. Now if he could only prove beyond a doubt that he *does* get veritable rabies by these means, this rabbit test would be a strong point in his favour. There is, however, abundant evidence in support of my conviction that what he induces in the rabbit is not rabies, but a spurious disease that might result from the application of any kind of foreign material to the surface of the medulla.

* Joseph Meister was the first patient inoculated by Pasteur with rabic virus.

In a letter from Dr. Dulles, dated Philadelphia, June 14th, 1886, there occurs the following statement:—"My friend, Dr. Spitzka, of New York, has just produced in several dogs the symptoms which Pasteur calls 'rabies,' by inoculating upon the brain with various non-specific materials, one being the spinal cord of a healthy calf, and another, plain brown laundry soap."

Dr. T. M. Dolan, in a letter to the *British Medical Journal*, 4th September, 1886, wrote:—

"M. Pasteur produced a disease in rabbits which he called rabies. The same kind of affection in rabbits can be produced by injecting almost any kind of diseased material into the same region favoured by M. Pasteur. In man, the symptoms of hydrophobia can be also produced by irritating the medulla; and in certain states we find a disease simulating hydrophobia, produced by a tumour pressing on the brain. (See *Practitioner*, 1881, for a case narrated by the writer)."

In another letter to the same journal, Dr. Dolan remarks that Pasteur did not test his virus on rabbits by simple inoculation into the skin, but into the rabbits' medulla. "And," he writes, "were he to do the same with the human subject, he would invariably kill his patients, who would die with symptoms of hydrophobia."

It is affirmed by Gordon Stables that "the rabbit, Pasteur's medium—possesses a complete immunity from rabies,—although by inoculating it with rotten matter from a mad dog's cerebellum Pasteur succeeded in producing *pyæmia*, or blood poisoning."

In the *Medical Press*, July, 1886, "Dubitans," in answer to some of Dr. Drysdale's eulogiums of Pasteur, wrote as follows:—

"The virus for inoculation is prepared by inoculating rabbits with the brain substance of 'a rabbit which has succumbed that same day to the disease.' What disease? Anything like rabies? According to reports received, the disease of the rabbits does not seem to present any symptoms of canine rabies. What disease then is it? Dr. Drysdale's account is too vague to enable us to judge. The very symptom he mentions is paralysis of the hind legs, after seven days' incubation, and then painless death in four days. Not much resemblance to rabies surely."

M. Paul Combes is of opinion that Pasteur mistook cases of septicæmia in rabbits for *dumb rabies*, and cases of meningitis for *furious rabies*, and that what Pasteur really produced by his inoculations of rabbits was a new disease, a sort of inflammation of the cerebro-spinal system, with rabiform symptoms, that might well be called "*medullary rabies*." "In order," he declares, "to prove incontestibly that Pasteur produces veritable rabies in the rabbits he experiments upon, certain scientific data are wanting."

"*Firstly*, facts, proving that the dogs with whose spinal cords the rabbits were inoculated were in reality rabid.

"*Secondly*, a detailed account of the symptoms exhibited by the rabbits when suffering from what Pasteur calls rabies.

"*Thirdly*, a careful comparison of these symptoms with those of other rabbits, caused to be bitten by a dog undoubtedly rabid."

After a speech made by Pasteur in the French Academy "*On the method of preventing the development of hydrophobia after a bite*," M. Jules Guérin objected that "according to the prophylactic method followed by Pasteur in his experiments, nothing more nor less is introduced into the animal system than artificial rabies, and that his treatment is preventive merely of the effects of this artificial disease, and except that it opposes the development of the malady that itself has produced, can have no preventive power whatever."

To the best of my knowledge, neither Pasteur nor any one else has ever seen a rabbit suffering from genuine *bonâ fide* rabies, namely rabies induced by the bite of a *really mad dog*. So small an animal as the rabbit, even if it did get bitten, would probably die at once from the effects of the bite itself, before there could be time for any inoculation of rabic virus. This being so, Pasteur has no grounds whatever for assuming that the artificial disease induced by him in rabbits is veritable rabies. If, indeed, he were able to compare the symptoms produced by the artificial disease with those resulting from the real disease, as he can do in the case of the dog, it would be a different thing, but he cannot draw any real analogy from a disease, the symptoms of which he has never witnessed. It is true that Pasteur tested his rabic rabbit-virus by inoculating dogs with it, but it is doubtful whether the disease thus induced in the dog is, as he is presumed to believe, *veritable* rabies, and not some disease of the brain or spinal-cord, as has been asserted by competent authorities to be the case. How can we tell but that *any* organic matter introduced under the surface of a dog's brain might produce similar effects? We have abundant evidence that such is the case with regard to rabbits. It is a pity that when Pasteur was making experiments on rabbits with human saliva, he did not also make similar experiments on dogs—the disease he was investigating being one that more often attacks the dog than any other animal. He might then have compared the symptoms of the malady thus produced with those of the disease obtained in dogs by inoculating them with the cerebral matter of so called rabid rabbits, and it is probable that in all these cases he would have obtained—not rabies, but—"a new malady," this being the title given by him to the disease he produced in rabbits when, during his earliest researches in hydrophobia in 1880, he inoculated some of those animals with human saliva, obtained, firstly from the corpse of a child who had died from hydrophobia, secondly from the bodies of children who had died from ordinary diseases, and thirdly from a healthy human being.

It appears to me that before we can justify Pasteur's inoculations of the human being with rabic virus, we must consider what

analogy exists between the organisms of the dog, the rabbit, the monkey, and the higher animal. The structure of a dog's skin, for instance, is very different from that of a human being,—the dog having only the rudiments of sweat-glands, except on the under part of the tongue, and the sole of the foot; hence the chemical constituents of its body are very different to those of a human body.

I fail to see that because Pasteur obtains certain results in the lower animals, it therefore follows that he must necessarily obtain identical results by means of similar experiments upon man. Neither is it clear to me that because rabic virus happens to affect the lower animals in its passage through their bodies, this is evidence of its potency as a prophylactic against hydrophobia in man. Pasteur's own experiments have proved that animals can be brought into diseased conditions analogous, though not exactly similar to, those of rabies, by inoculating them with human saliva, taken from a healthy, an ordinarily diseased, or a hydrophobic person. These results did not prove, however, that inoculation with similar organic matter would necessarily produce analogous symptoms in human beings. Who can tell whether the chemical nature of the virus has not become essentially changed by reason of being transmitted through monkeys, rabbits and dogs?

I may add that Viper-poison, or *lachesis*, a homœopathic preparation, can be so attenuated, and its strength so regulated (without any transmission through the bodies of animals) as to render it a powerful remedy in some diseases. Why could not rabic virus, if it be such a valuable prophylactic, be prepared in similar fashion? As it is, the complicated and elaborate nature of Pasteur's method of preparing his vaccines, the fact that he keeps the exact nature of his preparations a secret, and the constant and continuous torture of numerous animals necessitated by his processes, combine to render his system almost impracticable. How does M. Pasteur know but that a virus passing through the lower animals would lose some, or perhaps the whole of its potency in its passage, and thus entirely change the character of its original condition? It is surely possible that the virulent portion of the poison, which, as Pasteur himself imagines, may consist of two distinct substances, may be practically absorbed into another substance by amalgamation with it. For, as far as I have been able to ascertain, Pasteur has as yet afforded no sort of proof that his vaccine contains any rabic virus whatever.

These are points which should have been duly investigated before attempting to perform operations on the human race. For M. Pasteur to say, solely on his own authority, that he has discovered a preventive remedy for hydrophobia, is not enough. I question very much indeed whether there is another man in Europe who would have consented to operate, as he has done,

upon numbers of human beings, without having first thoroughly studied all the side issues and bearings of so momentous a question.

(FROM *London, Dec. 20th, 1890.*)

Though the ills of the flesh have no terrors for the aged and immortal Ithuriel, yet his gracious sympathy with the trials and tribulations of humanity render him anxious always to probe into the means of their obliteration. One of these means is hydro-pathy, and one of the oldest devotées of the science is Mr. Metcalfe, of Priessnitz House, at Paddington Green.

It was pleasant after the weary journey underground, and the dampness of the none too lively Paddington, to enter the home of health, where all was bright and warm.

Soon a venerable figure, almost as old as his own, though more stalwart and upright, greeted him, and as Ithuriel grasped his hand there beamed a look of benevolence in the eyes of the doctor, who was this time to become a subject.

"I want you to tell me something of your method of bathing people into health about which so little is known."

"Ah ! First let me tell you of the red-tape conservatism of the medical faculty that refuses to recognise hydropathy. Yet to hydropathy come as a last resource the failures of these bigoted practitioners. For my part, I should view the adoption of the Chinese principle with pleasure. If doctors were only paid while their patients were in health, we should have a great deal less illness in the world."

"What is the principle of your cure, Mr. Metcalfe ?"

"Cleanliness. The opening of every pore in the body by the systematic and scientific use of the so-called Turkish Bath. The hot room is the cure for nearly all the ills to which the flesh is heir. It causes the body to expel all the evil that is in it, and, in many cases, but, of course, not all, it will cure where drugs have failed."

"And when was this system first introduced into England ?"

"By the late Dr. Barter, with whom I associated. Mr. Urquhart first drew attention to the system when he was on Government service in Constantinople ; but Dr. Barter improved on the system, and established it in England. The first Roman bath was erected at St. Anne's, Blarney, and my own is the first, or one of the first hydropathic establishments in London. But the Irish had preceded Dr. Barter in some degree in the Middle Ages. There were baths in the old Irish feudal baronies on somewhat the same principle, though, of course, on a primitive scale. There were what may be called wells of very hot water into which the bathers plunged, and then afterwards swam in the open rivers."

"You spoke of Roman baths just now. Where they similar to Turkish baths ?"

"The so-called Turkish bath of to-day is really the bath of ancient Rome, improved of course, but still practically the same. When Rome was overthrown by the Turks in ancient times, they pillaged and destroyed everything but the old Roman baths. These they copied in Constantinople, whither they found their way to England, and were called Turkish baths. But Dr. Barter greatly improved on these. In them the heat was formed by boiling water, or by dashing water against hot bricks. This left the heated air very moist, and so destroyed, to a great extent, its beneficial qualities. The moisture acted on the pores of the skin, and prevented them from opening as they should. So Barter changed all that into the system now used. Under the old *regime* the body would not stand more than 130 degrees, while now most people can bear 300. Of course, you will understand that the baths are only one portion of the system. Diet is carefully studied, and in some instances medicine used as an auxiliary."

"How many patients have you had through your hands, Mr. Metcalfe?"

"About 4,000, many of whom were given up by the doctors. Among them were three certain cases of hydrophobia, and these were quite cured. There is one subject I should like to draw your attention to, and that is, Turkish baths for the masses. Fifteen years ago I opened mine free on two evenings a week, and they were crowded. How can you expect an ordinary workman to go to one of the existing comfortless public baths where the temperature of the air is so much less than that of the bath that, when he gets out of it he is liable to be seized with a cold and all its attendant ills? A system of Turkish Baths would pay handsomely. Charge from, say, threepence, to a shilling and you will have as many bathers from the working classes as you can accommodate. Years ago I agitated and worked for this, and have advocated it warmly in my books, but to no purpose, and so the poorer people go dirty. Far better it would be for them to be able to thoroughly cleanse their bodies regularly, and from cleanliness derive a more robust and a more certain health! Even in effete Turkey the poorest can enjoy this luxury."

"Does the profession patronise your establishment?"

"I have had nearly all the leading actors in London under treatment. I do not think, however, that persons using their voice appreciate the immense and almost immediate advantage which may be gained by our treatment. There is no means known to science which will so speedily alleviate hoarseness, and, in fact, many affections of the pulmonary organs. I could give you the names of many well-known men in London who regularly come here for treatment, and some of their cases have yielded in a remarkable brief period to the effects of the heated atmospheric treatment to which I subject them."

While thus talking we were wandering over the vast establishment (which is three houses in one), through the spacious dining-room, the cosy drawing-room, and the admirably contrived and fitted baths themselves.

"I shall be sorry to leave the old place," said Mr. Metcalfe, "but I am removing shortly to newer premises. Paddington as a residential neighbourhood has deteriorated so much."

"Well, Good-bye, Mr. Metcalfe, and thanks very much for your hydropathic lecture. I consider it very probable that anyone who places himself under your care regularly would live to be even as old as ITHURIEL."

(FROM *The Richmond and Twickenham Times*).

It is not necessary nowadays to preach the hygienic virtues of the bath. Everybody subscribes to it in principle, though everybody may not practice it. But if we need to argue less, we perhaps require to exhort more. For as our knowledge of the laws of health widens, responsibility for applying them and extending their application deepens.

Mr. Metcalfe has been preacher, and, as the old Methodists used to call it, "exhorter" too. "Essays on the Turkish Bath, Diseases of the Heart, Obesity and Atrophy"; "Claims of Hydropathy as a Remedial Agent"; "The Philosophy of Hydropathy"; "Hydropathy in Influenza and Fever Cases"; "The Theory and Practice of Hydropathy"; "Sketch of the Rise and Progress of the Turkish Bath"; and that more comprehensive work with Disraeli's famous epigram for title, "Sanitas Sanitatum et Omnia Sanitas"; all attest alike the knowledge and the zeal of the author in his favourite—may we call it?—science.

And that large and admirably equipped establishment on Richmond Hill is the outward and visible sign of the inward and intellectual conviction which has accompanied the owner from early manhood, and has been strengthened by original researches and experiments in all the years since.

For Mr. Metcalfe is now past middle age. He is of medium height, slight build, and wears generally the preoccupied look of the man immersed in intellectual pursuits. His manner is pleasantly courteous, and he brings considerable dialectical powers to bear on even an ordinary discussion. Naturally he is most at home in the subject which he has made a life-long study. It is true, as he himself remarked, that that topic is apt to run away with him when once he gets upon it.

But then Mr. Metcalfe sincerely believes in what he teaches, or rather preaches. Even his hydropathic establishment appears less as a mere business concern than as the ripe outgrowth in its

plans and arrangements of his medical studies and convictions. If he would he could add to his works a pleasantly gossipy book of the men who have come to him for treatment. Men famous in almost every department of life, in art, in letters, in science; great soldiers, great preachers, great lawyers, and—tell it not in Gath—doctors—allopaths and homœopaths—have spent days or weeks under his roof, and, we may be sure, learned all there was to be learned of the science of the bath.

And what is the *rationale* of this treatment, which is not new, which is not even modern, but was practised in ancient Rome at the acme of her greatness, in still older Persia, and—who knows?—possibly under the shadows of the Pyramids themselves. The main objects of the hot air bath are thus set forth in Mr. Metcalfe's "Essays" on the subject.

1.—To stimulate the skin, and to sweat out effete matter, and thus depurate the blood.

2.—To relax spasm or over tenacity produced by mental or bodily excitement, if such exist.

3.—To restore vigour to the body, bruised as it were or exhausted by bodily or mental labour.

4.—To draw the blood to the skin, and thus relieve internal organs of congestion.

By the operation of the sweating process, followed by washing, the skin is rendered purer than it can possibly be rendered by the hot water and soap bath. The glands of the skin are also stimulated by the hot air bath, while they are rather relaxed by the hot water bath.

The exposure of the skin to the cool fresh air, in the dressing room, after the pores have been fully opened by heat, is extremely exhilarating, and tonic in its action; and most probably the direct action of the light, and oxygen of the air, have, on the freely-opened skin, further beneficial effects.

The skin is so stimulated by the hot air that almost any degree of cold can be borne for some time afterwards, not only without any chance of "catching cold," but with positive pleasure. The writer of this has sat, after a bath, in a garden with his skin freely exposed for half-an-hour to the frosty wind of a January morning, and with positive pleasure and benefit.

Further we are told that "The Turkish Bath quiets the system and makes digestion easy. In organic disease of the heart, the bath, by surcharging the skin with blood and so largely exposing it to the atmosphere, will more freely oxygenate it than any amount of exercise which it would be prudent to take, considering that the patient is probably hide-bound as well as heart-bound, and can perspire only with an amount of effort which would be highly dangerous, and would result, perhaps, in sudden death.

"I maintain persons can avail themselves of the benefits of the Turkish bath with, to say the least, as little risk as attends ordinary medicinal treatment, and I believe with a very great deal less; and I am certain, from all I have seen of its effects in all forms of heart disease, that for curative or palliative efficacy, and for safety in its administration, hot air is infinitely to be preferred to most of the allopathic medicaments.

"The skin has been fitted by nature to be the great medium for transmitting impressions to the brain, the spinal cord, and viscera, constituting as it does a great electric surface, and as an organ of elimination, it can be utilized to a greater extent than any other organ in the body, and with greater safety. The action of the skin is of far more importance to the animal economy than the majority of mankind are aware of. Nine-tenths of the disease that affects humanity may be traced to checked perspiration.

"The first thing then the hydropathic practitioner will do, is to aid and facilitate the natural processes, both normal and extraordinary, by calling into play all natural agencies surrounding the patient with every condition conservative and promotive of physiological action.

"The object of any kind of treatment must be generally to strengthen the power of nature to shake off the disease from the vital organs. The water cure is a system of therapeutic art based on one principal—the imitation of nature. The means it employs do not force or thwart the natural processes, but work by and through them, and are all fraught with kindness to the animal organisation.

"Briefly stated, the water cure measures employed act directly on the nerves, and those control the circulation, by waste, supply, action, and re-action, by means of which alone can nature rid the vital organs of that which oppresses them and threatens their destruction. But the measures are not as some suppose, uniform in their effect. Thus:—

1. The invalid may, according to the indications of the case, be plied with cool applications in a variety of ways to give tone and keep the skin charged with blood.

2. With wet-sheet packings, &c., to allay nervous irritability and for sedative purposes.

3. With vapour and hot water baths for stimulation of the circulation, and depuration of the blood.

"With regard to cool applications to the skin, their philosophy is as follows. The sudden contact gives an immediate impulse to the cutaneous nerves, which, being propagated to their central masses within the ganglia of the viscera, are thereby roused to activity. The impulse given directly to the ganglionic or nutritive nerves is aided by the indirect sympathetic action of the cerebro-spinal or animal nerves, which also thickly distribute themselves

throughout the texture of the skin. These being also beneficially acted on by the applications to the surfaces, communicate the stimulus they receive to the viscera, which are thus acted on by both sets of nerves. The effect of this double nervous impulse is to send an electric thrill through the cords from the circumference to the centre of the great nervous system. The whole is convulsed and roused to activity. Now, the nerves of which we speak are to be found wherever there is a blood-vessel, and wherever the nutritive process is carried on. Every organ and part of an organ is supplied with them, and no organ can be diseased without a morbid action on the part of the organic nerves which permeate it. These nerves control the blood-vessels, and it is on the state of the blood-vessels of a part that its condition of health or disease depends. When they lose tone and cannot propel their contents as is necessary, the blood stagnates in them, they become gorged and distended, and diseased action is set up. The part gorged has, of course, too much blood, and this implies that some other part has too little. Thus, for example, when the internal parts are oppressed with blood, what is the skin's condition? One of anæmia or bloodlessness. The blood, which should by its presence impart to it colour, warmth, and vitality, is locked up in the interior. There it produces irritation, inflammation, oppression, congestion, or obstruction. Examples of this are every day met with by the practitioner.

"It has been stated that the effect of the impact of cool or cold water on the skin is at once to *tonify* the cutaneous nerves, and as these control the capillary blood-vessels, which spread their network throughout the skin's texture as thickly as do the nerves, the latter are speedily constricted and emptied of blood. The blood thus driven from the capillaries on the surface retreats on the vital organs, but these having been roused by the impulse communicated to their nutritive nerves, as well as by the sudden invasion of blood from the surface, will not allow the interior vessels to retain what is thus forced into them, but re-act and send the blood back to whence it came, where the emptied capillaries are ready to receive it, together with the additions which it brings with it. By the continued repetition of this process the blood is at length in due measure fixed on the surface, and as a consequence the internal difficulty is removed."

Mr. Metcalfe has had considerable experience in treating influenza by the water treatment, he was interviewed by the *Pall Mall Gazette*, and the following is an extract dated *January 21st, 1892*:—

"You have, I think, Mr. Metcalfe, treated with great success a number of cases of influenza?" - "Yes, I have. Several of them, too, were extremely critical cases. Perhaps I had better let you see the copy of a letter I wrote to the father of three

children I treated, describing the cases ; and then you can ask me any questions you like."

The letter was in reply to one asking for information about the cases, the father of the children being a prominent member of the School Board for London. It stated that the writer (Mr. Metcalfe) had not in the whole course of his experience "seen precisely analogous cases, that is, in the sudden development of a high temperature of the body with feverish skin, followed by a similarly sudden disappearance after forty-eight hours' treatment."

It then went on to describe the treatment of the first boy (six years of age). "On examining him I found his pulse was very rapid, while the temperature of his body was 102 to 103 degrees. I had him put to bed at once and packed in a wet sheet. After half an hour, the feverishness continuing, he was re-packed in a second sheet, after which the temperature and pulse were still high, though somewhat reduced. During the packings he was given frequent sips of cold water, and a wet towel placed on his head. I then placed him in a third sheet, after which the pulsation and the temperature were considerably diminished, but the feet were cold and the head hot. On removing this sheet I had a hot bottle placed to his feet, a wet bandage round the trunk, and kept the wet towel to his head. He took a little light nourishment, milk, etc., and fell asleep. By morning the fever had subsided, and the temperature was again normal.

"The younger boy (five years old), who came the day after, had apparently all the symptoms of his brother, except that he seemed more sickly, as though the complaint had seized hold of him more firmly. I at once resorted to the pack. The only difference was that the younger one vomited whatever was given to him, so we gave him nothing but water to drink until the fever was subdued by the packing.

"The third child (aged four years) exhibited all the symptoms of the other two. When he arrived he was very sick, head hot, cheeks flushed, pulse high, and temperature of body 103 degrees. He was subjected to the same treatment as his brothers: the symptoms abated in like manner, and he has since made as rapid progress as the other two patients. At first I had the idea that the children were sickening for some zymotic trouble, or had taken something that had disagreed with them; but after the fever had subsided, there being no evidence of other complications, I arrived at the conclusion that they must be cases of influenza, especially after comparing notes with medical men who had been treating children suffering from that complaint. I had previously treated hydropathically some cases of unmistakable influenza in adults, in two of which (a lady and a gentleman) the symptoms were accompanied with spasms of a most violent nature and fever; and although successful in combating the disease and

ameliorating the symptoms by hot fomentations, mustard applications, and wet-sheet packings yet the succeeding prostration was something marvellous. In the case of your boys, however, immediately the fever abated (though still a little weak), they seemed to suffer very little inconvenience."

"What was the duration of the successive packs?"

"From twenty to thirty minutes. The sheets used should be of thin linen (old bed linen is the best), and must be wrung very tightly out of tepid or cold water. Two or three blankets should be laid on the couch or bed; the wet sheet is placed over them, and the patient laid in it and wrapped tightly up with it, the whole of the body being covered except the head. Then the blankets should be tightly drawn across him one after another and tucked in. This to prevent evaporation. Then a hot bottle should be put to the feet and a wet cloth to the head, covered by a dry one. The patient will become so hot in from twenty to thirty minutes that he will want to be taken out."

"What is the next operation?"

"To take him out and transfer him at once into another wet sheet, which should be had in readiness, care being taken to avoid exposure as much as possible. Then, after twenty or thirty minutes, the pack should be repeated a third time. Generally at the end of the third pack the heat has been so reduced that the patient will feel sleepy. Then he should be taken out, rubbed briskly with a towel, and put to bed between blankets, with a hot bottle to the feet, a wet towel to the head, and a wet compress about the stomach. In nearly all the cases of influenza I have treated the patients have gone to sleep at this stage, and slept from four to eight hours, waking up with a normal temperature. During the packing the patient may drink barley water or simple water; when convalescent, mutton or chicken broth may be given, and so eased into his usual diet."

"And is this a treatment that may be administered to all?"

"Yes, to all; and the beauty of it is that it may be administered by almost anyone. All that is needful is a little common-sense, precision and resolution."

"Would you recommend this treatment for home use then?"

"Certainly. All that is required are a couple of sheets, two or three blankets, and some water. If necessary it can be administered under a doctor's eye, and it need not interfere with the application of other remedies. If properly applied the treatment is certain of success. I am confident that if medical men only knew the simple power of the pack they would adopt it at once."

INTRODUCTION.—II.

THE following miscellanea need no comment. They have appeared, some in the form of pamphlets, others in various publications, and having had their thousands of readers, have had not a little influence in disseminating a knowledge of Hydropathy and Hygiene amongst the people. But that is no reason why, like Oliver Cromwell's silver statuettes of the Apostles, they should not be collected together and sent about the world doing good in another form.

They are full of good things, the result of Mr. METCALFE'S ripened experience in the study and cure of disease.

With these few remarks I commend them to all as replete with good sense and practical wisdom on the subject of the preserving and restoration of health.

THE CLAIMS OF HYDROPATHY AS A REMEDIAL AGENT.

The position which Hydropathy occupies in the medical art, claims attention in the literary world. This hygienic system of dealing with disease compares most favourably with allopathic and homœopathic methods. There are thousands of now hale English men and women who have been cured of their difficulties, who can testify to the efficacy of Hydropathy when other means had failed. From various reasons, Hydropathy has not possessed in England as worthy an organ for representing its merits as allopathy and homœopathy; consequently the public in general are comparatively ignorant as to its peculiar advantages. Hence, I am sure the following article by Mr. Metcalfe, which appeared in a magazine some time ago, will be read with interest.

"Hydropathy!" I think I hear someone exclaim, "what is that? Oh! I see, the water cure, as they call it; but catch me having anything to do with it. It is such a nonsensical and troublesome affair; imposes such restraints on one's habits, such strict rules as to diet, drink, exercise, and what not; takes up such a time; and subjects one to such hardships, even if it does not kill one outright, that I prefer to die rather than submit to it. Besides, our doctor says that though it does good in some cases, it is not suitable in my case or that of my family, and if adopted would probably kill us all in less than no time."

Gently, my good friend, all such talk is sheer nonsense. You speak thus of the water cure because you know little or nothing about it. You have taken your cue from some wiseacres from the medical world, who evidently do not employ it in their practice. Why they do not do so can only be explained by themselves. Have they ever read the late Sir John Forbes's* writings? Just hear what that great authority said forty years ago: "Many advantages would result from the subject being taken up by the medical profession. The evils and dangers of quackery would at once be removed from it, and its real merits would soon be known. The tonic portion of its measures might then be employed in conjunction with special remedies of more activity, which, no doubt, would often prove exceedingly beneficial."

* The Editor of the *British and Foreign Medical Review*.

Such is the path of duty pointed out to the medical profession by one of the most distinguished of its lights. Why will not its members walk in it? It cannot be because the water treatment has failed to effect cures, *for that nobody can deny*. It must just be because it gives too much trouble. But, intelligent reader, why not investigate the subject for yourself? All your false notions are mere poetic imaginings. Hydropathy is not only the earliest and the most natural system of healing, but the most simple, the most pleasant, and one of the most effective.

That the preservation or recovery of health by means of hydro-therapeutics involves some trouble and the sacrifice of a little time I do not dispute. My readers will know the value of health, and also how many things in these trying times tend to deteriorate and destroy it. You grant that means ought to be used to preserve so great a blessing when enjoyed, and to recover it when lost. Now, in matters pertaining to health, as to everything else worth having, nothing of real and permanent value can be gained without some exertion and sacrifice. And as for the trouble and loss of time attendant upon the regime of hydro-therapeutics, how come they to assume in your eyes such formidable dimensions? Simply because the system has not been duly appreciated by the community at large. Had it been so, all our public hospitals would long ere this have been furnished with every convenience for its appliances; and as a consequence every private dwelling would have its bath-room, with the apparatus necessary for ordinary hydropathic treatment. Apart from its efficacy as a remedial agent, a very little treatment suffices as a prophylactic, viz., to counteract as they arise the daily effects of pursuits unfavourable to health, whether active or sedentary; and even actual disease, if taken early, is comparatively easy to be grappled with. It is said that the water cure is sometimes slow in its operations; why? simply because it is not resorted to until long after all other means have failed; no wonder, therefore, that, with such leeway to make up, the cure is tedious. But let Hydropathy enjoy the same advantages as other systems, and it will be found the surest, quickest, as well as the most natural remedy for the majority of diseases. Where none of the essentials to health have been attended to, and the system has got into a thoroughly disorganised state, disease will not only recur frequently, but be tedious and difficult to treat. This point has been well set forth by Dr. Guy, in that standard medical work, Hooper's "Physician's Vade Mecum":—

"Among the habits of life that most militate against health, and which, so long as they remain unchanged, tend to counteract the effects of the best medical treatment, the most important are sloth, luxury, dissipation, indulgence in the pleasures of the table, the abuse of spirituous liquors, opium, and tobacco, irregularity in

the time of taking meals and rest, a want of personal cleanliness.

"A want of personal cleanliness is more frequently chargeable against persons of education than might at first be expected. The practice of daily ablution of the whole body is observed by a comparatively small number of persons, but it is one which ought to be insisted on as an excellent tonic, as tending to guard the body against catching cold, and as keeping the skin in a proper state for the performance of its functions. The occasional use of the warm bath to ensure a more perfect cleansing of the skin is also to be recommended, and the practice of daily ablution of cold water, followed by friction with a rough towel, or hair-gloves, or the flesh-brush, is often of the greatest benefit to those who have an hereditary predisposition to consumption, or who have already manifested a tendency to that disease."

Now this is common sense. Yet people who have long persisted in habits which "tend to counteract the effect of the best medical treatment," and who have been accustomed to stave off immediate bad consequences by pernicious remedies, expect that their complicated maladies should be at once removed by Hydropathy as by a conjuror's wand. How can the work of years be undone in a day in the complicated and delicate organisation of the human body? Nature will not let off her prodigals as easily as all that, though she grudges not to put forth her benign healing powers in the case of those who return to sincere obedience to her laws; but even these she will cause to do penance for awhile.

It is quite possible to make the hydropathic treatment both disagreeable and dangerous, as any system can be made disagreeable and dangerous, by bungling and incompetency. Well directed, the treatment is at all times safe, and to most patients pleasant, but as the amelioration of human suffering is the object in view, whatever is incompatible with that object is of course interdicted.

There is no uncalled-for austerity or undue violation of the natural healthy appetites and feelings. Hydropathic regime is that of common sense, what Nature herself desires, what physicians of all schools agree upon, however lax some may be in enforcing their adoption. Comfortable but not too warm clothing, an abundant supply of wholesome, nutritious and palatable food, pure water to drink, exercise sufficient to strengthen but not to fatigue, pure air, regular hours of rest and cheerful society, are all so evidently agreeable to man's nature and constitution, that no one would possibly dispute their value.

As to alcoholic beverages in general, the hydropathist does not fanatically interdict their use from prejudiced motives only, but objects to them on general principles as being injurious to human life and a curse to society at large. Persons often resort to the water-cure who have stimulated themselves to the verge of death; and to these he forbids alcohol, because otherwise they would not

have the ghost of a chance of getting well. Constant internal stimulants have destroyed their appetites for plain, nutritious food, and to restore the appetite stimulants must be forbidden.

The external applications comprised in the hydropathic *regime* has the advantage of substituting a wholesome and natural stimulant in place of the artificial and injurious one withdrawn (a benefit not to be obtained within the domain of drug medication) —viz., the daily packs, hot-air baths, frictions, etc., which effectively supply the place of wine, beer, and spirits, and instead of destroying the appetite for food, stimulate and increase it. Under their application, health, and vivacity return to the shattered invalid, and by-and-by he has as little desire to return to the use of artificial stimulants as his “water-doctor” has to prescribe them.

In short, in all that relates to habits, food, drink, exercise, clothing, rest, and general mode of health, there is substantial agreement among all sensible and honest practitioners of the healing art as to what is conducive to health and what is not. It is because Nature herself has indicated the course of life that favours health and longevity that this agreement exists, and no one is justified in blaming the hydropathist or physician for insisting on these natural laws. If the former insists more strongly on such obedience, it is because he sees more plainly their good results.

I can quite understand my reader being in a quandary, and saying, granting the appliances are useful for purposes of health and cleanliness, it is surely a stretch of imagination to suppose that one can foresee such a variety of curative virtues as they are said to possess. The reply is, anyone conversant with the details of Hydropathy will repudiate the idea that there is any exaggeration in such claims; there is in the water treatment a whole therapeutic world, with resources to meet nearly every form of disease and every variety of constitutional idiosyncrasy, as has been abundantly proved by thousands of patients in every part of the United Kingdom.

Some people cannot get rid of the idea that Hydropathy means indiscriminate ducking in cold water, and that such is the system pursued at all times and all seasons in Hydropathic practice. Were this the case, it would assuredly make the water-cure an affair too formidable for ordinary mortals to encounter. But water can be heated, a fact which would seem to have slipped from the memory of some minds. In hydro-therapeutics water is applied to the body not only in an infinite variety of ways, but at every conceivable temperature, from the freezing point upwards; and it is by means of the modifications made in its temperature and the manner of application, that it becomes of curative efficacy in such a variety of diseases. Each patient is treated according to his strength and the nature of his complaint; and the treatment is

varied from time to time, as new symptoms manifest themselves. There is nothing of haphazard about such a procedure, as certain well-defined means are employed to accomplish certain desired ends. A skilled Hydropathic practitioner knows what he is about when he prescribes this and forbids that. He acts neither from caprice nor to throw dust into people's eyes. He selects his particular remedies after a careful consideration of the peculiar state and necessities of each patient.

As an illustration of this, let me adduce the case of the skilled gardener, who, dealing with an infinite variety of plants, succeeds in bringing them all to perfection—the strong hardy ones he places in unsheltered situations, where they are exposed to all the severities of the weather—they thrive under this treatment because Nature has endowed them with strength to resist, and even to profit by, all the action of the elements. The delicate and fragile ones, on the other hand, are protected from the cold blast, only exposed to the tender sunshine; while the tender exotic is snugly housed in the greenhouse or conservatory. Regard is thus had to the nature and capabilities of each plant, because, though all derive life and vigour from the same elements, they severally do so with important modifications. Now, in dealing with his patients, the hydropathist acts in a way exactly analogous to that of the gardener, for, in respect of vital stamina, plants do not differ more from each other than do the human beings who seek health from remedial agents. The same degree of treatment can no more be applied to all patients without injury, than the same degree of exposure can be given to all plants, so it is the duty of the practitioner to know how to meet the exigency of each case. The object of doctor and gardener is to develop a healthy vitality in their respective *protégés*, and for this end to know well—*quid ferre recusent, quid valeant humeri*—what they can and what they cannot bear.

How the great agencies which sustain the vitality of plants, sustain the vitality of animal life likewise; and how these agencies, simple and natural, may be directed by skill and intelligence to the prevention and cure of all. Deviations from a healthy standard whether in organic or inorganic life, forms an interesting subject of study, deserving of the attention of everyone. But especially ought every person on whom the question is forced, How am I to recover health? To study the facts and the principles of hydrotherapeutics. I am far from advocating a blind submission to any system, as such unreasoning acceptance, indeed, is reprehensible. There is no mystery about Hydropathy; it courts inquiry and investigation, and those who believe in it as a class, ought to understand the *rationale* of every appliance. Indeed, the success of the treatment must to a great extent turn upon this. Patients who cannot see the use of this or that measure, who are ever being

scared by one fancy or another, not only give a good deal of needless trouble and anxiety, but are not likely to do the system credit by accomplishing a speedy recovery. Whereas, when they comprehend the why and wherefore of everything that is done, they can cheerfully co-operate with their adviser, and reap the full benefit of his skill and experience.

It is not laying too great a burden on the non-professional public when the necessity of attentively studying this subject is insisted on, since the science of hydro-therapeutics is as simple and easy of comprehension as it is interesting and true. It does not appeal to an ignorant awe of the mysterious and unknown, but declares plainly that the powers of Nature can cure disease. And as for the appliances which will best call forth these powers, and excite their activity so as to combat disease, they are simply cold and heat, water and air, food and exercise, *faith and hope*. "Multum in parvo."

While the allopath encounters disease by producing a counter-irritation which shall divert morbid action from the affected part, and the homœopathist by specifics designed to act immediately on the symptoms of disease, the hydropathist attacks the foe in whatever part of the body he has effected a lodgment by improving the circulation over the whole body, and thus raising the tone of the system in general, enabling nature to put forth her powers to eject the enemy.

Of course, where local appliances can lend aid he employs them; but the constitutional vital force is the fulcrum on which he plants his lever, and moves the incubus of disease from its place.

I cannot perhaps do better than by quoting an able *resume* of common objections to the water-cure, and the answers thereto from a popular treatise on the subject.

Objection 1. Water treatment is too slow for dangerous and violent diseases.

Answer. It is the *most speedy* method of curing *diseases*.

2. It is too severe for feeble persons.

A. It is the mildest plan of treatment ever invented.

3. It is troublesome and too much like work.

A. Health is worth labouring for.

4. Pale, weak, and bloodless invalids cannot bear *cold* water.

A. Nor should they take it. Such persons need warm and tepid applications.

5. It shocks the system and disturbs the circulation, thus conducing to organic disease of the heart.

A. Nonsense. If too cold or too severe processes are employed, the results will be internal congestion and debility. But all this is unnecessary.

6. Cold applications to inflamed, gouty, and rheumatic joints tend to *drive the disease inward upon the vital organs*.

A. Nonsense again. They are just the things to keep it on the surface. Gouty and rheumatic affections are never struck in upon the brain, heart, or lungs, except in persons who have been reduced by bleeding or poisoned by allopathic drugging.

7. In skin diseases, the application of cold water tends to *repel the bad humours* to the internal organs.

A. Not so. Humours of all kinds naturally tend to the surface, and cold applications increase such determination whenever there is a preternatural heat. When repelled from the surface, it is always by depleting processes.

8. Some persons have tried the wet-sheet pack, shower-bath, &c., with manifest injury. *The various appliances did not re-act*.

A. Very true. But it was malpractice with them. Either the patients were not in a condition for such measures, or the practitioner who advised them did not understand his profession.

9. The dietary—mostly vegetable—is too low and meagre to suit all constitutions.

A. It is the *most nourishing* diet that can be found (though personally I do not prohibit fish and flesh in moderation).

10. Persons who live according to your system until they get well, are obliged to *continue the system*, or they are liable to get sick again.

A. And so they should. A reformed drunkard can remain sober no longer than he lets intoxicating drinks alone. Our system does not propose to *avoid the penalties* of disobedience to Nature's laws. It is predicted in *obedience* to them.

11. It deprives persons of many good things to which they are *accustomed*.

A. Habit is a poor authority for what is good or bad. Our system prohibits nothing that is intrinsically good; but it opposes all *false and morbid appetites*—everything, in short, which is in itself a cause of disease.

In my previous remarks I have referred more particularly to the objections raised against hydropathy, endeavouring at the same time to remove the popular ignorance on the subject. I now propose to discourse on the philosophy of the system, and to indicate briefly the *modus operandi* of the hydropathic appliances in the treatment of disease. In order to appreciate the *rationale* of hydropathic treatment, it will be convenient to observe that the human body is in a perpetual state of change, so that about once in every seven years the whole of its complicated structure is supposed to be renewed.

At each moment of life, in the animal organism, a continual change of matter, more or less accelerated by external influences, is going on; a part of the structure is transformed into un-

organised matter, loses its condition of life, and is again renewed. Physiology has sufficiently decisive grounds for the opinion that every motion, every manifestation of force, is the result of a transformation of the structure or of its substance; that every conception, every mental affection, every sensation, is accompanied by a change in the composition of the substance of the brain. The lungs, the kidneys, the bowels, and especially the skin, are the channels by which this extraordinary transmutation is effected. It is when this process of renewal is in some way deranged that a state is induced which is called disease. There is irregular distribution of the fluids, or something is retained which ought to be thrown out by the excretory organs—the waste exceeds the supply, or the supply exceeds the waste, and hence a morbid state of body, which declares itself in a great variety of ways by inward or outward signs, whose locality and character give the name to the disease. Thus it will be seen that these morbid conditions of the body hydropathic measures aid nature to right her various processes, so that all her functions, on which the health of the body depend, shall go on in her own way, and fulfil all her own objects; that digestion, absorption, assimilation, circulation, respiration and excretion, shall severally perform their parts effectively, and all morbid tendencies be thus checked, and finally destroyed, is the object of hydro-therapeutics, or the water-cure.

The various appliances accelerate the waste and repair of the system by stimulating the activity of the skin—the chief of the excretory organs, and on whose healthful action depends that of all the rest. Nature exerts herself to make the process of repair keep pace with that of waste; the appetite is increased, more food is taken and digested, new blood is formed, and thus in the process there is literally formed what is more or less a new man.

Liebig observes that “the animal body is a heated mass, which bears the same relation to surrounding objects as any other heated mass. It receives heat when the surrounding objects are hotter, it loses heat when they are colder than itself.”

We know that the rapidity of cooling increases with the difference between the temperature of the heated body and that of the surrounding medium; that is, the shorter the time required for the cooling of the heated body.

How unequal, then, must be the loss of heat in a man at Palermo, where the external temperature is nearly equal to that of the body, and in the Polar regions, where the external temperature is from 70 degrees to 90 lower.

Yet, notwithstanding this extremely unequal loss of heat, experience has shown that the blood of an inhabitant of the Arctic circle has a temperature as high as that of a native of the South.

This fact, when its true significance is perceived, proves that the heat given off to the surrounding medium is restored within

the body with great rapidity, but this compensation takes place more rapidly in winter than in summer, at the pole than at the equator.

Now, in different climates the quantity of oxygen introduced into the system by respiration, as has been already shown, varies according to the temperature of the external air; the quantity of inspired oxygen increases with the loss of heat by external cooling, and the quantity of carbon or hydrogen necessary to combine with this oxygen must be increased in the same ratio.

It is evident that the supply of the heat lost by cooling is effected by the mutual action of the elements of the food and the inspired oxygen, and to make use of a familiar, but not on that account a less just illustration, the animal body acts, in this respect, as a furnace, which we supply with fuel. It signifies nothing what intermediate forms food may assume, what changes it may undergo in the body, the last change is uniformly the conversion of its carbonic acid and of its hydrogen into water; the unassimilated nitrogen of the food, along with the unburned or un-oxygenized carbon, is expelled in the urine or in the solid excrement. In order to keep up in the furnace a constant temperature, we must vary the supply of fuel according to the external atmosphere, that is, according to the supply of oxygen.

In the animal body the food is the fuel: with a proper supply of oxygen we obtain the heat given out during its oxidation or combustion. In winter, when we take exercise in a cold atmosphere, and when, consequently, the amount of inspired oxygen increases, the necessity of food containing carbon and hydrogen increases in the same ratio; and by gratifying the appetite thus excited, we obtain the most efficient protection against the piercing cold.

Everyone knows how a cold bath judiciously taken *braces* the nerves; how a walk over a hilly country swept by a keen breeze does the same, and how the appetite is increased by either proceeding. In hot weather one cannot eat and digest as in cold weather, nor can one enjoy the same vigour and activity of body when travelling over the hot plains of India as over the mountains of Norway. So that cold invigorates the nervous system and increases the appetite, and by its influence the processes of waste and repair are quickened into activity.

Now it is by accelerating the processes of waste and repair that the water-cure eliminates disease from the body, and builds up new and healthy tissues in the place of those that have become morbid, which can be done by abstracting heat directly by means of cold applications, or by forcing perspiration through the agency of hot-air baths. Which of those processes should be resorted to, whether one or both, to what extent they severally should be carried, whether applied generally or locally, how far the patient

is to be stimulated, how far soothed and tranquillized, and many other points of detail involving questions of temperature, duration, locality, and power in the several appliances, must depend on the nature of the case and the judgment of the practitioner.

But let it be borne in mind that in all systems there exists a liability to error and mistake, as everything genuine has its "spurious imitations," and hydro-therapeutics form no exception to this rule, but its appliances are sometimes overdone or underdone. Its patients may suffer through errors of excess or defect, either on their own part or on the part of the practitioner by which I mean a too indiscriminate practice of hydropathy, an employment of its processes with little or no regard to the amount of vital power possessed by the patient. It is essential to a successful issue in the treatment that the practitioner should have a thorough practical knowledge of the various appliances. It would be presumptuous on my part to attempt to practise homœopathy or allopathy, nor could I do it with the same results as a man who had been studying and practising either system all his life. The same is true of hydropathy; it is not a thing that can be taken up without study and preparation,—experience and observation are necessary, and nothing but these can acquaint the practitioner with its action on the body.

More common, however, than an unduly vigorous treatment, at least at the leading water-cure establishments, and more fatal to the reputation of hydropathists, is a namby-pamby style of treatment, a pursuance of measures so *very* mild and so *very* agreeable, that the disease with which the patient is affected is often allowed to remain *in statu quo*.

Carlyle tells us that "Revolutions are not made with rose-water;" and the revolution that must sometimes be excited in a case of chronic disease ere the body can get quit of morbid elements, is not to be brought about by a few weeks' pleasurable sojourn at a fashionable hydropathic resort.

I think it would be convenient here to point out to my readers the comparative merits of allopathic and hydropathic remedies, giving them as it were a kind of birds'-eye view of their respective medical actions on the body. I would observe that it is generally admitted that within the domain of allopathic practice there has been since the time of Galen little or no progress. Of course my remarks do not refer to surgery. We have a good many high authorities upon the practice of physic, but really their various deductions are pretty much the same. Amidst numerous medical testimonies, I think perhaps the most concise view of the medical art is contained in the work by that high authority the late Sir John Forbes, who, having been for many years the editor of the *British and Foreign Medical Review*, had advantages that few possessed, of knowing the various grades of thought on medical

science by the contributions sent to him for that journal, and it is but right to say that he took a very independent position, and boldly reviewed works on the subject of Homœopathy and Hydro-
pathy, and in consequence brought upon himself very unjust criticisms from his medical brethren.

Seeing that he was a man of an unprejudiced turn of mind as well as a profound thinker and scholar, I do not think I can do better than quote his opinion as to the position of our remedial measures which is as following:—

1. Regimenal means.
2. Physical means.
3. Pharmaceutical means.

Under the first head to which he gives preference, he includes much more than is generally included in the term Regimen. It may indeed, he says, be said to include everything capable of affecting in any way the living body.

The Physical means may be said to include all the external applications and agencies, such as baths, exercise, air, clothing, etc.

The Pharmaceutical means, classed as of least importance, he speaks of as a *dernier ressort*, as having superseded the plan of almost all other remedies in the medical practice, so that, according to the vulgar notion, it would appear that the function of the physician consisted in little else than prescribing drugs, and as a matter of course the function of the patient consisted in little else than taking them. What is meant to infer here is that dietetics and physical means are of very little importance with the allopathic practitioner. There can be no doubt that the reforms brought about by the introduction of homœopathy and hydropathy have to some extent drawn greater attention to dietetics in the treatment of disease; but it is an undisguised fact that the medical teaching of the allopathic schools is a long way behind that of the advanced thinkers of the present day.

As to the most potent instruments of the medical art, Sir John Forbes says:

“The water-cure is a stomachic, since it invariably increases the appetite.

“It is a *local calefacient* in the wet sheet covered by dry blankets and macintosh.

“It is derivative; cold friction at one part by exciting increased action there, producing corresponding diminution elsewhere, the compress frequently acting, if not like a blister, at least like a mustard poultice.

“It is a local as well as a general counter-irritant.

“It is essentially alterative in the continued renewal of old matter; its renewal is shown in the maintenance of the same weight.

An important element in hydropathic measures is that almost all its remedies are applied to the surface. While one of the most formidable difficulties with which the allopathic practitioner has to contend with is that nearly all his remedies have to pass through one channel, namely, the stomach and bowels, which has a very pernicious effect upon these organs.

The physiological feature of hydropathy is the number of coolings. The generation of caloric has been traced to its right source. It results from the using up of waste matter, which, by accumulation would become injurious to the body.

The following is a summary of the supposed medical actions of hydropathic and allopathic remedies:—

Allopathic Alteratives.—Mercury, iodine potassæ hydroid, antimony, sarsaparilla.

Hydropathic Alteratives consist in wet sheet-packings, local and general, hot-air, cold and cool affusions.

Allopathic Anti-acids.—Soda, potash, chalk, magnesia.

Hydropathy has no direct anti-acids save cold water. Acidity is but an effect or symptom of digestive disorder. This system, therefore, attacks and destroys the cause of acidity, and so removes its effects.

Allopathic Anti-phlogistics.—Alkalies and neutral salts, calomel, antimony, venesection, leeches.

Hydropathic Anti-phlogistics consist in wet-sheet packings of short duration, tepid baths, ablutions, hot fomentations, fever compresses, and long-continued sitz baths.

Hydropathic Anti-spasmodics.—In chronic cases, hot fomentations, cold ablutions, hot spinal ablutions, wet packings, covered compresses, wet friction, pail douches. In acute cases, compresses, warm baths, fomentations, flannel rung out of hot mustard and water or chili paste.

Allopathic Anodynes.—White poppy, lactuca, humulus.

Hydropathic Anodynes.—For nerve pain, wet friction and ablution, streams of water, douchings, dripping sheets, and half-baths, wet packing and ablution, hot mustard spinal washes, followed by gradual pail douches, wet compress to liver and spine, with sweating baths. Diet chiefly vegetable, but nutritious.

Allopathic Diaphoretics.—Antimonial, ipecacuanha, neutral salts, liq. ammon. acet., Dover's powder.

Hydropathic Diaphoretics.—Cold-water drinks, hot ditto, wet-sheet packings, dripping sheets, cooling compresses, hot-air bath, with or without moisture.

Counter-irritants and Derivatives.—In medicine external appliances, issues and setons, blisters, moxas, stimulant embrocations, cataplasms, and other irritants, mustard cataplasms to the feet in fevers, application of leeches to distant parts, &c. There is no remedy in medicine that can act as a *general derivative*, except the warm bath with mustard.

Hydropathic counter-irritants and derivatives consist in mustard sheet-packs, chillis, and Cootes's acetic acid rubbed into the body, mustard rubbed into the parts affected, hot brine, local and general warm baths, hot air or sulphur, vapour baths with cold or cool affusions.

Allopathic Diuretics.—Squills, digitalis, nitric æther, acetate of potash, broom-tops, dandelion, mercury.

Hydropathic Diuretics.—Copious water-drinking; hot-air sitz baths, wet packing, &c. No remedies act more powerfully on the kidneys without injury. Copious drinking of barley water is good.

Allopathic Expectorants.—Ipecacuanha, mercury, antimonials, squills, balsam of tolu.

Hydropathic Expectorants.—Mild ablution of cold or tepid water-chest-washings graduated according to debility of the case, chest compresses worn constantly. Wet-sheet packing, mustard trunk packing, mild Turkish baths, liquid sulphur shallow bath, wet-hand rubbing, and tepid sitz-baths.

Allopathic Aperients, Cathartics.—Manna, magnesia, rhubarb, confection of senna, sulphur, sulphate of magnesia, calomel, colocynth.

Hydropathic Aperients.—Water-drinking, water enemas, wet covered abdominal or spino-abdominal compresses, and abdominal washings. *Sitz bath, pail douche on the spine and abdomen*, wet sheet packings and douching the abdomen, shallow baths, &c. *Exercise* regularly taken, diet—brown bread and oatmeal, ripe fruits, &c.

Allopathic Narcotics.—Opium, belladonna, conium, hyoscyamus

Hydropathic Narcotics.—No remedy sooner procures sleep than the wet-sheet packing and hot fomentations to the stomach and bowels. The tepid sitz bath or general ablution at bedtime is an admirable sleep producer.

Allopathic Tonics.—Bark, iron, quinine, gentian, columba, mineral acids.

Hydropathic Tonics.—Pure cold water is the greatest tonic to the stomach that can be taken. It dissolves obstacles in the intestine, and gives tone; water being easily absorbed, it easily enters into the blood, and rapidly dissolves foreign matter, which is readily carried off by the excretory organs. No remedies are equal to cool or cold baths as tonics in chronic diseases and general debility. If judiciously prescribed and employed they never disagree. They act on the whole body, producing increased vital energy in every function and entire renewal of the whole man to the extent of which the constitutional powers are capable.

Such is a comparative view of the leading hydropathic and allopathic methods, from a study of which the reader will be able to form his own opinion as to their respective merits as medical agents to meet the exigency of human sufferings.

The above brief sketch of the medical actions of the remedies of the two systems has been formulated by competent authorities as the result of practical experience. Though the precise actions must be a matter of conjecture, inasmuch as the remedies are generally administered as compounds, and through those compounds certain medical results are effected, yet to accurately state which of them has had the most to do with accomplishing the results is a mere supposition. In treating disease hydropathically, different applications are used as well as two or three appliances together, hence it is difficult to ascertain the extent of the action of one particular appliance over the other. I am indebted for the support of my conclusions on the medical action of the different appliances to the late Doctors Johnson, Gully, Wilson, and also to Dr. Goodman, of Southport, the best authorities in England on the subject. Seeing that Hydropathy has only been in existence some 50 years, and that the medical results we have obtained are from private practice, not having had the opportunity of hospital practice, where the treatment would be carried out with a great degree of method as compared with private practice, therefore, under the circumstances, there is some excuse for the Hydropathic practitioner not being so well posted up in the medical results as our allopathic friends. With another 30 or 40 years' experience, however, it is to be hoped the results will be different, when we shall have had a better opportunity of acquiring hospital experience of treating disease when the medical results will be more perfected. The same excuse, however, should not be chargeable to the allopathic system, it having been in existence for hundreds of years. Yet, it is a curious fact that even they know very little more about the general medical action of the different drugs in the human body than they did in the time of Hippocrates and Galen, and this view is based upon the opinions of the greatest authority in the allopathic practice. This has not been for the want of opportunities of scientific researches, because we have simply been deluged with thousands of volumes on the practice of physic propounding all kinds of theories. One can only account for these barren results by the fact that it has been difficult to arrive at any rational conclusions in the medicinal action of drugs in the body. Be this as it may, it has been well said by one of its greatest lights that the only evidence we have of the compound action of drugs in the human body is the result of nature ejecting medicine as quickly as possible. Assuming this to be correct, the medical researches in Hydropathic remedies are as far advanced as those of allopathic.

Dr. John Hughes Bennett, in his able lectures, which were published in the *Lancet*, observes: "Hosts of new drugs or new preparations of old ones (like the revival of antiquated fashions) are constantly extolled or recommended on the most

insufficient data, no one seeming to think it necessary to make experiments, careful observations, or deductions, but appealing only to a very limited experience." What the value of such drugs as therapeutic agents is, the reader may infer from Dr. Bennett's description of the actual situation with regard to mercury, one of the most commonly employed drugs known. Respecting mercury, he says: "I need not cite the extravagant praise it has received from its partisans. It will suffice to say that the most accomplished professor of materia medica in these times tells us that physiologically it is a 'corrosive, irritant, errhine, cathartic, and astringent; a stimulant, diuretic, diaphoretic cholagogue, and emmenagogue, and an exciter of the peculiar state of the constitution known as mercurial action, of which salivation is one of the chief local signs. Therapeutically,' he says, 'it is antiphlogistic, alterative, sedative, or contra-stimulant, deobstruent, antisymphilitic, and anthelmintic (Christison). A drug possessed of such wonderfully extensive and varied powers should certainly by this time have had its virtues universally recognised; yet the fact is with the exception of its action as a sialagogue and a cathartic, there is scarcely one other of its supposed virtues that is not disputed. Then as to its mode of administration, what differences exist? Some give it in large, others in small doses; some in acute, others in chronic diseases of the same kind. Its applications are so numerous and contradictory, that the question may well be, not for what diseases it is useful, but rather which has not been represented to have been benefited by this drug. In the meantime it has been admitted that it arrests the appetite, checks nutrition, excites a peculiar fever and erethism, produces a coppery taste in the mouth, furred tongue, and salivation; and the pathologist may well inquire how a poison operating in such a way can have any curative tendency whatever.'"

Such is a specimen of what is the real character of drug medication according to the testimony of the most eminent of the medical profession. In their view the therapeutic action of drugs is enveloped in such uncertainty, that while the good done by them, if any, is infinitesimal, the mischief is great and palpable.

CIVILIZATION AND DISEASE.

Mr. Metcalfe says that civilization has brought with it a considerable amount of mental and physical suffering, and it is perfectly clear that if we were all living in a primitive state, this suffering would be obviated, and the production of a paper like the present would be absolutely uncalled for.

It will be convenient to observe that all life, whether organic or inorganic, owes its existence to a great superior fundamental and abiding law laid down from the foundation of the world; and it is only when nature's principles are violated that we have any evidence of sickness or premature decay. In parts of the globe where people live in a comparatively primitive state, where they are in a great measure guided in the management of themselves by instinct, they are nearly exempt from physical suffering, common in civilized communities; and the exemption ceases to exist when artificial habits are introduced amongst them. Although we speak of all classes uncivilized as savages, yet in my humble opinion the term is too severe a definition, inasmuch as many aboriginal people are found to possess considerable mental capabilities, and, though uncivilized, they are God's creatures, having been placed in their native country by His over-ruling Providence, and not merely by chance. In every country peopled with races who are termed savages, which has been invaded by civilized races, there has been found a certain mental discipline amongst them both as to the management of their bodies and general internal affairs of their country, and with few exceptions they believe in a superior Power. However inconsistent their habits may appear to us they do not appear so to themselves, for where there is no intentional sin committed there can be no punishment, as it is said that where much is given, much will be required, and *vice versa*, by the same rule, where little is given little is required. On the sheer basis of Christianity, countries have been invaded, and thousands of innocent lives have been sacrificed in self-defence, and for such barbarous acts by the civilized, all the wisdom of ages, during 1896 years, added to the comments of many of our modern statesmen and philosophers, have not sufficed to solve the problem as to the amount of actual benefit that has been derived by forcibly attempting to civilize and to Christianize those we call savage races.

It is not intended to go into an exhaustive argument on questions of human suffering, as the subject would involve a discussion as interminable as the vexed question of "The Origin of Evil." We will affirm, however, that suffering is the result of violation of a physical law. Naturally the human frame is admirably adapted by laws which govern it for the realisation of enjoyment, and yet we continually find that it is a source of pain and discontent to multitudes. I believe that this state of things is antagonistic to the benign intentions of our all-wise Creator. Health depends upon obeying certain laws, which experience has taught us it is impossible to violate or even to modify without incurring suffering, and the extent of our transgression will be the measure of our suffering. Physically, we live under a stern mandate—obey and live, disobey and die. Consequently the

diseases which are rife amongst all civilized communities are but the result of their own actions. Our acquaintance with life and its conditions even in this scientific age is so imperfect, that we can do little more than say with the Psalmist, "We are fearfully and wonderfully made"; but this slight knowledge should be sufficient to guard us from blasphemously attributing the suffering of mankind to the will of God.

"Man's first disobedience, and the fruit
Of that forbidden tree, whose mortal taste
Brought death into the world, and all our woe."

Looking, however, to what may be called the secondary causes of disease, they are many and diversified. But, in the first place, let it be remembered that what we call diseases, maladies, illnesses, and so on, are but groups of systems caused by the efforts of Nature to rid herself of elements injurious to her vital integrity, and which ought not to have found admission into the system. So far as Nature herself and her processes are concerned they are perfect, and disease is impossible so long as they are furnished with proper and normal conditions. Even where they are not, they infallibly make the best of circumstances; that is to say, bad as symptoms may appear, they indicate the best practical state of things in the existing chemical and structural circumstances of the body. Hence, by the way, to strike directly at the abnormality of functions—*i.e.*, symptoms—is simply to thwart Nature in her endeavours to neutralise or expel matters of disease, or to remove structural defects, and must inevitably be productive of mischief. Clearly it is purchasing an apparent mitigation of the evil at the expense of inducing a state of things in general, worse than that which Nature herself prefers, in order that she may inflict the slightest and tardiest injury to the body. The proper way to treat disease is undoubtedly to aid Nature in restoring the chemical and structural conditions of the body to their normal state. But this is, as I have said, by the way, returning to the statement that Nature and her processes are, *per se*, perfect; it remains to show the causes of those abnormal manifestations of her powers, which are the occasion of the groups of symptoms called diseases.

These causes are to be sought in the constitution or circumstances of individuals. Temperament has much influence; thus acute inflammation and active hæmorrhages beset the sanguine, congestions and glandular and tubercular diseases the phlegmatic, while the bilious are liable to digestive derangements, to hypochondriasis and melancholia, and the nervous to excited nervous states and to mental derangements.

Then there are diseases traceable to hereditary predispositions or diathesis, among which may be classed scrofula, consumption, gout, epilepsy, insanity, asthma, stone, gravel, some skin diseases, and hæmorrhoids. Other diseases arise out of the peculiar functions

which the sexes have to perform, and a few from individual peculiarities or idiosyncrasies. Different periods of life, too, have their respective morbid manifestations; there are diseases of infancy, of puberty, and of old age.

Notwithstanding, however, that much is due to temperament, diathesis, predisposition, sex and age, more of disease must be credited to circumstances and surroundings. Indeed, when these are of the best possible description, even natural defects and morbid tendencies, such as have been referred to, are overcome and eliminated from the list of disease-producing causes, and much more is the healthy system maintained in health. But that surrounding circumstances are often very far from being of that character is too well known. The duties or necessities of human beings, not to speak of their mistakes and follies, multiply causes of disease on every side. The air, so necessary to life, becomes a source of disease through being loaded with the impurities of large towns or with noxious exhalations from cesspools and defective stench-traps. Not less injurious are the emanations from the human body itself, in circumstances of overcrowding and bad ventilation; evils which, though prevailing chiefly in large towns, are by no means confined to them. Next to unwholesome air may be ranked as a cause of disease deficient and improper food, and, in the case of the better classes, repletion and over-indulgence in table luxuries. A terrible aggravation of the mischief springs from the abuse of fermented and distilled beverages, which annually slay their tens of thousands in these islands. Or the occupation may necessitate sedentary habits, constrained and unnatural postures, straining of particular nerves or muscles, with inactivity of others, and so induce torpidity of the visceral functions and general languor and debility, together with local ailments of endless diversity. In fact, the circumstances are innumerable which modify the health of the individuals composing the human race, and the diseases which result, assume an infinite variety of aspects; to enter into details concerning them, and the causes, external and internal, out of which they spring, would be to discuss the whole subject of ailments and hygiene. This, of course, is out of the question at present; but we may remark that, by the advance of the science and art of hygiene, the ravages of disease may yet be brought within a very narrow compass. As things are now, however, the prevalence of disease is a great fact which has to be dealt with.

Diseases are divided into two distinct classes—acute and chronic. In the former, the onset of the disease is sudden and its duration short in comparison, and to this class belong fevers, inflammations, spasms, &c. In the latter, the onset is gradual, and the duration indefinite, and to this class belong cancers, tumours, chronic indigestion, cerebral diseases, &c. Often chronic disease is

the result of maltreatment of the acute, but sometimes it has been long latent in the system ere obtruding itself upon the sufferer's notice. When it does so there must be some special exciting cause of development into that form which compels attention. Besides differing in duration, acute and chronic disease differ as to severity, the acute being more violent while it lasts. Hence acute diseases are called *sthenic*—strong; and chronic are called *asthenic*—weak; thus characterising the difference of vital action. Some diseases, as intermittent fever, are chronic in duration and acute in severity. Other terms, I may notice *en passant*, are applied to diseases as indicative of certain characteristics of them severally; for instance, common, possessing the character of common inflammation; specific, having a character peculiar to itself; sympathetic, dependent on some other disease; idiopathic, not dependent on another disease; primary, the first in a succession of diseased states; secondary, following some other diseased state; continued, running an uninterrupted course; intermittent, broken by intervals of health; remittent, having symptoms varying in intensity but never altogether ceasing; contagious or infectious, communicated from one person to another; epidemic, attacking at varied intervals a number of persons at the same time; endemic, peculiar to certain localities—some diseases, as cholera and typhus, may be either epidemic or endemic; sporadic, attacking one person at a time. The entire class of epidemic, endemic, and contagious disorders are now included under the term *zymotic*—*i.e.*, fermenting.

In the case of acute disease, the first thing to be done by the water-cure practitioner is to take note of the direction in which the *vis medicatrix naturæ* is working, and to a knowledge of this he will be guided by existing symptoms, which indicate what Nature deems the best course to take in the circumstances. The second duty is to aid and facilitate the natural processes, both normal and extraordinary, by calling into play all the natural agencies already spoken of, surrounding the patient with every condition conservative and promotive of physiological action. It is not pretended that in respect to recognition of the value of all hygienic means, the water-cure differs from other medical systems except in more rigidly enforcing them.

In therapeutics, as in politics, the question, honestly speaking ought to be, not what is new or what is old, but what is best fitted to promote the greatest happiness of the greatest number.

That is the best medical system which confers the greatest benefits with the least drawbacks; just as that is the best political system which insures for all classes the greatest freedom and prosperity with the lightest burdens and the most efficient protection.

The system comprehended under the term *hydropathy* holds no mean position in the therapeutic world as answering to the above remarks in the political world.

The system as founded by Priessnitz was appropriately enough called the Cold Water Cure, inasmuch as he rarely employed water of a temperature over 70° , and his sudorific means were confined to exercise or the blanket-sweat.

Since its introduction amongst us, as a matter of course, the system has undergone various changes, brought about by practical experience; hence some of its early forms of treatment have been modified.

In the early days of every system there has been less or more grave mistakes from the want of experience in the adaptability of the remedies to human ailments.

It has been described by several people who were under Priessnitz that his treatment was harsh, and they were subjected to very stringent rules and severe measures; be that as it may, the major portion of the cases which came under his care had resisted every other treatment in existence, and no doubt required severe remedies; however, it is a curious fact the man cured or relieved over 7,000 patients during a comparatively short life.

Without wishing to commit myself as approving of harsh measures, I am quite prepared to admit that our hydropathic establishments in this country have gone to the other extreme, in really losing sight of treatment altogether, and have become little more than huge hotels or boarding-houses.

The term Cold Water Cure is scarcely appropriate to apply to hydropathic treatment.

Timid invalids have therefore now no cause to feel alarmed at the name given to the system, which is simply water-cure and water, as everyone knows, can be brought to any temperature.

Water being the principal agent employed, those inclined to give a learned name to the system called it "Hydrotherapy" which, so far as verbal appearances, raised it to the level of allopathy and homœopathy. But, unfortunately, although the two last-mentioned names, meaning respectively "other disease" and "like disease" indicate correctly enough the thing meant, it is not so with hydrotherapy, which means "water-disease"; whereas it is meant to signify "water-cure" as "cure," and that directly is the simple object of the system. Accordingly some of the medical men adopting the Priessnitzian methods, gave the name of "Hydro-therapeutics," "healing by water"; or another bearing the same signification, "Hydro-therapia." Either term does very well as a general designation, but both share with "water-cure" the disadvantage of unduly limiting the materia medica of the system, which embraces not only water, but air of varied temperatures, vapour-rubbing, friction, exercise, dietetics, hot-air baths; in short, whatever natural or artificial means tend to preserve or restore the health of the body, drugs of course being excluded, as having an action not in accordance with the object in view. The most correct and

comprehensive term, however, which we have met with is one of Transatlantic origin, viz.: "Hygeio-therapy," which means "healing by hygienic means"—just an exact description of the water-cure.

But whatever term the reader may encounter, whether hydro-pathy, hydro-therapeutics, water-cure, or hygeio-therapy, he will understand that the system meant comprehends all the curative resources possessed by those natural influences and powers to which the body owes its existence and well-being, and that the guiding principle is, that which makes and keeps the body healthy is likely when applied with intensified power to cure it when diseased.

The first need of the human being on entering the world is air to breathe, and all throughout life this need continues undiminished. Deprived of air for a few minutes we die. The great aerial ocean in which we live, and move and have our being, is nature's provision for this necessity, and to have air pure and abundant around the invalid is a primary duty of whoever treats his case. Everybody knows the value of fresh air in health, and it is of twofold importance in sickness. The lungs excrete effete materials and draw in oxygen, than which no processes are more important in the animal economy, and for their efficiency pure air is of course indispensable.

The next necessity is food. The body must be sustained and built up continually with fresh materials, as the organs of excretion do their work of elimination. It is in the course of this building up and pulling down process that the phenomena of life are evolved. Vitality springs, as it were, from the process of change or transformation in the body, just as the motion of the steam-engine is the result of the transformation of ponderable bodies, as wood, coal, water, in the form of gas and vapour. Now the adjustment of the building up to the pulling down process, so as to preserve a due equilibrium, is certainly as important as the proportioning of the supply of coals for the furnace and water for the boiler to the steam-power required. Hence the transcendent value of a right code of dietetics in the treatment of invalids. Health is the result of a just balance between the supply of new matter by the digestive organs and the withdrawal of old matter through the skin, lungs, kidneys, bowels, etc.

Of not less importance is the maintenance of a due balance between exercise and repose. Exercise of the bodily organs is indispensable to enable the elements of the food to yield the materials of a healthy frame, and in proportion as a man works or exercises, so should he eat, both as to quantity and quality. Every muscle should be exercised in turn and in due measure, not only to secure its own nourishment, but also to keep up a proper motion of the fluids and change of the solids of the body. The incessant activity of children, who are impelled to

motion by instinctive tendency quite irresistible, shows how nature has made provision for this human want as well as others. On the other hand, continued activity would wear out the system; and so exercise must be alternated with rest and sleep, of which the therapeutic value is great. Sleep is 'tired nature's sweet restorer.'

Psychological or mental influences claim the most anxious attention from every practitioner of the healing art.

The influence of the mind over the body is so great that the whole vital motions may to almost any extent be accelerated or retarded thereby. Cheerfulness and ease of mind tend greatly to promote nervous energy, good digestion, and healthy secretions, while the reverse effects follow from painful mental application and sad or anxious thought. But this is a subject altogether too wide to be entered upon here; still it may not be out of place to say that the invalid in search of health should discourage anything likely to cause mental disquietude, arouse angry feelings, or lead to a desponding frame of mind, and do all he can to induce cheerfulness, hope, and, where circumstances permit, genial social enjoyment, keeping the nervous system always in wholesome play, and leaving no opening for the inroads of monomaniacal worryings. Anecdotes illustrative of the good effect of such a line of procedure might be multiplied indefinitely were it not enough to appeal to universal experience.

Now all these influences just named are included in what is called hygeio-therapy, and if it be said they are common to all systems and universally available, let it be borne in mind that Hydropathists alone give them their due place and importance as well as their due credit for the share they may have in the recovery of invalids.

INFLUENZA AND THE WATER CURE.

BY R. METCALFE.

With the return of influenza into our midst, the question of its nature and origin has become one of the most important medical problems of the day. During the last few years the mortality from influenza has been greater than has ever been experienced, and I suppose the public mind has never been so greatly perplexed to know which of the thousand nostrums advocated to place reliance on. As an inevitable result of this scare and perplexity on the part of the public, everyone is asking himself either how he shall avoid influenza, or, if he has caught the disease, how he can best get rid of it. Hitherto medical men have differed widely as to its cause; and their treatment has been equally varied. Some,

while regarding the disease as a mysterious visitor, have treated it as a common cold with variable results. It is now, however, generally admitted that influenza is not by any means a mere common cold, but partakes more of the nature of malarial fever or ague. In the seventeenth century, when its appearance caused a great commotion, and its symptoms were carefully noted, the Italians, in their ignorance and bewilderment, traced it to the "influence" of the stars, and so designated it "influenza." But it had been known long anterior to that period. It is referred to by Hippocrates and other early medical writers, and a formidable list of influenza epidemics in various parts of the world between 1173 and 1875 is given by Hirsch; while, as to our own country, we have a fairly complete history of epidemics from 1510 onwards.

In nearly every epidemic of influenza on record the same facts are observable. It has been noticeable for its sudden and mysterious appearance, its attacking the robust as well as the weakly, its prevalence in widely separated parts at one and the same time, its varied and apparently conflicting symptoms, and its finally disappearing almost as suddenly as it came and being no more heard of for a number of years. The present epidemic began with us at the end of 1889 or the beginning of 1890; and as there is no instance on record of the plague lasting over three years, it is hoped that the present recrudescence of the malady may be of the nature of a parting salute. But, as we know, the unexpected almost invariably happens, and hence our hopes may be delusive. The last time an influenza epidemic continued so long was during the years 1847-8-9; and we happen to have a very full and precise account of it by a very able observer (Dr. Peacock), and I cannot do better than quote his description. It appears in Quain's *Dictionary of Medicine*, bearing date 1882. The writer there says:—"The disease is not to be regarded as simply an unusually prevalent common catarrh, but must be considered as a specific affection which appears occasionally over wide districts, and at, or about the same time; it is characterised by marked febrile symptoms; is often attended by serious complications, and causes great and prolonged prostration of strength. Early in the attack the pulse was quick and feverish and vibratory, though sometimes it was but little accelerated. At a later period it often became very rapid and feeble, or fell below the natural standard of frequency, being very soft and compressible, and occasionally intermittent. The tongue was at first moist, covered with the usual whity-brown fur, and red at the tip; subsequently it had a tendency to become dry. The breath had a peculiar offensive acid odour. Bleeding from the nose occasionally occurred and sometimes to an alarming amount. The skin was generally moist, and the perspiration had a sour smell. The urine was at first scanty, but afterwards increased in quantity. In this form of the epidemic,

affecting chiefly persons liable to disorder of the digestive organs and to rheumatism, nausea and sickness often occurred at an early period of the attack, and sometimes became urgent symptoms. There was often diarrhœa, and the pains in the head, back, loins, and extremities, which are present with more or less severity in all forms of influenza, were frequently from the first of a severe character, or increased with the progress of the disease till they constituted a predominating feature. Distressing restlessness supervened, with nervous agitation, and inability to sleep. Delirium also came on, amounting in some cases only to a little excitement and incoherence, but becoming so urgent in others as to require the employment of restraint to keep the patient in bed. It was remarkable, nevertheless, how completely this subsided in the morning. Notwithstanding the severity of these cases, they generally did well ultimately, though the patients recovered their strength but slowly, and often suffered long from lingering rheumatic disabilities.

“In the simpler cases during the epidemic of 1847, the attack usually came on with suddenness. A sense of cold was felt down the back and between the shoulders, with chilliness and some shivering, succeeded by flushes of heat, dryness of skin, pains in the head, chest, and extremities, and prostration of strength. At first there was dryness of the nostrils and throat, with a sense of tightness or constriction of the chest, and with some dry, hard cough.* As the illness advanced, copious running from the nostrils took place; and the cough became more frequent. The breathing was quickened; and distressing headache was felt, particularly in the forehead. These symptoms become increased in severity towards night.

“There were mental depression, listlessness, and general restlessness. In the greater number of cases entire loss of appetite was observed, with a sense of sickness, accompanied either by constipation or by diarrhœa; whilst the urine was scanty and high coloured. Prostration of strength was one of the most marked and distressing features of the complaint, with soreness, and dull aching pains in the chest, back, and limbs. The pulse varied in frequency, generally ranging from eighty to ninety, and rarely exceeding a hundred beats in the minute. It was uniformly very compressible, and, after the first day or two, feeble. The ordinary duration of the illness in this form of the epidemic might be stated at from three to five days in the milder cases, and from

* These simpler cases were the result of cold, as the symptoms described are similar to the chronic catarrh to be found in Norway, Russia, and Canada, which at certain periods of the year is quite an epidemic. It is clear these are not due to aerial infection, but simply to climatic changes, and half the cases at present in England are merely severe catarrhal colds.

seven to ten in those of a more severe description. But the disease, on its subsidence, left the patient for some time much prostrated, whilst still troubled with loss of appetite, inaptitude for bodily or mental exertion, and having more or less of a harassing cough.

In this country the influenza has been found to be a malady prevailing chiefly during the autumn and winter quarters of the year; though one of its mysteries is that generally it does not seem to be dependent on the weather or on the seasons. It was noted that in 1890 it was a visitor in the northern and southern hemispheres at the same time. It prevailed in all climates; in the cold of Canada and Siberia, and in the heat of India and Africa; in the dry climate of Egypt and Arabia, as well as in the damp of the British Isles.

It is precisely this appearance at the same time in widely separated localities and countries that points indubitably to the fact of its being diffused in the first instance by aerial means. Dr. Haygarth (regarded as one of our best medical authorities on epidemic diseases) noted the sudden appearance of influenza on our coasts more than a hundred years ago ("On the Natural Causes of Disease"—Proceedings of the Medical Society of London). The disease was referred to in Dr. Watson's lectures on medicine as having suddenly appeared off our island in the year 1837, when ships' crews, without communicating with land, were suddenly attacked with influenza in ways which prove conclusively that the *materies morbi* must have been conveyed to them by the wind. The same result was experienced in 1847, when a similar effect was noted on board ships in the Downs arriving from distant ports.

Dr. A. Carpenter notes that on the latter occasion the porters and others engaged at the London Bridge terminus of the Brighton Railway were nearly all laid up with influenza in the course of two or three days, so that the service of trains was carried on with difficulty. It was also reported that a number of Custom House officials, postmen, and policemen engaged on night duty were similarly affected. "The most striking point in these reports," he goes on to say, "is the fact that the first victims were men, especially those engaged in their avocations after sunset in the open air." With these facts before us no one can doubt that the etiology of the disease must be looked for outside our houses. Those who received the infection did so by means of the mucous membranes of the nose, throat, and eyes, carried it home with them, and in some cases, within a very short time, infected other members of their households, clearly proving that, although the disease reached them by aerial means, it was communicable from one to another.

The question then arises: What is the cause of the disease, and whence does it come? Sir Morell Mackenzie says (*Fortnightly*

Review, June, 1891): "In my opinion the answer to the riddle of influenza is poisoned nerves." He goes on to affirm that "the cause of the disease is a specific poison of some kind, which gains access to the body, and having an elective affinity to the nervous system, wreaks its spite principally or entirely thereon. In some cases it seizes on that part of it which governs the machinery of respiration, in others on that which presides over the digestive functions, in others again it seems, as it were, to run up and down the nervous keyboard, jarring the delicate mechanism, and stirring up disorder and pains in different parts of the body with what seems almost malicious caprice."

It is this peculiarity that explains the fact that the trouble takes three forms: There is the nervous variety, characterised by great depression and severe pains in the head, spinal regions, and muscles. Then there is a catarrhal kind marked by coryza or catarrh, and tendency to congestion of the respiratory mucous tract; the third, or gastric variety, troubles children most, and is marked by vomiting, diarrhoea and other symptoms of gastro-intestinal disturbance. Numerous and severe as are its manifestations, says Sir Morell Mackenzie, they are all grouped under three heads, viz., catarrhal, abdominal, and nervous. He goes on to say, "We have thus three well-marked types, each of which includes several varieties; all three may be intermingled or may succeed each other in the same case," and concludes that "the bewildering diversity of symptoms (only) becomes intelligible if we regard them as the result of disordered nervous action."

But what the "specific poison" is that occasions all the trouble Sir Morell is at a loss to understand. He pronounces against the microbe. That test he affirms, has failed. At the same time, he expresses the opinion that the cause of the disease is a living germ of some kind. It is only such an hypothesis that "explains all the facts." He is as emphatic against ozone in the atmosphere, seleniuretted hydrogen, and other telluric emanations as probable causes of the disease, as he is against the microbe theory itself.

Others, however, are as strongly in favour of the microbe hypothesis, and Dr. A. Carpenter (in an article in the *Pall Mall Gazette*, June 2nd, 1891) goes so far as to suggest the place of origin of the micro-organisms on which the propagation of the disease depends. He says: "It must be remembered that since November last, the wind has been persistently blowing from the north or east. It must also be borne in mind that in the summer and autumn of last year immense tracts of land were devastated by floods in Northern China, and possibly in other regions to the north and west of that district. These flooded lands would produce miasmatic influences capable of being transferred to other regions, provided the organisms were not destroyed by sunlight. Enveloped

in dense masses of vapour, they were blown to the north by the south winds prevailing in those regions, and there circulated in the higher strata of the atmosphere. The intense cold in these regions preserves the organisms from destruction until they are landed in the warmer portions of the earth affected by the Gulf Stream, reaching us soon after the severity of the winter has passed away, and the vivifying influence of spring begins to be felt. The dense masses of fog, miles in thickness, prevent the penetration of light, and the clouds they form reach us during those days on which a leaden sky has prevailed, and when night comes on the influence is still more intense. Those exposed to the night air receive the disease germs on that part of the body to which these can most easily attach themselves, and multiply at the expense of their host."

The supposition is not an unreasonable one if we accept the microbe theory. But may it not be, after all, a peculiar atmospheric condition which in the first instance affects the person attacked, producing the fever which Sir Morell Mackenzie says influenza is, and which the patient transmits to others? I confess that, in the absence of any sufficient proof of the existence of an influenza bacillus, I am strongly inclined to that view of the case.

But whether such be the case or not, all the best authorities agree that the disease is essentially a fever, and such I have found it to be, yielding readily to the ordinary treatment for fever, which seems to indicate that the disease is a kind of malaria very prevalent in certain parts of India. But it differs from ordinary fevers in the suddenness of its attacks. Dr. Bruce Low, describing the character of the disease from his own observation of patients in St. Thomas's Hospital, has said: "The invasion is sudden; the patients can generally tell the time when they developed the disease. Acute pains in the back and loins came on suddenly while they were at work or walking in the street; or in the case of a medical student, while playing cards, rendering him unable to continue the game. A workman wheeling a barrow had to put it down and leave it; and an omnibus driver was unable to pull up his horses. This sudden onset is often accompanied with vertigo and nausea, and sometimes actual vomiting of bilious matter. There are pains in the limbs and general sense of aching all over; frontal headache of especial severity; pains in the eyeballs, increased by the slightest movements of the eyes; shivering, general feeling of misery and weakness, and great depression of spirits, many patients, both men and women, giving way to weeping, nervous restlessness, inability to sleep, and occasional delirium. In some cases, catarrhal symptoms develop. . . . The temperature is high at the onset of the disease. . . . The usual duration of the acute symptoms is from two to four days."

The large number of fatal cases of influenza is explicable by the fact that the disease, though proving mortal to few of itself,

seems to join hands with other ailments. In persons weakened by chronic disease or unsound constitution (especially when the flaw is in the lungs or heart) an attack of influenza often "quickens the slumbering embers of other complaints into flame, in which the feeble remains of life are speedily consumed." Hence the need that it should be dealt with at once and with the utmost care to prevent, by reducing the fever, the development of other complications.

Having given a *resumé* of the history of the disease, and at the same time glanced at the various theories advanced in regard to its etiology, it remains now to speak of its treatment. I believe it is generally admitted that the present epidemic is of a more severe character than previous ones. But whether that be so or not, it is certain that it has hitherto practically baffled the skill of the medical faculty. That it has done so arises, I believe, in the majority of cases from the fact that the disease is allowed to get too strong a hold of the patient instead of the symptoms being attacked at once. In nearly all cases the disease is ushered in with fever and an increased temperature of the body. Now if the fever is not effectually checked within two or three days a large per cent. of the patients die.

Seventy per cent. of the heavy death-rate of recent cases has been from the weakness following attacks of influenza, which proves that the ordinary remedial measures resorted to have not been able to check the disease in its early stages. One of the victims to the disease was Sir Morell Mackenzie himself, who, though one of the highest authorities on the disease, was not able to cure himself. Judging from the fact that he lingered on for several weeks after the attack was over, he must have been a man of considerable vital force, and had he resorted to the full sheet packing while the attack was on, he would not only have been spared the bad consequences, but in all probability he would be living to-day.

The object in view, is to advocate a fair and unprejudiced trial of the wet-sheet pack immediately there is evidence of feverishness and increased temperature of the body. In dealing with these cases my experience shows that when the wet-sheet packing has been employed the first day of attack, there is practically no inconvenience suffered after the following day or two, and if used the second or third day, the after-weakness of the patient has been very slight indeed, most cases getting about again in a week or ten days. The only precaution needed is to avoid "catching cold" by undue exposure.

I am not disposed to go into the question as to this or that remedy which has by experience proved the most successful. I am only calling attention to a remedy whose efficacy in cases

of fever was tested and put on record long ago by one of the medical lights of his time. I refer to Dr. James Currie, who, at a time (the end of the last and the beginning of the present century) when typhoid and other fever raged in England, more especially in the large manufacturing towns, and medical men were puzzled to know in what way to treat it, had recourse to cold and tepid affusions in many scores of cases, and with astonishingly successful results. Dr. Currie was then practising in Liverpool, where the epidemic appears to have been the worst, and his treatment by water attracted much attention. He described his method and the results obtained in two works published in 1798 and 1805, entitled "Medical Reports of the Effects of Water as a Remedy in Fever and Febrile Diseases." Dr. Currie found, however, that there was a limit of time within which the patients should come under the treatment, in order to have a chance of arresting the progress of the fever, which may be given in his own words: "Its success has equalled my expectations. I repeat that, used in the first three days of fever, the cold affusion very generally stops the disease; that the same happy effects sometimes follow its use on the fourth or even fifth day, but seldom later; that even in the subsequent stages, when the heat continues preternaturally great, and the skin dry, it is of great and manifest advantage, almost immediately relieving the most distressing symptoms, and conducting the disease to a safe and speedier issue." He found also that the effect of using water in this way was to prevent contagion, and, as a matter of course, the spread of the fever was considerably checked.

By Dr. Currie's method, fever was reduced by perturbation of the nervous system, causing the fever *virus* to be thrown off through the agency of the internal vital forces, resulting in a general sedative or tranquillizing effect upon the whole system. But since Dr. Currie's time, great advances have been made in the use of water in the cure of disease, and chiefly in the employment of the wet sheet pack. Experience of this appliance in fever and other cases shows that the effects obtained by Dr. Currie can be produced more efficiently than by mere ablutionary methods; and if the doctor were alive now there is no doubt he would greatly appreciate its importance.

I have had very extensive experience in the treatment of typhoid and other febrile diseases by the use of the wet sheet pack, and have never had occasion to doubt its potency for a moment. During the past few years especially, I have been called upon to treat a good many cases of influenza of a severe form, both in children and adults, and where the temperature of the body reached from 100 to 103·4 degrees, when the wet sheet packing was commenced and in every case, whether child or adult, I succeeded in reducing the temperature of the body to a normal condition within 24 hours, if packed the first day of the attack.

See page 34, extract from *Pall Mall Gazette*. I will here relate three more cases. The first was the case of a Major in the army, who came from Vienna last year during the cold weather. He arrived at eight o'clock in the evening, and was taken with violent shiverings, sickness, and pains in the body, of a most intense spasmodic nature. The pulse was raised and the temperature of the body reached 104 degrees. I put him into a wet sheet pack for half an hour. While he was in the pack his temperature went down to 103 degrees. I then repeated the pack for another half hour. The temperature remained the same. I gave him a third pack, and in it the temperature went down to 102 degrees, while the pains and spasms gradually subsided. He remained in the pack from 40 to 50 minutes. On taking him out I put a wet compress round his waist, with hot bottles to his feet, and a wet compress to his head. After taking some simple liquid food he slept for five hours.

In the morning the fever slightly returned (temperature 100·1 degrees) and so I repeated the pack. This was followed at mid-day by a mild sweating bath. At bed-time I again repeated the pack, then placed a wet compress on the stomach, hot bottles to the feet, and a wet compress to the head. The patient slept all night, and in the morning there was no vestige of the fever left—only great prostration.

The second case was that of a lady who was rather predisposed to irregular action of the heart, and weakness of the chest, with monthly irregularities. She came into the establishment on the second day of attack, screaming with pains on the whole of the right side. Though the lungs were congested, yet the pulse and the temperature of the body was not much raised. At once a strong mustard trunk pack was applied, and frequently changed. After three or four hours the pain was removed. Curiously enough, however, the pain shifted to the other side, which was so intense that I could hardly keep the patient from fainting. I applied the same mustard applications, and after five or six hours the pains subsided. During the continuance of the packs the patient was freely supplied with water and liquid nourishment. When apparently quite out of pain, and her brother was seated chatting by her side, the pain suddenly surprised us by shooting into her legs.

I applied the same remedies to the legs. But it was only with great difficulty that I was able to subdue the pain. After twenty-four hours' intense suffering the patient was perfectly relieved, and all that remained of the attack was bronchial irritation and general prostration.

There is one peculiar feature in this case worthy of note, that the temperature of the body was never above 100 degrees, with an absence of feverish skin, and the pulsation almost normal; in fact,

the attack seemed to commence with cold shivers, general trembling, and spasms of every muscle of the body. When the attack subsided, there being a feeble action of the heart, the mustard trunk pack, alternated with leg packs, was resorted to, in order to relieve the bronchial irritation and slight congestion of the lungs which had supervened. The packs were applied three times daily for 30 to 40 minutes each operation; in two days the chest trouble subsided. With careful diet and three gentle sweating (Turkish) baths in the week, the patient left the establishment quite recovered from the influenza attack within eight days, and returned to Clacton free from pain, though feeling very weak.

The third case was that of a literary gentleman. He was suddenly attacked with violent sickness, headache, and fever. The temperature of the body was considerably raised, being 103·4 degrees. I again applied the pack, keeping the patient in it for half an hour. It produced the desired effect, and was not then repeated. In this case the patient being somewhat weak the pack was not repeated at once, a waist compress was supplied instead. Three or four hours afterwards—the fever still continuing—the pack was repeated. At bed-time, the patient being still feverish, I gave him a third pack. Afterwards I put a hot bottle to his feet, and a wet compress on his head and waist, he went to sleep and did not awake for eight hours. He rose in the morning as though nothing had happened, except that he felt a little weakly.

I could give a number of similar cases, but these typical cases are as good, and will serve the same purpose as a hundred, the following is an extract from the *Star* of January 25th, 1892.

FIGHTING THE “GRIP.”

HOW I WAS CURED OF INFLUENZA BY HYDROPATHY.

“As reference has been made from time to time lately to the use of water in the cure of influenza, the following particulars of a rapid and effectual cure may be interesting to the readers of the *Star*. A week since to-day I was taken suddenly unwell. I did not know what was the matter, but suspected a bad cold. I retired early to bed, and, after a miserable night, felt not the slightest doubt in the morning that I was suffering from a bad attack of influenza. I had just enough strength to crawl into my clothes, get into a cab, and order the coachman to drive me to Paddington Green, the only hydropathic establishment I know in London. My reason for going there was that 20 years before I had had a slight attack of brain fever, when a friend, learned in water-cure methods, cured me by means of the wet-sheet pack, and I had never afterwards lost faith in the remedy. When I arrived at my destination I found the water doctor away from home. But he was expected back soon, and in order to pass the time and keep myself warm I

went into the Turkish bath. I had not been in many minutes before I became very faint and fell in a swoon. This was followed by great sickness and prostration. When the doctor returned, the clinical thermometer (placed under my tongue) registered 103·4 degrees. I was at once put to bed, and in the course of a few minutes placed in a wet sheet. It had been wrung out of tepid water into which a handful of bran mustard had been thrown. Three blankets were first placed on the bed; then the sheet. In the latter I was enveloped from the neck to the feet. Then the three blankets were successively folded over me and tucked tightly in. Over these the ordinary bedclothes were drawn. A wet towel was then put to my head and a hot bottle to my feet. In a few minutes I was in a warm glow from head to feet. It was the first time I had felt warm for 24 hours. After half an hour I was taken out and rubbed down quickly with a wet towel, then with a dry one. A wet compress was then put round my waist, with a wet cloth to my head and a hot bottle to my feet, as before. After taking some light refreshment (gruel, I think), I fell into a sound sleep, without pain.

“In the morning I had another pack (administered in the same way), and a third at night. These, however, enveloped only the trunk. By Monday morning the fever had quite subsided (the temperature was a little over 98 degrees), and the pains in the back, limbs, and head, with which the attack had commenced, entirely gone. A little bronchial difficulty, however, remained, but by Tuesday night this, too, had disappeared, and I was able to resume my duties, albeit feeling somewhat weak and flaccid. I feel sure that if householders knew of this salutary and efficient method of curing disease it would be a great blessing to them, as it is attended with absolutely no danger if a few ordinary precautions be observed. It is above all a thing for the working man and his family to know.”

Perhaps a few words may be conveniently given here with reference to the philosophy of the wet sheet pack. Dr. Carpenter, Professor of Physiology in the Royal Institution, says:—“The wet sheet packing used by the hydropathist is one of the most powerful of all diaphoretics, and no person who has watched its operations can deny that it is a remedy of a most powerful kind. If its agency be fairly tested, there is strong reason to believe that it will be found to be the most valuable curative means we possess in specific nervous diseases, which depend upon the presence of *materies morbi* in the blood, especially gout and chronic rheumatism, as well as that depressed state of the general system which results from the wear and tear of the body and mental powers.”

Dr. Wilson counts the wet sheet pack as an antiphlogistic, or means of subduing fever in its hot stage and active circulation. In this respect it stands unrivalled, being unequalled in its simplicity,

safety, and efficacy. It is certainly the noblest arm of the water cure; causing little or no loss of strength, and leaving behind it none of the debility which bleeding and strong medicines occasion. Dr. Wilson puts the action of the pack in a nut-shell when he says:—"It effectually abstracts the morbid heat of the system, and reduces the excited, nervous, and vascular actions, producing all the coolness and calm necessary for the moment, and by the very nature of this process, the degree of extraction of heat is fixed."

Finally, to quote from one more authority on the philosophy of the pack, the first Lord Lytton, in his "Confessions of a Water Patient," says:—"It is not, as people persist in supposing, that patients are put into wet sheets, and then left to shiver. The sheet, after being well saturated, is well wrung out, the patient quickly wrapped in it, several blankets bandaged round, and a down coverlet tucked over all; thus, especially where there is the least fever, the first momentary chill is promptly succeeded by a gradual and vivifying warmth, perfectly free from the irradiation of dry heat, a delicious sense of ease is usually followed by a sleep more agreeable than anodyne ever produced. *It seems a positive cruelty to be taken out of this magic girdle in which pain is lulled, fever cooled, and watchfulness lapped in slumber.*"

ATTACK OF INFLUENZA COMING ON.

When the first indications of a coming attack of influenza are felt, I should strongly advise the patient to go and take a Turkish bath. Sometimes a bath thus taken in time may suffice to stave off the attack. Or, if a Turkish bath is not to be had conveniently, then the best thing is to get into a hot bath—as hot as it can be borne—(with a handful of soda thrown in), and remain in from ten to fifteen minutes. Then get into bed and have hot bottles to the feet, with plenty of covering, and hot liquids, such as barley-water with a saltspoonful of cream of tartar to a pint of water, to drink, to induce perspiration.

When there is not the convenience for a hot bath a tub may be used if sufficiently large to sit in. It should be filled with hot water, and the patient should remain in it with two or three blankets thrown over him until perspiration breaks out. Hot water should be added from time to time to keep up the temperature for fifteen to twenty minutes. The same effect may be produced by a lamp bath. In this case a spirit lamp is placed under a common wooden-bottomed chair; the seat of the chair is covered with a rug, and the patient, seated upon it, is covered over with blankets, or with a macintosh, descending to the floor, to keep in the heat. The feet in hot water, wet cloth to the head,

and liberal drinks of water or barley-water to induce perspiration. In this position the whole of the body, from the neck to the feet, is brought in contact with the heat, and a profuse perspiration is the result.

Any of these various methods may be resorted to in the first instance to stave off an attack of influenza. It is exceedingly useful to know how to use them, as they can be employed in the family, and will often, if resorted to in time, obviate serious illness. In all cases of an attack of influenza or cold, a mild aperient should be taken, along with the above preliminary remedies, to ensure free action of the liver and bowels, and barley water should be taken freely instead of water, in order to promote the free action of the kidneys.

Antiphlogistic is a term for indicating methods of treatment intended to counteract inflammation and its accompanying constitutional disturbances.

The Wet Sheet Pack is admitted to be the most efficacious method that has ever been discovered for subduing all forms of inflammatory diseases.

The wet sheet is a valuable remedy in all diseases characterised by an exhilarated pulse and dry burning skin. It causes little or no loss of strength, and leaves behind it none of the debility which bleeding and strong medicines occasion: it always ensures, therefore, a quick convalescence. It is a remedy also easy to manage. In appropriate cases, the most inexperienced person can hardly go wrong in its application providing he adheres strictly to the rules laid down for his guidance.

The packing process claims superiority over cold or cool infusions, such as those used by the late Dr. Currie in fever cases, inasmuch that its soothing effect on the sentient nervous web of the skin by soaking of its tissues and the prolonged contact of the wet linen, the heat of the body converts the water into vapour, and constituting the sheet, in fact, a great poultice. This cutaneous evaporation is one of the aims for the practitioner to accomplish when he seeks to equalise the circulation, to determine the fluids of the interior to the surface. It acts upon the law that liquids move towards membranes through which evaporation takes place. It facilitates and augments exhalation (not perspiration) at the time, and afterwards by the improved condition. For it must be borne in mind that whenever cutaneous transpiration is oppressed the fluids of course cannot come freely to the surface, and therefore tend to retire inwardly to accumulate in or congest the interior viscera.

In treating fever cases, where a second sheet pack is needed, the symptoms will be as follows:—suffused or flushed face, feverish skin, throbbing temples, quickened respiration and general malaise.

By this renewal of the sheet, the morbid heat of the patient is continuously, but generally drawn off—and this without running any risks of suddenly chilling the body beyond its powers of reaction. Accordingly, we find, that when the reductive packings are finished, and the patient placed in bed, the relief from the process is most sensibly felt. The exhalation from the surface which has been promoted, and the brisk movement of the fluids to the skin thus determined, have evidently been to unload visceral congestion, open obstructions, to equalise the circulation, and to tranquilize the nerves.

PACKS AND BANDAGES. THE MATERIALS THAT SHOULD BE USED.

Experience has proved to me that much misapprehension generally exists as regards the kind of material to be used for packing and kindred appliances. I can recall instances in which no degree of discrimination was used in the selection of the fabric, people having the idea that any sort of drapery would serve the purpose. The sheet employed would be thick, close in texture, and retaining far too much water, while its awkward dimensions encumbered the patient with superfluous yards of drapery about the neck and feet; or, perhaps the material would be cotton, when linen was alone suitable. It must be remembered that wet packings have a wide range of remedial action in various forms of disease, and that the choice of material is not a matter of indifference.

In regard to the respective merits of calico or swansdown, and linen, the last named retains little water and is a good conductor of heat, while cotton has just the opposite property. Linen, as everyone knows, is much used in surgery, it lies well to the skin, and upon the inequalities of the surface to which it is applied, moreover its touch is sedative and kindly. Speaking generally, it is the best material for packing and bandages, and should always be used where it is desired to abstract heat or allay inflammatory action, local or general. Bilious and nervous subjects, with highly active circulation, require its sedative and antiphlogistic influence.

On the other hand, it may be urged on behalf of cotton, that its property of retaining more moisture and conducting heat badly makes it a suitable material for packing phlegmatic subjects who have languid circulation. Its action on the skin, while calefacient and irritating, is at the same time poultice-like, and its effect on the general nervous system slightly depressing or narcotic. In cases where it is desirable to produce local or general irritation on the skin, in other words artificial crisis, cotton should be used.

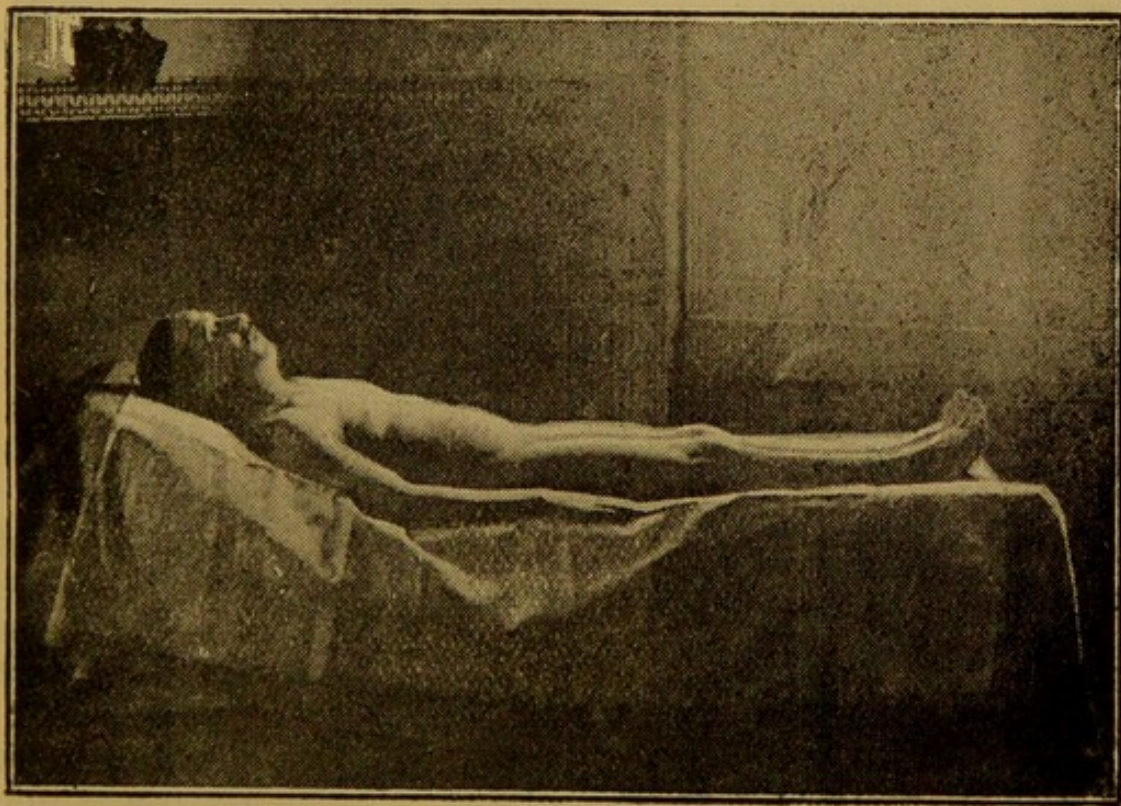
When wrung out of mustard and water, and covered with a mackintosh, it tends especially to produce on the surface those aqueous and humourable discharges which are so useful in certain cachectic states of the body.

It must be understood that swansdown is not used for either full or half sheets, or even for towel packing, but only for small or local packing, as, being so thick, it is altogether unfit for the large or extensive packing in which only linen or cotton should be used. The material which I recommend, and always use, is the thin and common Barnsley sheeting.

THE MODE OF APPLYING THE FULL SHEET PACK.

WITH ILLUSTRATIONS.

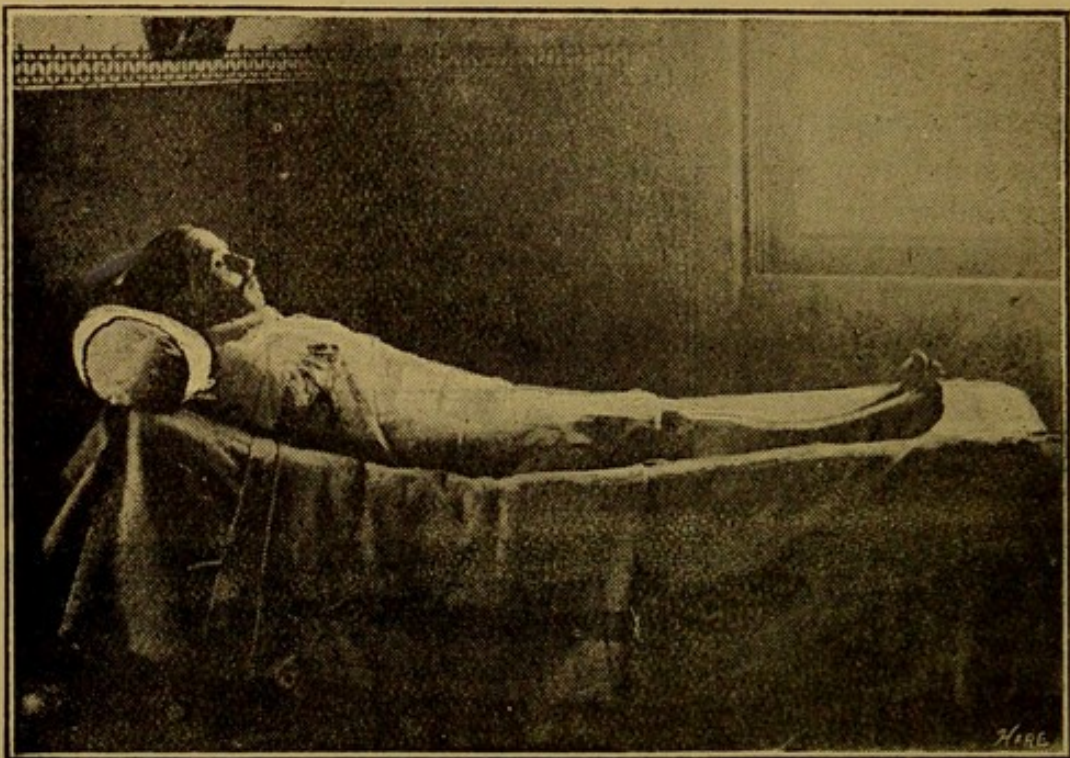
Over a bed lay three good sized dry blankets; then take a sheet some two yards broad by about a yard-and-three-quarters long, and wring it tightly out of cold or tepid water, and spread over the top blanket. The patient then reclines on the centre of the sheet and is quickly encased (*see* FIG. I.), half the sheet being brought over the chest with arms up, then arms down, and the



(FIG. 1.)

other edge of the sheet brought quickly over the arms, well tucked round the neck and between the legs. In case the sheet is not large enough, a wet towel can be spread over the front of the trunk, and each side of the sheet brought over the arms and legs (*see* FIG. 2), thereby bringing the wet sheet in contact with every

part of the skin. Over this the first blanket should be drawn not too tightly, but as if the operator were packing a piece of fine porcelain carefully in straw or other padding. This padding process completed, all interstices filled up, and the patient made easy and comfortable, the second and third blankets should then be wound tightly round all, rendering compact the encasement of the patient and so preventing all evaporation (*see* FIG. 3). If more clothing be desirable, extra blankets, or the ordinary bed clothes, or an eider-down quilt, may be added. The duration of the pack is regulated according to the requirements of each case, but is usually from forty to sixty minutes in chronic or constitutional complaints, such as general debility, etc., and it sometimes lasts for two hours.



(FIG. 2.) (NOTE.—This drawing does not show the legs covered, which they would be with full-sized sheet down to the feet.

Packs of every kind are generally followed by some form of ablution, such as towel rub, dripping sheet, etc., as may be prescribed. It is usual during the winter months to apply a hot bag to the stomach, immediately over the first blanket, and a hot bottle to the feet.

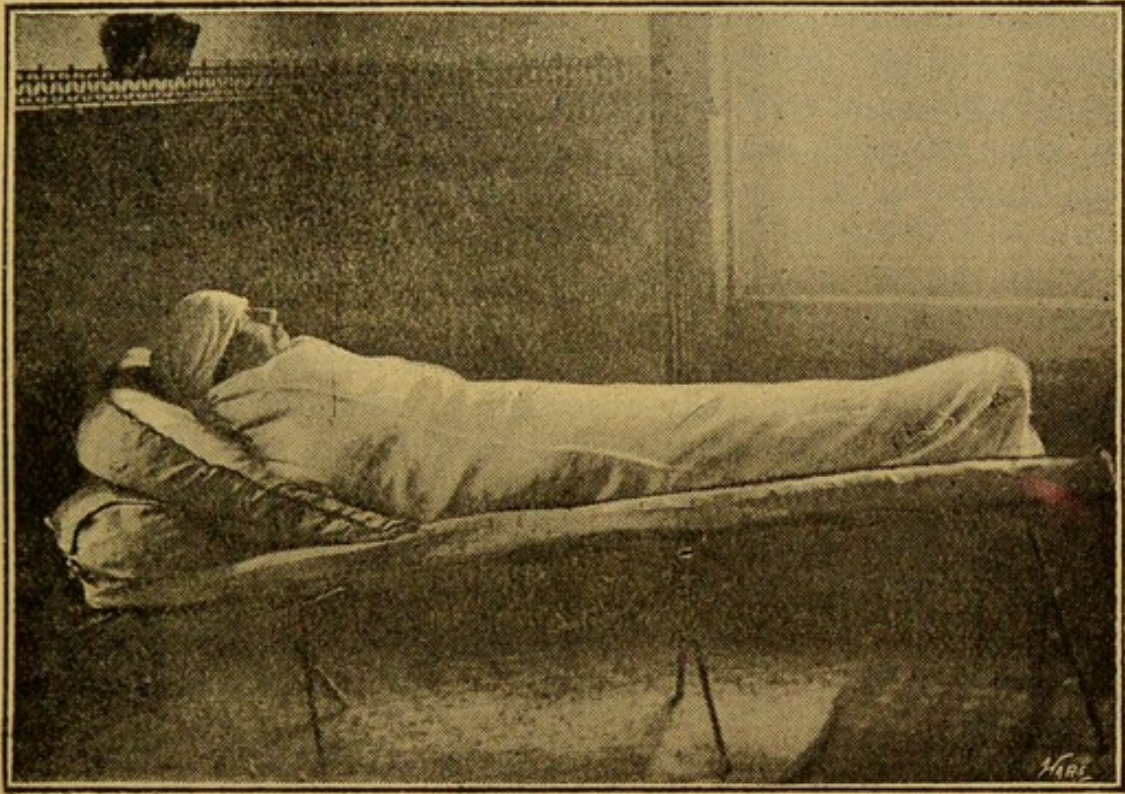
The Half Sheet Pack is a similar operation, only the legs are left out (*see* Fig. 4). In the absence of a half sheet, three thin pantry or huckaback towels may be used, one in front, another at the back, and one cut in two, a half on each arm, all applied lengthwise.

The Towel Pack when given in bed consists of a blanket placed beneath the patient, and two wet towels, one at the back, the other on the chest, carefully tucked round with a blanket and

the bed clothes drawn over. This pack is much resorted to during the winter months, and in cases of extreme debility should be given in the bedroom.

The Chest Pack is a similar appliance minus the towel applied to the back.

The Spinal Pack is similar, one towel being placed on the back instead of the chest.



(FIG. 3.)

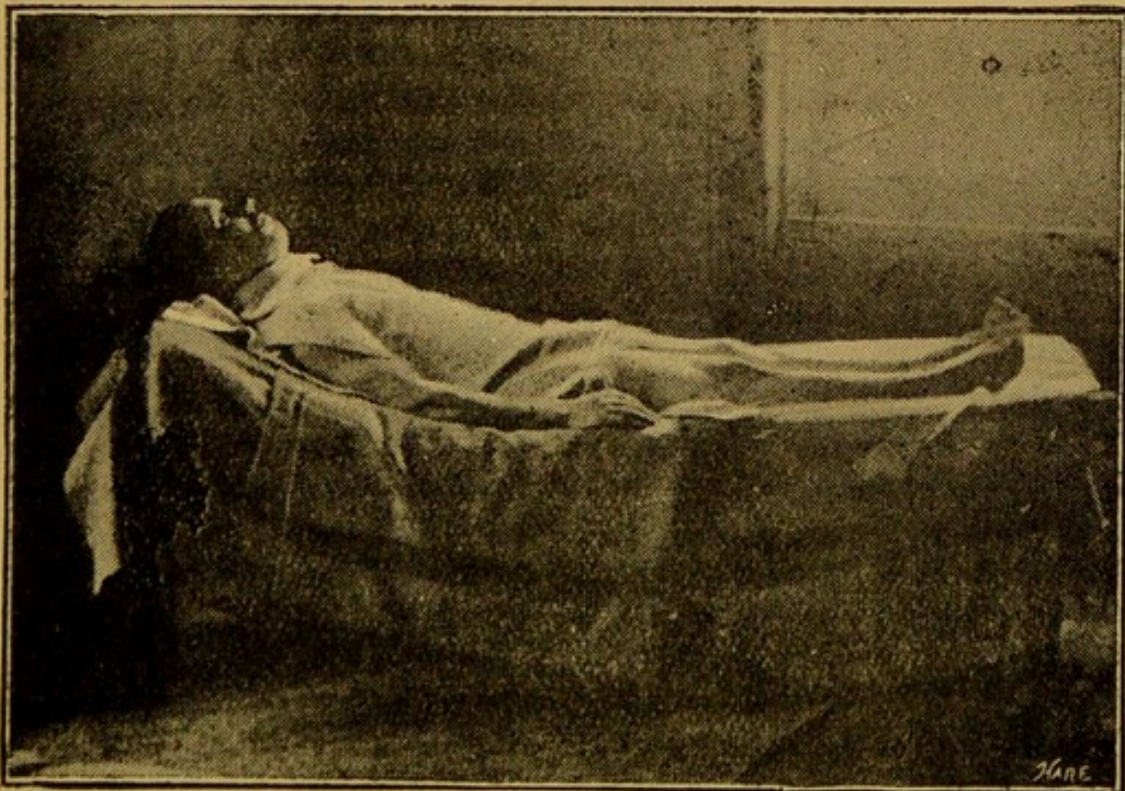


FIG. 4.)

PRECAUTIONS IN PACKING FEVER CASES.

When a full sheet pack is used in fever cases, with the mouth and tongue parched, and the temperature of the body raised two or three degrees, the duration must be from twenty to thirty minutes, only frequently repeated, until the fever is abated without any intermediate ablution. Long-period packs in fever cases are pernicious and weakening, but properly regulated packs are the most rational and judicious remedies. When the fever is abated the patient may have a wet-towel rub, dripping-sheet or shallow bath after the pack, according to the exigencies of the case. The usual precaution in any fever case must be taken not to allow the patient to become chilled in any way, and hot bottles should be placed to the feet at all times of the year when there is a tendency to cold extremities, on returning to bed.

The medical action of the half sheet is similar to that of the full sheet, and is generally resorted to when the patient is too feeble to endure a full sheet pack. Its duration and repetition in fever cases will be as above described, also as to the after bath.

The Trunk Pack (*see* FIG. 5) is used in still more delicate cases, the objects to be gained being precisely the same.



(FIG. 5.)

INDIGESTION, DETERMINATION OF BLOOD TO THE HEAD. &c.

The chest pack is used for indigestion, irritation of the digestive organs, coughing, inflammatory state of the lungs and irritability of the heart's action. It is not generally had recourse to in fever cases, but is an excellent sedative if frequently used in the complaints named.

As to the spinal pack its use is chiefly for irritation of the spinal nerves and determination of blood to the base of the head.

In the majority of cases where local packs are resorted to, the circulation to the extremities is very defective, and a hot bottle to the feet while undergoing the operation is absolutely necessary. The mode of ablution afterwards is similar to that used for full sheet packs.

To attain the object desired in all these appliances, and to render them effective, the patient must not be exposed too much and thorough warmth or reaction must be secured through the whole of the body after the packs.

I have endeavoured to state briefly how these appliances, which may be adopted under ordinary circumstances, are to be given, but to patients suffering from some severe or critical illness they should not be resorted to, without professional advice.

In all cases in which the packs are resorted to, whether for chronic or acute diseases, the head must be packed in a wet towel covered with a dry one. This is of as much importance as keeping the feet warm. During the continuance of the pack the patient should be supplied with water to drink. In chronic cases the patient should drink at least half-a-pint of water; in acute diseases he should be allowed to sip as long as the feverish state of the mouth continues.

The trunk pack bandage for self-adjustment is constructed in the following manner: First for the outside a piece of loom sheeting, of loose texture and unglazed; second, a piece of mackintosh of the same size sewn inside; third, a piece of linen of the same material as the first, only a little finer in texture, should be fixed inside the mackintosh by four flat buttons, one on each corner. This last piece is for the purpose of wetting and is applied next the skin. The mackintosh with its coarse linen covering is designed to produce warmth and prevent evaporation. The size of the bandage depends on the size of the person for whom it is intended, care being taken that it envelopes the trunk back and front, and is deep enough to extend from about four inches from the throat to below the navel, and sufficiently long to pass round the body, and overlay at the back. A semicircular piece about two or three inches in depth should be scooped out under the

arm-pits, and elastic shoulder straps attached. Tapes in which a few inches of elastic web are sown should be fixed to the bandage at each end, about one inch from the corner and be brought round to tie in front. The object of inserting the elastic is to admit of the expansion and contraction of the chest.

In using this self-adjusting trunk pack, if there is any feverishness in the mouth, or irritation of the throat, a wet rag should be put round the neck with a piece of flannel over it wound round two or three times. This compound bandage is a substitute for the trunk pack, which can be applied without the assistance of a second party, but the same precaution as to packing by blanket or in bed must be adopted in order to secure warmth. It may be kept on two or three hours, or in some cases it may be desirable to wear it all night.

For persons who are in the habit of taking their ablutions in the morning, such a nightly pack would be followed by good results. Those who have not the convenience of a bath, after removing the bandages, should well rub with a wet towel, and then with a dry one, so as to secure general heat of body. Delicate persons, who are not able to bear the pack both back and front, can use the chest portion only, if the pack is made in two pieces, as is sometimes done—divided under the arms.

BILIOUS HEADACHE, CONSTIPATION, NAUSEA, &c.

The indications for the use of this appliance are bilious headaches, indigestion, nausea, constipation, feverishness, over-eating, and excitement or worry of any description that tends to upset the organs of assimilation and digestion. These symptoms are ordinarily the precursor of some serious illness; which illness may be entirely prevented by timely recourse to the waist compress.

The body bandage is worn wet all round, extending from four inches below the arm-pits down to the hips, and it therefore very much resembles the trunk pack, only it is of less depth, being merely intended to cover the stomach, the lower portion of the lungs, liver and kidneys. The medical effects of this bandage are precisely those of the trunk pack bandage, though covering a less surface of body, and it is very often worn night and day. In Priessnitz' time all his patients wore it constantly, and it is now very generally resorted to by hydropathic practitioners for patients undergoing treatment. The only objection to it is that it is rather cumbersome to wear during the day by persons who are able to

attend to their duties, though this difficulty can be removed by using only the mackintosh over the wet bandage. The ordinary body bandage is about six or seven feet long—according to the bulk of the body—and a foot broad, and is made with one length of linen sufficient to go round the body. This is joined at one end by a piece of mackintosh of the same breadth, and to the end of this are attached double strings or tapes (with elastic inserted), so as to tie in front and secure the bandage. To the other end of the mackintosh three flat linen buttons are sewn, and buttoned on to this is a piece of thin linen, two inches narrower, so that it can easily be wetted and washed. When in use this wet piece is next the body, the mackintosh lapping over it, and finally the outer piece of linen winds round the mackintosh.

BRONCHIAL AND STOMACH COUGHS.

The chest bandage is prepared similarly to the last, but is shorter, extending from the neck to the navel, just under the arms, with tape to tie it round the body, and another to hold it in place round the neck; it requires to be narrowed off to fit in between the shoulders. Its use is very extensive, as it may be worn day and night; in which case an extra layer of flannel outside is necessary to secure full warmth.

There are no ordinary complaints or bodily troubles more common than bronchial and stomachic coughs in this climate, during inclement seasons of the year, and this chest bandage or compress has a most specific effect in alleviating such trouble; and in many cases, where the complaint has not become chronic, the habitual wearing of these during the whole of the bad weather, night and day, will remove the difficulty; or, when actual cure is impossible, the wearer at least is freed from any inconvenience.

The medical effects of the compress would appear to be twofold; it acts directly on the inflammatory irritation of the throat and chest, while the portion that extends over the stomach and the parts below seems to act especially on the digestive organs, as the coughing and expectoration is reduced and digestion promoted. An evidence of this fact is that if the bandage is not long enough to lap over the stomach and partly over the bowels, the effect on the cough is not so perceptible.

R. METCALFE.

HYDROPATHIC SUDORIFICS.

Priessnitz's favourite sudorific was natural exercise, but he found that it was neither sufficient nor even practicable in many cases, and was compelled to have frequent resource to the tedious artificial sweating process of the blanket sweat. Hence, to meet this urgent need, the vapour lamp and Turkish bath came into use in this country, and under their influence perspiratory streams are made to flow within a comparatively short time and can be pushed to the extent of eliminating even old-standing and deep-seated morbid matters from the body—The hydropathic sudorifics act directly and powerfully on the organ whose activity it is sought to rouse—Comparing them with one another, however, there are differences in respect to rapidity of action and range of power.

The blanket pack is still capable of doing good service, especially where other means of procuring perspiration are not within reach of the invalid.

As an eliminator of morbid matter however, the blanket has serious defects. In the first place, its comparatively low temperature renders its actions extremely feeble as a depurator of the blood, and when the secretions have been brought to the surface, they are, by being so long in close contact with the skin is liable to be absorbed through the pores. In the second place, the patient is compelled to breathe offensive exhalations escaping from the upper part of the envelope; and thirdly, eruptions are apt to be formed on the skin through the long continued irritation. These defects greatly detract from the value of the blanket pack, as a sudorific, consequently I prefer confining its functions to those of a milder heatant, preparatory to cool or cold appliances.

The lamp bath is a mere expeditious sweating process, which is got through in from twenty to thirty minutes, instead of occupying like the blanket pack, from three to four hours. It is, besides, very easily modified in a great variety of ways, to meet the several conditions subjected to its influences. It has its drawbacks however. The space included for the heated air, whether by box, blanket, or mackintosh, is small, and soon becomes filled with noxious elements from the body as well as from the process of combustion. The air is more or less burnt to support the flame; and as it would be intolerable to the lungs it cannot be grateful to what is in point of fact another lung—the skin. The vapour bath is eminently soothing and agreeable to the skin, and in some diseases of that organ is preferable to any other sweating process. In point of speed it is even more convenient than the lamp bath, producing perspiration in ten or fifteen minutes. It requires, however, to be managed with care, as when overheated it unduly excites the action of the heart. Over all these minor "sudorifics" the "Roman" bath possesses a very marked superiority.

A BRIEF HISTORY OF THE ROMAN OR TURKISH BATH.

The idea of warm water and vapour baths may be traced to natural hot springs, so may that of hot-air baths to the effects of the solar heat on the objects, animate or inanimate, exposed to it. Going so far back as existing records will carry us, Homer the father of Greek poetry and the poetic art, describes his heroes as refreshing themselves with the warm bath during the Trojan war (B.C. 1194), and we know that the hot-air bath was systematically employed in the renowned Greek gymnasia as part of the admirable system of physical training there pursued. Greece probably derived her hot-air bath from Asia, though of that there is no certainty. She caused it to form part of her unrivalled national institution, yet, strange to say, never thought of it as a household convenience—since we find the father of physic, Hippocrates, prevented from prescribing it in some cases on account of the difficulty of obtaining it. The Romans, on the other hand, who borrowed the hot-air bath, with its concomitants, rubbing, anointing, &c., from the Greeks, made it subservient to private convenience and luxury, as well as to public accommodation. In the days of the Empire, both the public baths for the people and the private baths attached to the dwellings of the rich were made marvels of architectural magnificence. Especially so were the baths of Nero, Titus, Caligula, and Dioclesian. They were not only of wonderful extent and granduer, but filled with the most costly works of art, paintings, sculptures, and every elegant decoration in metals, marbles, and precious stones.

Some are disposed to regard the Phœnician cities of Tyre and Sidon as the home of the bath, so far as the civilised world is concerned; and certainly it is easy to understand how from Tyre and Sidon a knowledge of the bath would find its way along the shores of the Mediterranean to Egypt, and Northern Africa as far as the pillars of Hercules on the one side, and to Asia Minor, Greece, Italy, Iberia, and the furthest west on the other. Then on the landward side the line of caravan communication would serve to transmit like knowledge to Russia, Persia, Tartary, China, and Hindostan. America might have received the bath either from Phœnician merchantmen on its eastern; or Chinese voyagers along its western shores. And *diverse* as have been the *forms* and *details* of the bath's processes in those regions severally, the *principle* has been *one* throughout. And, indeed, so likely is this principle to suggest and commend itself to the human mind, that

if the foregoing theory of the spread of the institution of the bath be rejected, it is no great stretch of imagination to suppose that the idea of the bath originated independently in different regions, at different times, and took the form which convenience or opportunity dictated. But be this as it may, a glance such as I now propose to give at its divers shapes may not be uninteresting to the reader.

The form of bath employed in countries bordering the shores of the Mediterranean—Turkey, Egypt, Morroco, &c., is that which has become familiar to us as the Eastern Hammam. A light and elegant cooling room for undressing first receives the bather. From thence, duly robed, he proceeds to the hot room, which is often so filled with vapour that he can scarcely breathe. Perspiration is here evoked, and the bather is forthwith soap-lathered with a brush of camel's hair, soused with hot water, shampooed and scraped. Conducted to the cooling room, he is offered coffee and sherbert, and reclines in a state of comfort described as truly elysian. The Orientals regard the bath as their greatest comfort and luxury, and their one welcome resource in illness, fatigue, or mental distress. Its beneficial action is enhanced by the pleasure of social intercourse, for which the bath gives most welcome facilities and the Oriental taste for architectural magnificence and granduer is not seldom gratified by the style and decorations of the building.

Going westward to Ireland and America, we find a form of bath more primitive, but constructed on the same principle. The *Irish* bath was generally built of basalt stones, plastered with mud or mortar, and shaped like a beehive, having a hole at the top and another near the ground by which the bather gained entrance. The interior was large enough for one person to seat himself, and the place was heated after the manner of an oven with a large turf fire. The fire was left until burnt quite down, when the remains were removed and the floor strewn with rushes. The bather then crept in and seated himself, and the sod which had been placed over the hole at the top to keep in the heat was removed to allow him to breathe. Here he remained until the beads of perspiration rolled off in abundance, and was then taken out, bathed, wrapped in blankets, and conveyed home. These erections were called *Tig Allin*, or Sweating Houses. They were, for the most part, placed on the banks of the rivers, lakes, or ponds, for facility for after bathing.

By whatever means the Aborigines of America became acquainted with "Thermal Medicine," it is certain that in their own primitive way they employed it for the cure of their distempers. In North America the native sweating house resembled a large oven with a small door on either side, one for the bather to creep in by, and the other for introducing red hot stones. On

these stones water was sprinkled to raise a steam. Here the bather sat until having undergone a thorough perspiration, he was taken out "hissing hot," and plunged into the stream hard by.

Sometimes this oven bath was constructed of poles covered with skins, so as to be perfectly air-tight, and sometimes a hollow square of six or eight feet deep was formed in the river bank, by damming up the other three sides with mud, and covering the whole over, except an aperture about two feet in diameter at the top, for the bather to enter. The use of these sweating houses was common among all the Indian tribes from the Atlantic to the Pacific Coast of what may now be called Anglo-Saxon America.

In Mexico, a similar form of sweating house was used, but built of bricks and provided with a furnace, having a mouth outwards to receive the fuel, and a hole above to carry off the smoke. Within was placed a mattress on which the bather reclined, a pitcher of water, and some sweet smelling herbs. When the bather (or Termazcalli) was duly heated, the bather entered accompanied by an attendant, the entrance was closed and water was sprinkled by the attendant on the hot stones around the furnace until the whole place was filled with thick vapour. While the bather reclined on the mattress, the attendant beat the ailing part with herbs dipped in now slightly warm water. The Mexicans found this mode of bathing a signal service in various disorders, and in the case of bites by poisonous reptiles.

Tracing the bath eastwards from its supposed source on the shores of the Mediterranean, we find it flourishing in Russia, Tartary, China, and Japan. The Russian Bath has often been described. In St. Petersburg, Moscow, and other large towns of the empire, the public baths are numerous, and frequented by all classes, especially, however, by the poor, who are influenced by religious motives as well as by considerations of health. On Sunday evening, in St. Petersburg, may be seen crowds of mechanics, labourers, soldiers, women and children, hurrying along the streets with birch twigs in their hands and towels under their arms. They make for a door, over which is written "Entrance to the Baths," take their tickets, males and females separately, who proceed to their respective compartments, where they undress. Beyond the undressing, is the hot chamber, which is filled with vapour caused by throwing hot water from pipes over hot stones or bricks. Around the apartment extends a range of steps reaching from floor to ceiling, and the heat is in proportion to the ascent of the steps. Into this vapory chamber as many bathers crowd as can find accommodation, and perch themselves in tiers from floor to ceiling. Each is furnished with a small wooden pailful of hot water, to souse his body now and then, as he switches it with his birch twigs. After working themselves up to a high state of heat and perspiration the bathers finish, in

summer, by ablutions with soap and water; and in winter, by rushing out and rolling themselves in the snow. The Russians take great delight in this bath, believing it to be a sovereign remedy in many diseases, while its effect in strengthening their constitutions is too evident to admit of dispute. "The eyes of a Russian gladden with rapture, when he speaks of the bagnio; it is the *ne plus ultra* of mortal bliss."

In Finland, the bath is generally attached to the houses of the peasantry, and consists of one small chamber, with a kind of oven filled with round stones, which are heated until they become red. There are two rows of seats, one near the ground, and one in the hotter region near the roof. While in the bath the Finlanders rub themselves, and switch their bodies with twigs of the birch tree. Having done this to their satisfaction, they finish off with cold water or a roll in the snow in true Northern style. The great objection to these Russian and Finnish baths is their oppressive amount of vapour and their defective ventilation. But though far from perfect, they are a prodigious improvement upon no bath at all, and as constructed and managed, for example, by M. Roth in London, they are in certain states of body eminently serviceable.

In the far east, Tartary, whither the victorious arms of Russia have now penetrated, the soldiers of the Czar will have an opportunity of bathing on the *hot-air* principle, which they will find more agreeable, it is to be supposed, than their own stifling vapour. The baths of Bokhara—the Tartar capital—are sixteen in number, and consist of four compartments, of which two are for dressing and sipping tea, and two for the perspiring, shampooing and bathing processes. The two latter are heated from below in Greek and Roman fashion. In the chamber the bather doffs his outer garment; in the second, which has a slightly raised temperature, he completes his disrobing, and girding himself with his bathing costume, he enters the third or hottest room, where he reclines until he has perspired satisfactorily. Proceeding then to the fourth room, he gives himself up to the shampooer, who manipulates with such skill as he has, rubs him with a coarse hair-cloth, and finishes by pouring cold water over him. Possibly he gets shaved before he returns to recline and sip his tea in the first or second apartment. These Tartar baths, though not so good as those of the Turks, are on the whole an immense improvement on the Russian; and it is to be hoped that the Russians will now take a hint or two from them for the removal of the defects of their own institution.

The Chinese baths approach nearer to the Russian type, being *vapour*, not *hot air* baths. As a fair specimen of them, those of Shanghai may be taken, which have been described as follows. Each bathing establishment has two outer or cooling rooms for toilet purposes, one large public room for the poorer classes,

and one smaller and private room for the respectable. Down the middle and along the sides of these rooms are ranged rows of small boxes or lockers furnished with lock and key, into which the bathers put their clothes. At the further end of the building is a small door by which they enter into the bathing room, which is about thirty feet by twenty, and is filled by hot steam or vapour. The entire floor, except a narrow space round the sides, is occupied with a hot water bath from one to eighteen inches deep. The furnace is outside, and the flues are carried under the centre of the bath. In the hazy light of this room may be seen the perspiring Chinamen disporting themselves in the shallow water, until, when cleansed to their satisfaction, they return to the cooling room, there to regale themselves with cups of tea and pipes of tobacco. All classes of Chinese frequent these bathing establishments. Mr. Ellis, in his *Journal of his Embassy to China* (1816), says of this Chinese cleansing apparatus, that it is "disgusting," and "worthy of this nasty nation;" but says Mr. Erasmus Wilson, "What would Mr. Ellis say of a country in which there existed no *cleansing apparatus* whatever? For example, his own." Thanks, however, to Mr. Urquhart and Dr. Barter, this home question has now lost something of its point and its unpleasantness.

In Japan the bathing place is usually built at the end of the gardens of private dwellings, and is got ready every evening, as the Japanese regard it as a necessary refreshment after the fatigues of the day. The bath is either a vapour or warm-water one, sometimes both. The sweating house is usually about nine feet square, and nearly six feet high, besides having the floor raised three feet from the ground. The floor is of planed laths set a few inches apart to let the vapours in and the water out. Two shutters, one on each side, are provided to let out the superfluous vapour, and there is a small door by which the bather creeps in. The empty space between the floor and the ground is enclosed by a wall to prevent the escape of vapour by the sides. The furnace stands out towards the yard, but under the sweating house is the boiler with the necessary water, to which is added sweet smelling plants. The fragrant vapours are made to ascend between the lath planks of floor to where the bather sits. There are placed near him two tubs, one of warm and one of cold water, that he may wash himself after the sweating process.

In all these forms of the bath, however primitive in construction and operation some of them may be, the same principle prevails. They all "flush out" the pores of the skin to an extent which it is vain to look for from the operations of a mere water bath. Nowhere in the countries just spoken of do baths come up to the magnificence of those of Greece and Rome; nevertheless, rude and imperfect as some forms of baths may be, they are all incomparably better than none at all.

The Romans called their baths *Thermæ* (from Greek *Thermos*—heat), and set the highest value on them as the means of health and pleasure. No doubt the *thermæ* were abused in the degenerate days which befell the Empire, especially when deprived of the patronage of the Emperor and the nobility on the removal of the seat of government to Constantinople, and made the lounging place of an idle and dissolute rabble. A new lease of life and usefulness, however, awaited the bath at Constantinople, and throughout the Eastern Empire; and when these fair regions were overrun by the Turks, and Constantinople fell into the hands of those barbarian conquerors, they not only spared the *thermæ*; but had the sense to adopt and patronise the institution, which they have preserved until now, much to their own benefit, and it is to be hoped to ours also. Travellers in the East having experienced great benefits from the use of the Turkish *thermæ*, they passed the consideration of them on the attention of their countrymen. Foremost among such apostles of thermal hygiene was the late Mr. David Urquhart, who, after long and apparently fruitless effort, at last succeeded in enlisting the sympathy of Dr. Barter, of St. Ann's Hydropathic Establishment, Blarney, who at once adopted and improved the Turkish Bath. In this work of improving he derived aid from an examination of the remains of Roman hot-air baths scattered over Britain; the bath, therefore, as now established among us, though called the Turkish bath, is the child of the Roman *thermæ*. The "Improved Turkish Bath" of Dr. Barter, now in full operation in most of the large towns of the United Kingdom, is "the Roman bath without its anointing; the Turkish bath without its undue moisture," anointing being no longer required for the purposes for which the Romans used it, and the moisture of the Turkish and other baths mentioned, having been found to be an imperfection, a clumsy substitute, in fact, for a proper heating apparatus. The improved Turkish bath is one of pure atmospheric air properly heated, having its due proportion of oxygen, making respiration pleasant, oxydation of the blood perfect, evaporation and depuration complete, and exalting the tonic influence of the subsequent cold appliances.

"Under the influence of pure heated air," says the late Dr. Barter, "free from visible steam, and continuously renewed by a perfect system of ventilation, no one feels the distress which so frequently accompanies other heating appliances; for while perspiration is more fully obtained, the pulse is but rarely unduly excited." This is the great feature of the improved Turkish bath, and one on which its perfect safety and curative property will be found mainly to depend.

Steam, by saturating the atmosphere with moisture interferes with the free transpiration from the lungs and skin, and thus impedes the process which nature provides for cooling the body. It

also fills the space which vital air should occupy, and thus from both causes nature is placed in a difficulty in encountering heat. Nature did not intend us to live in an atmosphere saturated with moisture. Pure air is man's proper medium; and if it be pure and dry it can never do harm.

It is a matter of experience that the feeling of discomfort is always proportionate to the amount of moisture present in the atmosphere. When the thermometer stands at sixty deg., the atmosphere, if dry, is felt to be agreeable, and if saturated with moisture, it will be raw and cold. Again, if the atmosphere is at 80 deg. and dry, it will not be oppressive, whereas if moisture be present, it will be peculiarly disagreeable. In the improved Turkish bath free from visible steam, one can remain any length of time, and almost at any range of temperature, with infinite benefit and with perfect enjoyment.

Free from the objections of tediousness, unequal action of heat, noxious atmosphere, as well as of relaxing moisture, the Hot-air bath has been called the "short way to the water cure," and looking to results, not without reason. Under the stimulus of the heated oxygen the system is roused to action, the circulation is accelerated, and the exhalation from the skin and lungs increased. There is a physiological tumult in which every function has its action quickened, and the large amount of pure heated oxygen drawn into the system by lungs and skin greatly aids in the decomposition of carbon, consequently there is a greatly augmented waste of the animal structures, together with elimination of the *debris*. Effete and unhealthy elements are loosened and swept away, and the process, as a whole, is the most powerful alterative which it is possible to conceive.

The advantage of the hot-air bath is not unfrequently exhibited to the Hydropathic practitioner in a striking manner. On a cold, foggy, unbearable day, such as we often experience in our climate, a gentleman, wet and weary, presents himself for Hydropathic treatment. He is not warm enough for the particular process, and he has not spirit enough left to try to rouse up the circulation by open air exercise. He is taken and prepared for the process by the Turkish bath, and sufficient heat developed in him to secure reaction after the process, which thus becomes altogether enjoyable, as well as effective. In this way the bath acts as a splendid counteractive to the climate, and a substitute for exercise.

No person who has enjoyed the luxury of a Turkish bath, for cleansing purposes, would undergo the torture of a hot water bath, if they could command a hot-air bath. The best proof of the way in which the hot-air bath has been appreciated is in the fact that there is hardly a town in England of any importance that does not possess its prosperous hot-air bath, and there is hardly a place in Europe where a bath does not exist.

THE TURKISH BATH IN DISEASES OF THE HEART.

In a lecture delivered long ago, before a meeting of medical men, Dr. Thudichum said of the hot-air bath:—"A boon to mankind, your nation, and every individual in this room; hot-air combined with cold affusions, with shampooing, with exposure of the body to light and air, await your approval as medical agents, and your application to those who are under your care."

The Turkish Bath was re-introduced into this country about fifty years ago, and, in the face of immense medical opposition, it has become a recognised institution, both as a sanitary and a remedial agent never to be ignored.

In view of removing some of the errors regarding the supposed deleterious effects of hot-air baths in heart complaints, I feel it incumbent upon me as a medical reformer to make public the results of my experience, now extending over a period of thirty years, of the efficacy of the bath upon diseases in general, and its power to prevent sickness. If, after the perusal of the arguments advanced, I should be fortunate enough to succeed in inducing my sceptical readers to try a Turkish bath, I shall feel amply repaid for the trouble and patience I have taken in producing this little brochure.

With the practical experience I possess, I may be credited with having some knowledge of the effects of the hot-air bath, and it will scarcely be necessary for me to remark that, during the above period, I have met with not a few persons holding strange ideas of the hot-air bath, for instance I may note that nine-tenths of the sufferers seeking relief will have it, in spite of what you may say, that their heart or liver is diseased, and they fear the treatment will not be suitable in their case. The poor liver is often vilified because it is doing its duty; and, indicating its sense of annoyance of having been imposed upon, by its owner having introduced substances into the stomach that could not be disposed of, hence a battle ensues which causes a general disturbance among the whole family of organs situated in the viscera. The liver, heart, and lungs being the most vital organs, they are necessarily affected to a greater degree than their neighbours. The primary cause of this derangement is attributable to indiscretion in diet and general bodily mismanagement,—a defective action of the skin, bowels, or kidneys; so that blood poisoning is caused by the reabsorption of pernicious substances which nature has not been able to carry off by her legally deputed channels. It is well known that the major portion of persons presenting themselves for a Turkish bath, are nearly at the end of their resources as to remedies, or they would not be found within the precincts of such establishments; and it

may be generally admitted that the complaints they are suffering from are not of the mildest form. Though heart diseases are undoubtedly not only among the most prevalent disorders, and exist in great variety of forms, yet if it were taken for granted every time a person complained of pain or any kind of trouble about the region of the heart, that this was an indication of organic disease of that organ, half of the people would be suffering.

When an individual is reported to have died of "disease of the heart," we are in the habit of regarding it as an inevitable event, as something which could not have been foreseen or prevented, and it is too much the habit, when persons suddenly fall down dead, to report the "heart" as the cause; this silences all inquiry and investigation, and saves the trouble and inconvenience of a repulsive "post mortem." A truer report would have a tendency to save many lives. It is through a report of "disease of the heart" that many an opium eater is let off into the grave, which covers at once his folly and his crime; the brandy drinker, too, quietly slides round the corner thus, and is heard of no more; in short, this "report" of "disease of the heart," is the mantle of charity which the politic coroner and the sympathetic physician throw around the graves of "genteel people."

At a late scientific congress at Strasburg, it was reported that out of sixty-six persons who had suddenly died, an immediate and faithful post-mortem showed that only two persons had any heart affection whatever; one sudden death only in thirty-three, from disease of the heart. Nine out of the sixty-six died of apoplexy,—one out of every seven,—while forty-six,—more than two out of three—died of lung affections, half of them of "congestion of the lungs," that is, the lungs were so full of blood they could not work; there was not room for air enough to get in to support life. It is then of considerable practical interest to know some of the common, every-day causes of this "congestion of the lungs," a disease which, the figures quoted being true, kills three times as many persons, at short warning, as apoplexy and heart disease together.

Cold feet; tight shoes; tight clothing; costive bowels; sitting still until chilled through, after having been warmed up by labour, or a long, hasty walk; going too suddenly from a close, heated room, as a lounge, or listener, or speaker, while the body is weakened by continued application or abstinence, or heated by the effort of a long address; these are the fruitful causes of sudden death in the form of "congestion of the lungs;" but which, being falsely reported as "disease of the heart," and regarded as an inevitable event, throw people off their guard, instead of pointing them plainly to the true causes, all of which are avoidable, and very easily so, as a general rule, when the mind has been once intelligently drawn to the subject.

Everyone knows that palpitation of the heart is readily caused by sudden fright, flurry, or excitement, or by ailments of the nerves and stomach, and that in such cases there is not the least ground for alarm, or to suppose it is organic disease of the heart. When palpitation is connected with disorder of the stomach, the habitual use of tea, or any other dietetic beverage, may be the disturbing cause of the whole train of symptoms, which disappear so soon as they are given up. When palpitation is connected with nerve disorder, it is mainly due to an abnormal state of the muscular system of the heart, the blood being in a bad state—aqueous, poor in fibrine, and deficient in the red essential particles. In such cases there is intermission or irregularity of the pulse, and curious noises are often audible in the neck, by means of the stethoscope. These noises, Dr. Watson compares to the rushing and roaring sound to be heard in shells, to the hum of a gnat, or to the sighing of the wind through a crevice. Dr. Hope says it may be imitated by a prolonged whispering pronunciation of the syllable *who*. The stethoscope proves these murmurs to be venous, and when occurring in young and bloodless subjects, are, in the absence of those signs proper to structural disease, indicative of mere functional disturbance.

To glance at the several phases of organic disease, we have:—

I. **HYPERTROPHY**; (over nourishment), in which the walls of the heart are thickened. When this takes place without alteration of the capacity of its Chamber, it is called “Simple Hypertrophy;” when with dilation of the right or left ventricle, it is called “Eccentric Hypertrophy.”

II. **FATTY DEGENERATION**. A term sometimes applied to a state wherein the muscular texture of the heart is spoiled by super-induced layers of fat; but it more properly indicates a state wherein minute oily particles are scattered through the muscular texture, so that it becomes soft, doughy, and inelastic, insomuch as to be incapable of discharging its proper functions.

III. **ANGINA PECTORIS**, which some pathologists regard as a merely neuralgic affection. This opinion, however, Dr. Watson shows is scarcely consistent with the facts, namely:—that the paroxysms are excited by bodily exertion and mental emotion, and that the disease is very frequently and suddenly fatal. Dr. Forbes examined, after death, the bodies of forty-five individuals who had died of the complaint, and, of these, forty-three had organic disease of the heart or great vessels, the other two having disease of the liver only. Dr. Fothergill considers excessive fatty degeneration of the heart as the essence of the disease. In the subjects examined by Dr. Forbes, however, there were not only cases of that form of heart disease, but others wherein there were ossification of the valves of the heart or of the coronary arteries.

IV. ANEURISM (dilatation) of the aorta, or great artery of the heart, the rupture of which is followed by immediate death.

V. PERICARDITIS is inflammation of the *investing* membrane, and ENDOCARDITIS is inflammation of the *lining* membrane of the heart.

The two last named complaints often arise from repeated attacks of rheumatism, and are a common accompaniment of the result of rheumatic fever.

Such are the chief forms of organic disease of the heart. The causes which produce them are many, sometimes they are congenital malformations, or hereditary diseases, when they are not so the chief physical cause of their existence is impurities of the body. It is easy to see that sluggishly circulating blood, thick and impregnated with impurities, will make such deposits as will cause hypertrophy, fatty degeneration, ossification of the valves or coronary arteries, and aggravate, if not give rise to, the state of things which leads to angina, aneurism, or carditis of either kind. There can be no question that it is the blood which conveys the rheumatic poison to the joints and the heart by which they are inflamed, hence, the more impure the blood, and the more sluggish the circulation, the more danger there is of organic disease.

So far as the ordinary hygienic treatment of heart complaints is concerned, the faculty insists as a *sine qua non* on the avoidance of shocks, and over exertion, whether physical or mental, on perfect quietude of mind and body; also upon careful attention to diet, so as to avoid all irritation or disturbance from the digestive apparatus, and they enjoin free oxygenation of the blood, *which advice all must endorse*.

The chief medicinal remedies in the allopathic practice consist of iodine, mercury, digitalis, tonics such as iron, steel, &c., alcoholic stimulants, diuretics, purgatives, bleeding and blistering. It will be seen on examination to what extent these remedies commend themselves to one's fidelity in the treatment of heart disease.

Not much can be said in favour of iodine and mercury, the results have proved as uncertain as the existing difference of opinion amongst medical men as to their having any beneficial action at all in disease. Consequently it may be fairly admitted that these remedies have not only not yielded results at all encouraging, but are considered dangerous weapons even in the hands of skilled physicians.

Digitalis is one of the chief remedies, notoriously uncertain in its action, and its employment in many cases is dangerous.*

* "Why the drug is called digitalis (from digitale, the finger of a glove), I cannot imagine," said an eminent medical professor, "unless it be that it points to the grave." The drug has been known to produce feeble pulse, coldness of the surface, dimness of sight, vertigo, and when large doses have been given, delirium, vomiting, purging, hiccough, convulsions, and death.

Purgatives are admissible in cases of constipation, requiring immediate relief, yet their general effects are only to make the bowels less active and in every case they produce perturbation of the circulatory system, and often have pernicious effects in organic diseases of the heart.

Diuretics may be found useful, but in giving them in large doses, which is often done, to make the kidneys do a portion of the skin's duties, it produces considerable constitutional disturbances and injures the kidneys, and in fact it is admitted by some of our best medical authorities, that the excessive use of diuretics is the frequent cause of kidney diseases.

Blood-letting, either by lance or leeches, was greatly resorted to in former years, but now the lancet is scarcely ever used, and leeches only in acute congestion. The prevailing opinion at one time was that congestion arose from too much blood, but the modern theory is that it arises from too little; therefore so far as blood-letting is concerned in heart disease it is not worthy of consideration. In certain acute attacks of heart and lung diseases, leeches may be admissible, but only in extreme cases where other more rational means are not available.

Blisters relieve by counter irritation and often prove serviceable in chest congestions; but in affections of the heart their value is practically useless. Mustard fomentations are always more efficacious, and are attended with much less inconvenience and discomfort to the patient.

The late Dr. Watson,—who may be considered as one of our best authorities on heart disease,—would check *nervous palpitations* resulting from a disordered stomach, (which are known by being only of an occasional occurrence while the rhythm of the heart is perfect in the intervals), by remedying the state of the blood, for which purpose he recommends preparation of steel, aloetic purgatives, animal food, the cold shower bath, and moderate exercise in pure air. *I will remind my reader that Dr. Watson's remedies are attended with far more danger than the most violent application of the hot-air bath.*

Undoubtedly amongst the various disorders to which the human body is unfortunately subjected, disease of the heart and lungs are the most prevalent, (even after making all allowances for *assumed* affections of the heart, the result of mere functional derangement), and the mortality is greater.

Hence heart diseases have secured a larger amount of attention from the medical faculty than any others, and doubtless within the last thirty years a good deal of light has been thrown upon the nature of these complaints, yet there is no class of disease in which less headway has been made in remedies either in the allopathic or homœopathic practice. The only real advantages that have been obtained is in diagnosing the different phases of the disease more

accurately, and thus enabling medical men to give more reliable hygienic rules for the guidance of invalids in the management of themselves.

In view of further advancement in treatment, it will be admitted that it is encumbent on everyone employed in healing the sick, to impart any knowledge he may possess, regardless of the source from whence it is derived.

I have briefly stated the nature of the means that are generally employed in heart disease, and the *rationale* of their action; but my object, however, is not to supersede or interfere with any treatment of proved utility, or to say anything in favour of the hydropathic treatment of heart and lung affections, but simply to rebut the supposed idea of the Turkish bath being fraught with any more danger or even so much as the ordinary modes of treatment, while its beneficial results prove it to be vastly superior to any other remedies that have as yet been applied, either in a hygienic or medical point of view.

“MEDICAL TESTIMONIES.”

I always make it a point if possible to support my arguments with the opinions of medical men of all schools, as I have no prejudice against any method that has for its object the amelioration of human suffering.

I cannot do better than quote from Dr. Wyld's work on “Diseases of the Heart and Lungs,” p. 308:—“The human skin contains about 2,000,000 pores, and about 30 miles of sweating ducts terminating in these pores. Normally, if a man take 95 ounces of food and drink in a day, he will pass off by his lungs about 15 ounces, by his bowels about 10 ounces, by his kidneys about 30 ounces, and by his skin about 40 ounces. It is thus evident that the skin is a most important depurative organ.

Further, the skin is composed of an infinitely minute and sensitive network of nerves and capillaries, and therefore presents a surface of wonderful extent and sensibility for the operation of heat and cold.

The main objects of the hot-air bath are—

1. To stimulate the skin, and to sweat out effete matter, and thus depurate the blood.
2. To relax spasm, or over tenacity produced by mental or bodily excitement if such exists.
3. To restore vigour to the body, bruised as it were, or exhausted by bodily or mental labour.
4. To draw the blood to the skin, and thus relieve internal organs of congestion.

By the operation of the sweating process, followed by washing, the skin is rendered purer than it can possibly be rendered by the

hot water and soap bath. The glands of the skin are also stimulated by the hot-air bath, while they are rather relaxed by the hot-water bath.

The exposure of the skin to the cool fresh air, in the dressing room, after the pores have been fully opened by heat, is extremely exhilarating, and tonic in its action; and most probably the direct action of the light, and oxygen of the air, have, on the *freely-opened* skin, further beneficial effects.

The skin is so stimulated by the hot air that almost any degree of cold can be borne for some time afterwards, not only without any chance of 'catching cold,' but with positive pleasure. The writer of this has sat after a bath in a garden with his skin freely exposed for half-an-hour to the frosty wind of a January morning, and with positive pleasure and benefit."

Dr. Thudichum, and the late Dr. Goulden, of St. Thomas's Hospital, both testify, from personal observation, to the quieting effect of the thermal processes on the heart, a fact not difficult to be understood when it is recollected that in the bath the blood is largely drawn from the centre to the surface of the body, thus relieving the internal organs from all undue pressure. Besides the patient sits or reclines at ease, (quiescent), while undergoing the sweating process, and that is followed by an ablution so mild and nicely graduated that all shock is avoided. If the blood is made to pass through the heart in swifter current, it is in less volume, for not only is much of it kept in the capillaries on the surface, but its total amount is diminished by the abstraction of watery and effete elements. The labour of the heart is therefore lessened to the extent of the diminution of the volume of blood passing through it.

It is quite a mistake to reason from the effects produced on the heart by violent or prolonged exercise, or by vehement mental emotions, against the Turkish bath, as though its action might be productive of like dangers.

Speaking of a case of dropsy from heart disease, Dr. Thudichum says that the patient having been kept in the bath one day and one night, at intervals, the pulse, which was previously 170, was reduced to 75 after this treatment, and the patient, who had been almost moribund, was able to walk about the garden. "Two cases," he adds, "of palpitation of the heart, unaccompanied by valvular disease, have come under my observation, in which a low temperature of the bath mitigated the palpitation, but a higher one removed it, so that while rapidity of motion remained, the inconveniences were removed,—the weight seemed to be taken off." With this experience I am glad to find the records of the Newcastle Infirmary fully agree. They state that the *extreme heat* exerts less influence on the heart and circulation than the ordinary warm water bath. In some cases, in which the pulse and stethoscope gave unmistakable evidence of heart disease, the patients have

undergone the process *without attendant mischief*, and with *unlooked for benefit*.

In fact the evidence is, that in cases of functural disorders of the heart, the beneficial action of the bath is simply overwhelming, and incontrovertible.

The majority of those who are supposed to have heart troubles are too often scared by the hackneyed idea, instilled into them either by their friends or medical adviser, that to take a Turkish bath would be highly dangerous. In the interest of one of the greatest friends to animal life, viz., *heat*, I have endeavoured to obtain some evidence as to the accuracy of these assertions, and the character of the replies obtained was generally as absurd as that some friend or friend's friend, had a great grandfather or grandmother who died in a hot bath somewhere, in Ireland, Turkey, Russia, or perhaps the backwoods of America.

As an illustration of the great dread persons attach to the supposed dangers of taking the bath, I have known patients, who were really anxious to be relieved of their sufferings, positively tremble with fear when they thought I should prescribe the bath, and this simply because it had been dinned into them that, they having heart disease, it would result fatally if they took one; whereas, perhaps, there was no appliance in hydropathic practice calculated to be of so much benefit in such cases. In fact, for all forms of heart and lung complaints, there is no appliance fraught with greater kindness than the hot-air bath, properly administered.

At a meeting of a number of scientific and medical gentlemen, assembled to hear the late Mr. David Urquhart's (author of "The Pillars of Hercules," "Manual of the Turkish Bath," &c., &c., to whom we are indebted for the introduction of the Turkish Bath) remarks on the efficacy of the hot-air bath as a medical and sanitary agent, the following dialogue took place:—

Mr. ——— "Is there any action of the air through the skin upon the blood?"

To which Sir Erasmus Wilson, F.R.C.S. & F.R.S., replied:—

"Yes, I have not the slightest doubt of the action of the air upon the blood through the agency of the skin, although I must confess that I have been very much surprised latterly in meeting a gentleman, a companion of the bath—Mr. Witt's bath—and a physiologist of great celebrity, who doubted the action of the atmosphere upon the blood. Why he could have doubted it for an instant I cannot comprehend, because we are all physiologists enough to know that the lungs are nothing more than a bit of skin turned in, just as the internal surface of the lung would become skin if it were exposed externally; that there is no special structure about the lung which enables it to be the special respiring organ, beyond its being a moist membrane whereby oxygen passes in, on the one hand, and carbonic acid gas passes freely out, on the

other; and assuming that the skin is thus made moist, an active respirative current will be established in both directions, inwardly and outwardly."

Mr. Urquhart. "I should like to follow up what Mr. Wilson has said. I find that in the bath, persons suffering from disease of the heart obtain instant relief, although the number of pulsations are increased. It is just as in the case of a steam engine going down an inclined plane, the piston works more rapidly because the work is done for it. The skin comes to the aid of the heart and lungs. Again, in a very high temperature, you lengthen your respirations. Up to a certain height you are oppressed, say at 110, 120, 130, or 140 degrees. The sense of enjoyment begins to manifest itself at 155 degrees, as if from that, upwards, there was a relief afforded to the heart."

Now, as the object of the action of the heart is to bring back the blood, and to pour it into the lungs, in order that it may there lose its poison or carbonic acid, and regain new life, or oxygen, that is to say, undergo the chemical operation of decarbonization, if that operation should take place partially throughout its course, and at the extremities, the heart by this chemical subvention is mechanically relieved. The counterpart of this reasoning explains disease, whether of the liver, the kidneys, the lungs, or the heart, namely, that the skin being coated with a varnish more or less impervious, the decarbonization of the blood does not take place so fully, and an effort is thrown upon the lungs and heart to drive it through, or upon the kidneys or the liver for the elimination of foreign matter beyond that which is allotted them; and so, being called upon for extra toil, they are overpowered, and become disordered. Weakness ensues; then the patient is confined to bed, and thus the curative of rest is called in. The balance is thus partially restored, and unless death ensues, the patient is rendered capable of recovery. When this happens, it is attributed not to rest, but to the method of treatment, which consists in administering poisons for the infliction of comparative disturbance on the less suffering organs, as a means of relieving the more oppressed ones. If you varnish the skin of any animal it will die;—the cause of death would be suffocation, not because its mouth was closed, but because its skin was closed, as in the case of small pox. We have a remarkable instance in the accession to the pontificate of Leo. X., when, to represent the golden age, a child was gilt: it died in the course of a few hours, therefore we are always breathing through the skin. It stands to reason that a piece of mechanism never would have been formed if it was not to be of use. Every portion of the surface of our bodies is pierced with fountains: these fountains will run with foul water so long as there are impurities within the man, and with distilled water from the moment these are expelled. Thus the nauseous effluvium that

belongs to impurity is given as a warning. The impurities of man come from within; the cleansing power of man comes also from himself. *Disease is only filth.*

The Turkish bath quiets the system and makes digestion easy. In organic disease of the heart, the bath by surcharging the skin with blood and so largely exposing it to the atmosphere, will more freely oxygenate it than any amount of exercise which it would be prudent to take, considering that the patient is probably hide-bound as well as heart-bound, and can perspire only with an amount of effort which would be highly dangerous, and would result perhaps in sudden death.

I maintain persons can avail themselves of the benefits of the Turkish bath, with, to say the least, as little risk as attends ordinary medicinal treatment, and I believe with a very great deal less; and I am certain from all I have seen of its effects in all forms of heart disease, that for curative or palliative efficacy, and for safety in its administration, hot-air is infinitely to be preferred to most of the allopathic medicaments.

It is well known that in all heart complaints, that the circulation of the blood is very much impeded in its course through the body, and the skin often becomes very inactive. In such cases, on entering the hot-air bath, the first effect that the person experiences is a slight oppression in breathing, and, when the skin does not act readily, this oppression is somewhat increased, but immediately on the skin becoming moist the oppression subsides, and the patient is relieved. The object to be gained medically in heart affections by the use of the Turkish bath, is the liberation of the skin; and secondly, the improved condition of the circulation through the body; and, in this way, it is marvellous how the action of heat affects beneficially all organic complaints, whether it be the liver, the lungs, dilatation or fatty degeneration of the heart; and even in angina pectoris, I have seen relief produced when once the skin acts. Hence I may say, in all heart diseases, the Turkish bath is calculated to prove a source of comfort in incurable complaints, and relief to patients where all other means have failed. Nearly all phases of heart troubles have from time to time come under my notice, and many of them under my immediate care, and I could enumerate a number of cases to substantiate my statements, were it necessary, but the object of this article being to convey, in as small a compass as possible, all the information which I can, for the benefit of the invalided public, I will only therefore give one well authenticated illustrative case, which will serve the purpose as well as though I gave a hundred, because I should have to go over the same ground; and that which is good in the one case, in a modified form is good in all.

The case I am going to recite was that of a gentleman suffering from one of the worst kinds of valvular disease, and who had

had the advantages of consulting some of our first men of the day, including Dr. George Johnson—who recommended the patient to take up his residence in Hastings, and he was there three months, under one of the leading physicians, pursuing a plan of treatment laid down by the London physicians. In spite of this the invalid gradually grew worse, until at last his friends were fearful of his death. When I was sent for I found the patient about as low as he could well be, and I at once saw the only chance of prolonging his life was the judicious use of the Turkish bath. His friends, and the medical man shrugged their shoulders and thought my opinion preposterous, exclaiming that if he took a Turkish bath it would kill him: *the usual opinion of persons who systematically denounce everything they have no knowledge of.* The patient however, having had some previous experience of hydropathy and the Turkish bath, and seeing the dilemma he was in, begged that he might be conveyed to my establishment, and I must confess that it was one of the worst emaciated cases that ever came under my roof; consequently, better evidence could not well be adduced in support of the bath. The patient, on taking the first bath, remained in the bath from a quarter of an hour to twenty minutes, carefully increasing daily the temperature until the skin began to act: and without going into a daily catalogue how the patient progressed day by day, I may say that, after he had been at the establishment two months, he was enabled to walk half a mile, and slept at least eight or nine hours out of the twenty-four. The condition of the heart very much improved; the bowels acting daily, whereas, before coming under treatment, the bowels never acted without a powerful purgative or an injection; and, besides this trouble, he had at least about twenty-five per cent. of albumen in his urine; as the patient improved, this was gradually reduced. Previously to his coming under my care, he could not obtain sleep without some thirty grains of chloral and three grains of digitalis; the appetite was bad, but, after he had been in the establishment for a month, he was able to take his meals regularly, and sufficient in quantity, with the result that he gained in weight six pounds. While of course, in this case, a cure was impossible, — it was only a question of amelioration,—yet I have no doubt whatever that had this patient come under the systematic influence of the Turkish bath six months previously, the condition of the heart would never have been so bad. But in consequence of allowing the disease to go on, together with the injurious effects of the use of large doses of chloral, and other experiments which had been tried, the man was reduced simply to nothing but skin and bone, and vitality drained out of him. The only other remedies I used in this case was hand-rubbing the whole body once or twice a day, and a wet compress worn round the trunk night and day to act as a sedative and a relaxative.

I think the success of this case presents conclusive evidence of the superiority of the efficacy of the Turkish bath over all the treatment that had been applied previously. I do not propose to make any further comments on the case, but will simply leave it for the reader to draw his own deductions. I have stated the case accurately as it occurred, and in doing so I am not in the least wishing to cast the slightest disparagement on, or deny the utility of, any specific remedy in medicine of approved efficacy, but all I say is that it is perfectly clear that the invalid had not all the advantages he ought to have had, or the results would have been different. It is my opinion that a good many of the known specific remedies in heart disease fail, owing to the want of susceptibility of the body to their influence, and by the judicious use of physical means, such as the Turkish bath, packs, &c., *small doses* of specific remedies would prove more efficacious, inasmuch as the body would be made more susceptible to their action. Just as in the case of quinine failing to give relief in ague and intermittent fever—immediately the patient has had a few Turkish baths, at a temperature from 160 to 180 degrees, quinine has been found to act like a charm. I will say in support of the hot-air bath remedies, in treating heart diseases, that they are fraught with no more danger than they would be in any other complaint; the bath only requires to be adjusted to the condition of the invalid.

What we lack is, the intelligent administration on the part of the proprietors of these establishments, which unfortunately gives rise to the general belief that the Turkish bath is not a medical agent, but a mere washing place.* I am quite prepared to admit that many people have been scared away from hydropathic and Turkish bath establishments through the incompetency of the people who have the direction of them; still, that is no barrier against the efficacy of hydropathy, and besides, this is a reflection upon the medical profession, and the onus rests upon their own heads. If they were as ready to recognise every innovation which science has developed, and to lay hold of and investigate its efficacy, as they are to ridicule it, all this trouble would be prevented; in fact, my remarks would not now be necessary, because each medical man would be able to give directions as to how the treatment of his patient was to be given, and these establishments would, necessarily, be managed with greater skill; but it is a curious fact, notwithstanding all the blundering management, that there have been fewer accidents and more good results from the use of Turkish baths, than by the scientific investigations that have been brought to bear upon the improvements in medicinal remedies.

* Not that I complain of the Turkish bath being resorted to for cleansing purposes; on the contrary, while I think it is the best bathing medium for man, I also consider the hot-air bath the best remedial agent for man.

SPECIAL PRECAUTIONS TO BE OBSERVED IN HEART COMPLAINTS IN TAKING THE TURKISH BATH.—Like administering any other remedy in critical diseases, it must not be supposed for a moment that it is unnecessary to exercise the greatest wisdom in the treatment of any person suffering from heart affection. In the first place, it is essential that the air of the Turkish bath should be perfectly pure by allowing of a constant inlet of plenty of fresh air. The patient should not be subjected to breathe burnt air or the fumes of sulphur given off by a Turkish bath heated by an ordinary cast-iron stove, as is unfortunately used in the majority of our Turkish baths.

Assuming it is all right as regards the heating apparatus and the patient for the first time is in the cooling room, denuded of his clothing, the first thing to ascertain is if the feet are warm.*

The attendant will then take him to the washing room, place his feet in hot water, give him a thorough wash and scrub with soap and hot water, and, after being well soused and thoroughly dried, the next stage is that the patient is led into the tepid room (having been previously supplied with a girdle and wet cloth to head).†

This room should be at a temperature of about 130 degrees: after remaining here fifteen to twenty minutes, the skin should exhibit signs of moisture. He may then be taken with safety into the hot room, at a temperature of 160 to 180 degrees, where, if feeling comfortable, he may luxuriate for ten minutes, and in the meantime he should be supplied with a tumbler of cold water, to be sipped gently. After this he should return to the washing room, there to have a mild shampooing while sitting erect on the slab; this process should not occupy more than five or six minutes. After a good wash down with hot water he should be finished off with a spray or bowl at 80 degrees.

The patient will then proceed to the cooling room, and, if in the winter, he should be restricted to five minutes for reclining on the couch; he should then sit up, rub himself well with a towel, and leisurely dress. A cup of coffee, cocoa, or tea,—whichever is most agreeable,—is recommended to be sipped during the process of dressing. The patient being dressed (and he should be particular to clothe himself suitable to the severity and the temperature of the weather, if it be the winter season), would find a walk very beneficial. Should he, however, have occasion to avail himself of an omnibus or train, he should be careful not to sit in a draught. In the summer, when the weather is warm and genial, the same precautions are not so necessary as during the winter months. In heart affections of any kind, especially if of a severe character, it

* See hot foot bath, p. 101.

† See head, p. 102.

is desirable to steer between extremes, choose the "happy medium," always remembering the French motto *juste milieu*, avoiding fatigue and excitement of all kinds.

INACTIVE SKINS.—I have found the following an excellent precautionary measure to resort to where there is a difficulty in procuring perspiration, namely, giving a slight stimulus to the surface by rubbing the patient all over with dry bran mustard after entering the washing room, and then having him bathed down well with hot water, afterwards well dried with a towel before entering the hot rooms.

Where there is great difficulty in procuring perspiration, it is essential that the bath should be taken daily until the skin is brought into thorough action; the only difference to be observed in the second and ensuing baths is, that the patient may pass direct into the tepid room without a soap wash, and if the feet are cold they must be put into hot water while sitting in the tepid room. If the moisture comes readily, he can remain in each room a little longer, and take the concluding ablution a little colder.*

FOOT BATH.—Many people have naturally cold feet; always in winter and very often in summer. One of the prevailing causes of headaches, after the Turkish bath, is owing to persons neglecting to put their feet into hot water while sitting in the sweating room. While, possibly, there are no direct evil results arising from headache contracted in this way, yet it is very trying, and when it can be prevented, by having recourse to a hot foot bath, *why have the headache at all?* Persons suffering from heart trouble nearly always suffer from cold feet, and on no account should they be without a hot foot bath, as it materially helps the circulation of the blood through the extremities, and thus relieves the oppression of the heart.

WITH REGARD to the duration of the sweating process it is rather difficult to lay down an invariable rule, but all attendants ought to have a sufficient knowledge of their duties to be able to tell when a patient has had enough. I have known a considerable amount of inconvenience produced from invalids remaining too long in the bath, and from the want of care in using the watery appliances after the sweating process, by dashing on rather too hot or too cold water, thus producing a shock to the nervous system. In all affections of the heart it is absolutely necessary that the patient should not remain in the sweating room too long so as to feel over-fatigued, but should leave the bath on feeling he has had enough, providing perspiration has been produced, but even though not perspiring very well, on feeling oppressed should leave the hot

* After becoming accustomed to the bath, it is a good plan to go direct into the hot room for a few minutes, to give a fillip to the circulation, afterwards pass into the tepid chamber.

room and be thoroughly bathed in hot water, and in every case the spray must be quietly graduated down to cool water,—80 to 70 degrees, avoiding a shock.

TEMPERATURE OF WATER.—Patients will always experience some difficulty in getting the water at the right temperature: the bath attendants are too apt to regulate the water by the hand; this is all well enough to an experienced man, who can generally regulate it to a nicety, but it is very much better—and the patient should insist upon it—that he should see the thermometer for himself before he gets into the shallow, or allow the spray to play upon his body. I never, under any circumstances, permit any appliance to be given unless tested by a thermometer.

EXERCISE.—Patients who are able, should always try to take a little exercise before going into the bath. In the case of the gentleman I have alluded to, he was physically prostrate and unable to walk, in fact he had to be carried to and from the bath; he could not even walk across the room without inconvenience; and, of course, in such cases as this, exercise should not be resorted to without consulting a thoroughly practical person who understands his business.

HEAD.—Every patient should bathe his head in warm water previously to entering the hot rooms; should the head feel inconveniently hot while sweating, renew the head bath as often as may be necessary; those having little hair will find it preferable to have a wet towel applied and re-wetted as may be required, and those subject to a flushed face should use warm water in the washing room instead of cold water to the head and face.

Ladies who have large quantities of hair, and who very often experience great difficulty in getting it dry after the Turkish bath, should thoroughly soak their hair on going into the bath, and then wind round the head a small Turkish towel, and keep it on until leaving the bath, not allowing any more water to come in contact with the hair *while in the washing room*.

IF EVERY PERSON SUFFERING FROM HEART DISEASE would slide themselves into the Turkish bath in this way, they would not only never experience any difficulty, but I am certain seventy-five per cent. of the sufferers would have their lives considerably prolonged, and, in many cases, radically cured. Patients once thoroughly accustomed to the bath should not discontinue it suddenly, but gradually diminish taking it, restricting themselves say to three times a week, afterwards to two, for several weeks, and then to *one a week for a lifetime*.

I MUST IMPRESS UPON PATIENTS having recourse to the Turkish bath while taking allopathic remedies, the desirability of having the strength of the medicines considerably modified, inasmuch as the Turkish bath makes all persons more susceptible to their influence. These remarks, however, do not apply to homœopathic medicines.

The great majority of heart affections are accompanied with undue stoutness which no doubt in many cases is owing to hereditary predisposition, there being usually a great difficulty experienced in getting the skin to act from inability to take sufficient exercise. In such cases, and where the usual precautions already referred to in the commencement of a course of Turkish baths proves unsuccessful, I have found a few vapour or liquid sulphur* baths succeed in coaxing the skin into suppleness and activity. The wet sheet, mustard pack, is very efficacious for a dry feverish skin, and I have also found that placing the patient in the hot room enveloped in a wet sheet succeeds admirably well. These remedies, however, should be conducted under the supervision of a skilled mind.

FAINTNESS rarely occurs in my establishment, and when it does it is mainly owing to inattention on the part of the attendants, or gross indiscretion of the bathers; so that any remarks on this head should really be unnecessary. There is nothing peculiar in the hot-air bath (providing all the arrangements are right), more likely to produce faintness than anything out of it. Some persons are predisposed to hysterical faintness on the least excitement or disturbance of the system. Should this occur when in the Turkish bath the feet should be sprayed well with cold water, the face and head wiped with a cold wet towel, and the chest rubbed vigorously with cold wet hands. Should these restoratives not effectually remove the trouble, the patient still feeling a little squeamish, or slightly giddy, he should be taken to the cooling room to recline, and have some warm cloths applied to the chest, well wrapped in blankets, with a wet cloth round the head, hot can or cloth to feet, and, on feeling all right again, he should return to the hot room to obtain a good sweating and the ordinary soap washing.

A sense of faintness will sometimes come on when there is a difficulty in procuring perspiration, but it more often occurs from the bather having a too full stomach of undigested food, or of having partaken of too much alcoholic stimulants, or in some cases the want of food.

A BATH SHOULD NOT be taken until two hours have elapsed after a full meal, neither should it be taken on an empty stomach. I have known persons to feel faint from sheer exhaustion for want of nourishment in the stomach. The best plan to be adopted is to steer clear between the two extremes. In giving these details, I may seem to be making mountains out of molehills, but the fact is, there is so much ignorance and a want of common sense, coupled with prejudice,

* Potassii-Sulphuret.—Use about half-a-pound to an ordinary warm bath, temperature 102 degrees, to remain in the bath from ten to twenty minutes, afterwards recline for fifteen minutes well covered up with blankets, and dress leisurely, when cool avoid feeling chilly.

that it renders it necessary for me to do so; and besides, persons suffering from heart disease are so timid in taking the Turkish or any other sweating bath, that, should I succeed in making converts, I am anxious they should be armed with the results of my experience, which has proved so successful in thousands of cases.

BATH ATTENDANTS are often in the habit of persistently laving, douching, or spraying at, or over the shoulders of highly nervous-sensitive individuals with cool or cold applications; this has a very bad effect when catching of the breath is induced. While it is desirable to give a bath effectually, yet it must be done without inconvenience to the heart. In administering a shallow bath, rough towels should be used to rub the patient with, while in the bath; this in a great measure prevents the catching of the breath. In using the spray, needle or douche, the attendants should whip it off for a second or two occasionally to give the bather time to breathe. The efficacy of all hydropathic measures depends as much upon the way in which they are given as a chemical prescription is supposed to do when correctly made up. Before the ablution the patient should bathe his head, chest, and shoulders well with cold water, thus accustoming himself to the cold, which will make a shock almost impossible.

It is a great desideratum with the people to get baths, and those properly administered, there being so very few establishments, and some of those not intelligently managed. I hope these crying difficulties are in a fair way to be obviated, and this is probable considering the strides hygienic measures have made within the last thirty years, which is an evidence that the public are beginning to appreciate them, in spite of tremendous opposition. As more light is thrown upon this subject, converts will be augmented and establishments multiplied to meet the demands of those who appreciate them, and the inconveniences they are now exposed to will be obviated, and tedious and elaborate precautions now so essential will then become unnecessary.

OBESITY AND ATROPHY.

Many are perplexed by the seeming paradox that the Turkish bath can both reduce the obese and give flesh to the lean. That the statements to such effect should be heard with incredulity is natural; but when the causes and characteristics of obesity and its converse come to be understood, together with the *rationale* of the bath's action upon the body, incredulity will give place to intelligent conviction and common sense.

Dr. Sheppard, late of Colney Hatch Asylum, says: "For ourselves respecting this important question of leanness and obesity,

we have remarked what may be termed the *adaptiveness* of the bath to the two extremes of animal development. A thin and emaciated patient will enter the sweating chamber terrified at the idea of losing more *matériel* than he has already lost, and wondering where and how he is to recover that of which it is proposed to deprive him. But, somehow or other, after perspiring profusely he finds he has more energy, and in a few weeks he makes sensible progress. By the process of sweating, something has been eliminated from his system which previously forbade the proper assimilation of food. Under such treatment emaciated persons will rapidly gain flesh after a few Turkish baths, and seem to enter upon a new life. On the other hand, persons surcharged with adipose tissue* will lose flesh by sudorification. This is not so invariable as the converse proposition. Stout persons in robust health soon recover what they lose in weight unless they are careful in the matter of diet and exercise. If advantage is taken of that which the process of depuration *enables* a stout person to do, he at once arms himself with additional weapons wherewith to combat the hydræmic diathesis.† Failing to do this his loss in weight by a single bath is made up by a single dinner, and he still preserves that Falstaffian rotundity which is due partly to a constitutional tendency and partly to his own self-indulgence." (and he might have said gluttony).

It is not difficult for one to judge of the weight which a man of a certain height should be in order that his proportions may accord with what may be called the natural standard. Tabular statements in regard to weight as proportioned to statute have been drawn up, one of which, by the late Dr. John Hutchinson, is given in Mr. Banting's pamphlet, and affords a pretty correct indication of what that natural standard is, still it is not to be made as it were a *bed of Procrustes* to which everyone may be exactly fitted. The weight, for example, assigned to a man of five feet eight is 155lbs.; but there are numerous individuals of that height who weigh a few more or less than 155lbs., who are nevertheless in good health and spirits, strong and hearty and in no way embarrassed by their moderate superfluity or deficiency of fatty tissue, nor indeed would it be easy to decide at what point in respect of either peculiarity health begins to be injured.

Something must be allowed for temperament. The nervous are inclined to leanness, the lymphatic to obesity, and the same standard is hardly applicable to both. Individual constitution or idiosyncrasy, too, affects the question of how much fat or flesh a man of a given height may comfortably carry; or, on the other hand, part with or do without. When, however, to come to diseased

* Undue accumulation of fat.

† Persons who have a tendency for undue fatty and watery accumulation.

conditions, a man increases considerably beyond the natural standard of bulk, the excess consists of fat, and he is one of the obese whose case is now to be considered. Perhaps the cause of his redundancy of fat may be indolent and self-indulgent habits, combined with eating and drinking to excess; a not infrequent cause, and one for which the remedy is obvious enough. But it may be that the person's diet is moderate, even abstemious, yet he gets fat even to the extent of having what the ancients called *Polysarkia*,—abundance of flesh, and the moderns call “dropsy of fat,” of such a one it is commonly said that he is fat by constitutional tendency, which is quite true. Indeed, every fat person has such a constitutional tendency, only in some it is developed in spite of both activity and abstemiousness; in others, not without great forgetfulness of these virtues. This tendency must in both cases be considered a diseased one, and to argue a weakness somewhere in the excretory and assimilatory organs; for where these are sound, people do not get over-fat. In fact, altogether, corpulence is a sign of weakness, as is evident from its usually stealing on its victims when they have begun to decline in vital power, and its being always attended with increasing susceptibility to disease as well as readiness to succumb to it. This is because fat has begun to take the place of muscle and fibre, to the deterioration of the constitutional power, and when it occurs early in life or in its prime it indicates a tendency to premature decay.

In such cases of overgrown bulk the oily matter would appear to deposit itself in the cellular membrane, as water does in *anasarca* (dropsy), and afterwards adipose tissue takes the place of muscular fibre. The mere burden thus imposed on the mechanical forces of the body must be a great drag; but, in addition, there is a certainty, where fat is also deposited in excess around the base of the heart, that it would confine both circulation and respiration; and when deposited among the intercostal muscles, that it will interfere with the expansion of the chest. If less injurious when accumulated in the abdomen, it still makes the unsightly Falstaff or pot-belly.*

Such are some of the characteristics and dangers of obesity. How, then, does the Turkish bath act upon it? Thus:—the hot air enwrapping and impinging upon the skin, stimulates it to pour forth through the pores a great deal of water, so that the sense of oppression under which fat people groan is greatly relieved, and what is more to the point, it stimulates the oily or sebaceous follicles to exude actual oil in abnormal quantity. Besides the stimulus given to the whole system by the sweating process, shampooing, the warm wash-down, and finally the cold bath, it greatly

* The wet compress worn constantly, re-wetted several times in the twenty-four hours, is very serviceable in helping in the reduction of the stomach and in aiding digestion.

quickens internal absorption, by which existing fat is still further diminished, and I have known obese individuals lose two pounds weight by one single bath, and on an average one pound weight per bath so long as the fat was in excess.

ATROPHY.—Thus much for the obese, now as to the emaciated. There are to be seen “effigies or shadows of men and women,” with pale or sallow skins, unhealthy looking and debilitated carriage, whom one is apt to set down at once as being afflicted with hypochondriasis, dyspepsia, tabes, diabetes, or consumption, or,—if one has been reading up in physiology,—as suffering from imperfect chylication or absorption, with, in all probability, an unsound condition of the secreting organs. But the unhealthy phenomena may after all be due to some accidental cause, such as insufficient nourishment or exhaustive discharges; however this may be, the skin of such persons is sure to be in a bad state.

How, then, does the bath affect the emaciated? First, it opens the skin's sweating ducts, so that acids and corrosive stuff may escape, to the great comfort and well-being of the system. Then it arouses the capillary vessels at the surface to activity, and with this activity the whole interior sympathizes, especially the stomach, bowels, lungs, liver and kidneys. The result is a quickening of all the processes of waste and repair; in the waste that goes on, the unhealthy matter is taken from the system, and in the reparative process, (with judicious dieting), it is only good healthy matter that is deposited. Such being the case, all parts of the body begin to be benefited; the digestive organs act with renewed freedom, relaxed vessels recover their tone, exhausting discharges, (if there be such), cease, secretion and absorption go on better, so does assimilation and so do all the processes of repair. There is an “oiling of the wheels” throughout the whole system, and the emaciated body is filled up because well nourished. All this comes of unlocking the skin, and if it be considered how essential the skin excretion is to the working of the reparative processes the effect will not appear too great for the cause assigned.

The Turkish bath, Dr. Thudichum says, removes from the body carbonic acid, water, volatile acid, urea, chloride of sodium, fatty matter, and certain salts. No living tissue is thereby removed, only matter which, if retained, would embarrass the nutritive functions,—so much dead weight. In exchange for this dead matter, the life-giving oxygen enters the body through the seven million pores opened by the bath, and quickens every function into renewed energy. How can the result be weakness? It is quite the reverse,—increase of strength, exhilaration and refreshment.

It is true that the copious outpouring of perspiration from obese and hydræmic subjects may occasionally produce a sense of exhaustion, but this, besides being essential to the correction of

their respective morbid conditions, is easily removed by combining other hydropathic measures with the Turkish bath. Perspiration too, whether from muscular exertion or the action of hot air, may be induced to excess, and a sensation of weakness consequently be felt, but nobody can suppose *that* to be aimed at, or even permitted in a proper thermal establishment.

Let it then be borne in mind, that the cause of both obesity and leanness is something wrong in the working of the excretory and reparative processes; there is clogging, obstruction, retention of what Nature would throw out,—the just balance of waste and supply is lost. This derangement leads in some constitutions to fatty deposits; in others, to a shrivelling of the tissues through interception of due supplies. In restoring the balance of waste and supply the bath rectifies either extreme condition.

But the bath should be administered by one who can “discern things that differ,”—one who will not treat obese and emaciated after the same fashion. The judicious administrator will expose an obese subject to high temperatures in order to decompose the superfluous carbon, give him short allowance of water to drink in order that the action of the hot air may be expended as much as possible in eliminating fat, shampoo him with might and main, souse him remorselessly with cold water, make him well oxygenise his body in the cooling-room, and finally wind up with a smart walk in the open air. But a “shadow” of a man he will treat differently, give him short, mild baths,* since the sole object in his case is to depurate and enrich the blood and so promote flesh-making, also plenty of cold water to drink,—(the jockeys say that it is the drink which makes the weight),—which will wash the blood as it were and increase the appetite for the food required to nourish the system.

I may cite one or two cases by way of illustration. The reader has doubtless heard of Banting, that martyr to obesity. He tried the Turkish bath for the reduction of his fat, and, as he tells us, lost weight as well as gained great power and elasticity for walking. This was sufficient to prove the bath’s power to reduce obesity, and had he continued its use alone with his dietetics it would have been well for him. But he allowed himself to be scared from the bath by a foolish fancy that perspiration was weakening; how far the perspiration of the Turkish bath is weakening let the reader judge from the following narratives:—

“My experience of the use of the bath,” says Dr. Lockhart Robertson, formerly Medical Superintendent of the Hayward’s Heath Lunatic Asylum, now one of the Lunacy Inspectors, (Chancery Division), “has hitherto been chiefly limited to cases of chronic mental disease. In one instance of acute mania, depending

* A short bath at a high temperature,—not to perspire more than from ten to fifteen minutes.

apparently upon recent small pox, I found immediate relief of the maniacal symptoms follow the administration of the Turkish bath.

My great success has been with cases of melancholia, with *refusal of food, and loss of strength and flesh.*"

Some years ago Mr. F., a man well known, who was about twenty-eight years of age, had been for six years labouring under nervous and mucous indigestion. The invalid had been under the care of the most eminent allopathic practitioners of this country and of America without deriving benefit. He had also been treated homœopathically, besides having had six months' hydropathic treatment at Malvern, during which time he on one occasion went for six weeks without a motion of the bowels. When he consulted me he seemed a mere human wreck, — a bag of bones; his eyes were dreadfully sunken, the tunica a blueish white; his complexion yellow and dingy. He had constant pain over the region of the stomach, which rejected all solid food, and even, in part, fluid. His bowels acted only once in ten days; his pulse was quick and very feeble; tongue a glossy red, and nervous system in a frightful state of irritability. He was so weak that he was not able to see society, to sit erect, or to walk ten yards without resting, his ordinary weight was twelve stone, but he now weighed scarcely seven.

After hearing his story I felt inclined to despair of ever being of service to him, and feared there might be a cancer in the stomach. He had, however, made up his mind to act upon the advice given him by the late Dr. Burns to come under my care. His friends also earnestly implored me to receive him into the house, though they had little or no hope of his recovery. I yielded to their wishes and undertook the case, though with no little dread. For a fortnight I pursued a mild course of treatment with so little good result that I feared he would die in the house, and determined to send him home again. I ventured to subject the patient to a Turkish bath as a kind of fillip, in which he fainted. During this operation I detected certain symptoms which led me to examine more closely into the condition of his skin, and it struck me that, while the stomach might have been at one time the chief cause of his present lamentable condition, the state of the skin was now the primary cause of the constant rejection of food. His skin was always in the state called *goose-skin*, i.e. shrunk and covered with raised papulæ, showing that all the gases were pent up in the system,* and that the rejection of food by the stomach was owing to the presence of those gases, which ought to have escaped by the skin. After cogitating for a little I had the patient placed in a *lamp bath*,† and, on commencing to perspire, supplied him with a glass of milk, which he took by mouthfuls,

* Hermetically sealed analogous to a gasometer.

† Heated to 115 deg.

without being compelled to spit any out. I then gave him some food, which he also swallowed without much difficulty. It was evident that I had at last "hit the right nail on the head," and, to be brief, had him thereafter fed three times a day while in a lamp bath; and, after his sweat and meal, had his body wiped down with wet towels. At the end of one month of this treatment, he gained one stone in weight. He remained another month, during which I discontinued feeding him while sweating, but still gave him two lamp baths a day, followed by a dripping sheet and at the end of the second month, he had gained another stone. I have just heard of him as being in all respects in excellent health, residing in America, married, with a large family.

Of course, in all such cases, the diet should correspond with the object in view, and be nourishing, (since it is no use to sweat a man who is not fed), and, moreover, of easy digestion; care also being taken as to quantity and time of eating. Careful dietetics, in conjunction with judicious sweating processes, will work wonders as is instanced in the above case, in fattening the emaciated.

In like manner, dieting must form part of the treatment of the obese. If a man eats like a glutton of heavy, indigestible food, no means will cure him of his obesity. I imagine that, in this respect, Mr. Banting made a mistake while using the Turkish bath,—not combining with it judicious dieting. Had he, while using the bath, known and adopted the dietetic system, which eventually afforded him a measure of relief, I feel sure that the combined influence of the two would have effected more for the cure of his obesity in one month than the Banting, or any other system of dietetics used alone, could affect in three.

In conclusion I may say it is one thing for medical men to set their faces against hydropathy and the Turkish bath, but it is another thing for them to bring forward a better mode of treatment. Let us see what medicine can do in these extreme conditions. Let us suppose our patients to be duly frightened from the use of physical means, and induced to try the ordinary mode of treatment. The remedies are, for the obese:—iodine, liquor potassæ, fucus vesiculosus, vinegar or other acid; and, for the emaciated:—the vegetable and mineral tonics, with perhaps a mercurial alterative. In the former case, unless the medicines are given in sufficient quantities to saturate the system, they produce no effect, and when they are so given, it is admitted by the profession that they undermine the constitution. In the latter case, the tonics, although they may for a time create a fictitious appetite, and cause more food to be swallowed, do not at all aid the digestive process, and it is not the food that is swallowed but that which is digested which builds up the body; consequently, it appears to me, neither obese nor emaciated people can derive real and permanent benefit from the use of medicines, alone, as at present administered.

Of course, in dealing with either class of cases, the medical man may prescribe special dietetics, interdicting the use of fat-producing substances by the obese,—as was done in Banting's case,—and enjoining a nourishing diet on the emaciated. But there is one remark that applies to either class of cases, namely, that a cure by diet alone must be slow, even where there is no derangement of the nutritive functions, but to most people it is irksome and inconvenient to be put into a dietetic strait-jacket. They will be perpetually trying to shake it as loose as possible, so that it will fail of the intended effect. Here, then, the bath shows its utility. By its habitual use, errors in diet, - if committed,—will be counteracted; and, in any case, a less stringent dietetic code conjoined with the bath will serve the object in view, whether it be building up or pulling down the body, better than the most stringent code without the bath.

Another remark may be made with reference to the exclusion of fat-forming substances from the diet in cases such as Banting's. It is the fatty element in the food which nourishes the nervous system, so that its withdrawal must tend to diminish nervous power, and, as a consequence, muscular power, so lessening the ability for walking exercise. Now the use of the bath, by warranting the consumption of a moderate amount of fat by the obese, obviates all risk of such an evil.

What I maintain then is, that a man, whether obese or emaciated, can in no way so well promote his strength and comfort, and improve his external appearance, as by regularly using the Turkish bath in the way that best suits his condition, observing at the same time suitable regimenal and dietetic rules.

The first Physicians by Debauch were made:
Excess began, and sloth sustains the Trade.
By chase our long liv'd Fathers earned the Food,
Toil strung the nerves, and purified the Blood;
But we their Sons, a pampered Race of Men,
Are dwindled down to threescore years and ten.
Better to Hunt in Heaths, for health unbought,
Than fee the Doctor for a nauseous draught.
The wife for Cure on Exercise depend:
God never made *His* Work for *Man* to mend.

DRYDEN.

SWEATING CURE IN HYDROPHOBIA.

From the mass of materials that have been supplied me, it is somewhat difficult to select the most interesting matter. Having given a good space to Hydropathy and its kindred subjects, and just now their having been several deaths from hydrophobia after undergoing Pasteur's treatment, some observations on Dr. Buisson's sweating cure for hydrophobia will not be out of place. In page 13, it will be observed that Mr. Metcalfe compiled a work on hydrophobia which was unfortunately destroyed by fire. On page 22, the reader will see an article on Pasteurism and Jennerism.

I venture to say that the merits of the sweating treatment for hydrophobia, is not only more humane, but more rational than M. Pasteur's methods.

I have given his theories a considerable amount of attention since its introduction.

Mr. Metcalfe says the most fatal blow to the rabic inoculation is the recommendation of inoculating all who have received only a mere scar or scratch from a rabid animal. According to the most reliable statistics, out of every 100 persons who have been bitten, not more than 5 per cent. contract hydrophobia; yet M. Pasteur and his followers would infect the 95 per cent. with rabic virus.

During Pasteur's early investigations by way of experiment, he used various strengths of vaccine which he termed mild, medium, and strong.

When he used his strongest methods a number of persons died from the effects of the inoculation, and even assuming there was a scrap of evidence that rabic inoculation did prevent the development of hydrophobia in persons who had really been infected that is no justification that 95 per cent. who had not been infected, should have their blood vitiated with such revolting poison.

One of Pasteur's experiments was on dogs, making them refractory from rabies by means of inoculation as a justification of the same method for human beings. If by inoculating dogs it prevented them having rabies, why not have all dogs inoculated? then there could be no rabies, and consequently no hydrophobia, which would spare human beings from terrible suffering and worthless experiments. But, the whole of Pasteur's investigations, known outside his laboratory, regarding his antiseptic methods for the cure of hydrophobia, may be summed up in one word as a phantasmagoria.

I herewith quote the following treatise in the literal translation from the French by Dr. Buisson, of Paris, published in 1855.

A METHOD OF PREVENTING AND CURING

HYDROPHOBIA,

BY BUISSON, DOCTOR OF MEDICINE, PARIS.

This Treatise was Dedicated to the Minister of Public Instruction,
Protector of Science and Art.

PREFACE.

In 1826 I discovered that it was possible both to prevent and to cure hydrophobia by means of vapour baths (so-called Russian): since then I have attended several persons attacked by hydrophobia and effected their cure. It is for this reason that I entreat my honoured colleagues to give my method a trial. Galileo, speaking of the earth, said: "Nevertheless it does move!" and I, for my part say, in speaking of my medical treatment: Nevertheless it is both preventive and curative! It might be said: This discovery, dead for so long, why resuscitate it? Because it is useful, of inestimable value, and because truth is immortal; she may slumber for awhile but she re-awakens stronger than before. If my colleagues refuse to recognise the importance of this discovery, . . . future generations will adopt it.

"In 1826 I made known a method of preventing and curing hydrophobia. In my treatise, I indicated by the initial letter of his Christian name, a person whom I had cured; to-day I am going to name him: that person . . . is myself.

"Very little was then known about this disease, and it was thought possible for the symptoms of hydrophobia to manifest themselves in a person after a very long period of time had elapsed since his being bitten by a rabid animal. Several examples were cited of persons dying of hydrophobia a year and even more than that time after having been bitten. There can now be no doubt about my own cure, seeing that it is twenty-nine years since I met with my accident. I shall briefly review this malady, and take as my judges all persons gifted with common sense. In order to prove the existence of light, it is sufficient to show an object, and in order to prove the infallibility of my treatment it is sufficient to describe it.

"Hydrophobia, or rabies, is either spontaneous or infectious. It is spontaneous with certain animals, such as the dog, the wolf, the fox, the cat, etc.; in a word with all such animals as do not perspire. It manifests itself by a refusal to partake of liquid nourishment: it may be engendered by the passions either of anger or of joy; I have observed it also as a supplement to other

maladies, particularly in the case of young dogs at the period of dentition. These animals are in nowise exempt from infectious rabies, a rabid dog, namely, can, by biting another dog, infect him with the disease. When rabies is spontaneous, the animal may survive; when infectious, it is invariably fatal.* Such animals as perspire, as man, the horse, etc., can only become hydrophobic by the absorption of rabid virus."

FIRST CASE.

Having been called in, an hour before her death, to attend a woman attacked by hydrophobia, and having bled her as much as she desired I wiped my hands on her handkerchief, covered with saliva. Perceiving a mark on the first finger of my left hand, I became aware, too late, how imprudent I had been. As soon as I reached home I cauterized the little wound with nitrate of silver. Day by day I promised myself that directly my avocations should leave me sufficient leisure, I would take some vapour baths. On the seventh day I experienced a sharp pain in the region of the scar: imagining, however, that it was in consequence of the cauterization, I paid no great heed to it, but the pain became so intense, that I was obliged to put my arm in a sling. The pain grew more and more acute† commencing at the first finger, following the radial nerve, it mounted to the forearm. The paroxysms lasted about two or three minutes, with intermissions of five or six minutes. At each paroxysm the pain spread to the increase in length of several centimetres; when it had passed the elbow it became intolerable. My eyes were extremely irritable and felt as though likely to start out of their sockets; I was painfully affected by light, and consequently by all luminous bodies, such as glass

* It is perhaps as well to state that it would be useless to employ my curative method on such animals as do not perspire—as the dog, etc.

† This sensation convinced me, that a fluid circulates among the nerves, the circulation being very much slower than that of the blood. There is no doubt that it is when the virus first penetrates into the nerves that the disease declares itself.

Supposing there is no wound, the virus takes no sort of effect on the skin. I have seen Dr. Bosquillon physician at the Hôtel Dieu, being possessed with the false notion that the disease was purely imaginary, washing his hands, without injury to his health, in the saliva of a rabid person.

The virus has no effect on the mucous membrane, supposing there to be no excoriations.

When a child, I once eat some bread whereon a rabid dog had foamed; I knew nothing of what had happened till long afterwards, and was happily saved from the anguish of fear that might have otherwise tortured me. Being once house-surgeon at the Hôtel Dieu, and assisting Monsieur Dupuytren, the chief-surgeon, in injecting water into the common median vein of a rabid person, the latter involuntarily spit in my face; I passed my tongue over my lips, and swallowed his saliva, without experiencing in consequence the slightest symptoms of rabies.

and metals. My hair seemed to stand erect and I became so acutely conscious of it, that it seemed to me possible to have counted the number of hairs on my head, even had I been unable to see them. A current of fresh air was not merely disagreeable to me, it prolonged my paroxysms of agony: my body seemed to me lighter than air. I believed that by merely springing from the ground I could have lifted myself up to a prodigious height; and that if I were to throw myself from a window I should not necessarily fall to the ground. I had a tightening of the throat; I suffered from constant nausea. I salivated much and expectorated incessantly. I felt that my sublingual glands were swollen, but when I wished to assure myself of the fact by looking at them in a glass I was unable to carry out my design, on account of my suffering eyes. I had a constant longing to run and to bite, and my only alleviation was to walk quickly up and down my room, biting my handkerchief the while. I had a horror of water, this was by reason of its luminosity: by dint of closing my eyes I found myself able to drink, although with difficulty.

For some time past I had been persuaded that a vapour bath was able to prevent, but not to cure, hydrophobia. My thoughts being occupied solely with death, I sought that which was the most prompt and the least painful. Being myself proprietor of an establishment of baths, and having resolved to die in a vapour bath, (so called Russian) I took a Réamur thermometer in my hands, fearing that the heat I desired might be refused me, . . . and at 42 degrees I was cured!*

I confess that at first I refused to believe in a cure which partook of the nature of a miracle; I believed that I was merely experiencing a long intermission from pain, which would be terminated by contact with the air outside the bath. Since the bath establishment belonged to me and I was able to re-enter it at will, I left it. I dined and drank with ease, I went to bed and slept well. From that day to this (29 years) I have felt no sort of pain or uneasiness.

SECOND CASE.

My servant's dog was ill; the man consulted a veterinary surgeon, who recommended him to give the animal a powder. In order to force him to take the medicine, he held the dog's mouth open, whilst his wife inserted her hand, containing the powder, into the lower portion of the animal's throat. The dog struggled; the door being shut, he sprang from the window leaping the height of one storey without doing himself any injury, made his escape, and was never seen again. Both the man and the woman had slight lacerations on their hands, caused by the dog's teeth.

* I pressed my arm from above downwards as far as the first finger, in order to expel the virus, all the time that I remained in the bath.

About fifteen or eighteen days afterwards,* this man, sitting by my side in my carriage, salivated incessantly; his eyes were glittering, he appeared ill at ease; he asked my permission to take a vapour bath (having heard of my discovery). I took him into my house, and myself administered to him a bath at 45 degrees; the cure was instantaneous. In order not to spread a panic, I attended him without mentioning the word "hydrophobia" to anyone, even to the attendants in my establishment. His wife never expected the malady. She took a few vapour baths, and perceived no ill effects from her struggle with the dog.

THIRD CASE

A man, aged 32, a florist, lost his little dog (a cur), a fortnight afterwards he met him at la Halle. The animal, who ordinarily could scarcely jump to the height of its master's hand, now jumped for joy two feet above his head. The passers-by formed a ring in order to see this phenomenon! . . . The man seized the dog, not without difficulty, carried it home and shut it up in his room; but finding that it broke everything in the room in order to effect an escape, he placed it in a paved shed, having a very stout oaken door. But the dog, in order to get out, gnawed the bottom of the door, and would have effected an escape, had he not been killed.

The neighbours, uneasy about the condition of this man, entreated him to obtain medical advice. When he came to me his face and hands were covered with lacerations made by the dog when jumping up to caress his master. Seeing that he was in a state of extreme nervous anxiety, I began by trying to make him believe that his dog was not in the least rabid, but I added that as a prudential measure I should advise him to take seven vapour baths in seven days, and also while taking each bath to drink two litres of hot infusion of borage. He did so, and has continued to enjoy good health up to this day.

FOURTH CASE.

In 1854, a shop-woman, aged twenty, possessed a dog which she habitually kept chained up. One day it happened, as a kind of extraordinary event, that she unchained it. In caressing her it slightly bit her upper lip. At the end of about a fortnight, she experienced a sudden and inexplicable anxiety, a presentiment of death that she was unable to explain, seeing that her own dog was well and that she was certain she had not been bitten by any other. She suffered from loss of appetite and horror of water, and one day threw herself into her mother's arms, bidding her adieu. On my

* I have noticed that there is no fixed period for the disease to declare itself; the virus may remain a shorter or a longer time under the epidermis without being absorbed. Once at the Hôtel Dieu of Lyons I saw a young man die of hydrophobia, forty days after having been bitten in the leg by a rabid wolf.

arrival I found her in a condition of nervous anxiety, speaking with difficulty, her pulse low, irregular and rapid, her eyes fixed and glittering. I assured her that her dog was not in the least ill and that she herself ran no danger. She replied that she had already reasoned thus with herself, but that nevertheless she knew that she was about to die. Then I perceived that the disease was real, and had already commenced its attack upon her system. I induced her to take seven vapour baths, but after the first bath, all her symptoms disappeared.

FIFTH CASE.

This is an example of a case of nervous hydrophobia, occasioned by fear.

A countryman who had been bitten by a rabid dog came, to consult me.

Two days after the man had, at my advice, employed my method of cure, I was informed that he was suffering from an attack of hydrophobia. Being convinced that the moral condition of the sick man was alone affected, I went at once to see him. His aspect was precisely that of a person suffering from hydrophobia; he howled aloud, he wished to fly from the house, he declared that he would do no more work, that he would like to eat and drink all the food he could lay hands on, seeing that he must shortly die. In order to cure his moral malady, I said to him, "You will never make me believe what is impossible: firstly, hydrophobia never declares itself in two days; secondly, hydrophobic persons neither eat nor drink. You do not wish to work any longer; what will your neighbours say? that you are an idle fellow." This reasoning made a deep impression upon him. He resumed his work and all his symptoms disappeared. I learnt afterwards that after his first treatment according to my method, those about him had talked to him incessantly of hydrophobia. This proves that one essential part of the treatment of those suffering from hydrophobia is never to speak to them about this disease, and that extreme prudence must be observed in conversing with them.

I shall now relate several facts in support of my theory of the effect of heat upon the animal organisation.

1. Vaccinate an infant, and give it a vapour bath directly afterwards, the vaccine does not take.

2. The bite of the tarantula can be cured by dancing: It is the perspiration evoked by this exercise which is the real cause of the cure.

3. A young man, out hunting in America, was bitten by a rattle-snake. Desiring to die in the midst of his family, he ran throughout the whole of one day in order to reach his home. Arrived there, he lay down, perspired profusely, and the wound made by the snake healed like an ordinary wound might have done.

4. At Constantinople, a doctor wagered that he would disinoculate himself of the pest by means of a vapour bath: he did so, and was completely cured.

5. In France, near Lyons, a man suffering from hydrophobia was placed by his neighbours under several mattresses in order to stifle him. Believing him to be dead, they retired, taking care to close the door. Some minutes afterwards, they perceived the man at his window, imploring them to open the door, and declaring that he was no longer mad. Thereupon his neighbours, among whom were some of his friends and relatives, held a council as to whether, for prudence sake, it would not be best to shoot him dead with a gun. Seeing them hesitate, he called out, "My friends, in order that I may convince you that I am no longer mad, give me something to eat and drink." After he had both eaten and drank they opened his door.

6. A young man, newly married and living in London, suffered from hydrophobia. His friends, in order to suffocate him, placed him between two feather beds. His wife, detained by her relatives in a neighbouring house, preceiving that her husband's cries had ceased, had a sinister presentiment; she tore herself from the arms of her relatives, ran to his assistance, and found him apparently dead! . . . In her despair, she had the presence of mind to open the window, and the air reanimated her husband; the sick man had perspired so freely that the sweat streamed down upon the floor . . . and he was cured.

7. A relative of the famous Grétry was once bitten by a rabid dog, and at the same time several other persons were bitten, all of whom afterwards died of hydrophobia. Feeling the approach of the first paroxysms, and wishing, as he said, to die gaily, he sent for musicians and for several friends, danced for several hours, and was cured by means of the excessive perspiration induced by the exercise. Certain rustic empirics are able to prevent rabies; their principal means of cure is inducing the patient to run for a long time, and to perspire freely in consequence.

Syphilis can be cured by sudorifics; in hot countries the malady cures itself without any medical treatment.

General Juchereau, secretary to the Académie de l'Industrie, corroborated my testimony when I professed to have heard it stated that in Naples in ancient times, people were cured of the bites of serpents or rabid animals by being placed in a kind of oven, which was subject to excessive heat; but, in consequence of several deaths having occurred, this method was abandoned.

All the facts I have adduced are identical with my own experience; with the difference that in a vapour bath, heat can be regulated at will, according to the strength and temperament of the patient.

If any of my honourable colleagues doubt the truth of my statements, it would surely be better that, instead of continuing to discuss my remedy,* they should make a trial of it. The discussions of savants only serve to confuse the meanings of science.

The beauty of my plan lies in its simplicity; and remedial efficacy. A vapour bath prevents the development of hydrophobia; and cures the malady when developed. In order to convince all sensible persons that I am really in earnest, I offer to inoculate myself with the disease. This fact should be a sufficient guarantee of the certainty of my method of cure. One day I asked the celebrated Dupuytren what he thought of my treatment, and he replied that if my method should fail, then no other cure in the world would succeed, seeing that my plan was perfectly rational, and, he added, if he himself were ever bitten by a rabid animal, he would not hesitate to try my method.

It will be admitted that up to this date no certain method of preventing or curing this terrible disease is known. For example: a man, after having struggled with a rabid animal goes to a doctor, who cauterizes the wounds; but if a mere scratch escapes his notice, the patient becomes hydrophobic, and it is precisely the most seemingly trifling wounds that are really the most dangerous. In the case of deep wounds, the virus is carried away by the flow of blood. Sometimes it happens that a wound is too slightly cauterized, at others, that the cauterization is made to too great a depth, and it is possible to die from the effects of such treatment, a fatality that actually happened to a female patient in the infirmary of the Hôtel Dieu. To make use of my treatment it is unnecessary to know either the depth or the number of the wounds; and, seeing that it is not at all painful, that it does not hinder a person from attending to his affairs, it can be resorted to, even supposing there should be any doubt as to the animal being rabid.

TREATMENT.

One vapour bath may possibly suffice to prevent hydrophobia; nevertheless, for greater surety, I make my patients take seven baths at 42 degrees to 48 degrees Réaumur, according to the constitution of the patients and the facility with which they perspire (take care, in the bath, to well press the wound in order to facilitate the expulsion of the hydrophobic virus); I always make the patient lie down between two feather-beds, and give him three or four

* It is astonishing that, among the preventive methods which are publicly placarded every year by order of the prefect of police, no mention is ever made of my remedy; the blame of this omission should fall on the Council of Health. This fact proves that a discovery—even one of inestimable value, has need of protection before it can be brought into general use.

litres of warm infusion of borage to drink during the day. I prescribe abundantly bodily exercise, and the question of nourishment I leave to the discretion of the patient. I especially forbid any sort of conversation on the subject of the accident, for fear of disturbing the mental condition of the sufferer. Supposing the disease to have declared itself, I give the patient only one bath, and leave him therein until he is cured, taking care, however to apply the heat gradually. It is possible for hydrophobia to last three days. Experience has taught me that on the first day, a cure is certain; that on the second day it is uncertain, and that on the third, by reason of the difficulty and danger both of introducing a hydrophobic person into the bath and of keeping him there, it is impossible. Besides, who would wait till the last day! When my method shall have become known, people will not even wait for the disease, they will prevent it in all cases.

Hydrophobia never declares itself before the seventh day, it is therefore possible to take a long journey in order to procure (so called Russian) vapour baths.

There is a letter from Buisson in the "*Abbeville Médicale*," quoted in the *Lancet* of November 1877. In this letter he advises that the wound should be moistened with linen dipped in liquid ammonia, and that the linen should remain for about an hour on the wound, to neutralise the virus.

The inflammation to be treated by cataplasms of linseed, renewed every three hours—the wound to be dressed with cold cream. "My treatment," says Buisson in this letter, "does not preclude cauterization."

Note.—In 1826, having presented my essay (*Memoire* is the French) to the Chamber of Deputies, then under the presidency of M. Ravez, the Chamber unanimously ordered that a copy of the work should be placed in their library. They also passed a vote of thanks to the author, and ordered his name to be inserted in the *procès-verbal*.

Some 10 years ago when hydrophobia and rabies were very prevalent in England a paragraph of the Sweating Cure for hydrophobia came under Mr. Metcalfe's notice, and having witnessed some extraordinary effects of heat and wet sheet packing in septicæmia he felt sure that hydrophobia could be cured, and wrote to several of the London papers intimating that he was prepared to treat any person who had been bitten by a rabid animal gratuitously. Mr. Metcalfe with his usual energy and enthusiasm began to investigate all Pasteur's inoculating theories of rabic virus and the sweating cure for hydrophobia. After 4 years' hard work he collected together a mass of evidence which was submitted to the printers for an estimate, in the meantime the premises were burned down and the M.S. with it. The only scrap left on the sweating cure was Dr. Buisson's treatise which Mr. Metcalfe had obtained

from the Medical Library in Paris. At the early part of this century hydrophobia was very prevalent on the Continent of Europe. At that time Dr. Buisson was in practice in Paris, and while attending a hydrophobic patient he got infected, and as the reader will gather from Dr. Buisson's work, he went to the sweating bath with a view of terminating his existence, but got cured and published the result of his case. The attention of the medical faculty was called to the fact, and where ever the sweating treatment was adopted efficiently the patients were cured. Mr. Metcalfe has treated several cases successfully. I will conclude my remarks on this subject by giving some particulars of a case treated by him 10 years ago, where the symptoms of hydrophobia developed while undergoing treatment.

The case was mentioned in several of the London papers. The following is an extract from the *Globe*, August, 1887, by Mr. R. J. S. Price, calling attention to three cases having been cured by the sweating treatment:—

“How sad it is to think that the Buisson treatment by sudorific baths, which claims not only to render the patient secure from the fearful after-consequences of a bite from any rabid animal, but also to boast of curative powers even after the first symptoms of that dreaded disease hydrophobia have manifested themselves, has not, as far as we yet know, been given a trial. It is only very lately that Mr. Metcalfe, of Priesnitz House, Paddington-green, can claim to have returned to his friends in Ireland a boy—who had been bitten by an animal certified by a veterinary surgeon to have been rabid—safe and sound, and cured, after unmistakable indications of rabies had been observed; while in France a little girl named Pauline Kiehl, who was bitten by an undoubtedly rabid dog, which attacked two other persons, both of whom subsequently succumbed to hydrophobia, and refused treatment by M. Pasteur, a considerable interval having elapsed between the infliction of the injury and the demand for the application of his supposed prophylactic inoculations, was treated in Paris by the Buisson process, thanks to a kind-hearted lady who had heard of the case, and that child is also now perfectly well. Again, on the 8th of April last, a boy was bitten at Kischineff by a rabid dog, and in consequence of some accident was not sent to Paris for treatment by M. Pasteur, as had been intended; on the 25th of the same month the boy manifested signs of the disease, the sweating bath treatment was applied twice daily for the four following days, and the boy was finally dismissed from the hospital in perfect health.”

MR. METCALFE'S LETTER TO THE EDITOR OF THE “*Globe*.”

SIR,—I am glad to see in your issue of yesterday a letter from Mr. R. J. S. Price. It was quite a relief to see in print the opinions of those who have been energetically urging for months a

fair trial of Dr. Buisson's cure of hydrophobia. I should be glad if you would permit me to furnish a few particulars with respect to the case of the Irish boy mentioned in Mr. Price's letter, in the hope that they may catch the eye of some unfortunate person who has been bitten by a rabid animal.

The boy, between five and six years of age, was the son of a coachman in the service of Mrs. Croasdaile, of Waltrim, in the county of Wicklow, Ireland. The child was bitten on the 14th of May last, and arrived at my establishment exactly 14 days afterwards. He was a fine, healthy fellow, complexion light, and of a highly nervous temperament. His upper lip was severely torn by the dog's teeth, and there was also an abrasion on the cheek. His wounds were attended to by Dr. Raferty. When the boy arrived the strapping was still on the lip, and the wound was not quite healed. The child was subjected to the Turkish baths three times a day—half a hour each time—in a temperature ranging from 140 deg. to 180 deg. Fahrenheit. The boy was allowed to pass from one room to another as he liked. The sweating was followed by a tepid spray. Generous diet and daily exercise were insisted upon. On Sunday, the 5th of June (about nine days after the patient had been under treatment), he became very restless and feverish—temperature of the body raised, pulse quick, with a little wildness about the eyes, and nervous twitching of the limbs. The boy had no relish for food or water. I was somewhat apprehensive of an attack of hydrophobia. The sweating process was continued as usual, and towards the evening the symptoms abated. About midnight the symptoms reappeared in a more aggravated form, accompanied by a slight delirium—tongue very white; he tossed about the bed, was sullen, and indisposed to answer when addressed. The following day each sweating operation was made a little longer. After the third bath all the symptoms subsided, and have never again recurred. The little fellow left on the 16th June last, and, with the exception of a slight discharge from the ears, was in excellent health and spirits. The following is a copy of the certificate of the post-mortem examination of the dog that bit the boy Doyle:—"32, Dawson-street, Dublin, May 17th, 1887.—Dear Sir, —I made a post-mortem examination on the dog sent in to-day, and find he was suffering from canine rabies.—Yours obediently, R. B. FREEMAN, Veterinary Surgeon." It is now 10 years since the child was bitten. I may mention that I treated one of the nine Bradford cases bitten by a rabid dog last year (1886); the other eight went to M. Pasteur. This patient is in first-rate health and has suffered no inconvenience from the bite.—Yours truly, R. METCALFE.

SANITAR A.B.C.

"As soon as you are up, shake blankets and sheet;
 Better be without shoes than sit with wet feet;
 Children, if healthy, are active, not still;
 Damp sheets and damp clothes will both make you ill;
 Eat slowly, and always chew your food well;
 Freshen the air in the house where you dwell;
 Garments must never be made to be tight;
 Homes will be healthy if airy and light;
 If you wish to be well, as you do, I've no doubt,
 Just open the windows before you go out;
 Keep your rooms always tidy and clean,
 Let dust on the furniture never be seen;
 Much illness is caused by the want of pure air,
 Now to open your windows be ever your care;
 Old rags and old rubbish should never be kept;
 People should see that their floors are well swept;
 Quick movements in children are healthy and right;
 Remember the young cannot thrive without light.
 See that the cistern is clean to the brim;
 Take care that your dress is all tidy and trim;
 Use your nose to find out if there be a bad drain;
 Very sad are the fevers that come in its train.
 Walk as much as you can without feeling fatigue;
 Xerxes could walk full many a league;
 Your health is your wealth, which your wisdom must keep;
 Zeal will help a good cause, and the good you will reap."
Globe.

THE VALUE OF ATHLETIC EXERCISE.

The structure of man's body renders exercise absolutely necessary to his health. He resorts to it instinctively, impelled by the strong love of activity implanted in him by Nature for her own wise purposes. By exercise the circulation is promoted, especially in the multitude of minute vessels which ramify through every part of the body, a vigorous action of the lungs is secured, vigour and activity are imported to all the organs as well as healthful energy to all the functions, and strength, elasticity, and grace developed in the body. Attention to exercise will bring out all the constitutional power inherent in the system, and tend to secure health and longevity.

When any organ is active, blood and nervous energy flow to it in an increased degree; hence increased nutrition and tone proportionate to the demands made upon the organ in question. When its action is judiciously regulated, being alternated with repose, a permanent increase in the supply of arterial blood takes

place, which leads to increased development and vigour of function. This is strikingly illustrated where one arm is vigorously exercised and the other is unemployed. The muscles of the former exhibit a far more powerful development than those of the latter.

Hence the due development and maintenance of the whole system depends on each part being duly exercised, so that a certain amount of labour or activity of some sort is essential to man's welfare. Without it he cannot possess the bodily vigour, health, buoyant spirits, and keen sense of enjoyment of which his nature is capable. Every individual ought, therefore, to lay himself (or herself) under a necessity to take exercise of some sort. Where it is not had in the ordinary employments, walking, riding, out-door sports, or gymnastics should be had recourse to: it matters not particularly what method is pursued so long as a due amount of exercise be secured.

A most important point is that the mind be exercised at the same time with the body. Exercise in order to be beneficial must be enjoyed. A solitary ride or walk is of infinitely less benefit than the social canter or pedestrian trip, or picnic. Exercise does most good when enjoyment is the immediate object—when all considerations for health are for the moment forgotten, and social health and hilarity inspire every movement.

This is too much lost sight of in the exercises engaged in by many people. The formal walk of the young ladies' boarding school makes the poor creatures an object of pity. How different would be their motions and the benefit derived from them if engaged in active play or in dancing! How stirring is the effects of martial music on soldiers weariedly trudging along on the march; and a South African traveller tells us when he and his party were exhausted with fatigue, as soon as they got a glimpse of the game all their languor left them in an instant. The bright eye and elastic step of exercise, when mingled with mirth, shows how great is the power of the nervous stimulus to increase the benefits of the muscular action.

It is not sufficient to go daily through a fixed and circumscribed mode of taking exercise. Besides becoming monotonous and spiritless, it only puts in motion a certain set of muscles, and so fails to effect the purpose which was had in view. There must be variety in exercise. By that means the whole or greater part of the muscular system is brought into play, and each single muscle secures that alternate contraction and relaxation which is the only condition favourable to its perfect development. The action of each set of muscles is, of course, more or less local; thus walking more particularly exercises the muscles of the legs, rowing those of the chest and arms, etc.; so that, if only one description of exercise be engaged in, the benefits derived therefrom are to a considerable extent confined in that part of the

system thus brought into action; though there can be no doubt that all healthful exercise must result in general good to the constitution, from the impulse given to the functional activity of the system.

It is contrary to all physiological law that any one set of muscles should be kept long in a state of relaxation or tension, as is the case with the living model of the statuary who must preserve for hours the same attitude. From the same cause much deformity exists among boarding-school girls, from the constrained positions which many of them for hours are compelled to maintain. Persons confined to the desk or study frequently suffer from this cause; the few muscles brought into play are overstrained, but the bulk of them, as well as the bones, become weak from disease, and general debility follows.

How inactivity of the voluntary muscles should impair the general tone of the system, will appear when it is considered that their special purpose is to use up the animal fibrine or richest portion of the blood, and that when not doing so some 30 per cent. of the blood is rendered useless and thrown back into the general circulation. The brain, ganglionic centres, spinal marrow, lungs, heart, and blood vessels thus become filled to repletion, and the functions of the viscera are embarrassed by the stoppage of the chief outlets to waste. Apoplectic or paralytic seizures are consequently rendered imminent. It must be remembered that the voluntary muscles form one entire half of the human frame, that they are extremely vascular, and that in proportion to their activity they demand nutrition. But where no *stimulus* is, there can be no *fluxus*, and hence internal congestions with their unhappy issues.

It is really surprising, when thus considering its importance both as a preserver of health and preventive of disease, that exercise should have been so long and so much neglected. But it only affords another instance of the fact, that, in spite of our many advantages, we are still far behind the ancients in many branches of knowledge and art. Even the Chinese, whom we still look upon somewhat in the light of half barbarians, have from time immemorial seen and provided for the necessity of adequate exercise. The humidity of the climate was looked upon as a prolific source of endemic and epidemic diseases, against which the only effectual preventive consisted in the regular exercise of the body by a description of gymnastic dance; and so all-important was it considered in relation to the welfare of the people that it was under Government regulation.

In addition to this, the Chinese have a system of medical gymnastics, dating back, it is said, to over two thousand years anterior to the present era; and so potent is it in the cure and relief of many diseases that people of every rank resort to it when

every other means has been tried in vain. Father Amiot, a Jesuit Missionary who spent some forty-four years in China during the latter half of last century, says : — “Volumen might be written of the traditions, stories, and extravagant virtues of the Cong Fou, which are implicitly believed; even the majesty of the throne—not exempting many emperors from a stupid credulity. Notwithstanding the priestly superstitions connected with it (for the priests persuade the people that it is a true exercise of religion), it is really a very ancient practice of medicine, founded on principles, and potent in many diseases.”

M. Amiot gives, at considerable length, a description of the methods and principles of this therapeutic system of movements, from which it appears that morning was considered the proper time for the treatment. The Cong Fou consisted in placing the body in certain positions and keeping it in each successive posture for some time, great stress being at the same time laid on particular methods of breathing. These methods were chosen and combined according to the disease of the patient.

The ancient inhabitants of Hindostan also practised many bodily movements of a nature greatly resembling those of the Chinese. One of the most weighty of them was the retention of the air in respiration, it being believed that air has the same effect on the body that fire produces upon metals exposed to its influence—namely, that of purifying it. Similar ideas were entertained among the Greeks. We learn from the narrative of a Greek who visited India in the third century before our era that there was an order of Brahmins who relied chiefly on regimen of diet, together with external manipulations, for the cure of disease; and we know that there is at the present time an order of Brahmins whose principal therapeutic agency is hygienic shampooing.

Little need be said respecting exercises among the Greeks and Romans. Every one, who has any acquaintance with the history of those peoples, knows what an important part gymnastics played in their educational system, more especially among the former. With the Greeks the gymnasium was the place for both physical and mental culture, the two going hand in hand, and probably no town of importance was without one of these schools. Education began at the seventh year, and consisted of music, grammar, and physical training. It is asserted by some historians that as much time was given to the development of the body as to the culture of the mind. In Sparta physical culture was of paramount importance, polite literature and the arts suffering proportionately in consequence. Even the women were obliged to go through the same exercises as the men; for, said the law givers, “Female slaves are good enough to stay at home and spin; but who can expect a splendid offspring—the appropriate gift of a free Spartan woman to her country—from mothers brought up in such occupations?”

With the Romans there was less appreciation of exercise as a sanitary or educational means; they being a nation of soldiers, the first, and often sole object they had in view was the promotion of physical strength for warlike purposes. They had gymnasiums, but these became perverted, especially in the latter days of the empire, into exhibitions of the most brutal and degrading description.

During the whole of the Middle Ages exercise, that is, exercise as a system, appears to have been universally neglected; and it was not until Ling called attention to the subject that the modern mind began to appreciate its importance. To him we are indebted for one of the most perfect systems of physiological gymnastics ever invented. It is known as the "Swedish movements." Dr. Dio Lewis, Mr. Watson, and Dr. Roth have also given their attention to gymnastics and calisthenics, and their systems have met with much favour. Of all four it may be said that they "comprise a great variety of movements calculated to develop the osseous and muscular systems, and so give freedom and ease to the carriage." They may be used by invalids, women, and children without any risk and with considerable benefit.

In connection with this subject of exercise, I must not omit to mention what in the hands of Dr. W. Johnson, Mr. Grosvenor, Dr. Balfour, Admiral Henry, and others has almost been reduced to a science. I refer to rubbing and percussion, though to enter upon the subject here in anything like a concise form would lead me too far. I must simply be satisfied by referring my readers to Dr. W. Johnson's valuable work entitled "The Anatriptic Art."

While thus urging the importance of exercise, it is always with the proviso that it be proportioned to the strength of the patient. Pushed beyond this, it is followed by exhaustion, and the body is weakened instead of being strengthened. Some inconsiderate people, thinking that if exercise be a good thing the more they have of it the better, make an amount of exertion altogether disproportionate to their muscular development or vital stamina, and hence experience a painful sense of weariness and exhaustion, and their sleep is uneasy and disturbed, they having drawn too much on both muscular and nervous energy. Not only does undue exertion have this effect, but it also alters the constitution of the blood itself by impairing the powers of nutrition. This is noticeable in animals that have been hunted to death, whose blood is found to be in a fluid state, and whose bodies speedily become putrid, and in that of soldiers, worn out with long marches, who, when attacked with fever, seldom recover.

As muscular activity involves waste, and therefore active nutrition, it is evident that food, in proportion to the exertion made, is absolutely necessary. Activity and appetite generally go together, and where the activity goes on the appetite remains un-

satisfied, there is loss of flesh and diminished vital power. This is the state of multitudes of poor people whose avocations compel them to exertion, but whose scanty and unnutritious diet is altogether incapable of adequately supplying the waste caused by it. Hence the pallor, feebleness, and diseases of debility so common among that class in our large cities; and from this cause it is no doubt that the stimulus of ardent spirits is too often had recourse to.

A sudden bound from an inactive, sedentary life to that of a pedestrian or gymnast would of course be attended with injurious consequences. Everything must have a beginning, and personal habits are in man so influential in modifying his bodily powers that one set cannot be all at once exchanged for another without inconvenience. The transition to be beneficial must be gradual. A person who has been unaccustomed to activity should therefore be careful to graduate his exertions when he does begin them, so that his powers shall never be overtaxed, otherwise he may jump to the conclusion that exercise does not agree with him. Let him go on by degrees from little to much, and he will find that it does, and leads him on "from strength to strength."

The times for exercise ought also to be judiciously selected. One grand rule is that it should never be engaged in after a full meal. For the healthy, early morning is the best time, when the stomach is empty and the body refreshed by sleep. Invalids however—unless their appetite for breakfast is defective, in which case they may take a short stroll in the open air—should defer their walking exercise till after breakfast, and always leave off before exhaustion from want of food sets in. The necessity of this precaution also militates against the expediency of much walking or other active exercise immediately before a meal. In both cases the blood is diverted from the digestive organs, where it is urgently needed, and digestion is interfered with in consequence. An interval of rest should always precede and follow any meal.

The kinds of exercise which should be resorted to must depend on a variety of circumstances. Walking is most readily had recourse to by most people, and it brings well into play the muscles of the loins and lower limbs. It, however, does not secure sufficient play to the muscles of the arms and chest, and should therefore be diversified by such exercises as rowing, fencing, shuttlecock, bowls, hand-ball, &c., which, besides exercising the muscles of the trunk and arms, pleasantly stimulate the mind—an advantage which has already been dwelt upon.

Riding is, especially for those of weak lungs, a most healthful exercise, having the advantage of not hurrying the breathing. "It calls into more equal play," says Dr. Combe, "all the muscles of the body, and at the same time engages the mind in the management of the animal, and exhilarates by the free contact of the air, a

more rapid change of scene. Even at a walking pace, a gentle but general and constant action of the muscle is required to preserve the seat, and adapt the rider's position to the movements of the horse; and this kind of muscular action is extremely favourable to the proper and equable circulation of the blood through the extreme vessels, and to the prevention of its undue accumulation in the central organs. The gentleness of the action admits of its being kept up without accelerating respiration, and enables a delicate person to reap the combined advantages of the open air and proper exercise, for a much longer period than would otherwise be possible. From the tendency of riding to equalise the circulation, stimulate the skin, and promote the action of the bowels, it is also excellently adapted as an exercise for dyspeptic and nervous invalids."

Dancing—when not associated with late hours and hot rooms—is also a most healthful and invigorating exercise, and very well adapted to women and children. Not less useful are the musical gymnastics now much in use both in this country and America. No school should be without some such system for the physical training and development of children.

From the foregoing remarks it will be seen that the importance of exercise, along with other hygienic practices cannot be over estimated, and that the individual who wishes to remember the motto, *mens sana in corpore sano* must not neglect one healthful means more than another.

R. METCALFE.

THE OBJECT OF CLOTHING.

THE FOLLOWING ARTICLE APPEARED IN "*The Modern Physician*."

No point is more frequently referred to in the intercourse of hydropathic practitioner and patient, than that of clothing; nor is any a source of greater trouble and anxiety to both. An invalid told to give up flannels will argue that he has been advised to wear them, or that he has worn them all his life, and cannot give them up now.

It may be asked what physiological purpose does clothing serve, beyond that of the conservation of the heat of the body? But what is the source of heat? The answer is: "The mutual action between the elements of the food and the oxygen conveyed by the circulation of the blood to every part of the body." What becomes of the heat? It radiates into the surrounding medium if that be cold, heat is lost quickly, if warm, slowly. There is then a great difference in the amount of heat given off from the body, on a very cold and on a very warm day. Yet on both days the heat of the blood is the same. How is this? Because on a very cold day a

larger amount of food is eaten, and a larger amount of oxygen inspired, consequently a larger amount of heat is evolved from the animal furnace within, which makes up for the extra loss of radiation.

It follows, then, that so far as bodily comfort is concerned, people in this country might very well do without clothing. All that is needed is to eat food in proportion to the degree of cold in the atmosphere, which, in the ratio of its coldness, contains oxygen to combine with the food, and to evolve heat by combustion. The whole body might thus withstand the elements as easily as the face does so now. Such in fact, was the case with the ancient inhabitants of Britain, when the climate was probably more rigorous than it is now. They went about with scarcely any covering but the pigment with which they adorned their bodies. And more recently the Scottish Highlanders, with a costume exposing the lower extremities to the free play of the atmosphere at all temperatures, used to sleep amid the snow on beds of heather. The Crimean War supplies us with another instance in point. While the Highland regiments and the Zouaves stood exposure in the trenches with comparative immunity from colds, others, like the Guards, who had not been inured to the cold, died off like rotten sheep.

This latter illustration shows, that while no doubt civilisation has introduced certain habits which militate against the robustness of physique which formerly obtained, it is not a necessary and inseparable adjunct of civilisation, and that if we would but resist the everywhere prevalent habit to coddle, we might be as impervious to the changes of the weather as our rude forefathers.

But whatever the way in which clothing came to be used, it is now felt to be indispensable to bodily comfort. There is now less exposure, less exercise, less appetite, and so less power of resisting cold. We cannot go unclothed, because we cannot take in the fuel and consume it that would be required to keep warm the body's surface in all weathers. So we clothe ourselves to make up for the deficiency of animal heat generated within, even though it be at the expense of the health of the body.

The object of clothing, then, is to make up for the deficiencies of the interior furnace in its work of maintaining the temperature of the body, our clothes, in fact, being "an equivalent for a certain amount of food." The heat generated by the action of the oxygen of the air upon the food radiates, as has been said, into the surrounding medium in the ratio of its coldness. Hence, under the existing state of things, the necessity of artificially raising the temperature of the air around the body when otherwise its low temperature would cause the vital heat to escape to rapidly. This is done by clothing, which, in proportion to its amount and non-conducting power, retains and accumulates on the surface of the body the heat evolved within by the vital processes.

This artificial temperature induced by the use of clothing ought always to be in strict relation to the amount of vital energy. If the vital energy is low, the habits sedentary, and the frame delicate and susceptible, the clothing must be warm to conserve the smaller amount of heat generated in the body under such circumstances the due proportioning of clothing to the wants of the system should, therefore, engage the earnest attention of the practitioner. Dr. Combe lays the following down as a general rule in regard to clothing: "Not to dress in an invariable way in all cases, but to put on clothing in kind and quantity sufficient in each case to protect the body effectually from an abiding sense of cold, however slight. This is, however, no guide to the use of clothing, with a view to improving the tone of the constitution, or curing disease."

It is not wise to resort to extra clothing on every slight feeling of chill, and when it is really necessary to put on additional covering it should be laid aside when the exigency ceases. It would be as absurd for a man to be always in a pack or bath, as to wear permanently the covering resorted to in an emergency. Speaking generally, clothing should be regulated first by the season—light in summer, heavy in winter, and medium in spring and autumn; secondly, by age—the youth requires less than the old man; thirdly, by nature of occupation—the navvy hard at work with pick and shovel cannot bear the amount of clothing required by the guard or driver of a stage-coach. Besides, there are a thousand circumstances tending to modify the necessity for clothing, wherein instinct and common sense must be the guide.

It would be absurd to live, or compel others to live, in a state of shivering or discomfort, with the idea of inducing hardiness of constitution. In order to ensure health, the natural heat of the body should be preserved at all hazard, having regard always to the fact, that food is analogous to power, while clothing is a mere artificial conserver of power. It is a greivous error to make the heat of the body depend on clothing, or any artificial means alone; the individual is thereby reduced to the condition of a hot-house plant. The more this system is persevered in the worse matters become. Clothing may be piled upon clothing, until a man of twelve stone shall be carrying about with him a stone weight of covering, and the result will be that the vital powers will sink lower and lower, until actual disease sets in through mal-nutrition. The immediate effect of this over-clothing is to relax the skin, and to augment the susceptibility of the system to injury from casual exposure or changes of weather.

Then, like all other substitutes for the operations of nature, excess of clothing tends to aggravate the evils it was intended to correct. The true way to "keep out cold" is to bring the body as far as possible into a state of health, so that cold shall not be felt.

This must be done by natural means—air, exercise, diet, bathing, &c. Sufficient heat will thus be evolved from the stomach, as was in the case of the naked Britons. Coddling and muffling will be at a discount. The keen breezes will be courted for very enjoyment, and thus the spectres of catarrh, bronchitis, and neuralgia will be put to flight.

In avoiding these evils, however, care should be taken not to run to the opposite extreme. In a climate such as ours, and with habits such as have resulted from our civilisation, a prudent regard to clothing has become necessary, so as to protect us from sudden changes of temperature. There is danger, however, of those who wish to harden themselves after having rendered themselves tender by over-clothing becoming equally indiscreet in the other direction, and so by going with too little clothing courting colds, congestions, &c.

Respecting the material of clothing, the chief debatable point in hydropathic therapeutics is, namely whether, or not flannel should be worn next to the skin. Dr. Combe, a physiologist, of the old school, says "yes," because "being a bad conductor of heat, flannel prevents that of the body from being quickly dissipated, and protects it in a considerable degree from the influence of sudden external changes. From its presenting an uneven though soft surface to the skin, every movement in labour or exercise gives by friction a gentle stimulus to the cutaneous vessels and nerves, which assists their action, and maintains their function, in health; while being of a loose or porous texture, it gives a readier passage to the cutaneous exhalation than any other material in common use. From the cellulated structure of the fibre of the wool, moreover, its tissue does not become saturated with moisture as linen does, whenever there is a flow of perspiration." In some very delicate constitutions, however, this author admits it to be irritating to the skin, and also that in hot climates it is apt to excite too great a flow of perspiration.

Though an admirer of Dr. Combe, and fully alive to his eminent services to the public in first instructing them in a popular way in the elements of physiology, I am constrained to differ from him on the matter of wearing flannel next the skin inasmuch as it tends to check the normal exudations. *Insensible* perspiration as well as the heat evolved, should be allowed to escape, for what is the skin but a breathing organ—a lung? Would it be wise to put a flannel over one's mouth? No more is it to put a damper on the skin. It helps to retain those products which should be removed, and it prevents the blood being oxygenized through the pores.

A great principle of health is to keep all the excretory organs in a state of normal activity.

We have it on the authority of physiologists of unquestioned repute that out of every ninety-five ounces of liquids and solids which are excreted from the body, forty have to come by the skin.

But when flannel is worn next to the skin, the emunctories cannot work with the freedom they should, for the reason that the flannel retards the outflow of the cutaneous excretions. The gases, too, that are exhaled from the skin are prevented from escaping, because of the retaining properties of the flannel, and they are consequently in a large measure re-absorbed.

In the case of women the evil is not so great, because the style of their clothing is better adapted to the ventilation, as I may term it, of the skin; but in the case of men it is different—their clothing is so tight about them that one-half of the natural excretions of the skin is retained in the underclothing. Not only are men's flannel shirts, vests, &c., made to fit tightly to the body, but they are also drawn down close to the wrists and ankles, as if purposely to prevent the escape of the unhealthy products of the body, which not only militates against the enjoyment of perfectly sound health, but also stands in the way of the recovery of patients.

In the case of hydropathic patients especially, it is desirable that flannel should not be worn next the skin when under treatment; for immediately patients put on flannel, the reaction is to some extent checked, and there is a diminution of the capillary circulation, and an undue amount of blood recedes upon the vital organs. In addition to this, as I have already said, the escape of the gases is prevented, and the renovating process of the treatment is in consequence impeded, and a cure retarded. Then, again, flannel produces a certain irritation of the skin, and has a very injurious effect, inasmuch as it makes the skin less sensitive to touch and feeling, which is a very undesirable thing to do. Flannel is, moreover, a non-conductor, and as such insulates the body from that contact with the atmosphere which is necessary for a robust state of health.

There is, we maintain, no more necessity to wear flannel next the skin than over the face. The skin is of fine and delicate texture, and is charged with numberless highly important vessels, and should, therefore, be as free as possible from anything likely to interfere with the normal exudation. If clothing we must have, care should be paid to this requirement; nothing should be placed next the skin but materials extremely smooth. Nor should the clothes be tight, but as loose as may be consistent with comfort. By this means the stomach, the bowels, and the liver, would be enabled to discharge their functions better, and all the internal organs would work more harmoniously together, and hence a healthier condition of the body would ensue.

Instinct must be the guide as to special circumstances requiring increase or diminution of the ordinary covering general or local. An accidental chill may call for an extra overcoat or shawl, and the same necessity exists on issuing from crowded hot

rooms into the cool air. These additional coverings should be laid aside when the necessity is over. When the body is hot and perspiring, it may be necessary to lay aside part of the exterior covering, and the rule to be observed is that of doing nothing rashly. There should be no capricious changing of clothing, nor inequality in its distribution over the body.

One more point and we have done. We should think that it was unnecessary at this date to show to common sense people the evils of ligatures, or compression, in connection with clothing, but experience proves that there is as much need for teaching as ever. Tight stays, corsets, garters, boots, and ties, so unpleasant to the wearer, and so hurtful in a physiological point of view, are still worn, as if physiology had never raised its voice against them. We know that with some persons fashion is everything, more than reason, more than religion. But those who aspire to live as human beings, ought to discard the absurd styles of dress which fashion has introduced. Many are the ailments which have been contracted by the stupid adherence to the dictates of fashion, and which we ascribe to civilisation. But fashion is not civilisation; it is fossilised semi-barbarism.

The above suggestions on an all-important subject, are the result of thirty years of thought and study on the requirements of the body for health, and those who value physical well-being would act wisely in at least giving them that consideration which the subject demands.

I would say, in conclusion, to those who may wish to make a change in their underclothing, that in speaking of linen I mean a coarse, unbleached linen. I was never more convinced of the salutary effects produced by replacing flannel with linen of a coarse texture, than when I saw the result on some dyspeptic cases from America, who had been advised by their countrymen to make the change. I had already adopted the principal in some measure, but now my views were confirmed by the marvellous effects produced in the cases mentioned, in which previously there had been a constant disposition to colds, coughs, influenza, rheumatism, and the like, but which had been quite cured by the change from flannel to linen, together with the general hygienic treatment.

I will conclude my remarks on clothing by giving an extract from the pen of F. P. Cobbe, as to how ladies should dress.

A little girl in a London Sunday-school being asked by a visitor "Why God made the flowers of the field?" replied (not unconscious of the gorgeous paper poppy in her own bonnet), "Please, ma'am, I suppose for patterns for artificial flowers." One might anticipate some answer scarcely less wide of the mark than of this sophisticated little damsel were the question to be put to not a few grown women, "Why do you wear clothes?" Their most natural response would obviously be, "To be in fashion." When we have

visibly wandered a long way from the path of reason, the best thing we can do is to look back to the starting-point and find out, if possible, where we have diverged. In the matter of raiment that starting-point is not hard to find—indeed, to mark it is only to state a series of truisms.

Human clothing has three *raisons d'être*, which, in order of precedence, are these:—

I.—HEALTH.

II.—DECENCY.

III.—BEAUTY.

HEALTH demands—

1. Maintenance of proper temperature of the body by exclusion of excessive heat and cold.
2. Protection from injury by rain, snow, dust, dirt, stones to the feet, insects, &c.
3. Preservation of liberty of action to all the organs of the body, and freedom from pressure.

DECENCY demands—

4. Concealment of some portions of the human frame.
5. Distinction between the habiliments of men and women, sufficient to avert mistake.
6. Fitness to the age and character of the wearer.

BEAUTY demands—

7. Truthfulness. The dress must be genuine throughout, without any false pads, false hair, or false anything.
8. Graceful forms of drapery.
9. Harmonious colours.
10. Such moderate consistency with prevailing modes of dress as shall produce the impression of sociability and suavity, and avoid that of self-assertion.
11. Individuality. Dress suiting the wearer as if it were an outer body belonging to the same soul.

(Be it noted that the fulfilment of this highest condition of tasteful dress necessarily limits the number of costumes which each person should wear on similar occasions. No one body can be adorned in several *equally suitable* suits of clothes, any more than one soul could be fittingly housed in twenty different bodies.)—F. P. COBBE, in *Contemporary Review*.

R. METCALFE.

HYDROPATHIC MATERIA MEDICA.

I will conclude this treatise with some extracts from the articles which appeared in the *Housewife* during 1892, by R. Metcalfe.*

The use of water as a medical agent is no new thing. It was much practised by the ancients, and indeed the bath and watery appliances formed an important part of their medical system. But we owe its re-introduction and development into a perfect system of therapeutics to Vincent Priessnitz, of Gräfenberg in Silesia, a man who in the early part of the present century attracted great attention by his wonderful cures, and succeeded in making many converts to his methods. Since his death hydropathy has made its way all over the world and counts its practitioners by thousands. But, though hundreds of thousands have benefited by its powerful agencies, having been restored to health when given up by the ordinary medical practitioners, popularly the system is still little understood. This series of articles on the water-cure therefore, is written with the view of enlightening the prevailing ignorance and putting the certainty of knowledge in the place of prejudice.

In the baths and other appliances hereafter to be described, care has been taken to refer only to such as can be administered in the home. But it is as well to say in the outset that in applying the various water applications, etc., everything depends upon their being given exactly as described.

DEBILITY (caused by fever, etc.)

THE BED BATH (1).—In this bath the nurse, without disturbing the bed-clothes, slips a warm blanket under the patient, and, after removing the night-dress, holds up the bed-clothes with one hand, and with the other sponges the body all over. The process is followed by a brisk dry rubbing. Local spongings are administered in the same way. Extreme caution should be observed in order to avoid chilling the patient. In very delicate cases the sponge should be dipped in tepid water; in ordinary cases in cool or cold water. The bed bath is only resorted to in cases of extreme debility and difficulty of reaction. It is very soothing and often induces sleep when nothing else will.

* Mr. Metcalfe stands in the premier rank of hydropathists in this country, having conducted a large establishment in Paddington for over thirty years, and having had at one time or another, some of the foremost men in science, religion, and politics under his care. He is the author of a number of works on the Water-cure and allied subjects, and is a constant contributor to the leading periodicals connected with the system of therapeutics he practices.—ED.

THE SOAP BED BATH (2).—This appliance is given for cleansing purposes ; hot water all over is used. The most effectual material for accomplishing the bed soap wash is loofah, used in Turkish baths, which possesses a pleasant and agreeable roughness to the skin, and entirely removes any disagreeable exudations. In the absence of loofah, a piece of new flannel is the best substitute to be employed. The hot soap bath is given in the same way as the bed sponge, and should always be followed by a sponge-over quickly with water, about 20 degs. lower than the wash, to refresh the invalid before rubbing dry.

The frequent use of the bed bath is extremely beneficial in all cases of emaciation, induced by severe illness such as fevers, typhoid, etc., and especially so when the skin is hot and feverish, as in the consumptive, suffering from hectic flushes. The use of the tepid or cold water sponge has a most marvellous effect in toning up the anæmic patient. The bed bath either hot, tepid, or cold, skilfully administered, is essentially a tonic, and an excellent refresher for either the convalescent or chronic bed-ridden patient, and is within the reach of the poorest family.

WET TOWEL RUB (3).—This operation is performed piecemeal, commencing with the upper part of the body, while the legs remain covered, and the feet resting on a hot tin, or in mustard and water ; salt will do in the place of mustard ; and in the absence of both, hot water will suffice.

While the patient is seated, the nurse, with a towel wrung out of tepid or hot water, quickly rubs the arms and trunk, the patient assisting, if strong enough. After he has been rubbed dry, which means until the skin is red and warm, the underclothing is adjusted, and the legs are treated in a similar way.

This application embraces all the medical results of No. 2, only a little more heat is extracted, more skin friction being produced by the rough towel.

While the towel rub is chiefly recommended to delicate invalids, yet in winter time it forms an excellent substitute to persons in robust health, where water ablution is not convenient. Where there is not an attendant to administer this towel rub, the person should take hold of each end of the wet towel, place it across his back and shoulders, and rub backwards and forwards, so as effectually to cover the whole back, and in the same way apply the dry towel. The wet towel may be applied for a minute or more, the dry towel a couple of minutes. The operation should be continued piecemeal all over the body.

Persons who are going to dress after the towel rub should do the feet and legs first, put on stockings and shoes, and wind round the legs a sheet or blanket from the hips downwards. By adopting this plan the feet are kept warm, and the general reaction of the body secured.

WET HAND RUB (4).—This application is given in the same way as No. 1, so far as not exposing the naked body to the atmosphere of the bedroom is concerned. The nurse has a basin sufficiently large to hold two quarts of cold or tepid water. After seeing that a warm blanket is placed under the patient and another one over, and that he is denuded of clothing, the nurse dips her hand into the basin, rubs as quickly as possible one portion of the body at a time, holding the blanket up with the other hand. A person to hold up the bedclothing is advantageous. The nurse is then able to rub with both hands quickly, allowing sufficient water to be on the hands to slide about easily over the skin. After the front is finished, the patient should be turned over on to his side or stomach; then the process should be repeated on the back. The duration of this frictional operation is generally from five to fifteen minutes; according to the strength of the patient.

With persons of bad reaction, weak digestion, and attenuated bodies, this mode of appliance is attended with the very best results, without any possible drawback, and, when properly given, is always followed by a most delightful and healthy sensation of re-invigoration. It is highly tonic to the whole of the bodily functions. The body to be well rubbed with dry towels until warm.

WASHDOWN (5).—This bath is usually administered to the patient seated in an empty vessel, such as a tub, though a sponge bath is the best, given with the feet in hot water. A pail of water and two rough towels are placed inside the vessel; the towels are taken out dripping, the patient having one, and rubbing very actively at the front; the nurse the other, and being similarly employed on the back. From half a minute to a minute is the proper duration for this appliance. After this a dry sheet is thrown on the patient, by which he is rubbed quickly, his feet the while being kept on the hot tin, or in hot water.

In the absence of any vessel, two or three thicknesses of blanket on the floor will suffice, with the object of absorbing the dripping water while the bath is being administered.

This application embraces all the advantages of the previous baths, the only difference being that it is more powerful, and has a greater tonic effect upon the body.

THE MILD CATARACT BATH (6).—The patient is seated in an empty bathing apparatus, two ordinary sized pails of water are poured upon him simultaneously from the neck by two persons, one in front and the other behind. The patient is then rubbed vigorously all over with the wet hands for about half a minute; he then jumps out of the bath, a dry sheet is thrown over the body, and he is rubbed briskly.

This bath is essentially tonic and stimulative to the nervous centres, and is a sort of "pick me up." A little more heat is extracted than by the previous local bedroom baths.

CURVATURES, SPINAL AFFECTIONS, etc.

SPINAL BATH (7) —The patient is seated over a vessel similar to the hip bath, on a piece of wood stretched lengthwise across it. He is then bathed with dripping towels, or else sponged, or cans of water poured over him, one after the other. The process may last from one to five minutes according to the necessities of the case. The patient should have the feet on a hot tin; and sometimes a hot pad to the chest, well covered, is of advantage; likewise a cold cloth to the head. Hot spinal baths are rarely given without being succeeded by cold effusion. This is a bath of great service to persons suffering from spinal irritation. The application is very serviceable in all forms of spinal weakness, curvatures, affections of the spinal cord, locomotor ataxia or congestion of the base of the brain, and is within the reach of the most humble individual. The feet should be in hot water while this bath is given.

The medicinal action of the back being bathed with cold water is to stimulate the spinal nerves; and thus to give general tone by sending a thrill of stimulation through the whole of the nervous system. In highly nervous individuals tepid water should be used, gradually cooling to cold, as the patient gets accustomed to the cold.

BACK WASH (8).—Whilst the spinal bath is generally confined to the spine and two or three inches on each side of it, in the case of a back wash, the whole of the back is treated, the patient sitting in the same way as in the spinal bath. It is given alternately with hot and cold water as the case may require.

This appliance is very serviceable in the case of lumbago or congestion of the kidneys. The patient's whole back is bathed, commencing from the shoulder-blades downwards. When the bath is used in this way, two vessels are required, one containing hot, and the other cool water, and the patient is plied first with one and then with the other. The hot water may be applied for five minutes, the cold water for a minute. In using the hot water, care should be taken to add fresh water to keep up the temperature, until the bather is able to bear the temperature of something like 112 degs. Two or three efficient applications of this kind will suffice to cure the most aggravated case of lumbago or congestion of the kidneys, providing there be no other complication. Good friction with dry towels afterwards is essential.

HAND AND FOOT BATH (9).—To give this appliance simply means having a vessel of any kind, sufficiently large to admit of the feet, to the depth of about eight inches of water; while the hand bath may be taken in a basin deep enough to hold six inches of water, in which the hands are placed, at the same time that the feet are in the water. The question as to whether hot, cool, or cold water should be used depends entirely upon what medical

results are intended to be effected. So far as the temperatures that may be used directly or indirectly are concerned the medical effects are sedative and derivative, that is to say, drawing the blood to the feet and hands and thus relieving the head of any undue passive congestion.

The hand and foot bath is peculiarly beneficial to ladies who suffer from periodical suppression. I have applied these appliances over thirty years, and judging from the results—providing there is no organic disease—I have no hesitation in saying that if the hand and foot bath was taken hot, twice a day, for three months, in conjunction with two sweating baths a week (the Turkish bath would be best), they would cure the most obstinate case of suppression of the menses. The duration of these appliances should be ten minutes each time, as hot as can be borne with comfort. After each application the feet and hands should be rubbed with a cold wet towel, followed by a dry one, with good friction.

In the early days of hydropathy, Preissnitz's patients who suffered from cold feet walked up and down a rivulet of water in which a number of small round pebbles were distributed at the bottom. The effect of this treatment, continued for several consecutive days or weeks, was to cure the patient suffering from cold feet. The patients were required to walk thus for five or ten minutes several times a day.

When hydropathy was introduced into this country, a similar plan was adopted: in fact, I have recommended numbers of patients, habitual sufferers from cold feet, not only to walk on pebbles in water, but to walk upon a frosty grass-plot, and many times have joined those patients, with most marked effects; after about five minutes or so, there is invariably a fine glow of heat induced. No injurious effect is likely to ensue from paddling up and down a rivulet, or walking upon the frosty grass with the bare feet, provided it is judiciously done. I hardly need say that there is no human discomfort more irksome or disagreeable to the feelings than suffering from cold feet and hands, and a hot head; and the whole aim and object of the foot and hand bath is to cure this discomfort, while the hot applications have a very soothing effect, are very pleasant, and have a very important influence in controlling the circulation, yet, if persevered in too long, they may have an enervating effect in rather augmenting the difficulty, by the feet becoming so familiar with heat as to be incapable of withstanding cold; whereas, by resorting to cold foot and hand baths, using friction while taking them, the reverse effect is experienced; consequently all hot hand and foot baths should be succeeded by cold appliances, either by plunging them into cold water, or by vigorously rubbing them with wet cloths, so as to create thorough reaction.

HEAD BATHS (10).—The head bath is generally given in a round vessel, similar to a washhand basin (a wooden bowl is the

best), large enough to hold three or four quarts of water, and conveniently to receive the back of the head, allowing a space all round of about two inches.

In taking the head bath the patient lies flat upon his back, on a mattress placed on the floor. The shoulders should be raised about six inches, so that the back of the head may be comfortably in the basin with the water extending up to the ears. The bath is given at various temperatures, and may last from ten to twenty minutes. While taking the bath a wet cloth should be placed on the brow, and a hot bottle or tin to the feet.

As to the applicability of this bath, it requires some consideration, for in certain cases cold applications will increase the difficulty, while heat will give immediate relief. The causes of headaches are too numerous to be entered fully into here, but they may be divided into two sections.

Sick headaches.—Arises from functural disorganisation, in which cases the head bath is of no use. The best treatment for them are hot mustard foot baths, mustard leg packs, waist compresses worn during the night, together with warm cloths to the head. As accessory means, the diet should be carefully watched and the bowels be freely opened daily. An injection into the bowels of a pint of barley water at 100 degrees at bed time is also a most valuable adjunct in sick headaches, whether the bowels act daily or not.

But the class of headaches for which the head bath is especially suitable are those due to debility, such as passive congestion at the base of the head, which usually arises from too much mental strain, close application to business, worry, and want of sleep. These troubles affect all classes. Females are liable to periodical irritating causes more than males, yet the same kind of treatment suits women as well as men.

So far as treatment is concerned, we divide it into two sections, viz:—congestive headaches and anæmia. In the case of congestive headache, hot and tepid applications should be resorted to, whereas in cases of anæmia, which means the want of blood, and results in a wearied and tired sensation, cool or cold applications are more suitable.

For the warm applications two basins should be used, one with water at 100 degrees, in which the head remains for five minutes. Then the head should be changed into a second basin at 80 degrees for five minutes; and finally into water at 70 degrees, thus gradually lowering the temperature without any shock or violent reaction. Where cold water is used the temperature in winter should be between 65 and 70 degrees, and the duration of the bath from five to ten minutes.

These baths should be taken twice a day until relief is obtained, the best times being ten to eleven o'clock in the morning,

and five to six in the evening, and where there is a predisposition to congestive headache, the bath should be used regularly, once a day for some months.

While I have indicated the head bath as a good local remedy, it must be borne in mind that these conditions of the head depend greatly on the general health, and too great attention cannot be paid to having the bowels relieved every day, and to the use of judicious diet.

As in the case of bilious or sick headaches, so in the case of congestive or anæmic headaches, they are largely affected by the state of the stomach, and very often hand and foot baths will be found useful where the head bath does not seem to succeed.

Whatever the headache may arise from, the feet must be kept warm, and a wet compress should be wrung out of mustard and water (see Compresses), and worn every night. It should be sufficiently large to cover the whole of the abdomen from the armpits to the hips, and when this is removed in the morning, the part should be well washed and then rubbed, first with wet and then with dry towels.

WEAKNESS OF CIRCULATION, ATROPHY, ETC.

PAIL DOUCHE (11).—The pail douche is of three kinds:—1: One or two pails of water of lower temperature are poured over the patient's back and chest.—2: Two or three pails of water of graduated temperature are poured over the patient seated in an empty shallow bath with the plug out.—3: Two or three pails of water are dashed suddenly and forcibly over the patient standing in an empty bath.

Pail douches are often beneficially given to delicate persons who suffer from spinal weakness. When given in the bedroom a long slipper bath is used; it is placed on blankets, with a little hot water in it, into which the patient is seated.

If a female, an oilskin-cap is placed on the head, and the nurse pours from behind two pails of water quickly over the back and head. Then the patient gets out, and is well rubbed with a sheet while standing on a hot tin, or in hot water. For the delicate the temperature of the water has to be regulated to the reactive powers of the patient; the first pail being usually 10 or 15 degrees higher than the second one, which may be, say, 75 degrees, or lower if it can be borne, the time of the year having to be considered in connection therewith, and the general ability of the invalid to bear a slight shock. The best test of a bath is when it is followed by a general reaction; if this does not follow, the temperature of the water should be raised. The first pail may be 100 degrees and the second 80 degrees; the temperature being gradually reduced day by day as the reactive powers improve.

The pail douches are especially beneficial to persons who enjoy a fair amount of health, but who cannot react after sitting in water, though they react remarkably well when water is dashed upon them. The most effective way to give pail douches is by two persons pouring the water on to the patient simultaneously, dashing the pails of water quickly on the body, back and front. The medical effect is a stimulative tonic, and rouses up the general circulation, thus effecting all the nutritive organs.

DRIPPING SHEETS (12).—These sheets are prepared in three different states of saturation, but the sheet used must be large enough thoroughly to envelope the whole body. I will mention them in the order in which they are generally prescribed.

In the first, the sheet has the water well wrung out of it; in the second, as much water is retained in the sheet as can be carried without dripping; and, the third is used with water dripping or streaming off. Whilst giving the first and second dripping sheet, a mackintosh sheet or blanket is spread on the floor, on which, in cold weather, a hot flat tin should be placed, or a large foot-pan containing hot water for the patient to stand in. The nurse throws the sheet from behind over the body, and while the patient is rubbing the front part of the body, the nurse rubs the back.

These operations require considerable nerve and muscular force, as well as rapid movement on the part of the nurse. The rubbing, however, is not done with the sheet itself, but with the hand firmly and quickly passing over it, as when pulling on a glove. When this has been done sufficiently, say for a minute, the wet sheet is quickly replaced by a dry one, and both persons continue rubbing until the patient has well reacted and feels a comfortable glow of heat all over the body. After adjusting the upper clothing the feet are served in the same way as the body.

With the third mode of applying the sheet a bath must be used—either a sponge, sitz, slipper, or ordinary warm bath—into which some warm water is poured to the depth of about an inch, and in this the patient stands. The nurse, standing behind throws over the body the sheet dripping out of a pail in the bath; and this is followed by the same rubbing and friction as in the previous cases.

These baths are resorted to where there is a want of action in the skin and the circulation is sluggish, which generally occurs with persons of a spare habit of body, or where there is a tendency to atrophy and general emaciation. In some cases the dripping sheet is used after a full sheet-pack or fomentation, lamp or vapour bath, as being the best substitute for a water ablution.

Process No. 1, is resorted to by people who are extremely weak, possibly just recovering from a severe illness, such as fever or gastric derangement, as it extracts very little heat from the

body, as compared with other appliances, and should be continued until the patient is able to bear the second description of dripping sheet, and afterwards the third. The advantages of the dripping sheet are: that it is within the reach of everybody, and that to persons who are delicate and have bad reaction, the amount of exertion required for the rubbing and friction which attends its application is beneficial, while there is a minimum loss of heat and weakening effect, as compared with water bathing.

WEAKNESS OF DIGESTION, KIDNEY AFFECTIONS, ETC.

THE HOT SOAP DRIPPING SHEET (13) is given in the following manner:—Into a vessel large enough to stand in as in No. 3, place a pailful of hot soapsuds, and thoroughly saturate a full-sized sheet or blanket therewith. Let the person who is going to be operated upon stand in the vessel, and some one from behind throw this hot saturated sheet or blanket over the head and shoulders, both parties rubbing the body all over with might and main for a minute or two. A jugful of warm water at about 100 degrees should be at hand, and after the rubbing it should be poured over the head and shoulders, then another sheet should be had ready, wrung out of tepid water, as in No. 2; the hot sheet should be allowed to drop down, and the tepid dripping sheet quickly thrown over the patient, who should be rubbed vigorously. This must be followed by a dry sheet rub.

If this operation is given with any amount of dexterity, the sense of comfort after it, is most agreeable and calming, and medically it is most efficient, quite equal to any cleansing bath (barring, perhaps, the Turkish bath), and it is certainly one of the most convenient processes, as it can be given in a bedroom. As regards the general utility of the ordinary dripping sheet, no person need be without a bath on rising, that is, if he has a quart of water and two sheets at hand. If at all pushed the bed sheets may be used. They can be dried during the day in readiness for bed at night.

I can heartily recommend the dripping sheet No. 2, to any man and wife using it to each other on rising daily. The amount of exercise in the administration would do away with all necessity for walking, etc., to produce reaction. The good results of all these appliances entirely depend on the skill and dexterity with which they are administered, because if the patient and nurse are not energetic and quick over the operation, the patient is liable to feel cold after it, in which case the bath might prove injurious, or at least it will have done no good. It should be borne in mind therefore, that the patient must be rubbed until he is thoroughly warm, and, if able to get up, he should dress quickly, or if returning to bed, a hot bottle should be applied to the feet. When it may be desirable that the patient should have a drink of hot fluid,

he should take half before, and half after the bath. No application of this kind should be given for at least two hours after a full meal.

In cases where there is organic disease of the heart, cold dripping sheets should not be used, as such may prove too great a shock, but by preference cold wet towels should be used instead, rubbing the body by piecemeal, first the legs and then the body.

SITZ OR HIP BATH (14).—The sitz bath may be considered one of the most useful appliances for home treatment, and a most powerful tonic—derivative in its action. Scarcely any vessel is so generally useful in a private house, and there is no form of bathing appliance so universally resorted to from which so much benefit is derived, without its users appreciating its true value. What is understood as a sitz or hip bath considered hydropathically is a vessel in which the patient is seated in tepid or cold water as the case may need, with the feet outside, and the body covered with a blanket to prevent exposure to the air of the room. There should be sufficient depth of water to embrace the whole of the bowels, the stomach, the lower portion of the liver, and the lungs, while at the back the water should extend about two thirds of the way up the spine, thus covering the kidneys.

The beneficial action of the sitz bath is various. It is had recourse to for weakness of the digestive apparatus, for piles and weakness of the bowels, looseness or constipation, uterine or kidney affections, also for undue flow of blood to the head, and general debility. I have also found it very useful for brain workers, taken twice a day, for about ten minutes each time. The temperature of the water must be necessarily regulated to the patient's age, the time of year, whether winter or summer, etc., and the powers of reaction. As a general rule, during the winter months, the water should range between 65 and 75 degs., and the duration from seven to twenty minutes. The best time to take the bath is at 11 a.m. and 5 p.m., but it should never be taken until two or three hours after a full meal, and about half an hour to an hour before a meal.

When the sitz bath is resorted to for constipation, it acts upon a patient very much better when it is preceded by hot applications across the bowels for thirty minutes. (See remarks on Foments or bowel pack with hot can over.)

During the summer months the water may be cold; all the patient has to guard against is not to take the sitz so cold as to induce internal chilliness. Practical experience is the best education for all of us, so long as the mind is not warped by unhealthy feelings: two or three experiments will be the best instructor regarding the suitability of this or that bath, as well as the duration and temperature of the appliance. Exercise should be taken by those who are able, before and after taking

this bath excepting when the hot application has been used, which is sufficient preparation for the bath. When it is impossible to go out of doors for exercise, the patient should bustle about the house or workshop sufficiently to induce reaction, or if not able to do this, the patient should return to bed with a hot bottle to the feet, until thoroughly warm before dressing.

The object here is not to direct treatment in every form of disease, but to throw out hints from a hygienic point of view to guide those who are not actually under medical advice.

RUNNING SITZ BATH (15).—This is the same as an ordinary hip bath, but with apertures to allow of a small gentle stream of water running in at one end and out at the other. In taking either the running or ordinary sitz bath, a cold cloth should always be applied to the head, and the feet in hot water, or on a hot flat tin. The advantage of the running sitz over the ordinary sitz is, the patient can be seated in warm water, the cold water running in slowly by one pipe, while it flows out by another, thus gradually cooling the water down to cold.

There are many nervous and highly sensitive persons, who cannot possibly get into cool or cold water, and this running sitz just meets their case, inasmuch as the water becomes cooler and cooler by degrees, until in about ten minutes the patient finds himself sitting in cool or cold water. Its use is chiefly for cases where powerful derivative action is required, and where it is essential to keep the water at the same degree of cold; its tonic and derivative action being therefore more powerful than the ordinary sitz bath. The duration varies from ten to twenty minutes.

The running sitz was a great remedy of the late Dr. Gully* in all cases of tendency to congestion of the head, or inaction of the bowels, and other local weakness peculiar to both sexes.

AFFECTIONS OF THE EYES AND NOSE.

EYE BATH (16).—A small syphon is employed to direct the stream of water over the eye, or an eye cup may be used, in which water is repeatedly applied to the eye. Messrs. Savory and Moore used to have a very good kind of eye syphon douche, as well as the eye cup or glass. This appliance scarcely needs description, as there are very few complaints affecting the eye that are not indirectly the result of some constitutional derangement requiring functional treatment to remove.

To persons who are suffering from weakness consequent on over-use of the eye, I have found the best tonic (where there is no inflammation) is to hold the face with the eyes open in a basin of cold water, as long as the mouth can be kept under water. At

* Dr. Gully was one of the most successful Hydropathic practitioners in Europe. The Speaker of the House of Commons is his son.

bed-time, when there is the least tenderness, or feeling of grit in the eye, I have recommended holding the eyes in water as hot as can be borne, and then retiring to bed with a wet rag wound round both eyes, and a dry towel over; and on rising, to hold the eyes in cool or cold water.

Where the eyes are suffused, and have the appearance of being very red, with difficulty in enduring the light, the eye must be protected by a shade. Tepid sitz baths are useful, taken for fifteen minutes twice a day. They act as a derivative, in other words, they draw the blood down from the head. Turkish or vapour baths, are most useful remedies in nearly all affections of the eye, where there is no organic lesion or structural alteration in the sight.

NASAL BATH (17).—This bath is employed in chronic catarrh, and in stoppage or other affections of the nasal passages. In the first place a hot pad about seven inches square is applied to the forehead, and secured by a bandage wound about the head. Water, first warm and then cold, is sniffed up, and ejected by the mouth. Affections of this nature are very often the symptom of a constitutional cause; hence local appliances are only palliative.

In mild forms of polypus, or thickening of the nasal membrane, I have known injections of weak Condyl's Fluid and Liquid Sulphur give considerable relief, and in some instances reduce the substance of the polypus, so that it gives little or no inconvenience. The Turkish bath in all these cases is most efficacious, and the use of the above injection has always been in connection with the hot air or vapour bath. Whatever form of sweating bath is taken the head must be in the bath, the heat having a specific effect on the nasal membrane, whether thickened or otherwise; care being taken that the frequency and mildness of the bath is regulated to the strength of the patient.

In some cases I have recommended the use of these medicated injections at home, and the general results have been good. The chief medical effect I apprehend is owing to their constringing and antiseptic action on the membrane; hence they may be considered more as palliatives than curatives.

To make the Condyl's Fluid injection, take a very small salt-spoonful of crystals of permanganate of potash, or if you use red Condyl's Fluid, take about a dessert-spoonful to about a tumbler of water. First use the injection hot, and then cold, two or three times a day, alternating with the sulphuret of potash. To prepare the latter take a piece of the sulphuret about the size of a hazel nut, and dissolve it in about a cupful of boiling water, then add to it a quart of water; the whole can be kept in a bottle, and secured with a cork. Use this warm alternately with the other injection, especially in cases of polypus. Inject with a small glass syringe into the nostril, about half a tumblerful at a time. In doing this

the syringe must be put well into the nostril, so as to force the liquid through into the throat. After finishing the injection, either of Condyl's Fluid, or the sulphur, take care to gargle the throat well with hot and cold water.

THE TONIC BATH (FOR RELAXED MUSCLES, ETC.).

THE SHALLOW OR SLIPPER BATH (18) is a vessel about five feet long and about two feet broad at the top, tapering to about one and a half at the bottom, in which the patient, after bathing the head, slips down with extended limbs in twelve, fifteen, or twenty inches of water, called respectively the ordinary, full, and deep shallows. With a wet towel the bather vigorously rubs his limbs, chest, stomach, and face, now and then throwing a double handful of water over his head, while an attendant rubs the back.

The duration of this bath ranges from one to five minutes, according to the requirements of the recipient. On emerging from the bath the patient stands on a hot tin, and has a dry sheet thrown over him, and is rubbed briskly until thoroughly dry and warm.

This bath is the most common of ablution in the hydropathic remedies. When the shallow bath follows the pack or sweating bath, great care should be taken not to expose the body to the temperature of the room before getting into the water.*

The duration is generally about a minute, and rarely exceeds two minutes, inasmuch as the shallow extracts a great deal of heat from the body, and just in proportion as the amount of heat required to be extracted, so is the amount of water, as well as the duration of the bath regulated. It is a powerful tonic, especially for phlegmatic subjects suffering from relaxed muscles and inactive skin. It has a very invigorating and strengthening effect on the whole bodily functions, and when carefully administered can scarcely ever do any harm, providing plenty of friction be used both in the bath, and in drying the patient, so as to produce reaction.

These compound appliances require careful regulation so as not to cool down the patient too much, and thereby exhaust the nervous system, thus checking the reactive power. A full shallow bath is generally resorted to by patients who have prepared themselves by walking or other exercise, and is not preceded by other appliances, the patient undressing quickly and jumping into the bath at once, both himself and attendant rubbing vigorously with both hands and towels. The duration may be from one to five minutes, according to requirements. After dressing quickly, the patient should take a brisk walk to induce reaction.

The deep shallow bath is generally had recourse to after a sweating bath; its duration never exceeds two minutes.

* This caution is particularly necessary as not only patients, but occasionally skilled bath attendants are careless in allowing the body to be exposed during the passage from one appliance to the other.

In heart affections no sort of shallow bath should be taken cooler than from 70 to 80 degrees, and in all cases of anæmia and nervous exhaustion this bath should never be taken at a lower temperature than 65 to 70 degrees, except under medical advice.

THE SPRAY BATH (19) is a modification of the spouting douche, but the stream is made to spray out into a multitude of small jets, as from the rose of a watering can, and when given in a cold room the feet should be placed in hot water, or on a hot tin. Though not generally to be found in private houses, there need be no difficulty in fitting it up, it being only a question of having a pipe over an ordinary hot water bath, with a mackintosh curtain stretched across the room from the ceiling, and hanging over the inside of the bath. A person standing in a little hot water could give it to himself.

This appliance may be termed a capillary (or skin) stimulant, especially when it comes with good force; and it is generally used at the public Turkish baths.

When this class of appliance is well fitted with hot and cold water, with plenty of pressure, no application is safer and more efficient to follow the sweating process, for by being graduated down to cold, all shocks are avoided.

Another good effect of the spray process is that it does not throw too much water over the bather. Taken with or without the sweating process, there is one prevailing error amongst patients, who luxuriate in external appliances, they are apt to overdo the ablution, and thus extract more heat than they can well spare. When any application is succeeded by languidness, though there may have been no harm done to the body, yet there has been an undue extraction of heat, and the benefits derivable from the baths are nullified; and the invalid would often be better without them. A luxury of any description that has no evil effects physically or socially may be enjoyed to the fullest extent, but we should always eschew evil, although it may be attended with momentary pleasure.

SHOWER BATH (20).—The Shower Bath is of such an ancient date, that it needs no description; in fact formerly this was the only bath people had, but latterly it has gone much out of use. Still I think it a very good bath, as it is convenient, and is a very powerful tonic, and cannot do any harm. When taken properly it should be in the following way: Have a little hot water in the bottom of the bath to stand in; bathe your head with a little tepid water before getting in, then put an oilskin cap on, pull the string and let the contents of the bath fall upon the body. One of the principal reasons why the shower bath went out of use was that it commonly produced headache.

The little hot water to stand in, and the oilskin cap, however, entirely obviate a rush of blood to the head, which causes the

headache. To stand on a hot tin, or in hot water, is an essential accompaniment of this bath to both sexes, and of all temperaments, but the oilskin cap is only required by those who are liable to an undue flow of blood to the head.

THE NEEDLE BATH (21) is of quite recent introduction into this country, having been imported from either France or Germany, and is a most powerful skin stimulant. The hundreds of minute jets rushing all round on to the body, pelting away at the skin for a minute or so, makes it red, which is an indication of the skin being surcharged with blood, and the internal organs relieved of congestion. If this bath is not taken for too long a time to cool the body down, the skin will retain the blood, but when this or any other ablution is taken too long, though at the time the skin may respond, afterwards the blood is apt to recede again upon the internal organs and a sense of chilliness is felt.

A delicate person should have a mild bath all round, never too hot or too cold, or too much of it. A person somewhat more robust may have a stronger bath all round, while a person in robust health needs no caution, so long as he keeps within reasonable bounds. But there is one standing rule that should always be observed, viz:—that no matter what the condition of a man's constitution may be, he should steer clear of all extremes.

This is a bath which requires both hot and cold water, and a considerable amount of pressure, and can in consequence rarely be given in a private house. It is generally, however, to be had in well-organised Turkish baths and hydropathic establishments.

I must refer the reader to pages 72 to 76 for detailed information as to the mode of applying the various packs and bandages.

The public generally having little or no knowledge of the remedial value of the packing appliances in human ailments, I here deemed it desirable to give a brief but a philosophical account of the medical action of the various packing process, on a variety of complaints by Mr. Metcalfe, including some remarks on sleep, ventilation, bedding, etc. I am very anxious to avoid repetition, though it is somewhat difficult to do so in dealing with a subject of this kind.

THE ABDOMINAL COMPRESS.—Like the chest compress, is a valuable local application in cases of chronic indigestion and constipation, and may be worn night and day. It acts specifically on the mucous lining of the stomach, and aids materially in the process of assimilation. This local appliance, with a well regulated diet, has not only relieved, but positively cured hundreds. With respect to constipation its effects are most marked (especially used in conjunction with the sitz bath), and has cured thousands of persons who have previously had no action of the bowels without using purgatives.

Another name for this among the Irish is the Stupe, the origin of which is curious. In early days the bandage was worn as aiding digestion, but, finding it had also a soporific effect, it was used to induce sleep, and hence designated the Stupe. The late Lord Lytton eulogised it with great emphasis as a sleep producer, while Sir Francis Burdett, and other men of eminence in the past, have testified to its efficacy, and in the present day it is extensively adopted by brain workers, who know nothing of hydropathy, because of its soothing effects and influence in producing sleep. I suppose no bandage is more generally worn by people who profess to despise hydropathy, among many of whom, who eat and drink too much, its use (illegitimate use I term it) is well known, because of its effects in preventing or checking the injury that such excesses must produce.

SLEEP.—I call the use of the abdominal bandage, when used as a sleep producer, by those who indulge in excesses, *illegitimate*, because we ought to avoid such excesses. But there are some delicately constituted persons, brain-workers especially, who at times get fits of sleeplessness, when, of course, the adoption of any wholesome means of procuring sleep is legitimate and indeed advisable. For such, sometimes even better than the Stupe, is the use of wet stockings. A pair of socks or stockings are wrung out of water (warm or cold) and put on; over them is drawn another pair of woollen ones; thus attired the patient gets into bed and soon falls into a refreshing sleep. Care should be taken that the stockings are well wrung out.

Nothing should be more carefully guarded than the power to obtain sufficient and refreshing sleep. Profound or quiet sleep is attended with complete unconsciousness; the functions of the cerebral hemispheres and the sensory ganglia being entirely suspended. Dreams imply imperfect sleep, and arise from some disordering influence acting upon the brain: their character as to pleasantness or unpleasantness always corresponds with the nature and degree of nervous, digestive, or other irritation oppressing the brain.

The necessity of sleep appears when it is considered that the exercise of the organs of animal life cannot go on uninterruptedly without exhaustion and disease supervening. Regular periods of rest are absolutely necessary to their health and functional integrity. Hence the Creator's provision for this purpose in the death-like repose of sleep, during which the animal economy has an opportunity of repairing the exhaustion and waste resulting from previous exertion. Where, from too little or disturbed sleep, this process is interfered with, debility and disease are sure to follow.

ALCOHOL.—The prime source of disturbance to sleep is usually something in the quality, quantity, or condition of those substances we use for nourishment, drink, or stimulation. Such is the tendency

of all alcoholic and narcotic substances, of aliments improperly cooked, or improperly combined and concentrated, of imperfect mastication and hurried deglutition, and of excess in eating, or eating at improper times. Strong tea or coffee and heavy suppers are great enemies of sound, refreshing sleep. So also, and especially, are anxiety, uncontrolled passion, indolence, and sloth. The promoters of sleep—the true opiates—are temperance in eating and drinking and moderate exercise, composure of mind, and extreme tranquility. While imperfect sleep weakens the nerves and exhausts the spirits, sound and sufficient sleep repairs the waste of the spirits, braces every muscle, fibre, and nerve, and imparts cheerfulness and vigour for the duties of the day.

The position of the body during sleep is of some importance. It should be perfectly horizontal, with the head slightly raised by resting on an ordinary-sized hair pillow. Sleeping with the head too high is a bad habit; bending the neck, compressing the chest, and unnaturally crooking the whole body are all bad habits, and from this cause children sometimes become stoop-shouldered or otherwise deformed. Persons who take late or heavy suppers, or suffer from enlarged livers, should not lie on the back, since the abdominal viscera, pressing upon the large blood-vessels below the heart, produce a tendency to cerebral disturbance, nightmare, apoplexy, etc.

The amount of sleep during the 24 hours necessarily varies with the characteristics of the individual. As a general rule, adults in civic life require on an average, seven hours' sleep out of twenty-four; some can do with five or six, others require eight or nine. So long as the slumber is quiet, it is refreshing, be the number of hours as they may—that is supposing the dietetic habits to be what they ought. Those who eat gluttonously of animal food, or are slaves to spirituous liquors and tobacco, will, of course, oversleep themselves to the injury both of body and mind. Their restless dozing will prove more debilitating than refreshing.

BRAIN-WORKERS require more sleep than manual labourers. Females are said to require more sleep than males, but for this notion there does not seem to be any good physiological reason. It is certain, however, that aged people require less than the middle-aged, and a portion less than the young and growing, who should be allowed to sleep as long as they please. But every natural and proper means should be taken to render the sleep of the aged, while it lasts, as sound and refreshing as possible. Indeed, this applies to the sleep of everyone.

The caution here given will not appear necessary when the artificial means used to procure sleep are considered. Opiates and other stupefying and deleterious substances are employed for this purpose, to the great detriment of health. Especially do children suffer from being dosed with cordials, paregorics and carminatives

to induce them to sleep, instead of their restlessness and fretfulness being prevented or allayed by a sound system of dietetics, bathing, and clothing. If the habits of the mother or nurse are temperate, so that the delicate little body shall not be irritated by milk of a deleterious quality, and the child is in all respects well and carefully managed, there will be no difficulty in inducing them to sleep as much as is good for them, and that without the aid of anodynes, or even of rocking cradles, which also are better dispensed with.

TIMES FOR SLEEP, BEDS AND BEDDING, ETC.

The siesta, or after-dinner nap, is commonly indulged in by the inhabitants of torrid climes, and it is a habit with not a few in this country. It is asserted by some medical authorities that "it is certain that after a full meal both man and animals feel a propensity for sleep." This, if true, arises, it is to be feared, from their propensity to gorge. This is the case with the *carnivoræ* among the lower animals, and doubtless it is when a man has taken a fuller meal than the wants of his system demanded, or when his food has been of too concentrated and stimulating a character, that he feels a propensity to sleep after meals. Where, from some cause sleep during the night has not been had, a man may be excused for taking a nap through the day when he has the opportunity, but it is far better to take all needful sleep at once, and so to regulate diet, etc., that the temptation to irregular napping will not be felt.

BEDS AND BEDDING must needs be treated of in connection with the subject of sleep. Feather beds should be eschewed by all who value their health. "They are," says one physiologist, "in every respect objectionable, possess not one redeeming quality, not a solitary virtue to save them from the general bonfire to which they ought immediately to be consigned."

Soft and warm they are no doubt, but they relax the nerves and debilitate the whole system and predispose to disease. Mattresses of hair, moss, hay, or straw are infinitely more healthful. Feathers being non-conductors, retain both the heat and gaseous emanations from the body, thus keeping it surrounded with a very impure atmosphere while in bed. Besides, the dead animal matter belonging to the feathers themselves decompose, and add other unwholesome gases and offensive odours to those escaping from the body. These utterly prevent the bedroom from being kept clean and sweet, no matter what pains be taken.

Too many bed-clothes also relax and debilitate the body, and detract from the soundness and refreshing character of sleep. Equally bad is the effect of too little clothes, thereby allowing too great an abstraction of heat. A sufficiency of woollen blankets, according to the season, with cotton sheets next the skin in winter, and linen in summer, will form the best bed-clothing for ordinary use.

VENTILATION.—Their should be free access of external air into the sleeping apartment night and day. Some people would be horrified at the idea of leaving their bedroom window open all night, but, with the precaution of screening the sleeper from a direct current of air, it is a very salutary practice. In large towns the air is generally purer and more wholesome after ten at night than it is throughout the day.

INACTIVITY OF THE LIVER; SORE THROAT, ETC.

The liver bandage is prepared by using pieces of linen mackintosh, and wet inner linen, long enough to extend from the middle of the chest, round the right side to the spine, and broad or deep enough to extend from the armpits to the hips, with two pieces of tape attached at each end, sufficiently long to tie at the opposite side.

This bandage is intended to be worn constantly for inactivity of the liver, enlargements, etc., and after wearing a short time, its beneficial effects are evidenced by an alteration in the action of the liver.

In cases of lumbago, the liver bandage can be used across the loins, and if re-wetted, may be worn night and day.

Where there is any perturbation of the heart, the same bandage may be worn on the left side, the only difference being that the bandage should be hollowed out under the arms, so that it may extend to the level of the shoulder, with an elastic loop to suspend it, and one string below, to bind it round the waist.

The neck compress may shortly be described as a wet rag round the neck, with two or three layers of flannel over it to prevent evaporation, without any mackintosh. Its use is for all kinds of sore throats. It is a bandage that cannot well be worn out of doors, because of its liability to get cold and dry. It should be changed as it becomes dry, and when removed before going out in the open air, the neck should be well sponged with cold water. It is very useful in all kinds of sore throat. In malignant or diphtheric sore throat, ice should be taken freely in small doses, and the throat bandages should be changed frequently.

HYSTERIA.

The head-bandage is a wet cap with a flannel cap over it, and is beneficial in cases of a tendency to heat in the head, brought about by mental strain, worry, and want of rest. I have witnessed marvellous results from its adoption in cases of hysteria and mental excitement almost verging on insanity.

But in these cases, along with the head bandage, recourse should be had to wet stockings, and the abdominal compress, and in nine cases out of ten—providing there is no organic disease of the body—refreshing sleep will be induced.

When the head and foot bandages get dry, the patient usually wakes up, but on re-wetting them, and drinking some water, milk or nutritive liquid, the patient will, in nearly every case, immediately fall asleep again. It is just possible that it may not succeed so well the first night or two, but the patient must not be disheartened, as by persevering, I have rarely found it fail in producing the desired effect.

Every form of bandage requires to be re-wetted as soon as it becomes dry, and to be thoroughly washed out with soap and water every twenty-four hours. This washing is important, because, after having been used for some time, they commonly contain a great deal of animal matter which has been drawn from the body, and will become offensive if that precaution be not observed. Moreover in every case, the bandages must be wrung out as tightly as possible before being applied. This caution is important, because many people have the idea that the bandages must be all but dripping wet in order that they may last a long time without changing. But, by adopting such a course persons make the bandages almost useless, indeed often quite injurious. The effect they have is to thoroughly soak the skin, and produce a condition similar to that in which the laundress finds her hands after working in the wash-tub all day. But this is not all, for not infrequently such bandages occasion a sense of languor and faintness; whereas, when properly wrung out, the opposite effect is produced; that, namely, of drawing out the superabundant heat, and causing a feeling of comfort and relief.

PACKS, COMPRESSES AND COLD AFFUSIONS.

About the beginning of the present century, when typhoid and other forms of fever raged very much in England, more especially in the large manufacturing towns, medical men were puzzled to know what to do in its treatment, the ordinary remedies failing in nearly every case, and patients dying off rapidly.

Dr. James Currie, a physician then practising in Liverpool, where the prevailing epidemic of typhoid seems to have been the worst. He seeing the uselessness of the allopathic remedies, was induced to try the effect of cold and tepid affusions. This he did in many scores of cases and with astonishing success, many of which were described by him in two works published in 1798 and 1805, entitled "Medical Reports of the Effects of Water as a Remedy in Fever and Febrile Diseases."

He found, however, that there was a limit within which patients should come under this treatment, to have a chance of arresting the progress of the fever. To quote his own words, he says: "Its success has equalled my expectations. I repeat, that, used in the first three days of fever, the cold affusion very generally stops the disease, that the same happy effects follow its

use on the fourth or even fifth day, but seldom later, that even in the subsequent stages, where the heat continues preternaturally great, and the skin dry, it is of great and manifest advantage, almost immediately relieving the most distressing symptoms and conducting the disease to a safe and speedier issue." He found also that the effect of using water in this way was to prevent contagion, and as a matter of course the spread of the fever was considerably checked.

The success of these watery applications, sometimes by sprinkling, at others, by dashing cold or cool water over the patient, created considerable interest among the medical faculty, and evoked much discussion at the time. This method was practised in the army, and on many ships where there were fever cases on board; but, like many other good remedies offered to the medical faculty, and proved most valuable in the few cases in which they may be induced to use them, its adoption was not general; possibly, because it was not "scientific" enough for their taste, or, possibly, because its adoption gave too much trouble. Be this as it may, as a matter of fact the use of water in fever cases was dropped after the typhoid epidemic was over, and, consequently, did not find its way into general practice.

One would have supposed that what had proved good and useful remedies by Dr. Currie and others, would not have been allowed to fall into disuse. Such, however, was the case, human suffering often having to give precedence to human prejudice. Some few medical men subsequently gave a trial to water treatment, but often in such an unreasonable manner as to preclude the possibility of success. One man immersed his patients in cold water for nearly half-an-hour, and then reported that his experiments were unsuccessful all round, and that, therefore, Dr. Currie and others who tried this method must have been fools; but Dr. Currie's plan of cold and tepid ablutions was based upon a practical knowledge of the human ailments, whereas that of the doctor referred to was a pedantic scientist.

When Dr. Currie was called in, in the early stages of the fever (as already said) he nearly always succeeded, and in the more advanced stages, he cured about ninety per cent., where other means had failed. The patient was thoroughly and quickly bathed in cold or tepid water, eight or ten times during the twenty-four hours. In delicate cases, the patient would be frequently sponged over only, in the bed, which always abated febrile agitation and generally induced sleep, and the process was continued until the fever subsided, and was gradually left off when the patient was beyond the possibility of a relapse. He preferred frequent short bathings of a minute or so to a long exposure of the body to the atmosphere of the room, or prolonged ablutions.

In severe cases he used a more stimulating appliance, in the shape of pail douches. The patient would stand or sit in an empty tub—a bath of some kind—and have two or three pails of tepid or cold water poured quickly over the back and head. He was then (as in all other cases) quickly dried and put to bed, the object being to excite the nervous centres of the spine, and send a thrill through the whole of the circulation, and to wake up activity in the whole motor system, in order to prevent the fever doing mortal damage to the mucous lining of the body.

Anyone reading Dr. Currie's account of the numerous cases treated by water ablutions would admit that he was a man of exceptional discernment; and during that trying period he exhibited no ordinary amount of energy and endurance. The success of his treatment showed that he must have personally superintended many applications, noting the action of the skin and the resisting forces of the patients.

A long experience has convinced me that when treating critical cases, relying solely upon the remedial action of external applications, the practitioner should see the appliance given, to know how the invalid bears each operation. When this is done under a keen eye, it is really marvellous what success is met with, as compared with the routine practice of allowing an inexperienced person to carry out the treatment.

THE PACK BETTER THAN AFFUSION.

By Dr. Currie's method, fever was reduced by perturbation of the nervous system, causing the fever virus to be thrown off by the agency of the inherent vital forces, and resulting in a general sedative or tranquillising effect in the whole system. Experience of the wet-sheet pack in fever and other cases shows that these effects can be produced more efficiently than by ablutions; and there is no doubt, were Dr. Currie alive now, he would appreciate its importance. It will generally be admitted that the recovery of all fever cases—in fact, all kinds of severe affections—entirely depends upon the amount of latent vitality in the patient; and the utility of remedies applied must depend upon their all-round action. There must be a unity with the laws of health; in other words, a harmonious affiliation between the principles of life and the remedy, or no good can possibly be effected.

The wet sheet exactly meets the case in point, being generally more efficient all round than Dr. Currie's watery applications, inasmuch as in highly nervous cases the sheet may be wrung out of warm water, and can be applied with little or no exposure, thus obviating any perturbation of the circulation. It is not cold that the patient requires, but moisture, to cure a hot skin, which will relax it, so that there may be inter-communication, the abnormal heat being thrown off from the interior. This reciprocity of action

necessarily draws out the heat from the internal organs, and together with it, foreign substances exude, hence endosmosis and exosmosis is re-established.

Dr. Wilson says that the wet-sheet pack is a means of subduing fever in its hot stage and active circulation. It stands unrivalled, being unequalled in its simplicity, safety, and efficacy. It is an invaluable remedy in all diseases characterised by exhilarated pulse, and dry, burning skin. It is certainly the noblest arm of the water cure; it causes little or no loss of strength, and leaves behind it none of the debility which bleeding and strong medicines occasion.

Dr. Wilson further eulogises the pack as being much superior in all fever cases to that of water ablutions.

First: It effectually abstracts the morbid heat of the system, and reduces the excited nervous and vascular actions, producing all the coolness and calm necessary for the moment, and by the very nature of the process, the degree of extraction of heat is fixed.

The second point of the superiority of the packing over water affusions consists in the soothing effect on the immense sentient surface of the nervous web of the skin, awaking all its tissues, and the prolonged contact of the wet linen with the heat of the body converting its water into vapour, and constituting the sheet, in fact, a great poultice.

Thirdly: The skin and lungs are great agents in the motion and distribution of the fluids. This cutaneous evaporation is one of the aims for the practitioner to accomplish when he seeks to equalise the circulation, to determine the fluids of the interior to the surface. He acts upon the law that liquids move towards membranes through which evaporation takes place.

LORD LYTTON'S OPINION OF THE PACK.

The late Lord Lytton, the novelist, in his "Confessions of a Water Patient," in speaking of the wet-sheet packing, says: "I have found in conversation so much misapprehension of this very easy and very luxurious remedy, that I may be pardoned for re-explaining what has been explained so often. It is not, as people persist in supposing, that patients are put into wet sheets and there left to shiver. The sheet, after being well saturated, is well wrung out—the patient quickly wrapped in it—several blankets bandaged round, and a down coverlet tucked over all; thus, especially where there is the least fever, the first momentary chill is promptly succeeded by a gradual and vivifying warmth, perfectly free from the irritation of dry heat—a delicious sense of ease is usually followed by a sleep more agreeable than anodyne ever produced. It seems a positive cruelty to be taken out of this magic girdle, in which pain is lulled and fever cooled and watchfulness lapped in slumber."

The medical effect of the wet-sheet pack has a wide range of action upon the body, consequently I have gone into its merits rather fully, as it is a remedy that can be applied in the humblest dwelling; and its general advantages include nearly every disease that affects the human race.

THE PACK IN CHRONIC DISEASE.

It is difficult to exaggerate the potency of the wet-sheet pack in allaying inflammation and irritation, and in arresting nervous excitement of every description. But its use in chronic disease is not so specific, although of great potency in connection with other branches of hydropathic treatment.

In dealing with chronic disease the treatment employed must not only be various, but of the most searching nature. For instance, in chronic rheumatic complaints, where all the joints are more or less affected, the most effectual appliances are the hot-air bath, massage, the sulphur bath, foment (local or general), or local mustard packs. When these remedies have been carried on vigorously for two or three days the joints become slightly inflamed, a feverishness is often produced, and a general irritation experienced by the patient.

Here comes in the calm of the wet-sheet pack, which immediately allays all the excitement that has been set up. The more compound treatment the patient can bear, the sooner is he likely to be cured of his chronic ailment.

The late Dr. Carpenter, professor of physiology in the Royal Institution says, "The wet-sheet packing used by the hydropathist is one of the most powerful of all diaphoretics, and no person who has watched its operations can deny that it is a remedy of a most powerful kind. If its agency be fairly tested, there is strong reason to believe that it will be found to be the most valuable curative means we possess in specific nervous diseases, which depend upon the presence of a definite *materies morbi* (bad matter) in the blood, especially gout and chronic rheumatism as well as that depressed state of the general system which results from the wear and tear of the body and mental powers."

There are a large number of patients who come under treatment where local packings form the chief remedies, such as chronic ailments of the chest, liver, bowels and kidneys, joints, throat, etc., in which cases the sweating appliances may be considered auxiliaries.

NERVOUS DEBILITY, BRAIN FAG, ETC.

In the case of invalids suffering from general nervous debility, brain fag, sleeplessness, nervous prostration, feverish skin, etc., brought about by over mental and physical strain, extending over a number of years, both full and partial packs soothe and

tranquillise the nervous system ; and arrest morbid nervous tension, and, with the mild sweating and sitz bath and massage, form the chief remedies in the case of such complaints.

The effects of the pack have been mistakenly compared to the effect of a hot linseed poultice placed over the body, because underneath the poultice there is always a certain amount of steam formed and the skin feels soft and moist, which moisture is mistaken for perspiration. The action of the wet-sheet pack is the reduction of the inflammatory local heat and feverish skin, and is not sudorific. The warm moisture made is by the heat of the enveloped body in the wet sheet, and is not perspiration, which can only be effected by an augmenting of the circulation that would in most patients produce wakefulness, whereas in the majority of cases they fall asleep in the sheet pack, which evidences the reduction of nervous irritation.

Dr. Wilson says that "the depurative action of the sheet pack is founded on the law of the equable diffusion of the liquids through *porous* membranes, that in a short time there is an interchange between the water of the sheet and the serum of the blood."

CHRONIC FUNCTIONAL DERANGEMENT.

In persons suffering from chronic functional derangements, whose bodies are unhealthy and saturated with abnormal secretions, we frequently find, after being packed for an hour, a discolouration of the sheet. This would show that the sheet has a drawing effect on the skin, and proves beyond a doubt that the temperature of the body was sufficiently high to admit of animal substance oozing out of the pores of the skin, or there would be no discolouration of the sheet. To this extent the wet sheet may be slightly depurative in its action.

The specific action of the wet sheet may be defined as follows ; The effect on the skin is a coolness for a few minutes, then reaction is experienced, the heart begins to beat with greater vigour, and the circulation is carried on with renewed energy ; the functions of the lungs are much increased, more air is inspired, and more vitality and force created while the patient is in the pack ; water is taken, and the presence of irritating substances is often felt in the abdominal canal, uneasiness and throbbing, showing that the stomach and bowels are carrying on their functions more rapidly. In liver complaints, similar results are effected, as in the case of affections of the bowels, which all goes to show the very powerful action the pack has on the animal organisation.

In chronic diseases, the pack is always followed by some external application, such as a shallow or sponge bath, towel rub, dripping sheet, etc., before dressing or retiring to bed ; the effect being to tone up the skin after the pack, consequently, the after bath may be credited with some of the beneficial results of the

pack. Judging from past experience of these applications, I consider the medical action of the pack depends very much upon the compound hydropathic treatment, judiciously regulated to the reactionary power of the patient.

THE PHILOSOPHY OF WET-SHEET PACKING IN ACUTE DISEASES.

Wet-sheet packing in acute diseases is a powerful sedative and antiphlogistic. It is immaterial what fever the patient is suffering from, whether local inflammations of the stomach, lungs, brain, or acute rheumatism, smallpox, measles, scarlatina, or any form of zymotic complaint, the pack soothes and arrests the feverish condition generally. In the earlier stages, when the skin is cold and clammy, I have resorted to the mustard pack with the most marked results, discontinuing the same immediately the skin begins to act. It is only in rare cases that mustard sheets are had recourse to; the plain packs are best in acute complaints.

In suggesting the addition of the pack as a remedial measure, there is no desire to disprove the value of any remedy that is beyond dispute, but it will not be denied that the ordinary remedies in fever cases have utterly failed. Nearly all fever complaints are still allowed to run a certain course as uninterruptedly as they did in the days of Hippocrates and Galen, though, as proved by the experience of Dr. Currie and others, these complaints can be most certainly and effectively checked by the timely application of simple external watery remedies.

Every hospital in London uses the water bandages and poultices for local inflammation, sometimes impregnated with medicinal ingredient, which have, however, practically no influence, as it is simply a question of moisture and the exclusion of air from the inflamed parts of the body. Few medical men, if any, will deny the efficacy of local cold or hot applications in congestion of the lungs, liver, or bowels. The full sheet pack, then, is merely an extension of these local applications over the whole body, when suffering from a burning skin and internal fever, all the pores blocked and insensible perspiration checked, there is, instead of one organ being congested an implication, of the whole of the organs. If then the efficacy of local applications is not doubted, the efficacy of the whole body being enveloped in moisture in cases of fever cannot be disputed. The only difference between the local appliances and the full sheet pack is, that the cloths when applied locally, have to be frequently rewetted when dry, and worn continually until the local inflammation subsides, while the duration and frequency of the full sheet pack is regulated by the practitioner according to the persistency of feverishness and the strength of the patient.

In cases of eruptive fevers, the wet sheet encourages the rash on the skin, consequently, where there is any tendency for the rash

to recede inwards, judicious recourse to packing is of assistance in bringing out the rash; and by dipping the sheet in a solution of Condyl's Fluid, or in sulphur water, two objects are accomplished; viz: the fever is reduced, while the body is disinfected and the spread of contagion prevented.

HOT BLANKET PACK; ORDINARY HOT MUSTARD AND SULPHUR BATHS.

Fomentations are used for the removal of inflammation and for dispersing congestion. In cases of acute rheumatism, cold stages of ague, achings of the limbs from the effects of severe chills, etc., very good results are often obtained from the whole body being enveloped in a blanket wrung out of boiling water, or a strong solution of mustard and water. The blanket foment is sometimes resorted to in hydropathic establishments for persons suffering from chronic rheumatism in all the joints, who are scarcely able to move about; and in some forms of great inactivity of the skin, cases of jaundice, or in incipient stages of rheumatic fever, its use is attended with great benefit. The application of these blanket fomentations must be very limited, as they can scarcely be used away from a hydro or hospital, two attendants (or a wringing machine) being required, also considerable dexterity and quickness in applying them.

The next best substitute for a blanket foment (if an ordinary hot bath exists, as is the case in most good-sized modern houses) is a soda bath, which is the more convenient of application at home. For this purpose one pound of common soda to an ordinary sized bath in water ranging from 102 to 110 degrees is used, the duration being from ten to fifteen or twenty minutes; great care must be exercised in not allowing the patient to get over fatigued by remaining in the hot bath too long, and in passing from the bath to the bed, a warm sheet or blanket must be wrapped round the body. When in bed, the patient having drunk a cup of hot liquid, hot bottles should be placed to the feet, and plenty of blankets covered over the whole body, still wrapped in the sheet, until, in the course of ten or fifteen minutes, profuse perspiration breaks out, and if it is a case of incipient rheumatic fever, or after it is developed in an acute form, the patient should be allowed to stay and perspire, and supplied with liquid nourishment, for several hours, or until the perspiration has stopped; when, if he has improved, the bath may be repeated, and the same process gone through, until all acute pain has subsided, after which he must be rubbed down with wet and dry towels, and the under-clothing or nightdress adjusted quickly.

Where the patient has been suffering for a week or two from a rheumatic fever, and the pain is somewhat reduced, a hot sea bath is found very beneficial, or in the absence of sea water, a hot

salt water bath can be made by putting twenty-five pounds of common salt into an ordinary bath at 102 or 105 degs. The bath is applied in a similar way to the soda bath, for ten or fifteen minutes, and repeated as the necessities of the case may require. After this bath there is a certain amount of salt left on the skin, which keeps up for a number of hours a kind of electrical action, and prevents the possibility of taking cold. This bath is also very beneficial to persons with bad circulation, or in a slightly anæmic condition.

Where the patient has practically recovered from all acute symptoms of rheumatic fever, and suffers from extreme stiffness, rendering him incapable of walking about freely, the liquid sulphur bath is remarkably soothing. It has a wonderful effect on the skin, which it renders very supple. Moreover it gives general relief to the biliary system. Its duration may be from fifteen to thirty minutes, or, in the case of delicate persons from ten to twenty minutes only.

THE SULPHUR BATH is prepared by mixing half a pound of sulphuret of potash with two quarts of *boiling* water, which is to be covered over for ten minutes to dissolve, and when the bath is prepared at about 102 degs., this liquid sulphur is poured into the bath. It is the most powerful anti-rheumatic appliance that can be given, but owing to the smell, and the action of the sulphur fumes on the ordinary white lead paint of the room, and on the brasswork, which turns black, is rarely used in private houses.

HOT MUSTARD BATH, prepared by mixing one pound of bran-mustard in an ordinary hot bath, is given sometimes in sub-acute stages of rheumatism, but more frequently in chronic cases, where there is an accompanying anæmia, as the mustard acts as a powerful skin stimulant. However pale the body is before taking a mustard bath, the skin becomes of a rosy-red colour, the result being to relieve the internal organs of undue congestion. As a rule, however, mustard is applied for local congestions only, as in compresses and packs, but its effect is analogous when applied to the whole body, as in the bath.

These special bath applications are described here as being more easily within the reach of people at large than the blanket foment. What is really wanted in the cases mentioned is extreme heat, and unless the blanket foment is given with great dexterity and precision, the transition from one blanket to another is attended with a liability to chill the patient, while with the bath such difficulty can be avoided.

NOTE.—The only precaution to be observed is that there should be no organic disease of the heart, or rheumatic pains about the heart, when these hot baths are used, except they be administered under medical direction.

HOW TO APPLY FOMENTATIONS.

The fomenting processes, although apparently simple, are often managed in a bungling and inefficient manner, from the want of knowledge in preparing and applying them. As an illustration, I will mention a case, by no means singular, but one of numerous instances. I was asked to go and see a friend of mine who had some faith in the water cure, though not sufficient to place himself entirely under the treatment, he was suffering from choleraic symptoms, and had been ordered fomentations by his medical attendant, which processes were being employed, though in a very imperfect manner.

In the first place, the flannel was quite inadequate to cover even the bowels; it was single, instead of being of three or four thicknesses; the water from which the flannel was being wrung out was not more than 110 degs., whereas, it ought to have been boiling. Then, instead of having a second fomenting pad in readiness when a renewal was necessary, there was but the one, consequently the parts were left unprotected during the time the same flannel was being wrung out again; while, in addition, the flannel, when applied, had not been half wrung out.

The result of all this was that no amelioration of the symptoms was effected, but, on the contrary, the pain increased, although two hours had been occupied in the process. I had the fomentations applied properly, and in one hour the patient was considerably relieved, and after further fomentations for a few hours, the pain subsided altogether. It is possible that if I—or some one else who understood the treatment—had not put in an appearance, my friend might have succumbed to the defective administration of the fomentations, though the medical advice given was correct, with the result of a life lost and a certificate written without a question being raised as to whether the patient had been treated rightly or not.

It might be that circumstances rendered it impossible to foment efficiently, owing to the want of "ways and means," though, in the case of my friend, the inefficiency was not from any lack of material, but from want of experience, energy, and the exercise of common-sense on the part of the nurse.

Considering that a large percentage of deaths occur annually from inflammation of the bowels, cramp, choleraic diseases, as well as inflammation of the lungs, etc., and that the most prominent remedies recommended by either allopathist or homœopathist, are strong steam fomentations, and mustard or turpentine applications, it is fair to conclude from the illustration given, that at least one half of these cases might be saved, if a proper knowledge existed as to the application of these simple remedies.

It is not difficult to describe the numerous cases in which fomentations are beneficial, nor how they should be applied, though it is impossible to lay down uniform rules to meet every peculiar case. Sufficiently clear light can, however, be thrown upon the mode in which they should be administered in all general cases of bodily derangements needing counter-irritants.

Foments are classified under the head of steam and warm foments.

Steam foments are so called from the flannel being heated by steam, and are changed very frequently, the object in view being to keep up a continuous active heat, in other words to keep the skin red. Steam foments are used in the incubating stage of typhoid, and the cold stages of versatile fever, in the violent internal pains of cholera and choleraic diarrhoea; in inflammatory visceral irritation and congestion of the lungs, and rheumatic pains in the region of the heart, resulting from rheumatic fever.

Warm fomentations are distinguished from steam foments by the flannels being applied only comfortably hot. The hot can or indiarubber bag is often serviceable, placed over the foments, as it keeps up a mild, gentle heat, and obviates the necessity of changing the flannel so often.

MODE OF PREPARING WARM FOMENTATIONS.

Over an empty vessel, such as a washhand basin or footbath, place a piece of huckaback towelling or wrapper, and over it lay two or three thicknesses of flannel, sufficiently large to cover the whole region of the pain. The towelling should extend beyond the flannel, about twelve inches at the ends, and six inches at the sides, thus enabling a person to get hold of each end. Boiling water should then be poured on it, and when sufficiently saturated, folded about six inches wide and passed through a wringing machine (this is by far the best mode); but in the absence of a machine the wrapper should be taken hold of by two persons—one at each end—and the water thoroughly squeezed out by hard wringing.

UNIQUE AND SIMPLE METHOD OF PREPARING STEAM FOMENTS.

Procure a large potato steamer capable of holding three or four quarts of water. Place in the steamer the fomenting flannels and boil; in fifteen or twenty minutes the flannels will be ready for use.

Use two sets of flannels so that one set is being made hot whilst the other is on the patient. By keeping the water on the simmer the flannels will be constantly ready for use. Water being added in small quantity at a time so as not to unduly chill

the bulk of water, whilst supplying loss of water by evaporation. The flannels should be renewed about every quarter of an hour. The patient, or the limb that is to be fomented, must be placed upon a blanket folded into three thicknesses and with the ends free to be folded upon and over the parts fomented, so that the heat of the fomenting flannels may be well retained there.

When it is impossible to administer hot fomentations with any degree of efficiency, turpentine or mustard bandages may be substituted. These latter are prepared by taking two wineglassfuls of turpentine, or half a teacupful of table mustard, to a quart of boiling water; or half a pound of bran mustard to two quarts of boiling water. Bran mustard is preferable to table mustard, inasmuch as it produces great heat, and is never liable to be lumpy when mixed, and never by any chance blisters the skin which table mustard is liable to do, if not very carefully mixed and applied. Bran mustard is difficult to procure except at certain places, but table mustard is within the reach of all. Chilli paste is very efficacious to rub over the parts affected, and with wet bandage over, it is a powerful counter-irritant, and can be procured of all chemists.

Fomentations may be local or general.

A general fomentation is when the process is applied to the whole of the trunk, from the hips to the chest, between the shoulders up to the neck at the back. This covers the lungs, spleen, stomach and the whole of the ganglionic system.

Local fomentations are applied to one region only, the stomach, or bowels, kidneys, chest, throat, liver, etc., also for boils, carbuncles, and nearly every form of external tumour or sore. They are further employed in inflammations, in gouty and rheumatic joints, in neuralgia, erysipelas, and in reducing irritation. In the acute stage they soothe, and in the chronic, they stimulate and relieve. They also aid in the reduction of thickening, when followed by cold ablutions or manipulations. In severe local injuries, with ragged or lacerated wounds, they assuage pain and impart comfort. When there is much bleeding, a cold wet cloth should be first applied, and frequently changed until the bleeding has ceased.

The fomenting flannels should be changed every eight or ten minutes until the desired effect is produced, a piece of fine linen being always interposed between the flannel and the injured part, during the fomentation. After this soothing process, a piece of wet linen or lint, not too much saturated, should be spread over the injury, and covered with a piece of oiled silk, overlapping the edges. The fomentation should be resumed on the return of throbbing or pain. This method of treating external injuries is much preferable to using poultices; the latter soon becoming sour, favouring the formation of pus, and causing irritation.

In the course of my experience, I have treated almost every conceivable complaint, both acute and chronic, with wonderful success by means of these fomentations, and I have every confidence in them when properly administered.

TRUNK FOMENTATIONS.

Spread a blanket over a bed or couch, on which put a mackintosh sheet. When the latter is not at hand, use as a substitute two or three pieces of paper; brown is the best and most effective in securing the heat. Extra blankets may be used to prevent the moisture going through. On this, place a blanket folded in three or four thicknesses, long enough when so folded to wind round the body, from the armpits down over the hips.

The patient, having divested himself of all his upper garments, sits on the edge of the blanket; the foment is then taken out of the wrapper, and applied by gradually pressing it to the parts, so as not to excoriate the skin, following which, the blanket, and then the mackintosh, should be wrapped quickly round. The loose blanket is intended to be drawn over the arms and shoulders to keep them warm; but if not found sufficient, put on an extra covering, and tuck it well in.

When changing the flannel it is necessary to have another one in readiness to apply instantly, so as to avoid as far as possible any exposure of the parts under fomentation. The fomentations are generally changed at intervals of ten or fifteen minutes. If a continuous and uniform high temperature is all that is required, a hot-water can or indiarubber bag may be applied over the flannel.

NERVOUS EXCITEMENT.

Fomentations applied over the region of the stomach and bowels are of great benefit in nervous excitement of the brain, over-exertion, or bad digestion. If resorted to at bedtime they generally have the effect of producing natural action of the kidneys and bowels by the morning, when medicines have proved powerless. They also aid in producing sleep where opiates only induce fever and irritation.

So far as diminishing excitability of the brain is concerned the warm fomentation is lowering, but indirectly it strengthens. Often an inflamed stomach by sympathy excites the function of the brain to the development of a degree of impulsive energy that passes for power, so as to make the patient fictitiously energetic in conversation and action. The fomentations withdraw the incitement from the brain by reducing the inflammation of the stomach, and the fictitious strength departs. In return for this apparent loss, the fomentation, by reducing the inflammation of the digestive viscera, enables them to send such natural stimulus to the brain as will give it sustained energy. The weakness felt as the natural result of the

fomentation is only in the animal nervous system, whereas the benefits of the process are felt in the nutritive nervous system, the greatest source of nervous force.

HEADACHE, TIC DOLOUREUX AND TOOTHACHE.

Nervous and bilious headaches, tic-doloureux, or toothache are relieved by steam flannels. Assuming that there is a regulated temperature of the room, and that proper liquid nutriment is given suitable to the nature of the complaint, then fomentations have been found to give almost immediate relief, and are indeed the most simple and rational remedies to cope with such complaints.

In cases of asthma, fomentations will give relief when applied over the region of the chest.

For spasms of the bladder the fomentations must be confined to the lower part of the bowels, and extend round the back.

In cases of sciatica hot fomentations applied down the whole extent of the leg, from the hip downwards, will often relieve severe paroxysms of pain in a comparatively short time. When the pain is more or less aggravated by a sluggish action of the bowels, the fomentation should extend from the waist, round the bowels, and over the hip. In the majority of cases of sciatica or lumbago the bowels are constipated, to relieve which an injection of warm water and olive oil (a pint of water to a wineglassful of oil) should be used twice a day, until some relief of the pain in the back is obtained.

Those who are subject to constipation of the bowels should partake only of such food as will induce the bowels to act without purgatives or injections.

Oatmeal gruel, porridge, brown bread, and fruit, will generally bring on a natural action of the bowels in about a week. If after two or three applications of steam fomentations relief is not obtained, the flannel may be used wrung out of turpentine and boiling water, and applied down the leg where the pain is felt.

In infantile convulsions, whether from teething or indigestion, fomentations should be applied to the whole of the trunk, from the armpits to the bottom of the stomach. The flannel in this case should be single, *i.e.*, of one thickness only, and must be placed inside a towel wrung out extra dry.

ENLARGEMENT OF THE LIVER, INDIGESTION, ETC.

In cases of enlargement of the liver, or its chronic inaction, also constipation of the bowels and chronic indigestion, the hot fomentation, with a hot can or bag over it, sufficiently large to cover these organs, for an hour at a time, twice a day, is attended with marked beneficial results, without any possible deleterious effects, though continued for weeks or even months in most obstinate cases; but they should be gradually discontinued as the difficulty subsides.

The object of using the hot can or bag is to do away with the necessity of changing the hot pad every quarter of an hour. The best time for applying the foment is before rising in the morning and on going to bed. When taken at night, the wet compress should follow and be worn during the night.

In acute cases the length of time the foment is applied is very different from that of the chronic, and is generally regulated as the pain diminishes. For instance, if resorted to for pains in the bowels, the fomenting should be continued until the pain is relieved, then discontinued for an hour and applied again until the pain disappears. The same course may be pursued for any acute pain of the liver or chest.

The difference between the action of a plain hot-water foment and that of one mixed with mustard or turpentine is that the former, when judiciously applied, thoroughly heats the parts to which it is applied, and produces a glow of warmth throughout the whole body; whereas the latter, well wrung out and applied only once, produces a burning sensation, redness of the skin, and counter-irritation. Nevertheless they should be kept on as long as they can be borne. When removed apply a piece of rag well saturated with olive oil, and covered over with a piece of flannel, mackintosh or oilskin.

In acute cases, such as bronchitis or inflammation of the lungs, turpentine or mustard fomentations will often give immediate relief, where steam fomentations have failed to do so.

The mustard and turpentine fomentations, having to be used very strong, will of necessity produce great heat on the skin and tenderness, but these are generally followed by an amelioration of the active symptoms. In order to keep up the improvement effected, if the patient is unable to bear a repetition of mustard or turpentine, the steam fomentation will answer the purpose. The room must be kept at an even temperature of from 70 degrees; and when the fomentations are not wrung out in the room, a kettle of water should be kept boiling, so that the steam may evaporate into the room and thus produce a moist atmosphere.

EXTREME DEBILITY.

In cases of extreme debility, when energetic fomentations are requisite, over the heart, lungs, liver, or even in inflammation of the bowels, the hot-water can or bag would be too oppressive and heavy; therefore nothing but the vivifying stimulus of the moist heat will suffice, and this can only be secured by changing the fomenting flannels very frequently.

Fomentations will sometimes produce a slightly exhausted feeling, and whenever this is the case, the foment must be eased on and off until the pain is removed. It will be wise to give the patient a sip of water gruel, chicken broth, beef tea, or, if necessary, a small quantity of brandy, as a stimulant.

When using fomentos to the body, if the legs and feet are cold, they should be wrapped in hot dry flannel, or when an india-rubber bag, or can, is not at hand, an earthenware bottle filled with hot water must be applied to the feet.

After discontinuing the fomentos in chronic cases, rub the parts vigorously with the wet hand, or a towel wrung out of salt and water, afterwards applying a wet bandage, covered over by an oilskin, with flannel outside.

In acute cases, after fomentation, the parts should be rubbed with a wet towel, followed by a dry one; then cover up with a wet rag, a piece of oilskin, and flannel to keep up the warmth and moisture. Should the bandage feel cold, it can be wrung out of strong mustard, or salt and water; and if the cold still continues, remove the bandages altogether, rub the parts with *Chili paste* or dry mustard, after which wrap well up with flannel.

Hot fomentations should never be applied to the abdomen, except when the patient is in a recumbent position, and can rest after them, neither should they be applied within two hours and a half after a full meal.

Fomentations accompanied with the hydropathic appliances are aids and correctives, producing effects that the other appliances are not intended for. They form part of a systematic methodical treatment. In hydropathic practice it is essential that they should be judiciously applied along with these remedies, and there is one abiding rule to be followed, *i.e.*, between the periods of the fomentations the parts are to be well rubbed, first with a damp cloth, wrung out of tepid water, and then with a dry one.

In trunk fomentations, when the patient is not too invalided, but able to get about, the parts that have been fomented might be rubbed vigorously with a cold wet towel, and then a dry one. If the patient can bear it he might be put into a hip-bath, well sponged, and then rubbed with a sheet. A more powerful bath would be for the patient to get in, legs and all, and be well soused with water. When a better action of the bowels is wanted, the patient may sit in water, extending to the navel, from fifteen to twenty minutes, the bowels during the last five minutes to be well rubbed with the hands. In this kind of bath, blankets should be placed over the parts not in the water to keep them warm, and after the ablution the patient should be well rubbed. Rubbing in a blanket, after being thoroughly dried will effect great good.

After trunk fomentos wrap a piece of flannel round the body to wear during the day, and at night wear a wet bandage, covered with flannel. When there is a sluggish circulation during cold weather, it is well to wear a guernsey during the night, and on rising in the morning rub the parts with a dry towel before adjusting the flannel. Coarse linen is much preferable to cotton for bandages.

ORGANIC AND INORGANIC LIFE.

Physiologists tell us that the human body, like other organised substances, is composed of elements which are every one found in inorganic matter, and that in its substance are to be found seventeen out of the sixty odd elements of which all known matter is composed. Of these seventeen elements, four are called *essential*, because they exist in and form the largest part of all animal substances, namely, oxygen, hydrogen, nitrogen, and carbon. The others being less constant, and occurring only in small quantities are called *incidental* elements. But, though the elements above enumerated are found alike in animate and inanimate substances, the same chemical characteristics do not prevail throughout the organic and inorganic worlds. When these elements combine to form living tissues, they exhibit chemical features as widely different from those met with in inorganic or lifeless matter, as a living body is different from a dead one. This results from the peculiar action of the vital powers, and as a general rule, the difference is in proportion to the activity displayed by those powers in the organised substance.

The following peculiarities are exhibited in the chemical characters of animal substances :—

1. The formation of the simplest compounds in the animal body demands at least *three* elements, whereas in the inorganic world the most abundant substances are found either in the elemental state or composed of *two* elements only, *e.g.*, water is formed by the union of hydrogen and oxygen. Sugar and other substances found in plants contain carbon, oxygen, and hydrogen, and in animal substances four or five elements are usually present in each compound.

2. In organic substances the several elements of the compound are held together, each with equal force to all the others; while, in inorganic, the elements are put together in pairs, or in what is called a binary mode of combination. Thus, taking an organic and an inorganic compound, each formed of four elements, the former on analysis is resolved into four distinct elements, the latter into two pairs of elements. In the re-combining of the elements found in the substances respectively the same difference is apparent.

3. The organic compound not only contains, on the whole, a larger number of elements than the inorganic, but the same peculiarity is characteristic of its minutest parts, a larger number of equivalents or atoms of each of the elements uniting to form an equivalent or atom of the compound. Nor do the several elements stand in the same arithmetical relation one with another in organic compounds as they do in inorganic.

From this last-mentioned peculiarity of animal organic compounds arises their characteristic instability, since the greater the number of equivalents or atoms of an element entering into the formation of an equivalent or atom of a compound, the less is the stability of that compound. But the instability of organic compounds is further increased by their containing nitrogen, and by the quantity of water which in their natural mode of existence is combined with them. From these causes the decomposition of dead animal bodies is extremely rapid. The same causes render them during life amenable to the action of the chemical forces exercised on them by the living tissues, and hence the process of waste continually going on in the human body during life.

In dealing therapeutically with the natural organic compounds of the human body, it is of the utmost importance to keep these and other characteristics hereafter to be specified steadily in view.

Inattention to the difference of chemical character existing in organic, as distinguished from inorganic substances, has caused much of that uncertainty which attends the action of internal medicines on living tissues, and has led to the disappointing results which have too often followed the exhibition of chemicals in abnormal states of the body. Physiologists, even in the present day, still endeavour to apply chemicals internally to the removal of diseased conditions; but with all these countless experiments we are not one step nearer to the causes and the essence of disease.

Without proposing well-defined questions, experimenters have placed blood, urine, and all the constituents of the healthy or diseased frame, in contact with acids, alkalies, and all sorts of chemical re-agents; and have drawn, from observation of the changes thus produced, conclusions as to their behaviour in the body.

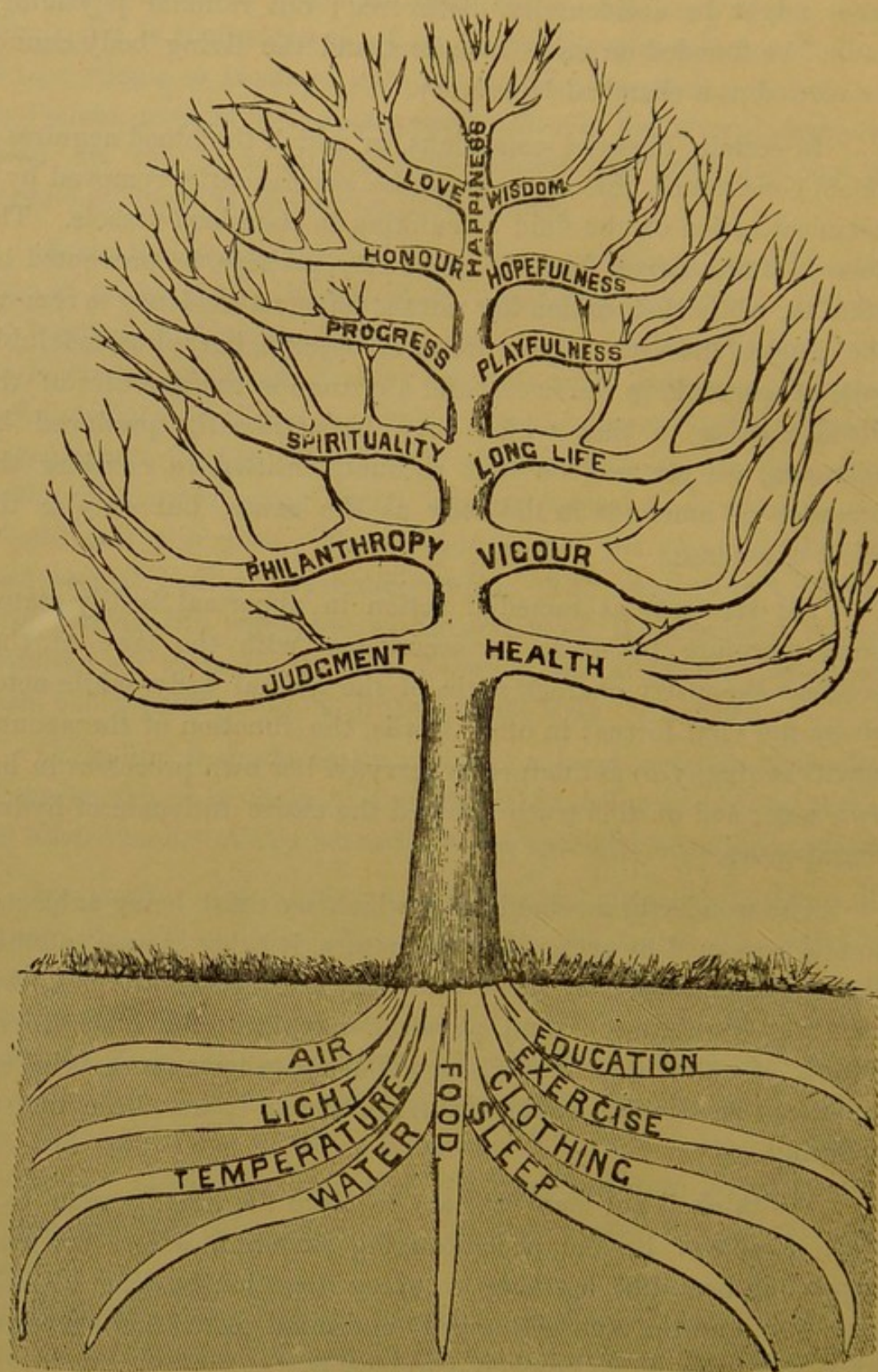
By pursuing this method, useful remedies or modes of treatment might be accidentally discovered; but rational physiology cannot be founded on mere reactions, and the living body cannot be viewed as a chemical laboratory.

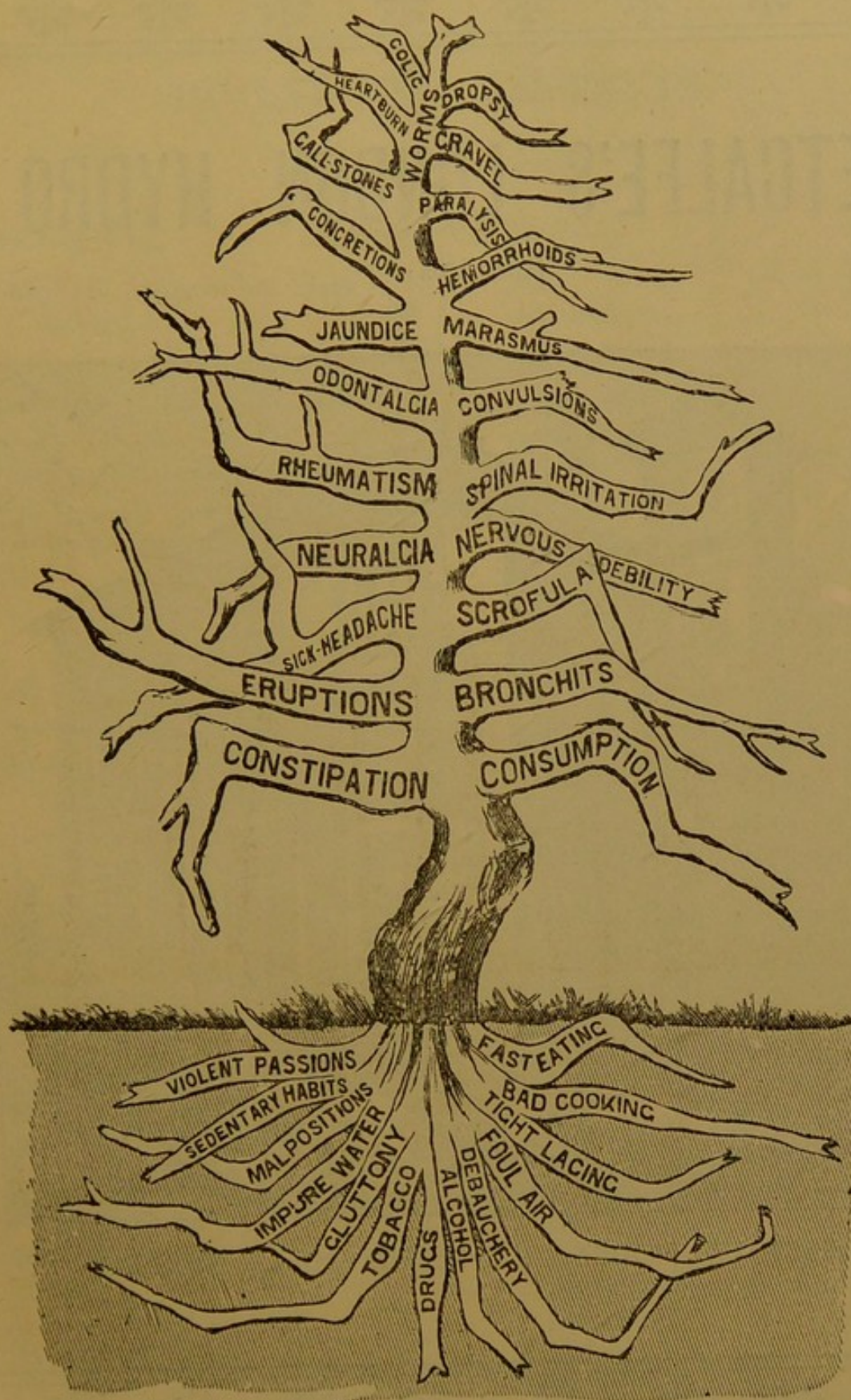
In certain diseased conditions, in which the blood acquires a viscid consistence, this state cannot be permanently removed by a chemical action on the fluid circulating in the blood-vessels. The deposit of a sediment from the urine may, perhaps, be prevented by alkalies, while their action has not the remotest tendency to remove the cause of disease. Again, when we observe, in typhus, insoluble salts of ammonia in the fæces, and a change in the globules of the blood similar to that which may be artificially produced by ammonia, we are not, on that account, entitled to consider the presence of ammonia in the body as the cause, but only as the effect of a cause.

All attempts at remedial action in abnormal bodily states, must therefore be made in accordance with the laws of that peculiar chemistry characteristic of the animal body, while acted on by the vital forces; in other words, the function of therapeutic agents is simply to aid nature to carry on her own processes in her own way; and on this truth is based the entire rationale of hydrotherapeutics.

The wonderful mechanism by which we exist, being subjected to and governed by certain laws of nature, it behoves man to study these laws and to obey them faithfully and conscientiously, thus ensuring health, moral and physical, happiness for himself and others. On the other hand disregard of those laws must, bring on our race those innumerable ills from which it has been and is suffering.

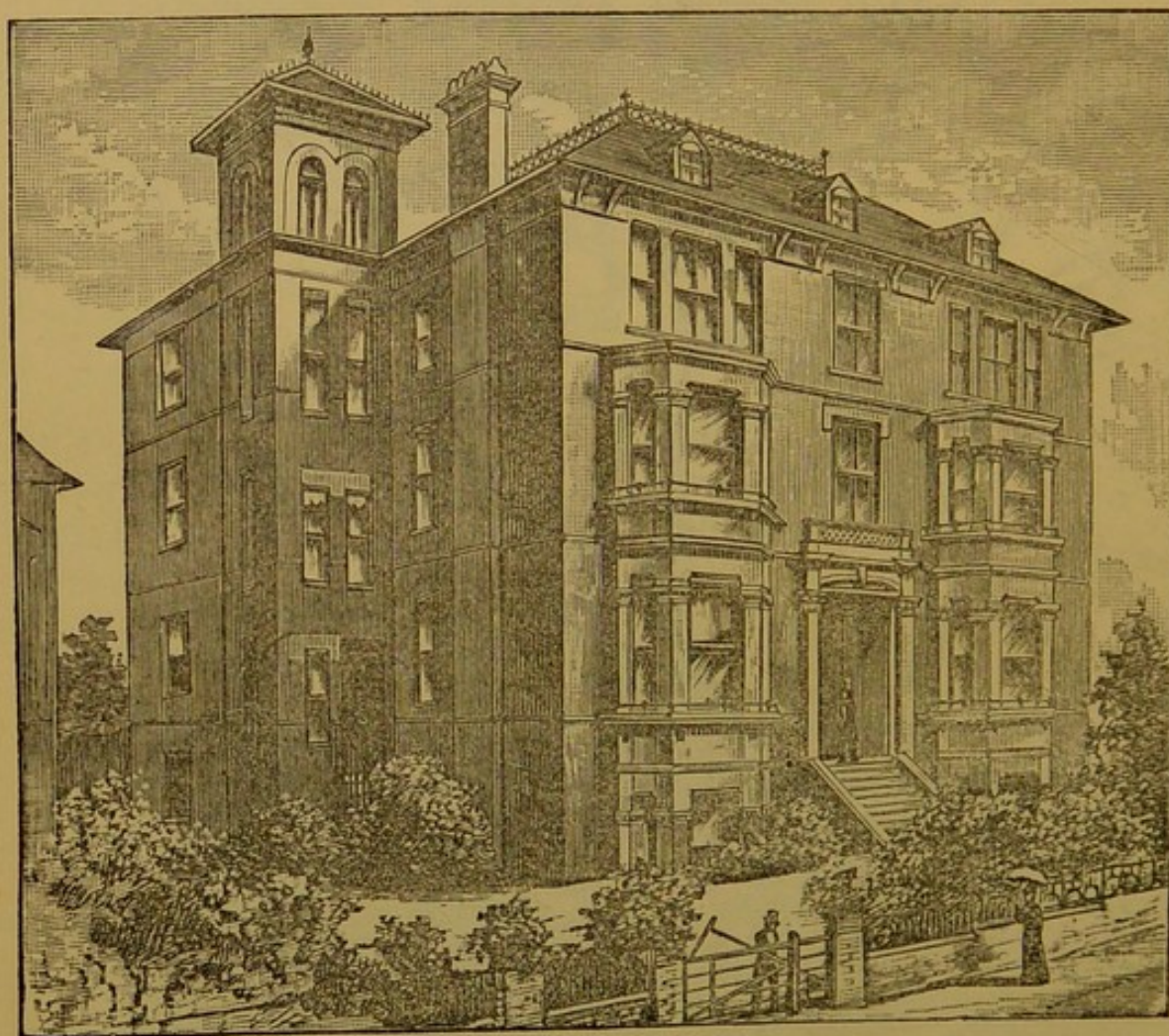
We think it not inappropriate to liken the healthy man to a tree, as shown by the accompanying sketches, whose branches expand in beautiful harmony in every direction, bearing blossom and fruit, and the man whose body and mind have been perverted by wrong usage to its crooked counterpart.





METCALFE'S LONDON HYDRO

(Limited).



PRIESSNITZ HOUSE, RICHMOND HILL, SURREY.

DIGEST OF CONTENTS.

I. GENERAL—	PAGE	CAUSES :—	PAGE
medical system, the best		age	55
defined	56	air, bad	55
nature heals	40	alcohol	55
remedies, relative value		emanations of body ...	55
of	48	environment	55
drugs, conjectural action		food	55
of	49, 50, 52	heredity	54
———objections, to use of		necessities of life... ..	55
49, 110, 152		occupations	55
———slow progress of		sexual function	55
drug medication	47, 92	temperament	54
———diuretics	92		
———purgatives	92		
hydropathy, objections		IV. HYDROPATHY—	
considered	43, 44	likened to gardening ...	42
———applied to surface		action described	
of body	49	33, 40, 43, 45, 46, 48, 49, 58,	
skin stimulation <i>versus</i>		79, 129	
alcohol	40	action, generally pleasant	
alcohol ... 40, 128, 151, 169		and safe	40
public baths and hospitals		action, easy and rapid in	
18, 30, 161		early stages of disease	39
Metcalf, biography		action, slow and trouble-	
9, 11, 12, 13, 14, 17, 18, 19		some in later stages of	
		disease	39, 156
		action in chronic disease	
		may necessarily induce	
		revolutionary excite-	
		ment of system before	
		morbid elements can be	
		got rid of	47
II. HEALTH—			
defined	58		
		V. HYDROPATHIC	
III. DISEASE—		TREATMENT—	
defined	45, 54, 97	incompetent administra-	
acute	55, 56	tion ... 40, 99, 104, 164	
chronic	55, 56		

	PAGE
administrator needs:—	
observation ...	47, 157
——experience	47, 145
——judgment ...	47, 99
diagnosis, its value	92, 93
symptoms not to be thwarted ...	54, 56, 147
aims of treatment	54, 56, 157
baths to be adjusted to diseased condition	41, 99
compound treatment	159, 161

VI. GENERAL MEANS—

air, fresh ...	40, 58, 154
bed clothing ...	153
cleanliness ...	40
clothing ...	40, 129 to 135
drink ...	40
excretory action ...	132
exercise ...	40, 58, 123 to 129, 145, 146
fashion ...	134
flannels next skin	132, 133
food ...	40, 58, 110, 128
psychological influences	40, 59, 124
respiration ...	126
rest ...	40, 58, 151, 152
sleep ...	151
unhealthy habits...	39, 40, 128
ventilation ...	58, 154

VII. SPECIAL MEANS—

patients should under- stand <i>rationale</i> of treat- ment ...	42
ablutions not to be taken in excess ...	149, 150
reaction	72, 142, 144, 145, 148

	PAGE
conjectural action stated	42
affusions, cold ...	149, 150, 156, 157
backwash ...	139
bandages ...	72, 73, 77, 78, 79, 106, 141, 142, 150, 154, 155, 161, 166, 169, 170
bed bath ...	136, 137
cataract ...	138
chilli paste ...	166
condy's fluid ...	147, 162
disinfection	147, 162, 163, 103
dripping sheets ...	143, 144
electricity ...	22
eye bath ...	146
fomentations	162, 164 to 170
foot bath ...	140, 141, 151, 154
hand bath...	140, 141
head bandage ...	154
head bath ...	140, 141
injections ...	168
lamp bath ...	109, 110
mustard ...	92, 101, 161, 163, 166, 169, 170
nasal ...	147
needle ...	150
pail douche ...	142, 143
salt ...	162, 163
shampooing ...	126, 127
shallow ...	148
shower ...	149
sitz...	145, 146, 147, 170
soap ...	137, 144
soda ...	162
spinal ...	139
spray ...	149
sudorifics ...	80, 109

BATHS—*continued.*

PAGE

sulphur ...	103, 147, 162, 163
Turkish, history	29, 30, 81 to 87
———definition,	86, 87, 100
———action ...	...
	32, 85 to 87, 93 to 111
vapour ...	80, 113 to 122
———defects of	80, 84, 86, 87
wash down ...	138
wet hand rub ...	138
wet sheet pack ...	...
	66, 69 to 77, 157, 160, 161
wet socks ...	151, 154
wet towel rub ...	137

DISEASES—

ague ...	162
anæmia ...	141, 149
asthma ...	168
atrophy ...	104 to 111
bladder spasm ...	168
bowels ...	145, 150, 167, 168
cholera ...	164, 165
chronic ...	159, 160
cold feet ...	140
congestion ...	...
	21, 92, 125, 139, 141, 142, 146, 154, 162, 167
constipation	145, 150, 167, 168
convulsions ...	168
coughs ...	79
debility ...	...
	128, 136, 141, 143, 145, 146, 149, 159, 169
diabetes ...	6
digestive troubles ...	...
	77, 88, 145, 167, 168
dropsy ...	5, 94

DISEASES—*continued.*

PAGE

eye ...	146, 147
faintness ...	103
fever ...	...
	71, 72, 76, 155, 156, 157, 161, 165
goose skin...	109, 110
gout ...	8, 159
headache ...	...
	141, 142, 145, 146, 154, 168
heart ...	...
	9, 77, 88 to 104, 145, 149, 154, 163
hydrophobia ...	...
	13, 22 to 28, 112 to 122
hysteria ...	154
inactive skin	101, 103, 109, 110
influenza	20, 21, 35, 36, 59 to 72
kidneys ...	139, 145
liver ...	154, 168
lumbago ...	139, 154
lunacy ...	108, 109
lungs ...	77, 89, 95, 165
menses ...	140
nervous ...	149, 159, 167
obesity ...	104 to 111
palpitation ...	90, 92, 94
piles ...	145
rheumatism	159, 162, 163, 165
sciatica ...	168
sexual ...	146
sleeplessness ...	...
	151, 152, 153, 159, 167
smallpox ...	96
snake bite...	83
sore throat ...	154
spinal ...	139, 142
toothache ...	168
uterine ...	145

CORRECTIONS.

Page 21, line 13, for deleterious *read* deleteriously.

—————29, for Mis *read* Miss.

Page 18, line 25, for What is *read* What he.

Page 54, line 14, for systems *read* symptoms.

Page 57, line 9, for has *read* have.

Page 80, line 21, *delete* is.

Page 82, lines 14 and 16, transfer the words *shampooed and scraped*
from line 16 to line 14 to follow the word *forthwith*.

Page 82, line 9 from bottom, for Allin *read* Allui.

Page 83, line 17, for *When the bather* *read* *When the bath*.

Page 102, line 10 from bottom, for *radically* *read* *would be radically*.

Page 103, footnote, last line, transfer comma from after word
leisurely to after word *cool*, thereafter adding *so as to*.

Page 111, line 3 from bottom, for wife *read* wise.

Page 115, line 14, for *had* *read* *I had*.

Page 124, line 3 from bottom, for *chest and arms* *read* *shoulders and*
thighs.

Page 132, line 19 for *that* *read* *the heat*.



✓



