

**On the importance of the functions of the skin, in the pathology and treatment of tubercular consumption / by Abraham Toulmin.**

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ON THE

IMPORTANCE OF THE FUNCTIONS

OF

THE SKIN,

IN THE

PATHOLOGY AND TREATMENT

OF

TUBERCULAR CONSUMPTION.

—

READ BEFORE THE HARVEIAN SOCIETY OF LONDON, MARCH 1st, 1860;  
AND RE-PRINTED FROM THE LONDON MEDICAL REVIEW.

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BY

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CONSULTING ACCOUCHEUR TO THE UNIVERSAL MEDICAL INSTITUTION FOR  
LYING-IN WOMEN; &c. &c.

LONDON:

H. K. LEWIS, 15, GOWER STREET, NORTH.

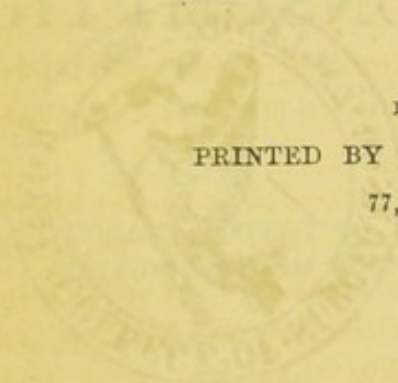
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IMPORTANCE OF THE FUNCTIONS  
OF THE SKIN  
IN RESPECT TO  
HEALTH AND DISEASE



BRIGHTON:  
PRINTED BY JOHN FREDERIC EYLES,  
77, NORTH STREET.



After an epitome of this paper had appeared in the weekly medical periodicals, as part of the record of the Transactions of the Harveian Society, I was honoured by the receipt of the following letters, from gentlemen wholly strangers to myself.

They are so flattering and satisfactory as an evidence of the interest taken by the profession in the new views I have ventured to put forth, as to the nature and treatment of Phthisis, that, with the permission of the writers, I cannot deny myself the pleasure of inserting them.

Lansdowne House,

Ryde, Isle of Wight,

March 31st, 1860.

Dear Sir,—

I feel that I am taking a great liberty in addressing you as a stranger, but I have only just read a few comments in the late number of the *Medical Circular*, for March 29th, upon your most interesting paper, read before the Harveian Society upon March 1st, on the functions of the skin in relation to Phthisis.

The views you have there set forth, I am persuaded to be the truest and most practicable in our profession, as respects the early treatment of Phthisis. I have, myself, been interested in the use of the old Roman Air Bath of late, as the most powerful purifier of the skin and blood which we can employ, and the same train of reasoning which you appear to have followed out, has been pursued by myself.

It is, unquestionably, the want of a due supply of oxygen, which lies at the root of the blood derangement of tuberculosis, and the hygienic means you devise are by far the best to ward off this diseased condition. Make the skin a "breathing apparatus," complementary to the lungs, and you must annihilate tuberculosis.

I greatly regret that your paper should not be published in a separate form—a pamphlet, as a pioneer of a fuller treatise,—as I am convinced your views must ultimately enforce a very different mode of treating Phthisis to what is usually pursued, and especially as regards hygiene.

Let me hope that you will give publicity to your paper ere long. . . . . The rationale of the marvellous invigoration of body and mind by this Bath seems due to a considerable quantity of oxygen absorbed by the skin after its pores are fully opened by the heated air. Again apologizing to you for my trespass on your time,

Believe me, my dear Sir,

Yours most truly,

C. D. J. LOWDER, M.D.



70, Brook Street,

Hanover Square,

April 2nd, 1860.

Dear Sir,—

I have just read a report of the paper read before the Harveian Society by you,—of which Society I am a member, but am sorry I was not present to have heard it. I think your observations the most reasonable, and the best that I have ever seen on the subject, and are very much the same as those I believe in myself.

The necessity for a Hot Air Bath I have felt for a considerable time, and have invented a very simple and cheap one.

Yours sincerely,

HARRY LOBB.

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Dr. Tucker's lecture on Roman Baths, &c., is presented with compliments in admiration of Dr. Toulmin's valuable scientific paper on the Functions of the Skin, &c., read before the Harveian Society of London. The favor of a reply will be esteemed.

Sligo, April 2nd, 1860.

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Folkestone, July 31, 1860.

Dear Sir,—

I have read with great interest the abstract of your paper on the Importance of the Functions of the Skin in Consumption.

Will you kindly inform me how I can procure a more detailed account of your practice, especially with reference to the Hot Air Bath and inunction, as I am anxious to try its effects on some patients of my own.

Apologizing for the trouble I am giving you,

I am, dear Sir,

Yours faithfully,

CHAS. E. FITZGERALD.

I also find that Mr Spencer Wells has done me the honor to refer to my paper in a lecture on the Ancient Roman Bath, delivered at the Grosvenor Place School of Medicine, in the following terms (in reference to the treatment of Phthisis): "A very excellent paper was read at the Harveian Society on this subject, by Dr. Toulmin, of St. Leonard's (see *Medical Times and Gazette*, April 14, 1860); and I was lately informed, by a gentleman recently returned from Australia, that a relative of his, undoubtedly in an advanced stage of Consumption, had recovered to a most extraordinary degree under the use of the Bath, and a life in the open air."



ON THE  
IMPORTANCE OF THE FUNCTIONS OF THE SKIN:  
A PAPER,

READ BEFORE THE MEDICO-CHIRURGICAL SOCIETY OF EAST  
SUSSEX, DECEMBER 13, 1859.

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MR. PRESIDENT AND GENTLEMEN,—

There are some points respecting the nature and treatment of Phthisis, that I am desirous of being allowed the honour of submitting to the consideration and criticism of this Society.

And first, as to the cause of the complaint.

It may be laid down as a rule that, incertitude as to the cause of disease, leads to uncertainty in the treatment, which it necessarily renders empirical.

Thus, for the causes of Tubercle we have been taught to look to those errors of life which lead to the deterioration of the health, as humid air, low diet, insufficient clothing, prolonged lactation, inebriety, or indeed to any exhausting influence to which the constitution may be subjected for a sufficient length of time.

Nevertheless, we have absolutely no data to show that such causes are sufficient to produce the disease, whilst we have abundant evidence to prove that it is produced independent of all of them.

There is however one cause connected with these errors of life, in all respects equal to the occasion, and possessing this, I deem it more philosophical to be satisfied therewith, than to refer to others, of which the power is problematical.

I allude to the breathing of impure air, and air in so small a quantity as to render it impure, especially during the night.

Whenever this is the continued state of existence, the result



must be a deficiency of oxygen in the red globules of the blood, and this I would especially beg leave to offer as, in every instance, the *proximate cause of Tubercle*.

The consequence of this want of oxygen in the red corpuscles of the blood would necessarily be, the deposition of plastic fibrin in an incomplete state of oxygenation, and therefore of organization:—in a state unfit to be received back again into the circulation, and thus incapable of being ultimately got rid of by the metamorphosis of tissue constantly going on.

From its imperfect organization, and its being unfit to become part of the living fabric, this fibrin remains unabsorbed, as a molecule of extraneous inert matter in the system, offering to the observer all the characteristics of Tubercle.<sup>1</sup>

That Tubercle, *per se*, is neither malignant nor tending to the shortening of life, may be inferred from the fact of its being found in the lungs of the new-born child, as well as in those of the octogenarian who has died of old age.

Like all newly-formed parts, Tubercle is prone to ulceration, and when this occurs in the lungs, *it kills mechanically*, by the ulceration extending to the surrounding lung tissue, in which it lies embedded.

Tubercle is to be found in other parts and organs as well as in the lungs, and when such parts are not essential to life, then its ulceration is a matter of but little moment.

From a consideration of these premises, it may be fairly inferred that, *Tubercle is neither a disease of the lungs nor of the air tubes*: that its being found deposited in them is an accidental circumstance, not arising from disease of those organs, but from deficient oxygenation of the blood, and therefore that Tubercle is *most essentially and purely a blood disease*.

I would now advert to a subject on which I fear my opinion

<sup>1</sup> Simon. in his "Animal Chemistry," states the formula for crude Pulmonary Tubercle to be  $C_{43} H_{35} N_6 O_{13}$ ; while that for protein is  $C_{48} H_{36} N_6 O_{14}$ ; in other words, Tubercle consists of an imperfect protein: differing from it in the absence of five atoms of carbon, one of hydrogen, and one of oxygen. Protein is the starting point of all the tissues; and the primary compound principle of fibrin, albumen, and casein. It is of course the natural result of the process of digestion when healthily performed. When this process from any cause is interfered with, the proper combination of the organic atoms does not take place, and a *less soluble* product is formed than the necessities of the system require.



may be considered very heretical, and yet it is one of great importance to the comfort and well-being of consumptive patients, and one, moreover, on which it is equally important that there should be no discrepancy of opinion; I mean the climate best suited for their residence. And here I may be permitted to ask, why do we so sedulously avoid cold air for consumptive patients? The only answer I can conceive is, that Phthisis being generally considered a disease of the lungs, and pulmonary diseases being more rife in winter than summer, the conclusion *is jumped at*, that the breathing cold air must be the exciting cause of pulmonary diseases, and amongst the rest, of Phthisis. With this conclusion, erroneous as I deem it to be, I do not desire at present to interfere, except in the especial instance of Tubercle, and here a number of facts present themselves which should lead us to ponder well, whether the ordering a warm atmosphere for such patients is, or is not, correct.

The first and most important fact is, that in the higher northern latitudes, such as Russia, Norway, Iceland, and Lapland, Pulmonary Consumption is almost, if not altogether, unknown.<sup>1</sup> The second is, that in all the Arctic voyages that have been made of late years, Consumption is not to be found in their bills of mortality. Whilst the third, and very significant fact is, that the

<sup>1</sup> "The Wandering Esquimaux, living virtually without fire, most meagrely dressed, dependent at the same time upon the hunt for every necessary of life, and almost daily exposed, in the pursuit of game, to the very lowest temperature, we are astonished at their complete indifference to the cold; not only do they seem indifferent to it as far as concerns their physical comfort, but they are able to resist all its depressing influences. They are a strong, robust, and healthy race. Scurvy is unknown amongst them, and I have never known or heard of an instance of tubercular disease"....."It is worthy of more than mere passing remark, that the climate is one of unusual healthfulness, and that Phthisis is unknown amongst the natives."— "On the relations between Diet and External Cold" by Dr Isaac J. Hayes, late Surgeon to the second U.S. Arctic Expedition. American Journal of Med. Sciences, July, 1859, as quoted by Ranking in Half-Yearly Abstract of Medical Sciences, July—December, 1859.

"In Iceland, Phthisis is not uncommon, as I saw many cases when there with Lord Dufferin; but this only verifies your theory, as with it you find all the conditions favourable to its development: great want of personal cleanliness, large families huddled together in ill-ventilated mud hovels, and insufficient food."—C. E. FITZ GERALD, Esq., in a letter to the Author.

The want of food here referred to, is an insufficient supply of carbon in some form of oleaginous matter. To produce combustion, either in the animal body or out of it, it is necessary to have fuel to be burned, as well as oxygen to support the burning.



sailor, exposed as he is to the most sudden variations of temperature, and without shelter from wind or rain, with clothes generally wet to the skin, has nevertheless an almost complete immunity to Phthisis. And in addition to this, what says the Registrar General on this subject? "Cold alone," says he, "appears to be less causative of pulmonary diseases than is commonly supposed." And again, "Glendale, in Northumberland, is the healthiest country district in England, and it is also the one in which there is the smallest number of deaths from pulmonary diseases." Singular, to say the least of it, that in Northumberland is to be found the place blessed beyond all others with the smallest amount of Phthisis! But this fully accords with my experience of the hygienic treatment that I have found most successful in arresting this disease, namely, permitting consumptive patients to breathe the dry cold and pure air of the South downs, rather than the warm and moist air of the shore.

And now, permit me to ask, what is the inference that should be drawn from such facts as these? This most important one:—viz., that if Tubercle be really a blood disease arising from a deficiency of vital air, and not a disease of the lungs or air tubes, arising from cold; that then, the sending consumptive patients abroad to a warm climate, (except in the latest stage, when it can only prolong life a few weeks), is a grave error; which must be mischievous, inasmuch as, the warmer the climate, the more relaxing does it become, and the less oxygen does the air contain.

Another corroborative and important fact in connection with this subject is, that Nature has made man, by his peculiar physical organization, capable of breathing equally well the air of the Arctic, as the Torrid Zone; and that she has furnished him with no means of guarding the lungs against the effect of either cold or caloric; but, on the contrary, that the skin is endowed with the most elaborate apparatus for preserving a uniform temperature to the body, the nature of which it is not necessary here to discuss. It may however be permitted me to observe, how wonderful is it, that at St. Petersburg for instance, with mercury at its freezing point ( $40^{\circ}$  below zero), and in the Arctic Seas, with the thermometer still lower, viz., at  $60^{\circ}$ , our lungs inhale the air without any sensation of cold. It is to the skin only that all such sensations



are referable, and it is the skin alone that requires guarding against injury arising from what is called "Taking Cold."

If, however, the cause of Tubercle be, as I have stated, I shall be called upon to account for a discrepancy that appears on the very face of my hypothesis, viz., that we find Tubercle is not confined to the poor, who chiefly suffer from a deficiency of vital air in their sleeping apartments, but that it is equally, if not more, a disease of the rich than of the poor, and that one of its most favorite victims is the carefully nurtured girl who lives and sleeps in large rooms, and is subjected to none of those privations nor atmospheric influences that have been usually looked upon as the predisposing causes of the complaint.

To explain this apparent contradiction, I must solicit your attention to what I believe to be a very general cause of Tubercle, but which hitherto has been altogether overlooked.

I think it will be conceded me that when we consider the importance of the functions of the skin, that that organ has not hitherto received at the hands of the profession its due share of attention.

It is well known that the skin excretes not only carbonic acid and other excrementitious matters, but, that it also absorbs vital air, and that in large quantities. In fact, that the skin is the viaduct for myriads of air tubes, and thus becomes *a most important breathing apparatus, not vicarious, nor ancillary, but supplemental to the lungs*. That this is the fact, the phenomena that ensued on gilding and varnishing children and animals, who died asphyxiated a few hours after, sufficiently testify; and in an equal ratio must be the morbid effect when the obstruction to the admission of air through the skin is only partial, yet at the same time *continuous*. But why should the cutaneous pores of the rich be in a less patent state than those of the poor?

From the fact, that the Christian religion does not make the frequent ablution of the body a part of its ceremonial law, as both the Jewish and Mohammedan religions do, and partly also from ablution of the skin not being so luxurious an operation in this country as it is in more eastern climes, we are certainly not in the habit generally, of making the washing of the whole surface of the body a part of our daily toilet. Nevertheless, the better classes of society



esteem themselves as being extremely clean in their personal habits, inasmuch as most of them change their linen daily, or at least on every alternate day.<sup>1</sup>

But this does not remove the exuvise, momentarily forming, in the pores and on the surface of the skin, the joint production of the sordes from within, combined with the debris of the cuticle, which, if not removed, soon forms so complete a coating as to become more or less impervious in a very short time.<sup>2</sup>

But I believe there exists a cause still deeper than this. We are all of us continually seeing "Acne" in the face, and we all of us know that this is merely inspissated perspirable matter obstructing the cutaneous pores: the external points of which are blackened with the soot of the atmosphere. These black points may, with the aid of the fingers, be pressed out, when they resemble so many worms (by which name, indeed, they are commonly known), of one, two, or three lines in length. From seeing these black points only on the face, we conclude (if, indeed, the subject crosses the mind at all), that the face is the only part where the pores are obstructed; not so however, as they are to be found equally impacted with sebaceous matter all over the body, minus the black points, which, as before stated, are only acquired in consequence of the skin of the face being exposed to the atmosphere.

There are three causes why the working man does not acquire this abnormal state of skin: First, the frequent perspirations that his employment induce; secondly, the weekly washings that are required in consequence of the unclean nature of his employment, in addition to which, he is compelled from necessity to a more restricted diet, and greater activity of body than the class above him.

In accordance with the above explanation, we have a large number of persons among the better classes of society who, from the causes just mentioned, have their cutaneous pores generally

<sup>1</sup> I trust I shall not be misunderstood here:—I do not charge the public with want of cleanliness, but with *not knowing how* to be clean. The desire to be so, is sufficiently evinced in the frequent change of linen.

<sup>2</sup> If quite impervious, then, as has been already seen, death would speedily ensue.



more or less obstructed, which obstruction must prevent the free entrance of air, as well as the exit of carbonic acid from the body, and thus we have the same set of causes operating through the skin of the well-to-do, as are produced in their less fortunate brethren through the medium of the lungs, that is, an imperfect oxygenation of the blood.

That this is no fancy portrait, but a real and striking likeness of the state of the skin of the larger portion of society at the present day, I appeal to any one who has seen the operation of the Hot Air Bath after the surface of the skin *has apparently been washed clean with soap and water*. It is extraordinary how large a quantity of this inspissated sebaceous matter is first softened, and then expelled by the operation of this artificial perspiration.

Before entering on the subject of treatment, will you permit me for a few moments to call your attention to that of "Taking Cold," as it is usually called.

When a consumptive patient is asked as to the primary cause of his complaint, he will invariably answer "It first arose from taking cold." *We* know very well that this taking cold, was merely the setting fire to the slow match that had been laid for months or years before. In other words, that it was inflammatory action first attacking nascent tubercle. But permit me to ask, are we all agreed as to the *manner* in which this cold is taken? Have not some of us a vague idea that it is connected with the breathing of cold air? A clear conception on this subject appears important with reference to the treatment of the complaint.

It is so ordered that the vital actions of the human body, in other words, life itself, shall be sustained under a very limited range of temperature; that is, that the heat of the blood shall never be less than 98° or above 105° or 106° of F. under the hottest atmosphere that life can bear. To secure this uniform and permanent heat, the skin is endowed with one of its most important functions, that of standing as an ever wakeful and watchful sentinel over the temperature of the body, and as such, informing the sensorium of any thermal change that has taken place externally. On the accession of cold, this is accomplished by the "rigor" that ensues, (the closing of the cutaneous pores),



warning us to put on more clothing ; and when heat is in excess, then the succeeding perspiration compels us to take it off again, and thus man becomes the cosmopolite he is.

When, then, any part of the body is accidentally and unwittingly exposed to a diminished temperature, especially if in a state of perspiration, the cutaneous pores *of the part* become closed, and some one of the following effects generally ensue. If it be the head that is exposed, then ear ache, or tooth ache, or face ache, or inflammation of the eye, or sore throat, or catarrh, or rheumatism, occurs. If the trunk or feet have been the parts impinged on, then the results are sometimes more important, and show themselves by setting up inflammatory action in the lungs or pleura, which, if Tubercle happens to exist in them, becomes the starting point of consumption, and the cause which the patient always refers to as the origin of his illness. In other cases, rheumatism, acute or chronic, or enteritis, or some other organic inflammation supervenes.<sup>1</sup>

Now, all these various affections are simply the result of the cutaneous pores of the part exposed being suddenly closed, and arise as simply from nature setting up increased action, for the purpose of re-opening them.

There are some curious circumstances connected with this subject worthy of our observation, for instance :—A man shall go on the coldest night in winter, thinly clad, on an open heath, and remain there a certain time, and yet, from the whole surface of his body being equally exposed, he will escape all the injuries above enumerated. True he may die from the intensity of the cold, but if he does, it is from the *whole* cutaneous surface being closed against the admission of air ; in the same way as the French soldiers died on their retreat from Moscow, and indeed, in the same manner as the gilded child, and varnished rabbits, whose pores were closed by a different cause, but with the same result, viz., drowsiness, coma, and death.

But the point most worthy of our consideration is that, by the aid of perspiration artificially produced, these various affections

<sup>1</sup> There is a very significant Spanish proverb on this subject:—

“If cold air reach you through a hole,  
Go make your will, and mind your soul.”



are *at once* cut short; not so much cured, as arrested in their course; the simple fact being, that the abnormal closure of the pores is directly overcome by the irresistible effort that is made to re-open them, under the influence of a greatly-heated atmosphere.

Such then, is my impression of the term "taking cold," it being uniformly nothing more than a partial and spasmodic closure of the cutaneous pores, whilst in every case they are as quickly re-opened under the influence of hot air, provided it be had recourse to without delay.

The importance of the treatment that I am desirous of seeing introduced for the cure of Phthisis, especially in its earlier stages, has been slowly forced upon my attention by its own intrinsic merits, during a period of time when I was paying particular attention to the functions of the skin in connection with the treatment of Gout and Rheumatism. Many of the symptoms of Phthisis, as the rigors and night sweats, appeared to indicate so strongly functional disorder of the skin, as determined me on the first opportunity to try the Hot Air Bath in Consumption, as I was then testing its value in the above-named complaints.

The first case that occurred to me was that of a young woman in whom softening had already commenced. She was first placed in a hot-water bath, for the purpose of thoroughly cleansing her skin externally with soap and flannel; which much facilitates the subsequent perspiration. She was then placed in a bed heated by a spirit lamp and made air tight, where she remained until she perspired profusely, when my desire was to have placed her under the cold shower bath, but for want of it, a blanket was laid inside the empty body bath, and then a pail of cold water was thrown over her in it. The result was so satisfactory and encouraging, as to induce a repetition of it, after which, I lost sight of my patient for more than a year.

The next case that presented itself was also a female, in whom both hectic fever and purulent expectoration were fully established; in fact, I was fearful, without some check on the heart's action, to place her in the heated atmosphere of the Hot Air Bath, and accordingly, previous to her entering it, I placed a bag containing two pounds of bruised ice on that viscus, the bag externally being thickly covered with flannel. The effect was marvellous. The ice



did not impede perspiration, the pulse was not accelerated, whilst the purulent expectoration was quickly and wonderfully diminished. The treatment was repeated three or four times, when she also ceased her attendance; but I had the satisfaction of seeing both these patients more than twelve months afterwards, and found that both had passed the year comparatively free from complaint.

So strong, however, were my convictions at this time, that when once hectic fever and purulent expectoration were fully established, or rather let me say, when once the pulse became *permanently accelerated*, that a cure was impossible; that I doubted my own cases, and believed that, because they got well, they could not have been tubercle; and it has only been with the lapse of years, and the accumulation of cases, and occasionally meeting with patients who had been under treatment years before, and now exhibited every sign of perfect health, that I began to think the treatment worthy of being submitted to the notice of the profession. Nor do I now wish to exaggerate the results to you, and only desire to say enough to induce you to give it a fair trial.

From the fact, that I never saw a case of Phthisis coupled with scrofulous ulceration; and also from the frequent instances, in which nature sets up an artificial discharge in the shape of fistula, I have become convinced of the importance of keeping up some permanent discharge from the skin in this complaint.

The inunction of the body also with some oleaginous matter, which I believe to be very important, was first commenced under the idea of guarding the skin of those patients from cold, who had the hot air bath without the subsequent cold shower bath; but I soon became aware of the value of inunction in all cases of phthisis. Inunction is said to increase the red particles of the blood, whilst these, as the carriers of oxygen to the capillaries, explain the modus operandi of cod liver oil, and other oleaginous ingesta.

The general treatment of Phthisis, for which I am soliciting your approval, may be summed up in a few short aphorisms, of which the first and most important is:—

That by the aid of the Hot Air Bath, all the functions of the skin be kept in healthy action.



2ndly.—That the whole surface of the body be anointed daily with some oleaginous matter, of which axungia odorised is as good as any other.

3rdly.—That a local ulceration on some part of the surface be kept always patent, by means of an issue or seton; and

4thly.—The ringing the changes on cod liver oil, iodide of potash, the mineral acids, tar creosote and naphtha, iodine and chlorine, iron arsenic and quinine, and indeed the class of *antiseptic medicines generally*; all of them admirable adjuvants in improving the general health (if selected in conformity with the functions most sympathising with, and re-acting on, the disease); but powerless in arresting the specific lesion in question, without the previous “open sesame” of the Hot Air Bath, *followed by the aspersion of cold or tepid water.*

The hygienic treatment, according to my view of the disease, consists in promoting by all possible means (consistent with the strength of the patient) a rapid change of matter, by which two objects are attainable,—1st, The absorption of the already deposited tubercle; and 2ndly, The deposition of more healthy, that is, more highly organised matter.

The grand assistance of the Hot Air Bath consists in clearing the cutaneous pores, and giving them their healthy tonicity, when the patient does, what in many cases he never did before, that is, *he breathes through his skin a large quantity of vital air*, which goes to maintain *at the point of health*, that metamorphosis of tissue in which life consists.

The aids to this important result consist in ordering the most nutritious diet, short of alcoholic stimuli; 2ndly, The living in a high, dry, and marine atmosphere, and as much as possible in the open air; and 3rdly, The use of all sorts of athletic exercises suitable to the sex and strength of the patient,<sup>1</sup> for it is of no use ordering full diet unless we also give air and exercise to convert such diet into pure and healthy blood. To this must be added, special exercises for the muscles of the chest and air tubes, amongst which singing is not to be despised, however little the voice may be attuned to such music.

<sup>1</sup> Of course avoiding those that accelerate the pulmonic circulation.



It is remarkable how nature appears to cry out for the use of the Hot Air Bath: witness the rigors, the night perspirations, the eruption at the angles of the mouth, which so often succeeds to a cold, or, in other words, to obstructed perspiration; and which is evidently the exit which nature has provided for the escape of morbid matter. Witness also the artificial eruption which *we* create, and call it "counter irritation," a term without a meaning, invented to answer disagreeable questions, but manifestly producing very beneficial effects of the same nature as the eruption above mentioned. In fact, half the eruptions we witness arise from similar causes, and answer similar ends, and all may be prevented, and cured, by a copious perspiration, kept up for a sufficient length of time, and repeated sufficiently often.

But perhaps it is the acid perspiration, so well known from its peculiar and offensive odor, and not confined to phthical patients (although generally indicating a consumptive tendency), that speaks louder than any other symptom as to nature's requirements; and there is none other that exemplifies more clearly the invaluable operation of the Hot Air Bath in withdrawing from the system the morbid matter (lactic acid) that occasions it, and thus enabling the constitution to re-establish the assimilative functions, which are always more or less deranged during its existence.

It is very surprising how great a disinclination there is on the part of the profession to operate,—or forgetfulness, or oblivion as to their power of operating externally on the skin, through the medium of *cold and caloric only*. Thus, in the December (1859-60) number of the Edinburgh Medical Journal, in an able paper "On the Action of the Skin in the Production and Treatment of Disease," the author, speaking of the difficulty of controlling the cold acid perspiration in Phthisis, says:—"In Phthisis, and in the states of debility which so frequently lead to it, this at some period is our greatest difficulty, for it is impossible in such cases, at least in a rapid manner, to increase the combustion of food; and our only chance is to administer remedies internally, which lessen the action of the skin, or the external use of stimulants, or salt, or of some defence as oil; and in cases where the organic mischief or defective power of assimilation are barriers to the increase in the



production of heat, these expedients can have only, at the most, a temporary good effect. Wherever, then, with perspiration the skin is cold, we may be sure the organ is too active, and must seek to lessen the activity on the one hand, and on the other to supply the heat which is thus unduly wasted." He then speaks of oil as a physical obstacle to evaporation, and goes on to say, "I regard such cases, indeed, as diseases of the skin, and they constitute a very large proportion of cases presenting themselves as out-patients at the Hospital for Consumption, and the condition, I believe, is a very common precursor to Phthisis."

It would be difficult to describe more clearly than has been done in this passage, the painful paucity of power that we possess over the functions of the skin when our practice, for the reparation of those functions, *is confined to the internal exhibition of medicine*. In fact, we *have no one drug by which we can command diaphoresis*, all our sudorifics acting primarily on the stomach, whilst their action on the skin is, in every case, most uncertain. On the contrary, when we condescend to copy nature in this matter, and humbly use the only means that she herself employs to produce it,—viz., caloric—all our difficulties vanish as if by magic; the stomach ceases to be sickened by the exhibition of emetics, whilst we gain absolute command over the functions of the skin, at the same time that all those symptoms, which the author has described as being the precursors of Phthisis, and in which his exhibition of medicaments, internally or externally "can have only, at the most, a temporary good effect," are controlled with the greatest facility.

The only special part of this treatment, with which you may not be quite familiar, and which I am consequently anxious to press on your attention, is the therapeutic use of the Hot Air Bath, which, in fact, is the old Roman method of bathing—as the remains of the baths at Pompeii, in an almost perfect state, testify,—continued by the Turks from the taking of Constantinople, to the present time.

This form of bathing, however, did not originate even with the Romans, but can be traced back through them to the Greeks, the Egyptians, the Persians, and to still earlier Eastern nations. The very antiquity of the usage demands our homage; but independent



of this, its having been constantly prescribed and adverted to by Hippocrates, Galen, and Celsus, at once stamps the Hot-Air Bath legitimate, and no one can be charged with empiricism for prescribing it.<sup>1</sup>

It is important to bear in mind that this process is altogether one of hot air, *not a vapour bath*, which, in every respect, is a much less efficacious or pleasurable mode of bathing. "In the vapour bath the blood soon acquires a degree of heat higher than its usual standard, partly on account of the greater condensing power of the medium, but principally in consequence of the check which is put upon the vaporisation of the fluid secreted by the skin."—(Carpenter). "It has also been proved that where the atmosphere is charged with the vapour of hot water, it makes a great difference in the degree of elevation of temperature which can be sustained without inconvenience."—(Madden). It is also questionable whether the negative state of electricity in which the body is placed is not objectionable. It is, at all events, the very reverse of that of the Hot Air Bath.

Such, then, is the mode of bathing that I have taken leave to introduce to your notice. It will at once be seen that it is applicable to a variety of disorders. In every case it is eminently deobstruent, and may be made equally deobstruent; and, in a great degree, it will supply the place of that painful amount of exercise which is required by our Athletæ to be taken by those who are under training. To the literary man who feels the time required for simple exercise as lost, it will be very valuable; and indeed to all, will tend most materially to sustain the general health.

<sup>1</sup> The old Roman, or present Turkish Bath consists of a suite of four rooms, heated to different degrees of temperature. In the first (heated to about 60° F.) the bather undresses and leaves his clothes. In the second he is placed in a hot water bath, where he is thoroughly washed with soap and flannel. From this he is introduced into the third room, heated to 120°, where perspiration soon becomes established; from whence he is led into the fourth, or grand sudatorium, heated from 140° to 160°. In this room the perspiration is profuse, and may be continued to any extent, by drinking cold water. After the bather has perspired sufficiently, he is next laid on a table and well shampooed, after which he is again sponged with warm water and soap, to wash away the matter that has been excreted.

With this, in many cases, the operation is completed, but in others, the bather goes under the cold or tepid shower bath, and is then anointed. This change of temperature is much enjoyed by the bather, and produces a delightful feeling of tonicity. He now returns to the first room and dresses, and is then supplied with coffee.



With consumptive patients, for whose use we are just now specially considering it, after they have once gone through the whole process, and have thereby got their cutaneous pores thoroughly cleansed and opened, it will not be necessary to go into the sudatorium oftener than twice or thrice a week, and then merely for a few minutes until perspiration flows freely, when they should be placed under the shower bath, which, as to quantity of water and degree of temperature, must in every case be regulated by its effects; but without which the patient cannot be made to feel that healthful glow and tonicity equally luxurious as necessary for his amendment.

Thanking the Society for the kind attention it has shown me, I will close my paper with one caution, viz.: that this is too powerful and important a therapeutic means to be entrusted to the hands of mere bath people; at all events not, until we have by personal observation and frequent trials, tested its powers and capabilities under a variety of circumstances, and in different diseases.

BRIGHTON, MARCH, 1861.



ROMAN OR TURKISH  
**HOT AIR BATH,**

65, WESTERN ROAD,  
BRUNSWICK SQUARE, BRIGHTON.

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OPEN DAILY, (SUNDAYS EXCEPTED),  
FROM EIGHT O'CLOCK, A.M., TO EIGHT O'CLOCK, P.M.

FOR LADIES,  
*ON TUESDAYS AND FRIDAYS.*

GENTLEMEN,  
*ON MONDAYS, WEDNESDAYS, THURSDAYS, & SATURDAYS.*

No expense has been spared to render these Baths most efficient and luxurious. They are built after the model of the old Roman Baths found at Pompeii, and are under the direction of a Medical Gentleman who has used the Hot Air Bath in his daily practice for the last twenty years.

Parties who may, or may not require the use of the Bath, are received into the private establishment of the Principal as Resident Boarders, with whom references will be expected.