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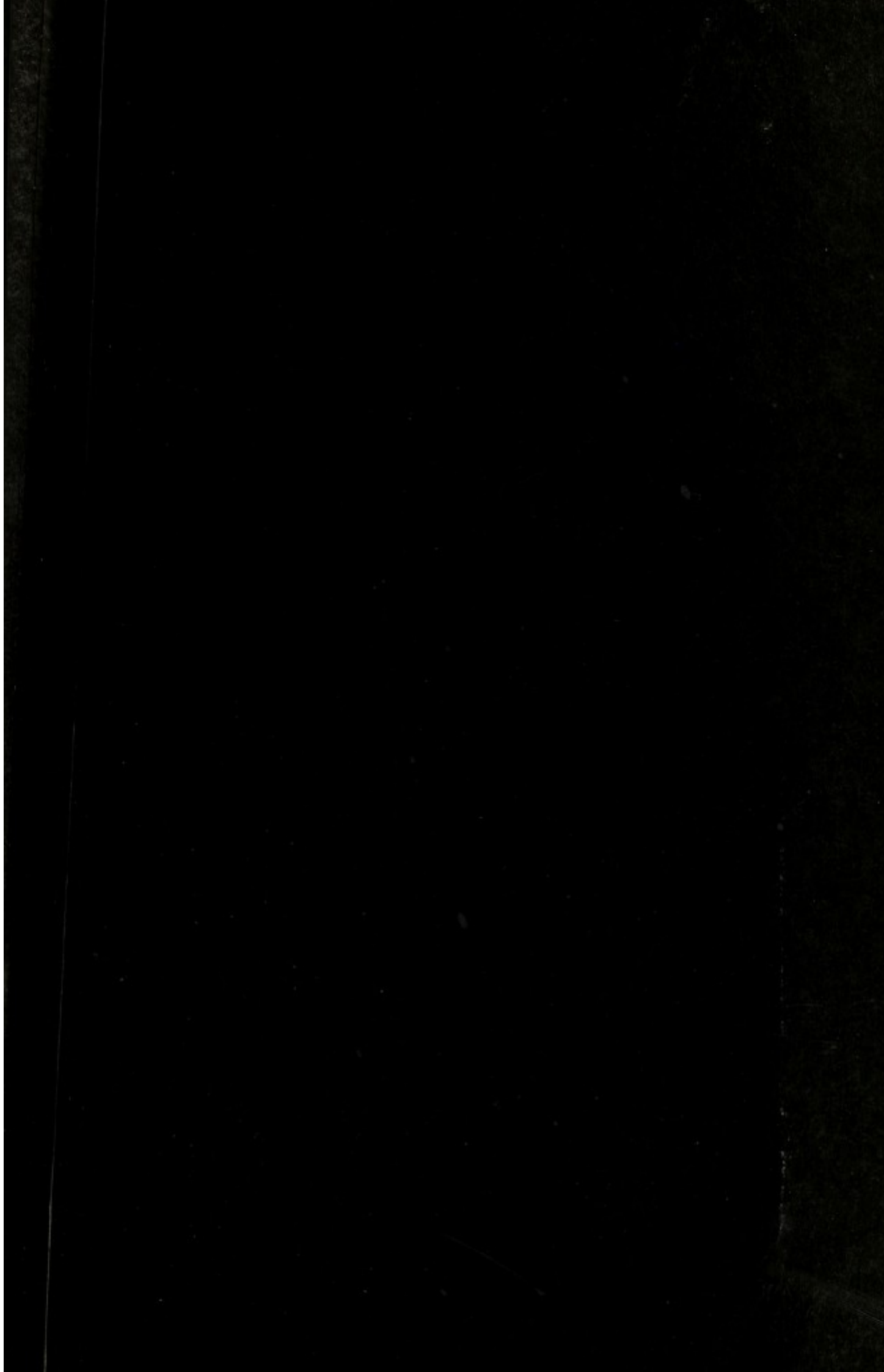
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1791

*Professor Fleming J. S. &c*  
*At the author's compliments*  
**THE SWEATING CURE.**

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**THE PHYSIOLOGICAL BASIS**  
**AND**  
**CURATIVE EFFECTS**  
**OF THE**  
**TURKISH BATH.**

**BY**  
**JOHN BALBIRNIE, A.M., M.D.,**

**AUTHOR OF**  
"PATHOLOGY AND TREATMENT OF UTERINE DISEASES," "THE WATER CURE  
IN CONSUMPTION," &c. "THE AVOIDABLE CAUSES OF DISEASE," "THE  
SIMPLE TREATMENT OF DISEASE CONTRASTED WITH MEDICINAL  
ABUSES," &c.

Much of the practice of our profession, which has resulted from what is called  
experience, is altogether incompatible with the existing state of our knowledge. —  
**PROFESSOR BENNETT.**

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**SECOND THOUSAND.**

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THE SWEATING CURS

THE PHYSIOLOGICAL BASIS

CURATIVE EFFECTS

TURKISH BATH

J. H. BAKER, M.D.

PHYSIOLOGY AND THERAPEUTICS OF THE TURKISH BATH

THE TURKISH BATH, WHICH HAS BEEN CALLED BY THE NAME OF 'SWEATING CURS'...

BROOKLYN

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WITH ILLUSTRATIONS

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VI.

The Indications Medical Domain of the Turkish Bath.

## TO RICHARD BARTER, ESQ.,

M.D., M.R.C.S.E.. &c.

MY DEAR SIR,

To dedicate to you this humble attempt to unfold the Philosophy of the Turkish Bath, is to me, I assure you, a true pleasure, not to say an honour. While it is in the highest degree grateful to have an opportunity of marking, in any proper public way, my appreciation of your sterling private worth, and your not less sterling professional character, it is at the same time, rendering to you only a bare act of justice. To you unquestionably belongs the credit of having, first of medical men, had the intelligence to foresee the therapeutic applications and advantages of the Bath, and of having had the courage to embark your money, and, what is more, your reputation, in giving an Institution of the East "a local habitation and a name" in the Isles of the West! Above all, discarding prejudice, obloquy, resentments, you have been the grand *innovator on the Institution*;—you have IMPROVED AND ADAPTED the Bath to its best work. IT IS THE FIRMEST ALLY AND THE MOST POTENT AGENT, OF THE HEALING ART! The Turkish Bath *as in Turkey*, won't do for modern times and requirements. Your first bath on that model was a *dead failure!* *And further modifications are required*; so that hundreds only will be necessary to build future baths where *thousands* have been expended in their construction so far. The simple *conservatory or hot-house* principle will beat all others for simplicity, cheapness, light, ventilation, comfort, workableness, and real curative power! As it is, many of the *expensive* baths are mere *Architectural baubles!* with everything in them but "go."



That you may long live to fight even for scientific TRUTH, and to enjoy its triumphs; that you may especially reap the legitimate reward of your probity as a man, and your skill as a physician, I earnestly pray. But, most earnestly of all do I pray, that when the toils and trials, the bereavements and griefs, and heart-chastenings, of this mortal probation are ending—when the world recedes—when earth's false glory and glitter fade, and the solemn realities of Eternity press on the vision, that through faith in the GREAT ATONING BLOOD of our Lord and Saviour Jesus Christ, and the regenerating and sanctifying power of the Holy Spirit, you may be made meet to be a partaker of the Inheritance of the Saints in light.

Believe me ever,

My Dear Sir,

Your most sincere friend,

JOHN BALBIRNIE.

9, PEEL TERRACE,

SOUTHPORT,

AUGUST 1st, 1864.

## PREFACE TO THE FIRST EDITION.

The question which we here feebly essay to expound is something more, and higher far, than the introduction amongst us of an Oriental luxury—a pure custom—or a new mode of cleanliness—all important as it is admitted to be, even in these subordinate points of view. THE TURKISH BATH IS A MIGHTY AGENCY FOR THE PREVENTION AND CURE OF DISEASE. It is a long sought *desideratum* of practical medicine, and will be hailed by all physiologists and physicians (who have more at heart the interests of humanity than the gains of a calling) as one of the most potent *modifiers of the living organism*, whether in health or disease. In this aspect of the subject, the more this new ally of the Healing Art is tested the more it will be trusted—the more will it vindicate its pretensions to be placed in the arsenal of physic, as an *orthodox weapon* of medical warfare. As such, we believe, the day will come that its machinery will be established as an integral and essential part of the equipment of every hospital, dispensary, asylum, workhouse, barracks, and camp—yea, even of every public school of every civilized state. Increasing experience is bringing forth new facts every day to prove its curative powers.

Will our palaces and metropolitan club-houses be long without the Bath? We trow not. How long will it be ere it become the health-preserving implement of every complete private mansion? No other agency will so neutralize the drawbacks and discomforts and dangers of our cold, damp, variable climate during at least seven months of the year. Whatever may be alleged of the *curative* powers of the Bath, it cannot fail, bye and bye, firmly to establish itself in the public confidence as the grand PROPHYLACTIC of disease—the PREVENTIVE agent *par excellence*.

There can be no question but that the Turkish Bath, extensively put within the reach of the poor, will do much to supplant the baneful fascination, and to substitute the injurious stimulation, of alcoholic liquors! It will become, perhaps, the most powerful antagonistic, or counteractive agent the Temperance Cause has yet wielded. That sacred cause must seek, as its three grand allies in exalting debased humanity, Cleanliness, Health, and Religion—and *the accredited ministers of those agencies*. The most speedy and summary way to put down the nuisance and demoralization of the GIN PALACE will be to *pit it against and to pitch against it* a Turkish Bath of at least equal decorative attractions—and offering to the poor, for the price of the poisonous dram, two hours oblivion of their care and misery—with improved health, quiet nerves, natural appetites, and, perhaps, washed raiment, at the conclusion of the process. A soup kitchen, or a working-man's refreshment-room, will be a necessary appendage to all such establishments. It will require no gift of prophecy to predict which place of resort shall receive most patronage, and how far the improved feelings, and thoughts, and habits so induced, will pave the way for the labours of the city-missionary. Will not some wealthy philanthropist, or society of philanthropists, try the experiment? Will not the teetotallers take up this question?

It is, perhaps, not out of place here to allude to, to demolish a prevalent misapprehension on the subject of the Turkish Bath: it is supposed to be only suitable for strong constitutions! This is a complete mistake. The weakly, on the contrary, as they have more need for it, are, perhaps, more benefited by it. Its influence as an instrument of *training*—as a means of physical development—is the least questioned and questionable. Powerfully aiding NUTRITION, it manifestly promotes growth and strength. For all, therefore, in whom nutrition is depraved or defective—for the scrofulous, the consumptive, the ill-nourished, the enfeebled, the emaciated, &c., the Turkish Bath is pre-eminently adapted. Nor is any extreme of age beyond its scope. Indeed, the national use of the bath, for ages, by the Persians, Greeks, Romans, and (since the conquest of Constantinople) by the Ottoman nations, demonstrates at least the utter groundlessness of its alleged dangers.

But every excellent thing—even the best—may be abused. The Turkish Bath is too powerful an agent for good, not to be an equal

instrument of evil, *when misapplied*. Its dose requires to be regulated like that of any other remedy—and this certainly is the province of the physician. To be wielded therefore with safety, precision, and success, in the treatment of disease, and for the invigoration of the delicate—to be delivered from the evils of its maladministration—and to prevent such accidents as have already occurred in this country—to save, in short, a good cause from a bad name—the Turkish Bath must be under scientific prescription and skilled superintendence.

In conclusion, it may be affirmed that the Turkish Bath amounts almost to a DISCOVERY! It is at least a new-found boon to the States of the Western World. We claim for it to become a permanent institution among them, as a remedy for many of the evils of modern civilization—a remedy near at hand, safe, effective, and agreeable. The questions it stirs are those which, next to morality and religion, intimately affect a nation's best interests. The habits it promotes are those which most directly conduce to the health, the happiness, the longevity, the physical culture, the material prosperity, and the moral elevation of the people.

JOHN BALBIRNIE.

CLAREMONT HOUSE,

GREAT MALVERN,

May 8, 1863.

## PREFACE TO THE SECOND EDITION.

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In issuing a new edition of this essay, the Author regrets that the most of it has been worked off and stereotyped, while absent on a tour. This has prevented both press-corrections and the addition of new matter necessary to perfect the physiological *rationale* of the Turkish Bath. It strikes the writer that his own, and all other explanations of its action and virtues have been too *mechanical*—have been founded too much on what might be termed the *SCAVENGER-WORK* of the Bath—its *safety-valve-opening and drain-flushing* operations. Undoubtedly this is a true and all important point of view ; and *alone* would place the Turkish Bath on a high pinnacle of pre-eminence, not only as a means of cleanliness and luxury, but as an instrument of Therapeutics. To macerate the corporeal tissues and thereby to soften and open up their porous structure, obstructed by disease, by sedentary occupations, or by luxurious modes of living ;—to clear off the epidermic varnish that mars the *breathing functions* of the skin, to exalt its exhalant and absorbent powers, and thereby to enhance its uses as a prime agent of the aëration and CIRCULATION, as well as of the purification of the blood ;—to set free the blocked-up excretions of the body by clearing their eliminatory outlets, and thus to facilitate what is called “the metamorphosis of structure ;”—by powerful, yet unweakening perspiratory drains, to equalize the distribution of the blood on the surface and in the interior, and thus to undo congestions of vital viscera ;—simultaneously with all this, to *poultice* (as it were) the extremities of the nerves, to soothe the sentient external surface, thereby most effectively quelling internal irritation and quieting brain excitement ; and finally to close the patulous pores and brace the relaxed muscles ; and then virtually to *electrify* the whole system by the finishing-off ablutions ;—certes, these are grand ends to gain—an immense boon to the sick or the sound man ; and these, moreover, are the express aims and “indications” of all medical practice, by whatsoever name called. Thank God, the sure accomplishment of these ends is the valid boast—we had almost said the exclusive prerogative—of the Turkish Bath ! So far we can point to its *demonstrable* sphere of action. This is, however, the utmost length that writers have hitherto gone in their appreciation of the *modus operandi* of the Bath. But these effects, how valuable soever, are after all in a sort merely *mechanical*, and constitute only one half, perhaps the least potent half, of the physiological benefits of the Bath. There is something more and greater far beyond—something “behind the scenes,” though less palpable, yet paramount. We have now to unfold *vital* actions of a higher class than the results specified—actions

which it is the aim of all medicines to effect; and which the very best medicines, by a rare chance only, succeed in effecting.

*That* copious visible destillation of fluids from the skin has its precise counterpart and analogue in the excretory actions taking place within—on the mucous, and even from the *serous* surfaces—from the ducts, and even the parenchyma of glands, perhaps even from every capillary tube and strainer. In this grand interior physiological *molimen* taking place always under the operation of the Bath, is to be sought the explanation at once of its enervative and of its curative powers.

As elucidating the philosophy of EXCRETION, or the DEPURATING ECONOMY of the body—we have on page five referred, in brief, to the beautiful physiological doctrine of CELL-FORMATIONS—minute vesicular bodies, wherein all the chemico-vital actions of the organism are effected. By the growth, filling and bursting of these nucleated cells, all absorption, all secretion, and all nutrition are performed. We were content there with a mere allusion to the subject. But as it constitutes in a sort the very *key of the position*—the stronghold of the fortress of truth—the Bath-partizans contend for, the subject must be opened up at greater length, and illustrated and enforced so far as limited space will allow.

Both the *organising* and the *disintegrating* acts of secretion are examples of the beginning and the ending of the CELL-LIFE now in question. The favouring conditions for the development of cell-action, when the dormant or latent germs of it exist, are HEAT and the PURE OXYGEN of the atmosphere. Instance the case of the growth of the chick in *ovo*, or of the seed in the soil, even if that seed has lain 3,000 years in the coffin or stomach of a mummy! Here *cell development* or secretory action is the *fons et origo* of the formative *nisus*, and not only the beginner, but the maintainer and the ender of it—till the “topstone” of the animal or vegetable structure is put on! “How is all this proved?” the unphysiological reader asks. We reply, “The microscope has brought to light these dark arcana of nature.” Let this reply so far suffice for the present. No instructed medical man will think that in treading this ground, I am going out of my way for material of defence of the Turkish Bath. The phenomena of the gardener’s *hot-house* (whether it be in the way of developing almost at will, foliage, flowers, or fruit, or *whether in keeping in health and vigour tender exotics that our rude clime would be fatal to without such fostering care*)—I say these familiar phenomena are illustrations of our control over CELL-ACTION. The sights in our prize-cattle exhibitions shew our control of the SECRETORY ACTIVITY of *animal* organisms, pushed even to a *morbid* excess. The simple agents at work here in addition to the *nutrient materials* (which must in all cases constitute the platform of operations), are temperature and pure air. Of course, VITAL ACTION is, above and beyond all, THE CONTROLLING POWER. But the grand point to insist upon is that this very supreme vital action is itself under the control of Art! Those SECRET, SECRETORY, FORMATIVE PROCESSES which we can initiate and evoke at will, as in the chick or seed, or which we can control in the animal as to produce all modifications of blood, bone, nerve, vessel, brain, muscle; or by which, in the case of plants, we vary at pleasure,

roots, stems, branches, leaves, buds, flowers, fruit—these I say ARE PRECISELY THE SAME PHYSIOLOGICAL ACTIONS WE CALL POWERFULLY INTO PLAY IN THE TURKISH BATH. This has not been laid due stress upon—if the point has been mooted at all!—and we are not aware that it has! A thousand facts prove that the caloric and oxygen of the air largely received by every pore of the skin, and every vesicle of the lungs, starts into unwonted activity the processes of *cell-development or secretory action*. This is the basis and beginning of all salutary, life-exalting, disease-curing efforts on the part of the organism. Of course, the subsidiary agency of diet and regimen, air, exercise, and repose, must be invoked and scientifically regulated. But in virtue of this secret physiological machinery of cell-operations—a true secretory *nisus*—it is in our power often suddenly, and at once, to extinguish the diseases, and re-constitute, re-build, and re-energize the dilapidated and decaying bodies of our fellow men—if slowly sometimes, and by a very bit-by-bit process—yet unflinching, and without failure as without check, *in the same way, by the self-same mechanism, as the coral insect (out of its secret infinitesimal secretions), piles up its rock-reef or sea-girt isle!* After these palpable and pertinent instances of CELL-ACTION, who shall attempt to call “romancing” or to think incomprehensible, incredible or mysterious the infinitesimalism of nature’s operations, or to question the grand results they achieve. “*Si le grand Dieu est grand dans les grandes choses, il est tres-grand dans les petites.*”

Space forbids us here to pursue the subject, we have thrown out sufficient hints for the reflective. I have given the clue to the true *rationale* of the best results of the Bath.

JOHN BALBIRNIE.

THE TURKISH BATH,

SOUTHPORT,

JULY 30TH, 1864.

# THE TURKISH BATH.

## CHAPTER I.

### THE PHYSIOLOGICAL BASIS AND ACTION OF THE TURKISH BATH —THE PHILOSOPHY OF DEPURATION—THE PENALTIES OF NON- DEPURATION.

“THE BLOOD IS THE LIFE,” as charged with the great vital STIMULI, *i.e.*, the sustainers of the movements of the animated machine, the sources of its heat, and power, and action; as containing on the one hand, the elements of nutrition, or the building materials of the fabric—and the fuel of the living furnace; and on the other, the atmospheric oxygen necessary to ventilate the house we live in—to combine with the products of decomposition;—thus, in one act, by one process, supporting the combustion of the body, keeping up its heat, and effecting the removal of its waste. This waste is better understood under both its popular and its scientific name—the *excretions*, or the skimmed-off impurities of the body. EXCRETION is, therefore, the depurating process of animal bodies, which we must, if possible, enable the reader fully to understand, if he is to comprehend the action, and appreciate the virtues, of the Turkish Bath.

The mere functioning or play of organized structures—every movement, great or little, of the living apparatus, even every act of volition, every thought, and every emotion—disengages heat and dissipates it; and, therefore, by the first laws of chemistry, must wear down and disintegrate the mechanism piecemeal. Hence, from its first development to its final dissolution, the body is in every atom (especially of its soft parts) the scene of incessant, even of momentary CHANGE—of Reproduction and Decay—of the displacement of the molecules of the old and effete matter, and their combination in new forms, in order to their exit from the body.

The healthy properties of the living fabric are maintained only so long as a due equilibrium exists between NUTRITION and EXCRETION, or DEPURATION; in other words, between *supply* and *waste*—between *income* and *expenditure* of body-elements—between the ASSIMILATION of the new materials, and the ELIMINATION or exit of the old, worn out, or superfluous constituents of structure.

In the outgoing rounds of the circulation (*i.e.*, by the arteries), the blood yields up its nutrient principles for the growth or repair of the several tissues; in the incoming or returning circuit (*i.e.*, by the veins), it receives for removal or revivification, the particles that have been



exhausted of their vitality, or that have served their purpose in the economy. This corporeal *debris* (*sewage*) imparts to the blood a dark colour and poisonous properties. Hence the great importance ever attached to keeping in good working order the EXCRETING APPARATUS of the body. This was the grand virtue of Old Physic (which we willingly concede to it), of giving minute attention to the *excretions*. The aim was right—the means faulty. Irritant medicines *create* the anomalous excretions they were supposed to eliminate.

Secretion and Excretion are often used as synonymous terms. They mean the same thing—literally something *separated* from the blood for specific purposes in the living mechanism. 1st. For the preparation of the nutrient materials, as the saliva, gastric and pancreatic juices, bile, &c. 2nd. For the formation of the solids and fluids of the body, as bone, muscle, nerve, tendon, the serous fluids of the joints and of the “shut sacs,” the humours of the eye, tears, mucus, &c. 3rd. For the straining off and outlet from the system of all substances whose retention would be injurious—all wasted, extraneous, or superfluous matters. These latter constitute the EXCRETIONS PROPER. The excretions are to be viewed as the living *waste-pipe-apparatus* for equalizing, as nearly as possible, the available amount of the body’s reparative materials to the degree of its wear and tear. The excreted products of the body, therefore, are, or should be, equal in amount to that of the solids and fluids ingested.\*

The DEPURATING PROCESS of animals is more essential to life than even nutrition. There is but one apparatus or system of organs, and that comparatively a small one, appointed for the elaboration of the food; but many and large are the instruments appropriated to the extrication—the *excretion*—of corporeal waste. The LUNGS, LIVER, and SKIN are set apart for the elimination of the effete or superfluous *carbon*. The KIDNEYS are the grand outlets for the decomposed *nitrogenous* matters, and the earthy and saline materials. Every other function may be suspended for a considerable time without involving life. We can live for weeks without food, or with the liver “locked up;” and several days with the functions of the kidneys annulled; but we can live only two or three hours with the skin coated over, and only a very few minutes with respiration suspended! HENCE IT IS CLEAR THAT THE INTEGRITY OF THE ELIMINATORY, OR DEPURATING, FUNCTIONS IS THE FIRST WANT OF ANIMAL LIFE—THE INDISPENSABLE CONDITION OF SOUND HEALTH. From the same facts, as well as from the immense extent and influence of the LUNGS and SKIN, it is very manifest that the *grand business of DEPURATION falls chiefly on these organs*.

\* A practical reflection here. A man, if he suspects his state of health, may thus summarily test it, take disease “by the forelock,” and save himself much after suffering, by simply asking, “Is my legitimate waste in labour or exercise equivalent to the quantity of good things I daily consume; and are there no *capillary obstructors* among those good things?” If the answer of conscience, or intelligence, or experience, as to these points, is unsatisfactory, then is his “*nick of time*” to diminish or cut off the supplies, and to hie him to the taking-down, swilling-out, and rinsing-off processes of the Turkish Bath.

“PRINCIPIIS OBSTA : sero medicina paratur,  
Cum mala per longas convaluere moras.”

How many valuable lives would thus be prolonged? How much invaliding prevented? How much medical practice superseded? Is the physician philanthropist enough to rejoice hereat!

The **EXCERNENT, OR DEPURATING, ACTIONS AND APPARATUS** of the living organism it behoves the lay-reader well to comprehend, if possible. In their philosophy lies the basis of all explanations of either the Theory or the Practice of the Healing Art. As elucidating this question, we must here devote a sentence or two to the subject of **CELLS**—the secret, retired, infinitesimal organisms, which are the true builders of all animated structure. Every vitalizing act commences in **CELLS**. Nutrition and secretion, growth and renovation, are but a series of *cell* operations! Fat is thus *excerned*, separated from the blood, in its little bags (**ADIPOSE TISSUE**). Glandular secretions are but the bursting and yielding up of the contents of the **CELLS** covering membranous surfaces, or lining the follicles and tubes of glands. The mucus, which coats the surface of the mucous membranes, is elaborated by *epithelium cells*. The *epidermis* (or scarf-skin) is but another form of these cells, their contents dried up and exfoliating. The cells are continually developed, cast off, and renewed from the germs supplied by the subjacent membrane. The **CELLS** of the intestinal **VILLI** (pile or tufts) select and separate from the contents of the alimentary canal the nutritious from the refuse matters. In like manner, the **CELLS** of the secreting tubes, follicles, or passages of a gland (as the liver, the kidneys, &c.), separate from the blood the effete matters it is its function to elaborate and discharge (as bile, water, &c.) **ORGANIZATION** is simply the appropriation thus of the nutrient compounds floating in the blood, and their combination in the proportions necessary to produce all the diversified “tissues” or structures of the body—here bone, there brain; here muscle, there mucus; here nerve, there vessels, &c. This organizing process is sometimes called **ASSIMILATION**—a vivifying or life-giving process; assimilation is literally making food *like to*, or part and parcel of, the tissues.

From all the above, it will be clear that the presence of any unassimilable matters in the blood—substances foreign to nutrition—as drugs and other poisons, miasms, the *ova of entozoa*, &c., or sheerly *the unremoved waste of the body*; in other words, **RETAINED EXCRETIONS**—will risk the development of abnormal tissues, or the deposit in structure of abnormal elements (*e.g.*, *hydatid sacs*, or *cistircirci cellulosi*). In this way worms are found in the brain, “flukes” in the liver, &c.; cancerous tumours are developed, and deposits of tubercle formed, &c. In the same way, we have to explain the local irritations, the pains, the functional disturbance of organs, the deteriorated nutrition, the decline of strength, and the constitutional suffering attending the course of certain diseases. **IN SHORT, THE ALTERATIONS IN THE BODY EFFECTED BY THE LOSS OF BALANCE BETWEEN THE FUNCTIONS OF NUTRITION AND DEPURATION—THE RETENTION, OR RETARDED ELIMINATION, OF THE PRODUCTS OF DECOMPOSITION—OR FOREIGN SUBSTANCES ACCIDENTALLY OR VOLUNTARILY INTRODUCED—LIE AT THE FOUNDATION OF MOST DISEASES, AND CONSTITUTE THEIR MOST PALPABLE MATERIAL CONDITIONS.** The mere reactions taking place between the solids and fluids of the body, *in channels where the circulation is barred* (*e.g.*, in congested viscera), suggests, even to the lay mind,

sufficient cause of deranged health, malaise, and misery. Imagine only half-an-inch of the finest hair—an eye-lash—dropped in among the machinery of a Geneva watch. The living organism is, beyond all comparison, more nice and complex, and, at least, not a whit less sensitive to disturbing causes !

HEALTHY BLOOD-MAKING DEPENDS INFINITELY MORE ON PERFECT DEPURATION—THAT IS, ON THE ACTIVE CONDITION OF THE EXCRETORY FUNCTIONS—THAN ON THE ABSTRACTLY NUTRITIVE QUALITIES OF THE FOOD. Whenever the body's *debris*, or the matters of its decomposition, are not duly excreted, a virtual and valid *materies morbi* remains to vitiate the process of recomposition. The functions of supply being impaired—the fountains of corporeal renewal being tainted—the *educts* and *products* of the assimilative process must be faulty. Bad materials can only furnish bad building. Hence the commencing loss of high *condition* whenever man comes materially to infringe the Hygienic laws ; when, for example, superfluous food and pernicious drinks combine, with the want of due activity of the LUNGS and SKIN (*i.e.*, with corporeal inaction), to derange the balance between waste and supply. Even the diet may be proper as to quantity and quality, and the alimentary canal may be kept “clean ;” but all will not avail to produce healthy blood or firm textures, so long as *the pulmonary and cutaneous safety-valves are obstructed or marred in their play*. Let me, however, here remark, so intimate are the connections and sympathies between the Skin, Lungs, Liver, and Bowels, that, under the circumstances described, it is impossible to keep the alimentary canal “clean,” even in the sense which leaves out of view the operations of digestion. Those who feed the best, in the popular acceptance of the term, are not the best nourished. An inferior aliment will be turned to good account—any ungenial substance it contains will be neutralized, strained, or *burnt off*, provided the air breathed, and the exercise taken, by the individual, be such as to keep up a highly active state of the grand eliminatory outlets of the body ; in other words, *provided the LUNGS and SKIN have the fullest scope for the performance of their appropriate functions*.

Here it falls into place to illustrate the effects of inactive DUPURATORY ORGANS, from sedentary habits, indolent repose, and luxurious indulgences of all sorts. The structure and functions of man show that he was not by any means intended to be a *sedentary animal*. Those who live the longest and enjoy the best health are invariably persons of active habits. *From the moment man becomes a civilized being, the DEPURATING PROCESS of his blood becomes less perfect ; in other words, the grand excretory functions of the SKIN, LUNGS, and LIVER are less completely exercised*. FROM THAT MOMENT, DISEASES OF VARIOUS TYPE AND CLASS, AND ONE LARGE CLASS IN PARTICULAR—TUBERCULAR DISEASES (SCROFULA AND CONSUMPTION)—BEGIN TO SHOW THEIR RAVAGES ON HIS FRAME. And the reason of this is very obvious. Man's habits and modes of life become then less conformable to the instinctive requirements of his constitution ; his exercise is less frequent or less natural—either unremitting or not at all ; his LUNGS are compelled to long periods of comparative inactivity ; and his

SKIN is equally diminished in function by loads of superfluous clothing, as well as made susceptible to every atmospheric variation by all sorts of "coddling" in warm rooms. By these and sundry other anti-hygienic influences, THE BLOOD OF THE CIVILIZED MAN IS INFINITELY LESS OXYGENATED THAN IT SHOULD BE. HE VOLUNTARILY DEBARS HIMSELF OF THE MEANS OF CARRYING OFF THE EFFETE MATTERS OF HIS BODY. When the LUNGS are imperfectly exercised it is impossible for the SKIN to be healthily active in its duties; for the two go together, co-functionate (if we may coin a word). Baths (of the old sort) and cleanliness were the best compensations the case admitted, But nothing—*save some such substitute as that now presented to the public in the shape of the Turkish Bath*—perfectly compensates the want of active exertion in a pure air; for nothing else can perfectly open, and keep open, the body's safety-valves, or secure the perfect elimination of the corporeal waste.

But the worst of the case of the locked-up excretions of the SKIN in particular is this—viz., *that the duty so shirked is thrown necessarily on the LUNGS, LIVER, KIDNEYS, OR BOWELS.* Hence, *nolens volens*, able or unable, the latter organs *are compelled to do double work!*—viz., to perform their own specific work, and to take up the superseded and suspended functions of the skin. For a time, the constitution gives no indication of the injury of this supplementary labour, or vicarious discharge of duty. But eventually, at "the turn of life"—at the critical age—in short, in the period of decline, the overtasked, overstrained organs, *knock under.* Nature tires, or gets deranged, in the unequal conflict. From this starting point, a chain of morbid causation gradually stretches its links round the organism, first impeding, then disabling function after function. The liver or kidneys utter their complaints with a voice that can neither be misinterpreted nor resisted. Congestion of the abdominal viscera is imminent, and blue pill is at a premium; or diuretics or cathartics are in demand. The heart, lungs, or brain, show open and manifest signs of congestion, at least of embarrassment and tardiness in their operations. The individual ages rapidly, His face is tallowy or jaundiced. He is the victim of sciatica, or TIC, or gout, or rheumatism. In short, from a primarily inactive SKIN, *aided by an over-active or over-stimulated stomach, and perhaps an over-worked or over-worried brain*, the sufferer becomes prematurely old and regularly broken down—a victim of disease too generally incurable, involving the principal organs—all the product of impaired general, and arrested local, circulation—congestion of vital structures—and, with this state of matters, retained excretions, and poisoned life-springs; all—all from the simple starting-point of UNDEPURATED BLOOD! A host of evils, therefore, in their beginning, perfectly subject to man's control, and within easy reach of remedy.

The most desolating, as the most universal, scourge of modern society, viz., TUBERCULAR DISEASE—has its origin IN IMPAIRED FUNCTIONS OF THE SKIN AND LUNGS! This is usually supposed to be purely and simply a disease of disordered nutrition. *And so it is in all its essential elements.* But the *fons mali* lies farther and deeper. Neither digestive

derangements, nor scanty nutrition ever, *per se*, generates this "foul fiend." Be it thoroughly well considered and remembered, it is only *when impaired nutrition, or bad blood-making*—whether from bad materials or bad stomach—*coincides with forced inaction of the pulmonary and cutaneous functions*—that is, with defective elimination of carbonic acid and lactic acid—that the dire blood-taint in question, and its *characteristic products*, are manifested. Multitudes of scrofulous and consumptive patients do not belong to the ill-fed classes, neither are they among the notoriously dyspeptic: or they only become dyspeptic in the advanced stages of the malady. On the other hand, it is a matter of familiar observation that your thorough-going dyspeptic—and his name is Legion—never becomes either scrofulous or phthisical. As a general rule, he is a being who lives very much for himself, and therefore with extreme care—one who encompasses himself with the comforts of life—who eschews excesses, and who has a care to breathe pure air—who takes much exercise, who bestows much pains on the condition of his skin, giving it every advantage of clothing, cleanliness, currying, suitable temperature in doors, &c. Besides, your gastric sufferer is usually a keen man of business, or an ardent devotee of literature and science, and is not devoid of much agreeable mental stimulation. *All these are conditions opposed to the inroads of tubercular disease!* But let the circumstances of the case be reversed—let the individual be ill-fed, ill-warmed, ill-housed, ill-clad, ill-ventilated—let him become the inmate perhaps of a cellar residence, or a prison cell, with *moral* as well as *physical* depression, low spirits, &c., to struggle with—and it will then be a miracle if he do not, sooner or later, exhibit some form of this exterminating disease. But the morbid change in question (*tuberculosis*) takes place, less *because* of the implication of the digestive organs, than because the lungs and skin have been condemned to comparative, if not absolute, inactivity. The very sighing of the disconsolate is an instinct to rouse the action of the lungs. In like manner the well-to-do classes, who have no material or ostensible miseries to borrow the disease from, equally succumb, when blighted affections, grief, bereavements, disappointments, &c., deaden both heart and head; paralyzing, in a sort, the SKIN, and LUNGS, and LIVER—if not limbs also. *In short, any one may become the mark and victim of tubercular disease, when, together with causes impairing the general health, THE ACTIVE PLAY OF THE SKIN AND LUNGS IS IMPEDED, from any circumstances whatever.* The most potent of these are checked perspiration, or unguarded exposures in variable climates, over-clothing as much as under-clothing of the skin, stooping posture, or confinement of chest by ligature or stays, the influence of absorbing passions, &c.; and most of all (in the highly-favoured classes who should otherwise escape the disease) inflammations, which congest or consolidate portions of the pulmonary tissues, and the treatment of which, as *hitherto managed*, entails weeks of wearisome confinement to the sick room; too often in the olden time the poisoning of the system, and the ruining of the digestive organs, by the excessive

use of drugs ; bleeding, blistering, low diet, and depletants, together with the depression of the vital powers by every other anti-Hygienic influence.\* We shall give for the present the apposite case of the monkeys in the Zoological Gardens of London, not a great many years ago. An elegant room was built for them. Every attention was paid as respects the quantity and quality of food. But one thing was wanting—*ventilation was entirely neglected!* In short, the functions of the SKIN and LUNGS were ignored. The consequence was, *they all died of tubercular disease* within a very short time.

In conclusion of this part of our subject, we believe it may be laid down as an irrefragable truth, viz., THAT NO ONE WITH PERFECTLY ACTING LUNGS AND SKIN BECOMES TUBERCULOUS ; OR BEING TUBERCULOUS, LONG REMAINS WITHOUT THE ARREST OF THE RAVAGES OF THE DISEASE.

LACTIC ACID is one of the products of the decomposition of the tissues, and finds its chief outlet by the skin. When the cutaneous function is impaired—(and this impairment, we contend, is an integral part of tubercular disease)—the elimination of the lactic acid is attempted by other outlets, chiefly by the bowels. Hence the prevailing acidity of the intestinal canal in scrofula and phthisis remarked by all who have investigated that point. Hence the partial and temporary benefit of alkaline remedies in those diseases. This acidity of the *primæ viæ*, and the derangements of the alimentary canal associated with it, are most common in infants and children. Hence their greater tendency to manifest the mesenteric forms of scrofula.

We challenge refutation of this position, viz., that IMPERFECT BLOOD DEPURATION (*i.e.*, defective play of the LUNGS and SKIN) and not directly bad digestion, or faulty blood-making, is the primary source of the vitiation of the solids and fluids characteristic of scrofula and consumption. A careful analysis of all the phenomena, and an extensive generalization of the best ascertained facts regarding the causation of these diseases, can lead the honest and dispassionate inquirer to no other conclusion. For our own part we have devoted many long years to this research. The solemn and unalterable conviction of our understanding we have now uttered—and fearlessly, as becomes a truth-seeker. The foregoing observations, therefore, are a high plea, if they do not constitute an unanswerable argument, for the Turkish Bath to be established among us, co-extensively with the evils it is designed and fitted to grapple with.

Let us explain as briefly as possible the mischievous effects on NUTRITION of impairment of the functions of the lungs and skin—*i.e.*, of the want of adequate supplies of OXYGEN to combine with the CARBONACEOUS waste of the body, and to effect its elimination from the system. This point of view will exalt the utility of the Turkish Bath more highly in our estimation than aught else. We have already shewn that oxygen is the first want of the animal economy—a want of infinitely more importance than even food ; inasmuch as the products of decomposition demand

\* I shall illustrate all this another day in my medical histories of some distinguished victims of consumption.

abstraction and exit, *momentarily* as they are formed. Now, as the food contains large supplies of this most indispensable element (oxygen), is it a very violent supposition, or a very improbable hypothesis, its reception failing by the *lungs and skin*, that the economy in its pressing want of oxygen *borrow*s from this source of supply—albeit at too dear an interest? or, as LIEBIG would express it, *converts the elements of nutrition into elements of respiration!* What more likely resource; what more natural; what easier; what more at hand; than when the food is decomposed in the process of digestion, and its elements set free, that a *portion of the oxygen of the fatty and albuminous matters should be abstracted to supplement the deficit of that introduced by the lungs and skin?* In this way, a radical vitiation of the alimentary principles would be effected—thereby disabling them for perfect nutrition, precisely to the extent to which they had been robbed of oxygen. The tissues formed from this faulty material would, of course, be defective, or diseased, in a corresponding ratio. This deteriorated albumen *we know* presents in the case of tubercular subjects. It will not FIBRILLATE like the albumen of healthy blood. *It assumes, instead, a granular, amorphous form*—a form unfit for the nutrition of the tissues. Chemistry will perhaps tell us one day what precise things has taken place in the atomic constitution of this deteriorated albumen. Is it a very far-fetched and unlikely conjecture, *that it has parted with some atoms of its oxygen* FOR INDISPENSABLE DEPURATION? in other words, to diminish the evils of an excess of uneliminated carbon in the system? Are we assuming too much in calling it DEOXYDATED ALBUMEN? But we are fortunately not left in the same uncertainty as to the results to THE OILY PRINCIPLE of the loss of a portion of its oxygen. Chemistry even defines and gives a name to this deoxydated oil. It is a CHOLESTERINE—a form utterly unfit for nutrition. *It abounds in tubercle!* This we should expect. The liver is the appointed organ for eliminating the excess of fatty matters in the system. Cholesterine is a constituent of bile. When in excess in the economy, we have of course FATTY LIVER. *Now this fatty liver is peculiarly and pre-eminently the lesion of consumptive subjects.* The fat and oils of their diet go into the stomach sound. Here we find them in a degraded shape; *i.e.*, largely divested of their oxygen. What greater proof could we have of the principle we seek to establish, *viz.*, that oxygen failing by the skin and lungs, Nature, in her dire extremity, when perfectly non-plussed, *robs the food of it*—as it were, preferring that the machine be kept in play at any hazard and expense, rather than to come to a stand at once—that the patient die slowly and gradually rather than suddenly. Need we wonder that blood-globules made of such deoxydated materials are of *low* vital properties, and that in proportion as the system is compelled to use this faulty material a progressive deterioration of the whole solids and fluids of the body takes place—to an extent, in the long-run, utterly incompatible with the functions of life?

This which affords, for the first time, the true *rationale* of fatty liver, for the first time also yields the explanation, at once of the emaciation characteristic of tubercular disease, and also of the efficacy of cod-liver oil

in checking that emaciation, and mitigating the symptoms. By virtue of disabled lungs and sluggish skin, vitiated air, faulty posture of body, ligatures of waist, sedentary habits, close confinement in unwholesome chambers, breathing live-long nights an atmosphere unrenewed, and doubly tainted by the mephitic exhalations of bed, &c., &c.—oxygen having become an imperious want in the economy, not only is the food robbed of a quota of its oxygen, but the available fatty tissues of the body are laid under contribution. *Nature has, in fact, deposited fat in its areolar beds for the purpose of supplying the necessary oxygen during seasons of inactivity of the respiratory organs and skin.* Instance, point-blank, hybernating animals, who commence the winter fat and awake lean! The same is the source of the waste in phthisis. Cod-liver oil, by presenting a large store-house of oxygenous supply, *saves the adipose tissues*, and so far is an invaluable nutrient element.\*

Finally, on this branch of our subject. No *undemonstrable* or as yet undemonstrated truth is clearer (to my own mind at least) than this, viz., THAT THE AVAILABLE OXYGEN OF THE FOOD IS CONVERTED INTO AN ELEMENT OF RESPIRATION OR DEPURATION WHENEVER SUFFICIENT OXYGEN FOR THE PURPOSE IS NOT FORTHCOMING BY THE INLET OF THE LUNGS AND SKIN, OR SUFFICIENT CARBON NOT ELIMINATED BY THE SAME OUTLETS. Here, then, is a grand impairer of nutrition—a NEW, and yet very old FACTOR OF DISEASE, introduced to the notice of the profession! Is this not tracking to his lair a fell destroyer of the human race, who has long lain in ambush?

The practical views now suggested in connection with the Turkish Bath, when pushed to their legitimate consequences, will operate, we believe, a great revolution one day in medical treatment; and will influence for good the destinies of thousands of unborn generations! I challenge my respected medical brethren to refute the distinct proposition I lay down on this head, viz., DEFICIENT OXYDATION OF THE WASTE OF THE BODY LIES AT THE FOUNDATION OF MOST DISEASES—AN EVIL AGGRAVATED IN CHRONIC DISEASE, BY THE ATTEMPTS OF THE SYSTEM TO COMPENSATE THIS DEFECT BY ABSTRACTING OXYGEN FROM THE FOOD!

Disprove this allegation who can?† Beyond all question, this infra-

\* I answer two objections here: 1st., Why is the oxygen of the oil and albumen robbed, which have so small quantities of it to spare, compared with the starchy and saccharine principles of the food which abound in oxygen? I reply that the oxygen is not readily get-at-able in the food in question, because they are *hydrates of carbon*—i.e., combinations of water and carbon, which water would require to be decomposed before its oxygen was available. Now we have no proof that water is ever either formed or decomposed in the body. *But the oxygen of the oil and albumen is more easily separated.* Hence these principles suffer the robbery of it, and the consequent deterioration of their properties as nutrient principles. OBJECTION SECOND: Is not your destination of food antagonistic to Liebig's theory of heat-forming and blood-forming elements? I admit that it is; and I am prepared to prove, moreover, that Liebig's theory of animal heat and of the destination of food is open to fatal objections, which cannot be entered upon here. We give one example: If carbonaceous foods were solely or chiefly for respiratory purposes, what becomes of the highly carbonaceous rice and ghee diet of the Hindoo, living often in a temperature above that of his body? How is this carbon burnt off without burning him up? Liebig's theory totally fails to explain these points. How is rice and ghee incapable of sustaining an Equimaux? Suffice it, then, to state my convictions, that every chemical research instituted will only confirm my position that the oxygen of the fat of tubercular patients is appropriated as I allege it to be; *that superfluous quantities of the oil and albumen of the food of such patients are laid under contribution—are decrydised for depurating purposes, in the defect of the perfect duty of the lungs and skin.*

† My "party"—the "party" of the Turkish Bath—will doubtless challenge the profession to



oxydation is the starting-point of gout, of rheumatism, of diabetes, of granular kidney, of fatty degeneration, of many forms of fever, and of some others of our gravest diseases. If so, what is pointed out as the cure of this state of matters? Less trust to mere drugs unquestionably; *and more attention to open, and keep open, the body's safety-valves!* This can always be done by the simplest natural agency. It would argue little wisdom and less benevolence in the All-wise and All-merciful Designer and Maker of all things, if we were obliged to go to the wilds of Peru for a remedy to a disease caught on the banks of the Thames, or in the meadows of the Severn! But fortunately for mortals, the "bane and antidote lie both before them." If I were asked to give a brief and distinctive definition of the Turkish Bath, I would say, *It is that which claims the exclusive or pre-eminent power of physiologically opening the safety valves of the living mechanism; or, in other words, developing a high activity of the depurating economy of the animal body; and so fulfilling the first GRAND INDICATION FOR THE CURE OF ALL DISEASES.* If wielded by courageous and skilled hands, no artificial, or medicinal system will be able to compete with it, either as respects the *quantity* or *quality* of its cures. How precisely adapted it is to arrest the ravages of scrofula and consumption, all theory now declares—if facts failed to speak. And we do anticipate and PREDICT an immense decline in the prevalence and mortality of these maladies from the time of the general establishment and patronage of the Turkish Bath among the Western peoples—now their greatest victims. Among the Eastern nations who use the bath this desolator of European hearths is almost unknown! *Ecce omen.*

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## CHAPTER II.

### THE AGENTS OF DEPURATION; OR THE EXCRETORY APPARATUS OF THE BODY.

THE whole body may be considered, in one point of view, as a grand excretory apparatus. The Lungs, the Skin, the Liver, the Kidneys, and the Bowels, are but the more prominent organs for the elimination and outlet of the superfluous, wasted, or noxious materials of the system. The first three only of these constitute the subject matter of the present exposition—giving simply so much of their anatomy and physiology as is necessary to the explanation of their functions. We begin with

1st. THE LUNGS. On this function all that is relevant or demanded for our popular treatise may be comprised in a very few lines; and the briefer the more desirable, because we have much to say on the SKIN and this disproof—to invalidate or substantiate my position. So important is the question practically, so much will the truth of this view advance the cause of the Turkish Bath, that I entertain strong hope that some rich partizan will make it the subject of a Prize Essay for German, French, or British chemists to decide.

LIVER—organs much more under our control, and, therefore, more subject to abuse.

The largest product of the waste or transformation of the structures of the body is CARBON. This is indicated by the dark colour of the blood returning from the rounds of the circulation—exhausted, devitalized, and loaded with the impurities of the body's decomposition, as well as with much of the refuse of the materials of recomposition, chiefly carbonaceous. The Divine Architect of our frames has taken corresponding precautions for its excretion or throwing out. The apparatus provided to this end is at once the simplest and the most comprehensive. The exclusive requisite is a membrane that shall admit the *diffusion of gases*; in other words, that shall expose the blood to the influence of the atmospheric air. This is all that is necessary to the outlet of the most poisonous elements of decay, and to the entrance of the supreme principles of vitalization. To purify is thus synonymous with to vivify. The air-cells of the lungs and the pores of the skin, are respectively the great contrivances for this purpose. It is the function of the lungs and of the skin to fulfil this conjoint office. Aëration of the blood is thus the first essential of life. Remove a fish from the water, and the gill-plates—its lungs—dry and cohere. Aëration of the blood is impossible. The fish necessarily dies. In the earth-worm, leech, and other animals far down in the scale, there is nothing of the strict nature of lungs and gills; but other equally efficient means (for them) of aërating the blood are adopted. The change from venous to arterial blood is effected in small sacs, or vesicles, usually placed in pairs along the back, and opening upon the surface of the body by means of pores in the skin, called *spiracula*, *i.e.*, breathing tubes. Close these spiracles, and you as effectually kill the animal, as by drying the gills you kill a fish, or, by obstructing a man's windpipe, you "stop his vitals." In the earth-worm there are no fewer than 120 of these minute external openings between the segments of the body. In the leech they are only sixteen on each side.

Throughout the whole animal kingdom there is an intimate relation between the energy of the vital functions and the activity of the respiratory apparatus. In cold-blooded reptiles, as the frog, respiration is reduced to the very minimum; the vital functions are correspondingly low and languid. In insects on the contrary, there is a large provision made for breathing. In them we find vital action excessive—even vehement. The common fly is reckoned to move its wings a thousand times in a second! Witness the activity of a hive of angry bees, of hungry or thrifty ants, and the large amount of heat they evolve! The quantity of oxygen they consume far exceeds, relatively to their size and weight, the proportion of any other living creature. In the animals at the other—the high—end of the scale, the blood is aërated by a minute capillary network of vessels spread on the walls of the pulmonary vesicles or cells. In man, it is calculated that 1,800 of these bladder-like dilatations are grouped around the extremity of each air-tube—making in all some 600 millions. The larger of these tubes possess muscular fibres, are hence contractile, and

therefore liable to spasms. Thus originates one form of asthma. The average amount of carbon given off from the lungs of an adult is about half-a-pound per diem.

THE EXHALATION FROM THE VAST PULMONARY SURFACE IS A FAR GREATER AGENT IN THE CIRCULATION OF THE BLOOD THROUGH THE LUNGS THAN THE PROPULSIVE POWER OF THE HEART. This is incontrovertible—and this fact alone speaks volumes in favour of the Turkish Bath.

2nd. THE SKIN. It is a low, incorrect, and unworthy view of this grand organ to regard it only and simply as a protective covering to the body. It is in truth much more—a living, sensitive, breathing, exhaling, absorbing, excreting, eliminating membrane of exquisite structure and endowments. Herein many of the prime operations of life take place. The skin may truly be called a great appendage to the heart and lungs—being an equal co-worker with them in the circulation of the blood. It does for the larger or *systemic* capillary circulation what the lungs do for the smaller or *pulmonary* circulation. It not only rids the blood of its carbon and supplies it with oxygen, *but regulates its density*—evaporating its watery constituents. The skin is at once the grand DRYING, DRAINING, and VENTILATING apparatus of the body. It is in itself an universally expanded lung, kidney, liver, heart, and bowels! It is the greatest medium of nervous and vascular expansion, and, therefore, the seat of thrilling sensibilities, and exquisite tactile endowments. Altogether, the skin is an admirable piece of Design—illustrating alike the Wisdom and the Goodness of the Supreme Architect. On the sound condition of this organ, as much as, if not more than that of any other, depends the comfortable working of the living machinery. Its sympathies are intimate and universal with every suffering member. On it are reflected *their* ailments; and *its* derangements, in turn, are sure materially to modify for the worse the play of the interior apparatus. Herein is apparent how potent, not to say how safe, a battery the skin presents for the reduction of disease. In fact, many acute maladies select the skin as it were the common sewer for the running off of morbid elements which have accumulated in the system; and which no over action of the bowels or kidneys by drugs has been of avail to eliminate. We speak of the *sweating-crisis* in fevers, for example.

The effect of leeches and blisters, and hydropathic fomentations and compresses, illustrates further the powerful sympathies of the surface with the textures and organs seated below. Every body knows how in small pox, scarlet fever, and other eruptive diseases, *the battle is won or lost on the field of the skin*, according as its safety-valve-functions rise or fall. If the interior irritation can be safely transferred to, and retained on, the surface—all is well with the patient. Do we want a ready test of the state of health of any man, or woman, or child, yea, even of our horses or oxen? We narrowly examine the skin! Its hues and its gloss, its roughness or its wrinkles, its sallowness or its pimples, speak a language the wise and experienced well comprehend.

The skin is the greatest excernent organ—the principal outlet of the

body. It is a complete web of nerves and blood vessels; its thickly studded pores constitute the vastest system of corporeal drainage. Four times more matter is carried out of the body by the cutaneous surface every day, than by the alimentary canal. Costiveness or constipation of the skin, *i.e.*, constriction of its pores—a locked-up state of its exudations or exhalations—is, therefore, a much more serious affair than the same condition of the bowels. The latter may be “bound” with tolerable impunity for a week. A few hours arrested function in the case of the former may produce the most deadly symptoms; and if it were possible to seal up all the pores of the skin *at once*, as by an impermeable varnish, the individual would die in a few minutes! This accident nearly happened to a famous pugilist some time ago at the Royal Academy, where it was sought to take a cast of him *en masse*. We can now easily explain the sudden death of the boy who, at the rejoicings on the accession of Leo X. to the papal chair, *was gilt all over*, to impersonate the age of gold!

The skin and the mucous membranes, or the inner and outer linings of the body, may be called and considered almost identical structures. Their functions are reciprocal—indeed substitutionary and convertible. Hence the intimate alliance for weal or for woe—the profound sympathies—existing between them, and their sensitiveness to take on and resent each others ails and aches. They are the great highways of traffic with the world without, and the vital domain within. Through them must pass *in* all the elements of corporeal reconstruction—the vivifying atmosphere and electricity—the pure *ether* of God’s firmanent around us—the nutrient elements, or food and drink, with salts, alkalis, earths, metals, &c. Through the same membranes pass *out* the corporeal sewage, *debris*, or waste—all that has served the purpose of the animal economy. The obstructed functions of one or other of these inner and outer investments of the body, originates the largest number of Acute Diseases; as in their permanent derangement lies the greatest source of inveterate Chronic Ailments. If we want thoroughly to purify the blood, permanently to increase the temperature, to enhance the reactive powers—to induce, in short, a radical renovation of the entire man, we must address ourselves *to exalt the functions of the skin!* In one grand point, however, these co-related organs differ—they borrow their chief nerves from different sources. These of the mucous membranes are *nerves of organic life*, and depend for their energy on the spinal GANGLIA, or centres of vegetative or automatic action. The sensitive nerves of the skin, on the contrary, belong to the domain of *animal life*, and derive their origin from the *cerebro-spinal* centres. But the organic nerves are here interspersed also for the purposes of nutrition, and for the absorbent and exhalant functions of the skin. These nervous connexions explain the exquisite morbid and healthy sensibilities of the skin and mucous membranes; as well as their intimate sympathies with each other, and with the centres of vitality—the brain and spinal marrow, the heart, the lungs, the viscera of the abdomen, &c. In this way all morbid impressions are transmitted from without inwards.

By the same mechanism, the cutaneous functions in their turn become deranged by sympathy with every internal irritation; according to the extent and intensity of the interior derangement, or visceral disorder, is the healthy action of the skin marred or prevented; becoming, in turn and reciprocally, a source of aggravation to the internal malady. All digestive derangements, for example, tell upon the skin; and conversely, all cutaneous disturbance *tells* upon the digestive organs.

The texture of the skin is divisible into three principal layers: 1st, the outer scarf-skin, or EPIDERMIS—a simple exudation and drying up of cells or scales, in a pavement fashion, pushed upwards from the *dermis chorium*, or true skin, below. The scurf of the head is an illustration of the epidermic scales. It is a truly *excrementitious* membrane, and may not inaptly be deemed and designated a sort of *protection-varnish* to the vasculo-nervous web below. But as it is constantly generated, it is not a coating *intended long to be retained!* Like all the other structures it is of CELL-formation. Possessed of independent, inherent power of life and growth, each cell draws to itself the fluid residuum of the colourless part of the blood, and secretes a horny matter. These cells lie layer upon layer constituting a sort of mosaic flooring. As the deeper layers are gradually pushed onwards and become superficial, their fluid portion evaporates, and they are converted into dry, flat, extremely thin, and dense scales. The abnormal accumulation of these scales is seen in many cutaneous diseases. Now it is easy to conceive how a dense compact varnish of this sort, when accumulated beyond measure—when not periodically removed—when encrusted moreover with dirt—obstructs the vent of the pores; not even admitting the tiling or layers of scales to act as a valve, and rise with the pressure of fluid from below. In the same way it is apparent how, by soaking and scrubbing, we improve the *permeability* of the skin, and, therefore, increase its fitness both for exhalation and absorption. This horny surface-skin is principally dried albumen, with unctuous matters. Alkalis combine with these and constitute a soap or detergent. Hence the universal use of a combination of alkalis with oil for washing purposes. 2nd, the *dermis* or skin proper, or *chorium*, is an elastic network of fine fibres or strands firmly interwoven. In the meshes of these are enclosed little bags of fat—cushions you may truly term them—a regular padding, as it were, provided by the Supreme Architect, to enable the skin to resist the compressions and contusions it is daily exposed to, as well as to fill up any irregularities of the surface. These elastic cushions, with admirable foresight and benevolence, are made to abound in the soles of the feet and palms of the hands! 3rd, between the upper surface of the true skin and the scarf-skin, is a separate and distinct layer of blood vessels, and nerves heaved up into little conical eminences, like tufts, or the pile of plush. They are called *papillæ*. Hence this fine sensitive nervo-vascular web is called the papillary layer. The colour of the skin depends on the quality and quantity of the blood in these vessels. The circulation of those of the head, face, and neck, is much under the control of the nervous system, as is manifested in the opposite effects of fear or shame. The retention of

the blood in these little vessels gives the mottled livid hue of the skin when chilled, and what is familiarly known as *goose-skin*—the *gorged tufts*!

Inflammation of the skin consists in persistent gorging and retardation of the blood in these *papillæ*. The PORES of the skin are minute tubes about a-quarter-of-an-inch long, and of a spiral course. A coil of this tube constitutes the perspiratory gland. On the lines of the palms of the hands and soles of the feet these pores present visible dots, 3,000 to the square inch, equivalent to seventy feet of drainage-pipe on every square inch of the body. If all the pores were joined end to end they would form a tube twenty-eight miles long! Conceive, then the results of checked perspiration—but a few miles of this sewage-way blocked up. Yet such obstruction is more or less the characteristic of most chronic and acute diseases. In these cases the excreting functions of the skin are more or less at fault. It is either scurfy, dry, and burning, as in certain fevers and inflammations; or it is pale and dead, and parchment-like, as in long-standing digestive derangements. To compensate this interrupted function of the skin, the liver, the lungs, the kidneys, or the bowels, assume often a vicarious or supplementary activity—a sort of double safety-valve work. Under this double duty they are very apt to break down—being then unfitted either for their own or their supernumerary functions. Hence the gravest diseases are engendered. Here drugs are but too often a powerless resource, because a fund of life, hard to replenish, has been drawn upon, which only the *organic energies*, by repose, and diet, and regimen, bathing, and perspiration, &c.—all judiciously handled—can gradually restore. Hence the virtue of the Turkish Bath.

The amount of visible perspiration, as every one knows, varies with the exertion undergone, and the heat of the weather. The insensible perspiration, however, or the vapour exhaled from the skin, is a more uniform quantity—averaging from two to two-and-a-quarter pounds per diem.\*

From all this shewing, then, of the nature and functions of the skin, it will at once appear how pre-eminently fitted it is, if not intended, to be the battle-ground of the physician in his conflict with disease: 1st, from its being the seat of thrilling sensibilities—as, in a sort, an electric surface—it is the great medium of transmitting soothing, or stimulating impressions to the brain and spinal cord, on the one hand, and to the viscera of the chest and abdomen on the other. The nerves may well be compared to a system of infinite connecting wires, or telegraph-lines, along which intimations of every kind are transmitted to the extremities,

\* The skin abounds in oil glands and tubes, analagous to the perspiratory. The unctuous secretion takes place most manifestly on the shoulders, on the face and nose, along the ridge of the eyelids, in the ear passages, and the roots of the hairy scalp. This oily product is sometimes arrested in its minute secretory tubes when the skin is either torpid or inflamed. The contents become solidified and impacted in the tubes. The projecting points get blackened with dirt or dust. When the tube is forcibly emptied an animalcule resembling a wood-louse is found embedded in the little worm-like mould of the tube. The disease is called *acne*; vulgarly, "grog-blossoms." The uses of this oily matter are evidently to lubricate the skin, to impede its too rapid evaporation, to neutralize the soaking relaxing effect of moisture, and to protect it against acrid substances. In the eyelids it evidently serves the purposes of a gutter, or caves, to confine the tears and moisture of the eye. It keeps the cartilaginous cavities of the nose soft, and, with the hairs, serves to repel the intrusion of insects.

and all intermediate parts, and back again from the extremities, &c., to the centres, of power. 2nd, from its immense superficies—constituting it the largest drain or waste pipe of the body. 3rd, and lastly, from its being an organ both everywhere patent to observation, and capable, without injury, of standing a little rough treatment when necessary.

But a still more interesting point of view of the functions of the SKIN, than even anything embraced in these comprehensive details—remains now to be developed. DEPURATION, of which (as we have seen) it is a principal organ, is very grand work, and takes the precedence even of nutrition in the rank of importance to life. But the highest, the first, the most indispensable function of animals, the skin shares in common with the heart and lungs. It justly boasts to be a coadjutor with them in the prime faculty of CIRCULATING THE BLOOD. *Without cutaneous exhalation, there could be no motion of the fluids!* The vital current would come to an almost instantaneous stand. So that, however great our admiration may be of the economy of the SKIN, as the chief eliminator of the carbon and lactic acid of the system, our ideas of its supreme utility and importance will rise still higher, when we view it as an organ quite as essential as either the heart or lungs to the circulation of the blood! This is a point of view many are not prepared for. Nevertheless it is the truth. It is ground that, so far as we know, has not yet been occupied by the expounders of this “Oriental question:” and it is, moreover, ground that is decisive. On this alone the whole merits of the Turkish Bath may be safely based. Its partizans need seek no other. Herein alone rests its all-sufficient defence.

Some of the facts on which the true philosophy of the Turkish Bath is based may be easily comprehended, and very briefly summed up.

The blood, as is well understood, describes a twofold circuit in the body. 1st, that through the lungs; 2nd, that through the general system. The heart, a double organ, and as a great force-pump for each circle, is placed at the junction between the two. But, mark well, the propulsive power, or force-pump function, of the heart, extends only a comparatively small way in the route the blood has to travel, *i.e.*, only through the more capacious trunks, and palpable vessels. When we come to the CAPILLARY CIRCULATION (which is by far the greater moiety of the whole) we find *supplementary local forces* invoked to aid the transit of the vital fluid. We say nothing here of the alleged influence of the ganglionic nerves—of the contractile power of the capillaries—of the affinities and reactions existing between the vessels and their contents. These may be good hypotheses, but they are not *demonstrable* agents. The grand motor-power we have now to introduce, *viz.*, CUTANEOUS AND PULMONARY TRANSPIRATION, is demonstrable and point blank. There is an exact analogy and co-relation between the functions of the leaf in plants, and those of the skin and lungs of animals. [The lungs may be likened to an extended inward skin, rolled up into folds or convolutions, *honeycomb-wise*, for the purpose of close-packing.] Now the force, or influence, which promotes the ascent of the sap in plants, *viz.*, the

exhalation from the leaf—is one identical physical principle with that which determines the motion of the fluids of the body towards the exterior, viz., the transpiration from the skin and lungs. *All liquids in connection with an evaporating membrane, acquire motion towards that membrane.* In other words, evaporation from living surfaces, or even from dead membranes in contact with liquids, causes the fluids to rise in the capillaries—thus producing motion or determination from behind, *i.e., from within towards the surface.* *The amount of motion is directly proportionate to the rapidity of evaporation ; i.e.,* stands in a fixed relation to the temperature and moisture, or dryness of the atmosphere. Capillary attraction fills the vessels, but it does not cause the fluids to rise. The motion of the fluids belongs to, or is derivable from, the evaporating surface. The immense transpiration constantly going on, in the state of health, from the large exhalant surface of the skin and lungs, produce a virtual vacuum within the capillary tubes whence the fluid or vapour is oozing. By the external pressure of the atmosphere ; and in the case of the lungs, by the vacuum created at each expiration, the fluids are forced, or rather drawn, into the superficial vessels. In this way, the blood acquires a decided movement, and determination to the surface. This *vis ab extra* is no doubt aided by the other powers concerned in the circulation ; as the contraction of the capillaries, the chemico-vital actions taking place in their extremities, &c., &c.

From all this it will be very apparent how the suppression of transpiration (as by improper exposure to chills and draughts, when the skin is unfortified or bathed in sweat, or by states of the atmosphere in which moisture and heat or cold coincide, and, therefore, the conditions of evaporation fail) is followed, as a necessary consequence, by a check of this outward movement of the fluids. A primary essential of health, if not of life, is thus interfered with. If the power of vital resistance be not strong, or if, at the same time, the body be diseased and weakened, then occur sanguineous arrest or stagnation—congestions of vital organs ; and, in the same proportion, impairment of vital functions. The lay-reader will not marvel at the fatality of lung diseases—chronic or acute—when he reflects that the lungs are a great rolled up inner skin,\* with tubes, like the branches and twigs of a tree, penetrating in all directions through that rolled up mass—a true congeries of cells to convey the air to its hidden surfaces and convolutions. Bronchitis coats over the lining of this branching air-tube with a viscid phlegm. Pneumonia solidifies the porous mass of cells, which constitutes, as it were, the leaves of this imaginary tree. Apoplexy floods this whole structure with blood. Tubercle compacts and hardens the mass. It is a concretion in its effect equivalent to sealing up or obstructing the pores of

\* Imagine a great net of the finest texture and material, some fifty yards of blond for example, with a minute but very distinct bladder filling up each mesh, and all this rolled up into the size and shape of a sugar loaf ; but from the apex or cone (the point) proceeds a tube with dividing branches and twigs, precisely like those of a tree, penetrating the congeries of cells and blood vessels in all directions, to convey the air to its every convolution, and to its inmost recesses. This gives you a perfect idea—if a rough one—of the lungs.



the skin *with a close crop of warts!* In such a state of affairs how can transpiration take place? What becomes of the functions of the lungs thus beset? Imagine a large patch of these supposed warts ulcerating, and bleeding, and coalescing into a *seething crater* of corruption, and the general disturbance and local desolation that will emanate from this morbid centre. There you have the essence of consumption—what may be called, after this figure of speech, the Etna or Vesuvius, of the living man, rather say of the dying man! Even, without a figure, we talk of pulmonary *caverns*.

No fact, then, we think, can be established more clearly than this—*viz.*, THAT WHATEVER IMPEDES EXHALATION FROM THE CUTANEOUS SURFACE, OR FROM THE AIR-CELLS OF THE LUNGS, STAGNATES THE CIRCULATION OF THE BLOOD IN THE INTERIOR ORGANS. If the stoppage of the exhalation be complete, the arrest of the circulation is entire and sudden. Death, with coldness and shivering ensues. Hence we find that coating over a rabbit with pitch (by preventing exhalation, and, therefore, the circulation and oxygenation of the blood) rapidly diminishes its heat; in fact, asphyxates it. The rabbit so treated dies in a shivering fit!

We have another beautiful illustration of this doctrine of suppressed transpiration in the phenomena of EPIDEMIC CHOLERA. Whatever be the noxious agent, or miasm, that causes the disease, one thing is very certain, *viz.*, that it operates to annul or paralyse at once both pulmonary and cutaneous exhalation. Hence the Turkish Bath, early had recourse to, would be the cure, *par excellence*, as it cuts short the cold stage of ague. The stifling old fashioned vapour and hot-air baths, *under the bed-clothes*, failed; because what was wanted was PURE HOT OXYGEN, and the lungs to have their due share of it. The essential of cholera is the draining away of the watery portion of the blood by the exhalant surface of the bowels! What remains is so much clot—or tar-like residuum that cannot circulate. The lungs are useless, and the skin dead. TRANSPARATION IS ABOLISHED. Oxygenation is impossible. *The living furnace won't draw!* The carbon cannot be burnt off. Animal heat cannot be elaborated. Hence the deathly coldness and blue skin characterizing the disease, from the entirely venous nature of the contents of the vessels. When things have come to this pass, the vitality of the blood is reduced to the lowest ebb. Hence the simple chemical affinities gain the ascendant over the vital. The serum of the blood separates from the fibrine, and the channel of its outlet once being opened from the congested intestinal membrane (where the blood has retreated on being driven from the surface) there is nothing in the unaided powers of the constitution to stop the drain of vitality. The salts of the serum, indeed, *operate as a cathartic* to each exhalant tube! The drain goes on so long as there is any serum to drain away. The primary conditions of life fail—the organic powers are brought to a stand. The system sinks defeated in an unequal contest.\*

\* Yet even in this, the body's direst extremity, if the patient has not been already poisoned by the remedies, or if the constitution has not been impaired by excesses, or by chronic visceral irritation (as from drugging and dram-drinking), genial nature will usually come to the rescue. The vomiting and purging will stop from sheer exhaustion—from there being no more serum to drain away. The

But the evil of checked transpiration, does not lie solely in the visceral congestions so produced ; but there is, moreover, the arrest of the chemico-vital changes ever operating, both on the surface and in the interior of the body. Perspiration, for example, contains, as we have already remarked, lactic acid, and the lactates of soda and ammonia—the products of the decay of the muscular tissues in which this acid abounds. During muscular exertion these products are largely evolved. Hence, if perspiration be checked under such circumstances by prolonged cold, or chill, then these decomposed materials are retained in the blood, or forced to be eliminated by the vicarious duty of other organs. This is the fountain and origin of rheumatism, gout, diseases of the kidneys and skin, erysipelas, fevers, inflammations, &c. Hence we see how the blood becomes doubly tainted, doubly charged with abnormal elements. The oppressed excretory organs are far from being up to the mark of their own respective functions, let alone performing supernumerary duty. Digestion and assimilation are weakened in the same proportion. Herein is a new and independent source of the direct generation of morbid products. Thus is the *melee* of the suffering organism thickened, and confusion gets worse confounded.

3rd. THE LIVER. As this is a GREAT DECARBONIZING ORGAN supplementary to the skin and lungs, and one influenced powerfully by the Turkish Bath, its function falls necessarily for review in this place. Situated midway between the apparatus of supply, and the organs of distribution, it acts as a reservoir of carbon, and a *diverticulum* from the heart and lungs—straining off, before it reaches these organs, the surplusage of carbon, brought by the *mesenteric veins*, directly from the alimentary canal. But the liver does something more than rid the system, *at first hand*, of superfluous carbon. *The bile is more than an excrementitious fluid.* Before being ejected, it is turned to account for the purposes of digestion. Thus is the liver wisely ordained to economise

very collapse that follows gives the organism time to rally—to collect her forces for a final struggle with the enemy. In the calm that follows, the soft tissues constituting the greater part of the body, yield up the fluids that yet saturate them ; and the salutary thirst created, brings fresh supplies. The vessels receive the new tribute, and contract down upon their diminished contents, and so the circulation once more recommences. The reaction is apt to be excessive—a grand source of peril in the convalescence.

We cannot dismiss this allusion to the CHOLERA-QUESTION, without bearing an honest, but fearless and emphatic, testimony to the merits of Dr. WILLIAM STEVENS, the discoverer of the only true antidote yet found to the ravages of this fearful scourge of mankind. His *saline treatment* constitutes one of the finest illustrations of the application of the BACONIAN, OR INDUCTIVE METHOD OF PHILOSOPHY, to disease and remedy, to be found in the whole range of medical science. In fact, the medication in question is perhaps the only instance of a SPECIFIC, the practice of the Art of Physic furnishes. Every where else, we grope more or less in the dark, as to the real *modus operandi* of medicines. But here, the precise ingredients that are drained away in the exuded serum of the blood are restored to it ! The success of the treatment corresponds with the accuracy of the philosophical analysis that dictated it—only 2 or 3 per cent of failures—while a host of rival modes of cure often lose one-half of the cases ; sometimes three-fourths ! But impartial historical truth compels us to confess that paltry professional jealousy and personal pique were for long permitted to obscure this great discovery, and to rob the suffering public to a great extent of its benefits. In this he only resembles his great prototypes Harvey and Jenner. POSTERITY WILL DO HIM JUSTICE. Advanced now “in age and feebleness extreme”—his heart dead and his ear deaf, to the voice of human applause, he may yet console himself that a grateful country will not quite let his memory die ! It would have been, perhaps, sufficient for the glory of a lesser name, to have been among the first—if not the very first—of surgeons who planned and successfully executed the grand operation of *tying the internal iliac artery* !

material—to subserve nutrition, even by refuse drainage-matter. It serves to sift and clarify the dissolved contents of the stomach and bowels. It checks the influx into the general system of excess of carbon coming directly from the sources of supply; and so takes the strain off organs already sufficiently charged with the body's impurities. The THORACIC DUCT, or great main-pipe of the lacteal system, carries the *chyle* (the newly absorbed nutrient principles) directly to the venous trunk terminating in the heart. But the otherwise disposable carbon is absorbed by the mesenteric veins, and so finds summary exit by the liver—multitudinous and complex ends accomplished by simple means that shew wondrous design—mingled Wisdom and Goodness! The immense quantity of blood the liver receives from the coats of the intestines, *and which it decarbonizes*, places in a strong light the relief the due performance of its allotted work affords to its coadjutors the skin and lungs. These three grand allies in the living economy intimately co-operate with each other, play into each other, substitute each other, sympathize with each other, suffer with each other, and have their diseases cured by the relief of each other. The failure of any one of this “*triple alliance*” imposes upon the others vicarious duty—*i. e.*, *if they can do it*; and where they cannot, disease is the consequence. The prevalence of liver-complaints among the indolent, luxurious, and high-fed classes, and in Europeans living in hot climates *after the dietetic fashion of cold countries*, is not now difficult to account for. In the first place, their food abounds in rich carbonaceous compounds—the error being not less in *quantity* than *quality*. In the second place, the amount of stimulant liquors taken to propel along their heavy indigestible meals, aggravates the intestinal irritation by determining an undue amount of blood in the alimentary mucous membrane. In this case, the skin loses what the intestine gains—the sanguineous excess of the one causing its deficit in the other. In the third place, the want of adequate exercise of the limbs, lungs, and skin, fills up the measure of these evils. This it does by preventing that due waste of the body, that activity of the excernant functions which passes off, with the least bane to the constitution, the superfluities of a full or pernicious diet—oxydizing and eliminating the impeded products of decomposition. Herein precisely lies the error people commit in hot weather at home, or in burning climates abroad. Herein is the philosophy of the bilious diseases then and there prevalent. Under a high temperature, the cutaneous functions require the most unimpeded scope; instead of being diminished, or paralysed, by diversions of blood to the interior, by congested mucous membranes, &c.—all the effects of table excesses—of irritant food, drinks, or drugs. Hence the twofold source of the accumulation of carbon in the system. 1st., that in the liver directly, from a too heating, full, and fatty diet, especially in warm weather or in hot climates. 2nd., that in the general circulation, or in congested viscera, from its impeded exit by the skin and lungs. In cold weather, on the other hand, or in cold climates, people are less bilious. The habits are necessarily much more active, to enable them to resist the cold. The limbs, lungs, and skin, are all in more vigorous play, and so

effecting more completely corporeal waste, as well as throwing it out—burning up the fuel of the living furnace—exalting animal heat by quickened transformation of matter, and the increased chemico-vital changes so brought about. To this extent, therefore, is the liver relieved of the supplementary duty it would otherwise be obliged to assume if the superficial outlets of carbon were locked up, or acting under par. Hence, in cold weather, the comparative, if not complete, immunity from bilious disorders of persons of temperate and active habits. But in hot seasons or climates, there being little or no demand for carbonaceous diet, *as fuel to heat the body*, THE LABOUR OF ITS EXTRA EXIRICATION MUST NECESSARILY FALL CHIEFLY ON THE LIVER. Hence, this organ, taken aback by duty it is incompetent for, irritated and overtasked, falls into disorder. Nature often attempts to clear away the *surplusage* thus accumulated, in the shape of cholera, dysentery, diarrhœa, fevers, &c. The same explanation accounts for the popularity of such medicines as colomel, colchicum, dandelion, &c., that stimulate the functions of the liver, and emulge its ducts. These intestinal irritants and disgorgers of loaded gall-bladder and bile tubes, afford the needed relief, but it is only temporary. It is like borrowing cash, in the Palmer fashion, at 600 per cent. ! But say only cent. per cent. interest, or fifty per cent., what follows? What must follow—but corporeal bankruptcy sooner or later! The spendthrift goes on for a time, leaning on the false prop *that is to pierce and break him*. Medicinal stimulants, like alcoholic, *leave behind the necessity for their repetition in increased dose!* And, note well, the stomach was never intended to be a depository of filth in any shape—and pharmaceutical filth is often the most abominable of all. The stomach is only fitted, as designed, to receive the legitimate elements of the corporeal structures—the sound building materials of the body. Aught else is inappropriate, unassimilable, uncongenial—in fact, in a lesser or greater degree acts as a poison—if it be not actually such. This is a principle that cannot be impugned. But this game of over stimulating, over-helping, over-straining the liver, will not always continue. The day of reckoning comes at last. Long-enduring Nature gets into the *sulks*—she will endure, and be “put upon,” no longer. Functional derangement, under all this tampering and tinkering, ends in structural alteration. A prime organ of life gives way, profound general malaise and disorder follow in its train, and the whole fabric totters to its fall.

The biliary disturbances, whether periodical or continued, is the simple attempt to explode off the pent-up materials of disease; and, in sooth, what are most diseases but efforts of nature to rid the system of substances undrawn off by the excretories—by the outlets appointed to eliminate whatever is superfluous or injurious? In a state of the system so charged and ready for a morbid explosion, it is easily conceivable how little things may upset the nice balance of health—may drop a spark of fire, as it were, among combustibles; as, for example, an indigestible article of food, a convivial excess, mental worry, extreme heat or cold, &c. It is not so clearly apparent how the same cause, in one case, insinuates

slow, lingering, but fatal disorder; and in another, carries off the patient by rapid cholera, inflammation, rheumatic, typhoid, or putrid fever, &c., &c.

A vast deal of low spirits, *ennui*, *tædium vitæ*, &c., of the easy and wealthy classes, arises sheerly from the deficient excretion of the body's waste, notably from accumulated carbon—from biliary impurities—the *freest, best, and safest vent to which would be by the skin, as roused by the Turkish Bath*. If these morbid accumulations were sudden, they would produce all the shock of a narcotic poison, sometimes immediate death or paralysis: but, accumulated piecemeal, *the system gets time to accommodate itself to the poison*, as it does with alcohol, or opium, or arsenic, in large doses, if gradually begun with and long persevered in. But this very *tolerance* on the part of the constitution is the cause of the digestive and biliary derangements of the over-fed and under-worked classes. With so palpable a *materies morbi* gorging the liver, floating in the circulation, and poisoning the life-springs—its particles arrested, perhaps, in the delicate textures of the brain—is it any marvel that patients are consumed with all sorts of nondescript bodily aches and ails—worst of all, with mental misery, far more intolerable than corporeal suffering? “A peerage or a pension,” as the *Times* would say to the physician who should successfully exorcise these demons of our high civilization—the plagues of our most refined society. IN THE TURKISH BATH,\* CONJOINED WITH DIET AND REGIMEN, AIR, EXERCISE, AND DISCIPLINE OF THE APPETITES AND PASSIONS, LIES THE REMEDY.

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## CHAPTER III.

### THE MEANS AND APPLIANCES OF THE BATH—RATIONALE OF ITS PROCESSES.

It is a sound axiom universally received and acted upon by philosophical physicians—viz., that THE DISORDERED ORGANISM, GIVEN FAIR PLAY TO, RIGHTS ITSELF—RECTIFIES ITS OWN DERANGEMENTS; and it is, therefore, a principle held by some of the great practitioners of our time—one ably contended for by the late Sir John Forbes—that the cure of disease may be legitimately sought for in the due use of Nature's pure elements (*i.e.*, in the appointed or physiological STIMULI of the vital powers; in the judicious aiding, abetting, and sustentation of those powers in their self-conservative struggles) *and not exclusively in the vain nostrums and farragos of the apothecary's art!* These may be all good in their place. The alleged “specifics” are nonentities—are a fallacy, a delusion, and a snare! We have no specifics. Science renounces the research. Not more nonsensical was the pursuit of the “Elixir Vitæ”—the “*Aurum Potabile*”

\* Well regulated, *biens entes due*, and not prescribed at random, or to be invoked at the beck and whim of every patient who has once experienced its solaces. I happen to know that already the Bath, like other good things, is being abused. Thus a good cause will, by and bye, get discredited.

—the “Philosopher’s Stone.” My Lord Palmerston would define to a T the function of the physician, *as being “the judicious bottleholder” to Nature!* This is really, in a great crowd of cases, the grand part he has to act. Now, we shall see what salutary ingredients the Turkish Bath puts into this restorative bottle—how it relieves Nature of the impediments that shackle her operations—how it softens and relaxes the solids, that the fluids may the more freely circulate—how it expands and opens up the vast porous structure of the tissues, and so promotes the clearance and cleansing of the secret rills, and channels, and reservoirs of life. It sensibly seeks to purify the vital currents by *flushing* the vital sewers! It opens up the *waste-pipes* of the body, only to run off and disgorge through them its accumulated filth. The pores of the skin constitute, in fact, the vastest *drainage-system* of the animal economy, and are at once the safest route, and most salutary outlet, for purging off all extraneous, decomposed, or superfluous matters. The Turkish Bath sets about this scavenger-work by the immersion of the body in pure hot air. A preliminary macerating, sweating, clarifying, and eliminating process is thus performed. The pores are again closed, and the relaxed tissues and skin contracted, tonified, and braced up by tepid, then cold, ablutions. Renovated vigour is thus imparted to the whole organism—even without the refreshment of food! Thus a grand *immediate* benefit is gained by this truly artistic process—viz., to nourish and strengthen the body upon the old materials existing in the storehouses of the fabric—to *burn them off, or to use them up*, so as in any case to have clear receptacles, and clear conduits, for the elaboration and distribution of the new food. In this way we notably energize or *activate the absorbing powers*—the threefold effect of which is—first, to promote perfect circulation; second, to break up and remove unhealthy tissues; and, third, to put down more substantial structures in their place.

It may be received as a companion proposition to the first we stated under the present head of our subject—perhaps almost as a corollary from it, viz., THAT ALL IRRITATION BY DRUGS, VIOLENT CORROSIVE SUBSTANCES (OR BY CONCENTRATED ALCOHOLIC STIMULANTS), OF THE DELICATE INTERNAL LINING OF THE ALIMENTARY CANAL IS EQUIVALENT TO BLISTERING IT! Give a strong healthy dog a dose of what is considered a “mild domestic” medicine—“grey powder,” with castor oil, or salts and senna. Dissected the day after, the mucous membrane of the intestines will present, here and there, large *blood-shot* patches—telling how the blister has acted; And yet we every day *so* blister the gastric tubes of delicate infants and children—not to talk of the *horse-blistering* in the case of adults—by aloes and colocyth, calomel and drastic salts, scammony and gamboge, elaterium and tartar emetic, Croton oil, *et hoc genus omne*.

Now the Turkish Bath is wholly antagonistic to this destructive stimulation of the most delicate, sensitive, and highly vitalized surfaces of the body; tissues “tender as the apple of the eye”—as repellant to rude touch—as resentful of abrasion—and as difficult to appease when irritated. But the Bath not only does not irritate, it positively soothes

man's sentient inner and outer linings, at the very time that it opens, and flushes, and floods the body's natural drains.

As the internal organs, therefore, are nice things to tamper with, or rather won't safely bear tampering with, Nature sets before us the *skin* as the grand battle-field in the warfare with disease. The keeping of this field in proper trim is also the best means of preserving health regained or not yet forfeited. Everywhere else the system may be refractory to our operations, and impatient or irresponsible to discipline; but the skin is always placable, always submissive, ever ready to be soothed or coaxed; and failing that, is not unwilling to be *coerced* into salutary action for the rest of the economy; provided always we know the right way to evoke its powers and to conciliate its co-operation.

The most fertile sources of morbid elements in the blood are retained or altered secretions. These are now admitted to lie at the foundation of a great majority of diseases; hence the most theoretically-feasible, as well as the most practically-available, agents of cure, are those required for the healthy exercise of the natural functions, especially those of WASTE AND REPAIR—OF SECRETION AND EXCRETION. In the capillaries chiefly, if not exclusively, are carried on these processes of waste and repair—the building up of the new fabrics, and the taking down and taking away of the old, worn out, or useless materials of the body. *Now the principal—at least the most demonstrable—seat of action of the Turkish Bath is the capillary system; ITS GRAND EFFECT IS THOROUGHLY TO OPEN AND CLEANSE THE CAPILLARY TUBES AND STRAINERS—TO CLEAR OUT THEIR OBSTRUCTIONS, AND FREELY TO CIRCULATE THE BLOOD THROUGH THEM.*

The chief help Nature requires in most diseases, chronic and acute, is—*first*, to open the safety-valves, to rid the body of its impurities; *then* to establish the equilibrium of the blood alike in the central and superficial parts of the body—to soothe the sentient external surface, and to allay internal irritation—to relieve labouring viscera of intropelled fluids (*i.e.*, of congestion or stagnation). This purifying process—this inward unloading of organs—this equable distribution of the blood—is the sure, if not necessary, result of active determination to the exhalant surfaces, and the powerful drain therefrom of fluids easily and promptly replaceable.

Now these aims just specified are the curative aims and “indications” of all medical practice, no matter what outward badge the practitioner may wear—what sect he follows—what name he is called by. That which best accomplishes these aims must needs be the best curative agent. The Turkish Bath, we conceive, unquestionably makes good this pretension, and is, therefore, the agent that comes nearest to the *beau ideal* of curative art. Above all other systems of healing, it is *par excellence* the equalizer of the circulation—the unrivalled and unfailing DERIVATIVE to the surface—the solvent of capillary engorgements—the dissipator of morbid accumulations—the opener up of the body's safety-valves—and the flusher of its common sewers and drains; in short, the clean-sweeper-out of all filth blocking up the life-channels and poisoning the

life-springs. These are the direct and *immediate* effects of the practice we advocate. The *indirect* and the *remote* effects are, the increased quantity and improved quality of the secretions, the regulation of nutrition, and, in a word, the EXALTATION OF VITALITY in the whole organism. In this way alone can we rationally hope SO TO AID AND SUSTAIN NATURE as that she will be able to throw off most of the diseases that assail the fabric.

How, then, does the Turkish Bath accomplish all these salutary effects? How does it establish claims to efficacy such as no drugs and no system of medicine can pretend to? All this we shall proceed now to explain.

The first essential element of the action of the Turkish Bath is HOT AIR; *the purer the atmospheric oxygen, and the freer of all admixture or dilution, clearly the better.* Under this stimulus, the whole secretory activity of the system is roused, transpiration is powerfully increased, both from the skin and lungs, with the effect of imparting extra activity to the circulation—a point sufficiently established in describing the effects of exhalation from the surface of the leaf in plants. This sanguineous *molimen*, or determination, is not merely on the surface; but it is effected *from within*, and to the surface. Every vital, vegetative, or purely organic function is stirred up to unwonted activity; the heart beats with renewed energy, and the blood vessels participate in its augmented impulse. The skin at length opens apace, however bound, obstructed, or reluctant its outlets at first may have been. With the pouring forth of perspiration, and thereby the absorption or neutralization of an immense amount of the surplus or latent heat of the body, comes instantaneous relief—a subsidence of the whole physiological tumult, raised expressly, as it were, to drive out an intruder. The large demand of vital fluids set up on the surface, and the chemico-vital elaborations there taking place, tend powerfully to unlock, and draw away, the pent up blood of diseased interior structures, congested viscera, and the like. The “change of matter,” or “the transformation of the tissues,” over the whole body, is facilitated; in other words, the *waste* of the animal structures is largely augmented. This demands the quicker elimination of this waste. With the increased outpouring of the structural *debris*—veritable *body-sewage*—unhealthy elements imprisoned within, are loosened, set afloat, and swept off by this real flood-tide of fluids,\* speeding onwards to the surface, like rivers, to be lost and exhaled in the ocean. The completeness of the aëration of the blood corresponds in degree to the activity of exhalation; respiration is deepened, and the lungs are profoundly filled.† These actions now

\* *Suspended internal functions* of various sorts have thus a *chance* of being set free from fetters that may have long enthralled them; and with this vent given to pent-up nature, the bloom of youth is restored to many a pallid cheek, especially in the case of young females. The simple draining-off of the overabundant watery elements of the blood of the subjects in question is no mean service rendered to the constitution, and paves the way for the filling of the vessels with purer and healthier materials. Of course, to do these cases full justice, they should be under professional superintendence.

† Hence the beneficial effects that may be legitimately expected in chronic congestion, hepatization, *tubercular deposits*, &c., of the pulmonary organs. But as these are the nicest of all cases to treat, they require careful surveillance, as well as accurate diagnosis. No *random* dosing will do; otherwise debility, rather than strength, may soon result.



described are the most powerfully ALTERATIVE we know. The effect on nutrition—the correction of its aberrations—is not long to manifest itself.

All this profuse drain of liquids oozing out by every pore of the surface, and drawn from every depth and cranny of the interior, justifies and calls for proportionate supplies of water by way of drink. This new fluid in its turn is drained away—thus *literally washing out the blood, dissolving and straining off its impurities, and scouring out even the vessels*. ABSORPTION therefore, is not less quickened than elimination. *Renewal and waste* thus run a race with recruited powers. No morbid humours, or even hard deposits, can long stand this *perturbative*, or break-up process, *provided only it be judiciously repeated*, so as not to impair the strength, or exhaust the stamina of the subject. In this way, excessive fatty deposition is broken up, melted down, and swilled out of the system; gross morbid humours of various kinds, and unhealthy tissues, are absorbed and removed. The muscles are rendered more compact; the skin tenser, more elastic, more clear, more glossy, more satiny, as well as more permeable. The same activity of absorption which takes down the paunchy and the bloated, also promotes the fattening of the lean and ill-nourished; and this, not only because the nutrient materials in the stomach are turned to better account, but because their resorption into the circulation is more energetic.

We have made no reference here to the action of the Turkish Bath on the Great Sympathetic System of Nerves. The stimulus of heat must powerfully affect these nerves, as well as the ganglionic and common sensory nerves. In like manner acts the stimulus of COLD, which is also an integral and essential part of the bath. The ORGANIC functions, or the purely *vital* and *vegetative* actions of the economy, are much under the influence of the grand sympathetic and ganglionic nerves; and, therefore, it is to be inferred that we could have no increase of circulation, exhalation, secretion, &c., without the stimulation of these nerves. It may be demonstrated another day that in this *sympathetic* and *ganglionic* stimulation lies the whole curative virtue of the Turkish Bath, inasmuch as it is the forerunner and exciting cause of the augmented physiological actions that constitute the peculiar phenomena of the Bath.

The shampooing process, if not an essential, is a usual accompaniment of the Turkish Bath. Skillfully and moderately performed, as befits the less pliable frames of the hardier nations of the West, it will necessarily receive due attention—especially wherever the grand object of the Bath is to substitute exercise. But the subject simply requires allusion to here, not elucidation. At the end of the above described macerating-ordeal—when the muscles, blood-vessels, nerves, and skin are all relaxed—is the proper time for *kneading* the body, in the same way as iron is best moulded and welded, and fashioned, when hot—an apt simile of Mr. Urquhart's.

The bracing, fortifying discipline of tepid and cold ablutions properly succeeds to the preliminary procedure of stirring up the circulating system, softening the surface, opening the pores, and *producing purgation and waste by the skin*. After thus giving vent to effete matters, or retained excretions, this conclusion of the process, and closure of the pores, is a *sine qua*

*non* of the Turkish Bath—following up, and confirming its benefits. Without this *finale*, its efficacy would be impaired, if not forfeited or lost, for a great many subjects. The unreflecting, or the totally inexperienced, may shrink at the idea of this sudden transition from high temperature to a cold bath, as something dreadful to bear, or dangerous to practice. But it is neither the one nor the other. The fear is a fallacy; the apprehension entirely groundless. On the contrary, the application of cold after perspiration *in this fashion* (passive) is not only not dangerous, but it is highly salutary and refreshing—exhilarating, in truth, beyond any previous conception of the uninitiated.

This conclusive operation is based on the soundest physiology, and is not less needful and appropriate than it is grateful to the patient. A general maceration of the tissues has been effected. The vessels, and nerves and skin have been all relaxed from the heat and stimulation they have been subjected to, and from the copious floods that have oozed through them. A virtual depletion has been effected—the only depletion that is sound and safe. Now, then, is demanded, and is borne, the *shock*—the bracing power of cold. By this the cerebro-spinal and ganglionic nerves have temporary excess of vitality *at once* imparted to them—a veritable electric thrill is felt. A rush of blood is determined to the surface, to replace the heat abstracted. The effect of this is to increase and **FIX** the circulation in the skin—thus rousing the capillary actions of the surface at the expense of the interior; promoting thereby the dispersal of congestions, and establishing the sanguineous equilibrium of the central and superficial parts of the body. All this brings about a rapid “transformation of the tissues”—the breaking up, absorption, and swelling out of old, decayed, or diseased matters; and the deposition of new. The normal, or physiological activity of the vital functions is increased—the *vis vitæ* exalted everywhere. The more freely the skin has been acting—the larger the flow of fluids—the greater will be the cold that is desired; the better will it be borne; the more potent will be the stimulus it affords; the more permanent the reaction that will ensue—the more decided, in short, its curative results. Hence the feeling of immense relief and solace—of renovated mental and corporeal vigour—after a process that, to the superficial thinker, seems exhausting.

The phenomena above described, are vaguely expressed by the word **REACTION**. In this reaction itself lies a great aim and agency of cure. To be able to **REACT** well is the grand help nature requires in a majority of diseases. The body corporeal then does for itself—for *its enemies within*—what the body politic does for itself when it rises *en masse* to repel *its enemies without*. In both cases, the effect is at least *to quell or appease internal irritations, dissensions, and tumults!*

By the discipline of the Bath, any over-sensitiveness, or morbid sensibility of the **SKIN**, becomes so blunted—its tissues are so braced and fortified—its natural functions so exalted—as to bear with impunity any transitions of temperature—and the more extreme, often the more agreeable; as also the more hardening the effect, With the restoration of a

high condition of the SKIN, coincides the return of healthy functions in the MUCOUS LININGS, whether of the lungs or of the alimentary canal. In this way persons that are subject, on slight exposure, to catarrh, influenza, bronchitis, diarrhœa, &c., get case-hardened to atmospheric variations, and even bear draughts with impunity.

The allegation that perspiration is a weakening process is another fallacy that hardly needs demolition. — *Sweating, as accomplished by drugs (sudorifics), we admit is a debilitating drain.* So is the vapour-bath as used in the bungling way common in our old bath establishments. But properly evoked, and followed by tepid, and then cold ablutions, it is, on the contrary, highly tonic and invigorating. In the Turkish Bath, the patient lies full-stretched, in perfect repose, on couch, bench, or *dureta*. Nothing of the normal constituents of the body is abstracted save the saline and watery portions of the blood. The water is replaced by absorption from the stomach as rapidly as it is given out: for when the drain comes to be excessive, the supply is proportionate. And here, be it well observed, it is only in *very pure systems* that the water, welling out from the pores, comes away pure. It is far otherwise when the body is impure. Not only the water oozed out by the pores, but the atmosphere all around is tainted by the eliminated products and exhalations of disease. This happens in bad cases of chronic maladies, characterized by corrupt humours, constitutional taints, &c., *i.e.*, whenever the secreting and excreting functions are materially interfered with; whenever in short, substances are retained either in the highways or the byeways of the circulation that should have been eliminated. These constitute a very formidable, as a very palpable and intelligible *materies morbi*. In granular kidney (Bright's Disease) these odours in the *calidarium* are occasionally something dreadful. *The easy exit afforded to these pent-up elements of disease by the powerful drains and perturbative action of the Turkish Bath is, beyond all contradiction, the source of its immediate and permanent benefits.* Hence, if skilfully wielded, the reputation it is likely to achieve in the cure of visceral congestions, morbid accumulations and obstructions, and in blood-taints, &c.

If the Bath fails, nothing else will avail to transfer to the robbed, emptied, shrivelled, parchment-like surface of the body, blood long pent up in a torpid liver, an engorged spleen, a congested mucous membrane, or a hepatized lung. By its outlet of peccant matters it gives immediate relief to *malaise*, misery, and fatigue. Increased absorption and elimination remarkably improve the appetite, and promote digestion and nutrition; healthier solids and fluids are formed than those that are thrown out or wasted down. Hence the Turkish Bath fills up the skinny or flabby, and reduces the obese, the paunchy, and the plethoric.

## CHAPTER IV.

## WHAT THE ANGLO-TURKISH BATH SHOULD BE.

THIS is a very brief "head" of our subject, and may be very summarily discussed.

The "performance" of the Turkish Bath consists essentially of "four acts"—requiring indispensably as many separate chambers; *i. e.*, for any good public establishment.

1st. The first of the suite is the dressing and cooling room. Here the bath costume is assumed, and here the bathers rest, cool, and dress, at the conclusion. The size, style, and arrangements of this apartment admit of every variation; but it should, wherever practicable, be a large "hall" in dimensions. To modify the details conformably to English habits and tastes, it should have stalls screened off, with couch, chair, dressing table, &c., in each, in order to afford all the privacy and convenience desired. *Spiracles*, or ventilating "bull's eyes," should be placed at the head of each couch, to give the bather full command of his atmosphere, independently of the general aëration of the room. The *dome* form of ceiling would be the most suitable, as the most wholesome, certainly the most picturesque, if not also the most Oriental, in style. The gratification of taste and ideality is an almost indispensable condition of attaining the *fullest* benefits of the Bath. All the pocket-questions, however, of any proposed building, we must leave to those whom they concern.

2nd. The second chamber—the *TEPIDARIUM*—is of an average temperature of 115 deg. to 135 deg., with a wooden platform covering the flues all round the sides of the room. On this bench mattresses are laid, or couches are scattered about. Here the bather reclines, and perspiration commences. This process may last from twenty to forty minutes—longer or shorter, according to the habits of the individual, the tolerance of the constitution, or the necessities of treatment.

3rd. The *CALIDARIUM*, or *Sudatorium* of the Romans, is of an average temperature of from 140 deg. to 160 deg. This is high enough for all salutary or sanitary purposes, and even too much for a great many people. In this, the true "hot chamber," the perspiration becomes very profuse, and the operation of shampooing is performed, *i. e.*, the muscles and integuments are kneaded, and the joints stretched and twisted *secundum artem*. When "enough" has been had of this *multum-in-parvo* exercise (and the chamber should be left before there is any symptom of fainting), the bather is supported by the bath attendant to the

4th. The *LAVATORIUM*, or *FRIGIDARIUM*—the Bath-room of the establishment. It should be replete with every convenience for tepid and cold bathing, douches, pumps, jets, &c. Here the patient is well soaped and lathered, washed first with warm water, or a warm *rain-bath* drenching him at all points. Then he finishes off with cold douche, *warm bath*, or *plunge*. A good deal of animal heat is abstracted in this chamber; and it is prudent to replace it by a return to the hot-room for a few minutes. From this the dressing-chamber is once more gained, where the bather,

enveloped in fresh bath-costume, seeks his couch, and cools gradually. Now the real elysium of the bath is enjoyed, without any risk of catching cold. After half an hour, or longer, of the most intense physical luxury and mental calm, the bather resumes his garments, and takes his leave—his predominant feeling being the enviable one of the traveller in the desert who comes to an oasis—a green, fertile, well-watered spot, amid the arid wilderness of sand he has traversed. The bather has enjoyed at least a two hours' oasis in the desert of this world's cares; and he therefore quits the establishment, not only a purer, but a devouter man, perhaps, than he entered; feeling, we hope, his heart raised in gratitude to the Giver of all Good, for at least one additional sweet mingled in the cup of life, and with a very sensible bracing-up anew for its battle; but feeling most *immediately* concerned to eat, and prepared to digest, a good meal.

Before proceeding to the last part of this little treatise, it behoves briefly to allude to a much disputed practical question in connection with the bath, viz., how much, if any, moisture should qualify the atmosphere of the hot-room? This, in our humble opinion, is a question very easily settled; one, perhaps, which should never have raised any controversy. We have only time to touch on four points here, which, we hope, will be *decisive*. 1st. Let the reader recollect what we have said on the subject of evaporation, and the conditions promotive or repressive of exhalation from membranes. Now, in the bath, the skin is moistened with perspiration; but in proportion as the air is loaded with an excess of aqueous vapours, the second condition of transpiration fails—the less necessarily is the evaporation from the lungs and skin. Hence the blood will naturally tend to retain its aqueous constituents. They will, therefore, be in excess; the tissues will be inclined to paleness and flabbiness; in other words, to *serous infiltration*, or the LEUCO-PHLEGMATIC HABIT of body. This we see exemplified in the pasty complexions and relaxed tissues of the inhabitants of the humid Low Countries.

2nd. Vaporization is concerned in *keeping down* the temperature of the body—is a cooling process—and one of the active agents (as we have shewn in its place) in the cutaneous and pulmonary circulation. When this, therefore, is interfered with, or prevented, the blood is necessarily of a higher temperature. Perhaps, for the same reason to a certain extent, but assuredly because of the deranged circulation following impeded exhalation—we have internal inflammations, determinations, and congestions favoured.

3rd. Evaporation is one of the steps of the blood-making process. The superfluous watery particles of the CHYLE are thus let off in its passage through the lungs and skin, and by this means its fibro-albuminous principle is advanced to the more perfect condition it presents in the *liquor sanguinis*. In the case of the Hollander just alluded to, not only may the watery constituents of his diet not be sufficiently exhaled, but his *chyle* may be marred in quality from the same deficient transpiration from the skin and lungs. Hence a double taint of his blood—the twofold origin of his constitutional characteristics.

4th. A moist atmosphere is a *rarified atmosphere*, and thereby diminished in its respiratory qualities—the *elastic distention of the dead vapour displacing* a portion of the viable air.

On these clear and unequivocal grounds do we give the award to Dr. Barter, as right alike in theory and in practice—as having both science and fact on his side—in his views of the Turkish Bath; contending strenuously as he does for a calidarium, or hot-room, *without any admixture of vapour!*

Theoretically, than, the argument is all on the side of those who contend for the entire absence of vapour from the hot rooms of the Turkish Bath. But practically the question may be settled in its favour—provided the amount of vapour be so very small as merely to soften the aridity of a perfectly dry atmosphere.

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## CHAPTER V.

### THE BATH CODE—RULES AND REGULATIONS FOR ITS SAFE AND SALUTARY ADMINISTRATION.

1st. Calm and repose of mind and body, is the first essential rule of conduct in the Bath. All distracting thoughts and passions, therefore, should be left at the door, or laid aside with one's garments. Even to talk is more or less to excite the brain, and should be avoided as much as possible. The reason of this rule is obvious, because the object sought is to summon into vigorous exercise the more *organic* or *vegetative* powers of the economy—to promote for the time the quickened activity of circulation, exhalation, excretion, and absorption, &c., and to set at rest the *jaded* or worried ANIMAL NERVOUS SYSTEM; in other words, to quiet the brain, to soothe the SENSITIVE NERVES, and to rouse the ORGANIC OR NUTRITIVE NERVES.

2nd. In the tepidarium there should be a central fountain, partitioned off as it were for three foot baths. The first for water of 70 degs.—a second for water of 90 degs.—and the third for water of 100 degs. In cold weather, especially, bathers going in with cold feet have the first cup of comfort, so to speak, administered in the shape of a warm foot bath, which can be taken at the bather's pleasure for as long as he pleases, and as often as he pleases. The feet being well warmed at the off-go in this manner, the determination of blood to the head some bathers complain of, will be quite obviated, and perspiration will be induced in a very much shorter time.

3rd. If the uninitiated bather feels faintness, palpitation, or difficulty of breathing, he should either go back to his dressing couch, and open his ventilator, and so get "a mouthful of fresh air," or he should have his feet and legs soused with cold water, and sip some cold water, or have a compress (or small towel), wrung slightly out of cold water, and applied to the region of the heart or stomach pit, with a tumbler of cold water dashed over the face, or slightly tepid water, to cool the head and produce

evaporation; or a wet compress may with advantage be rolled round the head, or he should conclude the process at once by the cold douche. But to bathe the face and head only is sufficient and the safest. But let bathers beware of cooling the head too freely, even with tepid water. Cold water for that purpose is totally inadmissible, because of the undue reaction to the head that would infallibly result. But even the tepid water cooling of the scalp must be cautiously and rarely done; once should suffice. If "headachy" feeling prompts to repeat this head cooling, be sure that the continuance of the bath for that occasion had better be dispensed with, and hasten to the lavatorium, and take a tepid rain-bath, which is ordinarily sufficient for almost any case. By any of these expedients, the commencing faintness, the palpitations, or the breathlessness, will be at once arrested; and the bather may thereby be enabled to continue a sufficient time in the hot-room to flush the vital sewers, to open well the perspiratory outlets, and to bring relief to internal irritation, inflammation, or congestion.

4th. If the object of the patient is to perspire freely, and the sweat is reluctant to break forth, the tepid ablution of the head will enable the patient to stand a larger dose of the heat; but he must be very cautious in this procedure, for the after-result would be an undue congestion of the face, with headache and evident fulness of blood. The time spent in either the hot or tepid room will vary according to the sensations and *power of tolerance* of the bather. A very susceptible subject should suffice (at first, at least) with the tepid chamber; its temperature is high enough for ordinary salutary purposes. From half-an-hour to an hour is a good average for most people. The profuseness of the perspiration, of course, is the grand modifying element in estimating the time to be spent in the room; the *skin-bound* require longer time than those with whom perspiration is early and copious; but the former cannot often stand it so well.

5th. After the skin has been thoroughly macerated with perspiration, and the muscles relaxed by heat, is the proper time for the shampooing process. The denser tissues and more compact fabric of Britons won't stand this *pummelling*—this kneading and disjointing operation—like that of the lithe and relaxed Oriental. *But as much as can be borne of deep handling*, chafing, and *succussion* of the flesh, should be performed on every bather. The friction of the surface—the soaping and peeling off of the scarf-skin—follows this. Last of all comes the cleansing off with tepid water; and then, with robust subjects, the cold douche, wave bath, or cold plunge, should be used. The due amount of cooling required in the lavatorium for individual cases is a very nice point, as upon its due regulation depends the grand efficacy of the bath and its perfect comfort, as well as perfect safety. Ordinarily, the tepid rain-bath in cold weather is sufficient; only the young and the robust should take the cold douche or cold rain-bath, unless in very hot weather. Another cautional rule of practice is, never by any means to allow the cold douche or wave bath to *hit the head*. For delicate ladies and children especially, I quite dissuade any violent shocks in the way of sousing, spraying, or plunging in cold

water. Many infants are subjected to very cruel operations in the cold tub every morning, by way of *hardening* them; and with children of really feeble constitutions, the result is the opposite of hardening. This *finale* of the bath closes the pores, and braces the relaxed muscles, and vessels, and nerves, and skin; thus fortifying the whole system, and rendering the taking of cold impossible. A single minute of this effectual finisher-off suffices. It is sure to obviate any exhaustion or faintness felt in the hot-room. A momentary chill by the sensitive, or the weak, or the weary, may be felt. This is removed by the return to the hot-room for but a few minutes, or simply passing through it may suffice to replace the abstracted heat.

6th. The skin is best allowed to dry in a warm sheet, the patient taking his rest on a couch in his dressing-stall. Here he can denude himself without let or stint, if he wishes to free his breathing surface from all impediments—a most salutary and hardening habit, not to speak of the advantages of a much greater amount of oxygen absorbed by the nude skin than when covered. The time spent in the cooling-room—the *luxurious time of the bath*—may be about half an hour at an average.

7th. The bather should dress leisurely, and should walk away at his leisure, taking care not to renew the perspiration, for he may thus, if under unfavourable circumstances, expose himself to chills.

8th. For the better regulation of the time to be spent in the tepidarium and as clocks will not go in these high temperature rooms, each bather, if his feelings are not to be the criterion, should carry with him a half-hour sand-glass, placed on a bracket near the spot where he reclines. In the cases of real invalids, *there should be no guess-work as to the exact time devoted to the hot-room transudation*; and hereby it could be regulated to a nicety where watches and clocks are inadmissible.

9th. In persons whom we may truly term hide-bound, in those of very callous skins, or those who have seldom or never perspired, every thing would be gained by *soaking them in a bath of 98 deg. for ten minutes* before commencing operations. *A moist membrane is an exhaling membrane*; and this would best secure a breathing condition of the skin, relax the pores, unbind the tense *dermis*, as well as soften and soak off much superfluous epidermis. From half an hour to a full hour would often thus be gained in persons hard to perspire.

10th. The bath should not be taken on a full stomach, nor yet on one completely empty (*i. e.*, after a prolonged fast). Three hours after breakfast or lunch, or dinner (if an early and light one), is the best time. After a full evening dinner or supper the bath is highly improper.

11th. Water may be drunk *ad libitum* by the thirsty and the fainting, and moderately as a general rule.

12th. When the object is to deplete or disgorge congested solid organs, (as the liver, the spleen, the kidneys), or to reduce a solidified lung, then profuse perspiration, at the sole expense of the existing fluids in the body, will be more likely to drain off the excess of blood from the overloaded organ. To this end withhold all drink during the process. But diseases of



the kidneys are an exception to this rule. The matters strained off by these organs require to be well diluted in order to be washed out of the system by the perspiratory tubes and the exhalent outlets of the skin. In such cases, also, the terrible odour that is diffused through the hot rooms sufficiently indicate the unusual and deadly stuff which the lungs and skin are set to work to throw out.

13th. Lastly, moderate exercise, short of fatigue, preceding the bath, will increase its efficacy—chiefly, as materially shortening the time necessary fully to rouse the functions of the skin. In what I call “the hide-bound,” this preliminary exercise is of vast importance.

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## CHAPTER VI.

### THE LEGITIMATE MEDICAL DOMAIN OF THE TURKISH BATH—ITS PRACTICAL APPLICATIONS.

I. THE Turkish Bath is the truest and best ANTI-SPASMODIC. In cramps of all degrees—in spasm of the muscles of the bowels, which are the source of the pains called CHOLIC—in spasms of the gall-bladder, and gall-ducts—in pains in the region of the kidneys, or lumbago—in spasms of the bronchial tubes (asthma)—even in lock-jaw and tetanus, its use is a legitimate and hopeful experiment at least. Between the combined effects of the hot room and cold douche, spasms of any sort will have a better chance of yielding than under any other mode of treatment; but very hot fomentations with flannel must be conjoined. In any case the tedious convalescence—the usual result of the powerful medicines swallowed to overcome spasms—will be saved.

II. The Bath presents a valuable resource in the reduction of dislocations, and of strangulated hernial tumours (ruptures).

III. The Bath will be of the greatest utility in *passive* diseased states, wherever action is below par, as in the very commencement of acute diseases, in the premonitory stage of fevers and inflammations—the stage of depression of power—in the congestive stages of eruptive diseases, (measels, scarlet fever, small pox, &c.), wherever, in short, collapse takes place and the symptoms shew retrocession of the fluids from the surface to the interior; in other words, wherever congestion of vital organs exists or is apprehended.

IV. The Turkish Bath, for this reason, is an unquestionable resource in cholera—will be, perhaps, its grand remedy in the first stage. Having already spoken at large of this disease, as likely to be influenced by the Turkish Bath, we need not enlarge here.

V. The Turkish Bath should be *at once* had resource to in the collapse, shivering, uneasy feelings and depressed spirits, that follow a decided chill of the surface, when perspiring freely; as, for example, when getting

wet in an exhausting journey, or from too long exposure in an open boat,\* or from the absorption into the lungs of an infectious miasm—a dose of which a man often gets in standing over an open drain. In all these cases, before active irritation, or acute inflammatory symptoms, have manifested themselves, there is every reason to hope that many diseases would be strangled (to use the favourite phrase of French practitioners) at the very off-go—and thus many premature deaths, often of the most illustrious personages, would be prevented. Thus died the Duke of Kent! Thus died George Washington! Thus died Count Mirabeau!

VI. In purely nervous irritations of the heart or in those connected with organic disease; in simple palpitations; in *angina pectoris*, the hot-room actually does quiet the circulation, and would do so still more remarkably, we think, if the cold or hot compress, according to circumstances, were kept on the chest, and often refreshed.

VII. In the case of local spasms, hot flannel fomentations applied to the seats of suffering while in the tepidarium would probably facilitate their solution.

VIII. THE TURKISH BATH WILL DIMINISH THE LIABILITY TO TAKE INFECTIOUS DISEASES. This often depends upon a habitually sluggish condition of the kidneys, with marked and scant secretion. The powerful revulsion to the surface, and drain of fluids by the skin, operated by the Bath, effectually takes the strain off the kidneys—disgorging them, and, in fact, *almost performing their functions!*

IX. In “Bright’s Disease,” in diabetes, in gout and rheumatism, and in all kidney diseases, with excess of uric acid and its salts, the practice that carries off the corporeal *debris* by the skin—and not by irritant drugs acting on the kidneys or the bowels—is the true art and science of their cure. In such cases water-drinking during the bath is strenuously to be insisted upon; inasmuch as the excess of water washes out a corresponding proportion of solid constituents. Thus colchicum, or acetate or nitrate of potash, may be superseded.

X. In AGUE the Turkish Bath offers the most feasible remedy, as being a disease *resulting from diminished secretion of the solids strained off by the kidneys*. The probability is, therefore, that a highly active state of the cutaneous functions would eliminate these solid matters of the urine through the surface, *even as we find an eczematous eruption occasionally frosted over with crystals of urate of soda!*

XI. In TIC-DOLOUREUX or NEURALGIA, the Bath promises great things.

XII. SKIN DISEASES will most probably be removed by a very summary process in the Bath, according to all experience hitherto.

XIII. IN IRRITATIVE CONGESTIONS OF THE WINDPIPE, from public speaking (“PREACHERS’ THROAT,” so called), the Turkish Bath can hardly fail to be pre-eminently successful; for this disease is usually only symptomatic of a morbid condition of the skin and digestive organs.

\* Lord Byron thus caught the fatal rheumatic fever that carried him off. He had got wet through in riding, and contrary to all remonstrance, would return home in his wet clothes, and exposed in an open boat. The Turkish Bath, on his arrival at home, would have been the surest means to have counteracted such a chill. But, alas! what treatment had this great man in his last illness?

XIV. In acute affections of the THROAT and tonsils, even in croup and diphtheria, the Bath will almost invariably save life.

XV. In CONSUMPTION the Turkish Bath, fairly tested, will, on the clearest abstract grounds, as well as on the shewing of facts, produce the greatest ratio of arrests of the disease. The noxious acids of the alimentary canal are thereby drained out of the system—the air cells of the lungs are dilated—pulmonary secretions are dried up—internal congestions are dissolved and dissipated—the relaxed skin braced—appetite promoted—night perspirations checked—the noxious chills and shivering at once cut short—and refreshing sleep procured.

XVI. In DIGESTIVE DERANGEMENTS characterized by intense acidity, the Turkish Bath offers a great resource, as oozing out through the skin the excess of lactic acid, which often lies at the root of the evils of dyspepsia.

XVII. In chronic BRONCHITIS, and emphysema of the lungs, and in the DRY CATARRH of the aged, the Turkish Bath is worthy of extensive trial.

XVIII. In DROPSIES, both of the shut cavities of the bowels and chest and of the exterior tissues, as well as from diseased kidneys, the Turkish Bath is precisely suited, and will work wonders—as taking the tension off the veins—the effusion of water being only a *vicarious* effort to relieve the plethora of the congested vessels.

XIX. In *tympanitis* and other cases of abnormal secretion of gas in the stomach and intestines, the Bath will promote the extrication of the gaseous exhalations, or suppress directly its formation.

XX. In CHRONIC LIVER DISEASE, in enlargement of the liver, and jaundice, &c., the Turkish Bath will be found the most potent agent of cure, as demonstrated by the large success of the much inferior hydropathic instruments of sweating used in such cases.

XXI. In GOUT AND RHEUMATISM the Bath will prove itself the speediest and best remedy.

XXII. In SYPHILLIS and *mercurial diseases*. In diseases arising from the abuse of treatment, the same hydropathic experience calls for an extensive use of the Turkish Bath. The medicated vapour-baths of the *Hôpital de Mudi*, in Paris, are less efficient attempts in the direction of the Turkish Bath.

XXIII. In the large and too common and distressing class of UTERINE diseases, the Turkish Bath, with all the means and suppliances of a good hydropathic establishment, will supersede to a *very large extent* the often very tedious and (to the constitution) expensive medication, by means of caustic and the knife, mechanical helps, &c.

XXIV. CANCER has now, perhaps, found its antidote in the Turkish Bath. Mr. Urquhart communicates a remarkable case of a lady who came to him in a desperate and hopeless condition, after the cancer had once been excised, and who was so far recovered as to be able to walk five miles. We hope the profession will give a fair trial to this remedy, in a disease wherein they admit the powerlessness of all ordinary agency.

XXV. The Turkish Bath will take down summarily, and safely,

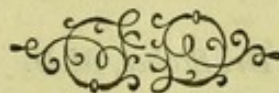
**EXCESSIVE OBESITY**—literally melting down and oozing out the oil of over-abundant adipose tissues—draining (as it were) the muscular fibres of this paralyzing accompaniment, as well as thereby increasing the tone and motor-power of these fibres. The Bath promotes the nutrition of the ill-nourished—increasing the appetite in proportion as it increases absorption.

XXVI. In **DIARRHŒA**, dysentery, &c., the Bath will be the cure *par excellence*; as determining excessive action, and diversion of the fluids from the intestinal lining to the skin; as well as soothing ganglionic irritation.

XXVII. We are inclined to hope that the Turkish Bath will prove itself the nearest thing to a *specific* for **HYDROPHOBIA**. If anything will ooze out, or neutralize the virus, once perfectly developed, it will be the action of the highest temperature that can be borne. Last century it was the custom, in some parts of Scotland, to smother these unhappy victims, by placing one feather bed upon another, the patient between, and a party of women sitting all round on the edges of the bed. On one of these occasions, within the memory of a living individual, a little boy was put in to be so strangled. After a quarter of an hour when they thought he was clean dead, to the surprise of the operators, in taking off the upper bed, he leaped up out of *a pool of perspiration* in the centre of the bed, where he lay, and said he felt quite well—indeed he was cured! This is an encouraging fact for the trial of the Turkish Bath.

XXVIII. The Turkish Bath will undoubtedly prove itself the best corrector of what has been designated the **CIVIC CACHEXIA**, the vitiated habit of body bred by *hard town-life*, whether it be the life of luxury or the life of labour—a nameless, nondescript condition of the solids and fluids—impairing much, if not quite, the relish of life—rendering vapid its enjoyments—and all this the result of over-excited brain, over-worked stomach, over-gorged vessels, and under-worked limbs, lungs, and skin—the effect, in a word, of **CLOSED SAFETY-VALVES**.

XXIX. The Turkish Bath will become an indispensable substitute for exercise to three large classes of people: 1st, to the indolent and luxurious, who take advantage of their privilege, but who find it, alas! anything but a blessing to be exempt from the primal curse. 2nd, to the brain-toiling, city-pent masses—the keepers at home—the men of literature and science; the drudges of the desk, the prisoners of the counter, or the slaves of the factory. 3rd, to valetudinarian multitudes, not ill enough to be loosened from the oars of business—“which thousands, once chained to, quit no more,” but too ill for personal comfort, and for the comfort likewise of those around them—the hypochondriac, the bilious, the dyspeptic, the bloated, the unwieldy, the asthmatic, the lame, and the lazy.



# TESTIMONIALS

TO THE

## SOUTHPORT TURKISH BATH.

*Dr. Balbirnie, M.A., M.D.*

JUNE 10TH, 1864.—I have been taking these baths daily for the last eight or ten days; not that I required them as a patient, but simply that I wished to experiment as a physician. To-day, however, I have felt bilious and headachy and out of sorts, and the bath has cured me. At all times it has been a source of great luxury and corporeal solace and vigour. This Southport bath is the most comfortable and efficient for its size of any I have yet visited. Mr. Whitehead is the very perfection of a bath administrator—prompt, alert, painstaking, thoughtful, attentive, and kind. With this instrument I expect great medical achievements to be accomplished, not only in nipping in the bud a vast crowd of diseases, but in at once arresting the course of acute diseases, and facilitating by months the cure of chronic.

*Dr. Fisher, M.R.C.S.*

“WIGAN, Nov. 6, 1863.—After having had many Turkish Baths, at Mr. Haigh’s well-conducted Establishment, Southport, I feel more and more convinced after each bath that we have nothing equal to them as eliminators of noxious matter from the human system. In these days we do not take sufficient exercise to make us perspire freely, hence this artificial mode of inducing perspiration is useful, particularly for those whose habits and occupations are of a sedentary nature.”

*Dr. Marsden, M.R.C.S.*

“I have travelled in different parts of the East; and had baths in *Constantinople* and *Brousa*—the city of hot-air baths in Asia-Minor, celebrated for upwards of 2,000 years in the value of its hot springs and baths;—but I never had a *more pleasing and thorough Oriental bath* in this country than that at Southport. My skin, after the operation of bathing, was perfectly crisp—a proof of the shampooer’s science and perfect knowledge of the art of manipulating, percussing and rubbing the body. The temperature of the first room was 128°, the second room was 158° of Farenheat, and reduced, by shutting off the valve, in 10 minutes to 138°. I can recommend the Southport Bath as one of the highest order, and the discipline as thoroughly scientific.”

*Dr. Stokes, M.D.*

“I have just taken a bath at Mr. Haigh’s New Oriental Bath, and feel very much pleased with the perfection which characterises all its details. I consider the establishment of this bath in Southport a *great public benefaction*.”

*Dr. Segar, M.D.*

"I have bathed in the Southport Oriental or Turkish Bath, and been well satisfied with its cleanliness, various processes, and attendants. It is a *great acquisition* to the town of Southport. Numerous patients who have consulted me respecting it, have since received great benefit thereby."

*Dr. S. M. Turner, F.R.C.S.*

"I am pleased with the bath and attendance."

*Dr. McNicol, M.D.*

"Is perfectly satisfied with the arrangements and mode of administering the bath."

*Dr. Harvey.*

"I can strongly recommend the Southport Turkish Bath."

*Dr. Craven, F.R.C.S.*

"Baths well arranged. Attendant intelligent, trustworthy, and understands his duties."

*Dr. Casanova, M.D.*

"Bath very pleasant and luxurious. Attendants very attentive and kind. No better establishment in the United Kingdom, though on a small scale at present."

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A Lady's Bath and two additional rooms have since been added.

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*The originals of five hundred testimonials may be seen at the Baths.*

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In his "Plea for the Turkish Bath," Dr. Balbirnie, M.A., M.D., says—"If I were asked to give a brief and distinctive definition of the Turkish Bath, I would say it is that WHICH CLAIMS THE EXCLUSIVE OR PRE-EMINENT POWER of *physiologically opening the body's safety-valves; or, in other words, developing a high activity of the depurating organs; and so fulfilling the first grand condition of the cure of all diseases.* If wielded by courageous and skilled hands, no artificial or medicinal system will be able to compete with it, either as respects the *quantity* or the *quality* of its cures."

Dr. Thudichum says—"As a physician, I felt placed in my hands the most powerful and certain, and at the same time the most safe and agreeable, curative agent in existence."

# THE TURKISH BATH

IN

## HEALTH AND DISEASE.

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Dr. ERASMUS WILSON, F.R.S., says :—“The Turkish Bath may be ranked amongst the very foremost of the necessaries of life. To remove all impurities from the 7,000,000 pores is to cleanse and ventilate 28 miles of drainage ; and this is accomplished every time these baths are taken.”

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