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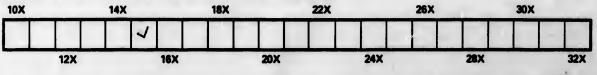
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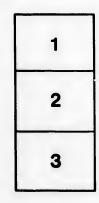
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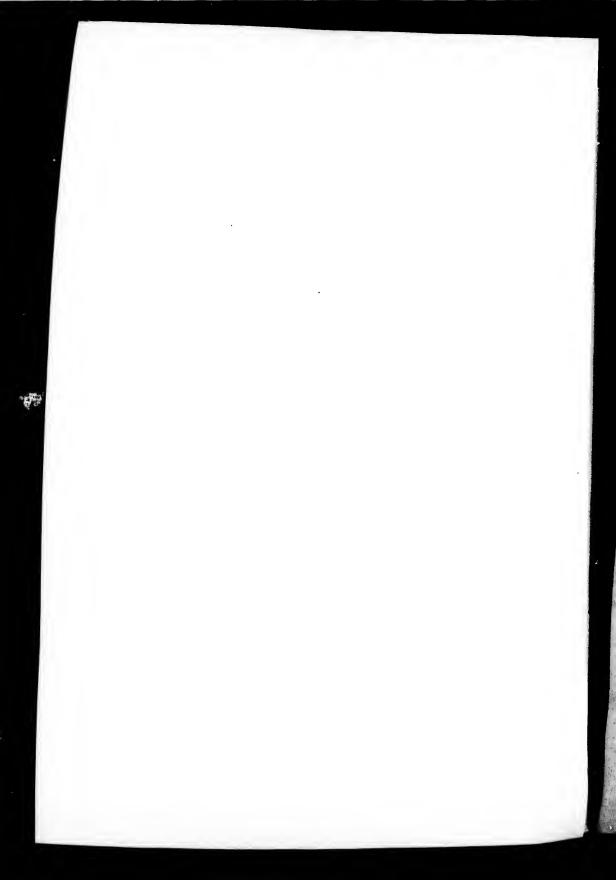
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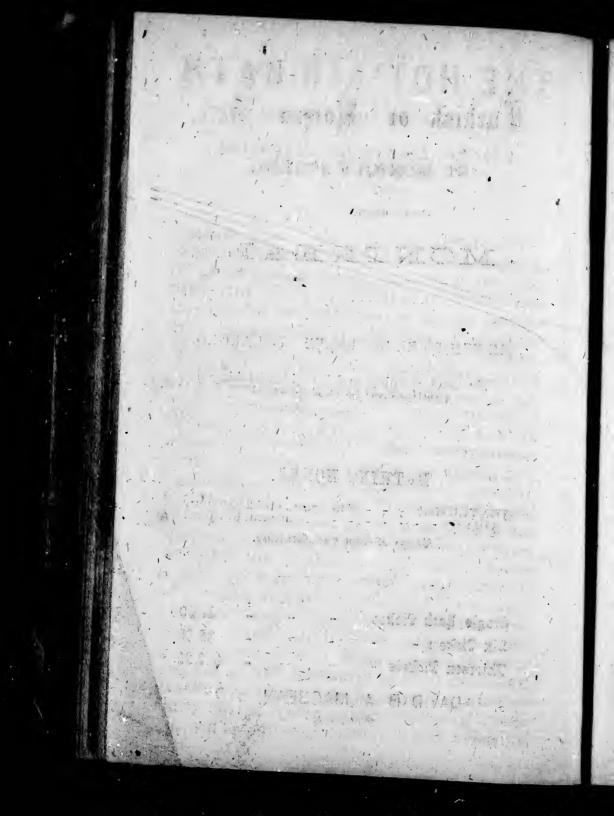
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## THE HOT-AIR BATH

AN ARTICLE TAKEN FROM THE

Dublin University Magazine,

August, 1873.

That direful scourge, the Asiatic cholera, is reported to be on its march westward, and the newspaper press is beginning to warn local authorities of their duty with respect to the inforcement of proper precautionary measures. It is only when some epidemic rages, that matters affecting public health excite general attention. Then, indeed, our municipalities seem keenly alive to the emergency; committees are appointed and elaborate reports prepared, public meetings are held, flowing speeches made, and promising resolutions passed by acclamation. Parliament even catches the sanitary fervour, and Bills are hastily drawn up, and as hastily placed, as Acts, on the statute-book-in short, a virtuous, patriotic sense of duty appears to have seized the nation at large. But a sense of duty that is created only by a panic, is not likely to be permanent, and seldom, indeéd, survives the cause that vivified it. Hence, we always find that, however earnestly sanatary measures may be discussed during the prevalence of an epidemic panic, interest in them gradually fades away as the panic subsides, and the measures enacted are suffered to remain, for the most part, a dead letter.

That, at the present moment, in how very few cities and towns in Ireland or Great Britain, do the great mass of the people en. joy the advantages of those prime essentials of healthful existence-pure water to drink, and pure air to breathe in their habitations? Then how shamefully imperfect is our general drainage, without which a proper sani. tary condition is impossible. But yet more shameful is the want of an adequate system for the utilization of sewage, which is permitted to exercise a most pestiferous influence on public health. It is little to the purpose to lament the existence of these evils, and say that the neglect with which such matters are treated is not in keeping with our boasted civilization, and the scientific enlightenment of our age; the truth is that the ravages of an epidemic alone can scourge mational apathy into action ...

It is not our intention, however, to dwell on such sanitary matters at present, our purpose is to draw attention more particularly to one great, cheap, and easy means of promoting public health, the value of which is fully acknowledged by the medical profession, and also by Parliament—we allude to the establishment of public baths. Properly constructed and conducted baths are, in truth, admirable sanitary institutions. This is admitted on all hands, but the question we desire to consider is one about which a good deal of diversity of opinion exists, viz., What form of hath is most rt, a dead

how very or Great people en. essentials r to drink. abitations? s our genoper sani. yet more ite system ch is perous influo the purnese evils, hich such ping with scientific truth is alone can to dwell sent, our e particusy means value of ne medinent-we lic bathe. ed baths. institunds, but r is one y of opih is most

suitable for the general public? In other words—What is the best bathing medium, water or air?

This is a question of great social importance, and we think a calm consideration of the merits of water and air as bathing mediums, will lead to the conclusion that there is no form of bath so well adapted to meet the bathing wants of the population of all classes—but more particularly of the industrious hardworking classes—as the hot air bath, commonly known as the "Tur kish." We believe the more closely and impartially this matter is examined, the more clearly will it appear that the habitual use of the hot-air bath would be an inestimable blessing to the working classes, though, at first sight, prejudices may be active in repelling such a conclusion.

No question can now arise respecting the general merits of the hot-air bath. Its great sanative and sanitary influences are undisputed. Since its revival among us, its salutary action-so highly appreciated. intancient times-has been amply tested by experience, and the incomparable benefits derivable from its judicious use, have been acknowledged and eulogised by medical authorities of the highest eminence. But, while its action admittedly exercises a direct and potent agency in preserving health and guarding against the approaches of disease, -more especially in the case of persons whose constitutional debility, sedentary occupations, or over indulgence in artificial habits of life indisposes them for active

physical exertion,—an opinion largely prevails that the bath is not equally applicable to the working classes, with the vast majority of whom, the daily expenditure of bodily energy is a necessity of existence.

This opinion, though plausible at the first blush, has its origin in a total misconception of the influence of hot air on the human economy. Because it produces perspiration, it is erroneously supposed that the action of the bath is exhaustive and debilitating, and, therefore, the very reverse of what is required by the condition and necessities of the working man. At the same time, water-bathing meets with more general approval, because, according to a sort of traditional popular belief, it is considered safe and refreshing.

Now both these opinions are erroneous. The hot-air bath is not debilitating, but the very reverse; and water-bathing is not necessarily a salutary process, in which the population generally can safely indulge.

We can readily understand how the idea originated which attributes to the hot-air bath an exhaustive and debilitating effect. In the popular mind, profuse perspiration is associated with bodily fatigue, because perspiration is naturally produced by bodily exertion, and bodily exertion is necessarily accompanied by, more or less, bodily fatigue; hence, as hot air excites copious perspiration—which is the visible and valuable result of its action—it is illogically assumed that such perspiration is similar, as regards cause and effect, to the perspiraargely preapplicable ast majore of bodily

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Such an assumption is a physiological heresy. It altogether ignores the essential difference that exists between the two modes in which perspiration is excited. In the case of bodily labour, there is necessarily an active expenditure of vital energy, and the perspiration that oozes from the pores of the skin is evidence of so much physical vitality expended, the natural effect of which is, to induce bodily fatigue that may be carried to any endurable amount of bodily exhaustion.

On the other hand, perspiration excited by a bath of pure hot air is, in all respects, the exact reverse as regards both cause and effect. In producing such perspiration no bodily labour whatever takes place, no vital energy is put in motion; hence, as there is no physical action of any kind, there can be no consequent exhaustive wear and tear-no expenditure of physical vitality-no waste whatever of what is ordinarily called our "strength." The bather, on the contrary, remains in a state of quiescence, and the pleasurable repose he enjoys is heightened by the grateful influence of the bath, the salubrious action of which necessarily relieves the system by the exudation of burthensome impurities. In this state with profuse perspiration teeming from every pore, cold water-to drink which when in such a condition, produced by bodily exertion, would be almost certain death-can be imbibed freely, not only

without any danger, but with sanitive advantage and positive enjoyment. In the one case, the sudden introduction of cold water into the stomach produces a congestive effect—" shoots to the heart and numbs the seat of life,"—consequent upon which usually follows general paralysis and death. In the other case, the water imbibed goes to supply the craving wants of nature created by the expulsion of blood impurities, and the depuration generally of waste matter from the system by the salutary action of the perspiratory apparatus, which it is the peculiar merit of hot air to powerfully, enjoyably, and yet safely stimulate.

Thus, what is dangerous even unto death in the one case, is potently promotive of health in the other, and this demonstrates most conclusively that the perspiration produced by hot air, so far from being a cause or evidence of debility, is a most salubrious process by which the whole system is strengthened and invigorated.

Dr. Carpenter, an eminent authority, observes—" That perspiration has no weakening effect in itself,—except by the diminution of the water in the blood, which may be re-supplied from the stomach—appears from the fact that if persons exposed to high heat make no bodily exertion, they experience no loss of vigour if copiouslg supplied with cold water. Such exposure may induce very much to invigorate the system."

To the same effect is the testimony of Dr. Balburnie, who has had considerable exanitive adt. In the on of cold s a conges. and numbs pon which and death. bibed goes of nature od impuriy of waste lutary ac. tus, which to powertimulate. unto death motive of nonstrates ration prong a cause salubrious system is

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ny of Dr. rable experience on the subject. He says-"The allegation that perspiration is a weakening process, is a fallacy that hardly needs demolition. Sweathing, 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 cold ablutions, it is, on the contrary, highly tonic and invigorating. In the Turkish bath the patient hes 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 becomes excessive, the supply is proportionate."

Thus the supposition that the bath debilitates by exciting copious perspiration, is alike inconsistent with experience, and repugnant to the conclusions of sound physiology. It is indeed, to the very copious action of the perspiratory apparatus which the bath induces, that a large portion of its incomparable merit is attributable; for while poisonous waste matter is freely eliminated from the body by perspiration, the system is, at the same time, prepared to receive an invigorating supply of oxygen from the air.

As Dr. Sheppard expresses it, an invigoration takes place, "arising from the contact of the unscarfed skin with particles of caloric, and from the newly acquired power of drinking in oxygen through channels previously closed up," that is, through the pores of the skin; and the vast importance of maintaining the skin organism in healthful action, may be understood from the remark of so high an authority as Rolt, "that three fourths of the disease to which civilized man is subject are attributable to the pores of the skin becoming stopped up."

It is this double function of the skin—its breathing capacity so to speak—at once an excretory and an absorbent organ, that enables the hot air bath to act so generally and so powerfully as a therapentic or curative agent. "It will," says Dr. John Armstrong, " balance the circulation sooner than any other means I know. The patient is raised, as by the touch of a magic wand, from weakness to strengh."

No doubt, like every other good thing, the bath may be injudiciously employed, but assuming, as we have a right to do, its proper administration under competent superintendence, then, indeed, so far from having a tendency to impair vitality, its de cided effect on the system is highly tonic and exhilarating. Instead of causing weakness, one of its most henefieial effects is to relieve the system of the distressing weariness which follows fatiguing bodily exertion, and this undoubted merit renders it peculiarly applicable to the condition of the working classes.

The evidence on this point is of the most conclusive character. It is unnecessary, 'however, to do more than refer to the deinnels preo the pores ortance of healthful he remark that three vilized man pores of the

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the most ecessary, to the decisive testimony of a few medical authorities, among whom Dr. Millingen is entitled to considération. as he resided at Constantinople for some years, in the capacity of physician to the Sultan. and enjoyed an extensive personal experience of the bath in the East.

Adverting to its use by the labouring population, he says:—

"The working classes among the Turks-for such classes do exist. and are as numerous and fully more hard-working than elsewhere-know of no other means of prevention, on feeling indisposed, but the bath. It is looked upon so much in the light of a panacea by the lower orders, that they hardly ever dream of consulting a physician when taken unwell. If the bath fail to cure them, nothing else will succeed. This prevailing conviction accounts, in a gr at measure, for the solal absence of dispensaries and civil hospitals, not only in this large city, but throughout the whole empire. Yet, I apprehend, from the tables, of mortality monthly published, that the mortality is not greater than it is in countries blessed with those institutions. The higher classes, and women especially, do not, as with us, know much about regular exercise. so that were it not for the ample compensation offorded by the bath, they would not enjoy the excellent health they generally possess.

"I must remark that intemperance, of late years. is much on the increase; and, moreover, that it is carried on to an extent which, if stated, might#be looked upon as fabulous. Yet the gout is not more prevalent, nor deltrium tremens either. This immunity I can attribute to nothing else but to the expulsion of the alcohol, circulating in the lungs and skin, during the stay in the bath."

Such is Dr. Millingen's testimony respecting the practical value of the bath to the working population, and as a sanitive institation. Evidence equally strong is supplied by every competent authority who has had experience of the bath in the East, but happily since its revival among ourselves, many distinguished medical men, from a conviction of its great merits, now habitually use it, and on no point is their testimony more manimous and decided than with respect to the powerful influence it exercises in charming away the depressing effects of bodily fatigue, and refreshing alike both mind and body. "After excessive fatigue, mentally or bodily," observes Surgeon Moore, "I have invariably found the most southing and refreshing effects from its use."

"If you go into the bath weary and jaded," says Dr. Brereton, "even though you have been up and working all night, you come out refreshed; if from grief or care you are desponding when you enter, your heart is lightened before you leave, for it is impossible to resist the exhilarating effects of oxygen; if, on the other hand, from the reaction of over-excitement, you are restless and unable to sleep, the bath becomes a narcotic. It is only the experienced physician who knows how many forms of disease originate in these so common, but now so easily obviated causes."

Thus "The bath," as Dr. Thudichum observes, "is an engine for the production and maintenance of health." Without, therefore, accumulating further evidence on this point, we may, with some confidence, rely on the conclusion dictated by common g is suprity who the East, g ourselnen, from ow habiheir testided than luence it epressing efreshing ter excesobserves bly found ng effects eary and a though

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dum obtion and erefore, on this ce, rely ommore sense - that what tends with such potency to restore and maintain health, cannot possibly have, at the very same time, a direct contrar, effect.

If the admitted action of the bath, properly employed, indubitably is to produce and preserve health-as all competent authorities unanimously testify-surely it is needless to occupy time in proving so selfevident a proposition, that such action is wholly incompatible with another action diametrically the reverse-that is, with imputed fendencies to weaken and debilitate. and impair vital functions. The two qualities, actions, or tendencies, could, not possibly coexist- It would be absurd beyond. expression to suppose that, at one and the same time, the bath could weaken and strengthen, preserve health and impair itoperate, at once, as a debilitating drain on vitality and prove a source of recuperative energy and enjoyment. Yet this preposterous couclusion would be imposed on us by those who, unacquainted with the subject, allow prejudice to override reason, and without judgment, affirm that the bath process has a debile effect.

Equally unsupported by science and experience is the supposition that water bathing is better calculated to prove of advan tage to the working classes than the hot-air bath.

In contrasting the merits of cold water and hot air as best adapted to supply a heathful medium for bathing, we must remember at the outset that heat is a physiological necessity of animal life, and is naturally promotive of animal growth, whereas cold is antagonistic to both. This accounts, in some degree, for the fact that cold bathing is fraught with extreme danger to many constitutions—cold affusion or immersion causing a sudden determination of blood from the surface, the consequent congestion of vital organism, the loss of voluntary motion by cramp—spasms, asphyxia, and too frequently, death.

Hot air, on the contrary, as already shown, diffuses, a genial influence over the whole system. is incontestably safe and salubrious, while it is of universal applicability; for there are very few constitutions indeed, if any, to which it is not adapted when used properly.

The cold water bath has undoubtedly a peculiar merit, and in certain cases, when skilfully employed, is capable of becoming a powerful therapeutic agent, but is neither so efficacious and safe, nor so universally applicable as hot air. "Like all powerful and valuable remedies, its employment," as Dr. Sir John Forbes declared, "requires great caution and discrimination—first, whether it should be used at all; and secondly, as to the form and mode of using it."

This caution and discrimination is rendered necessary, simply because the coldwater bath is equally potent for evil as for good, and therefore, not adapted to be safely indulged in by the population generally. Hence, in condemnation of its innd is natuh, whereas accounts, t cold badanger to on or imrmination onsequent loss of vons, asphy-

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i is renne coldil as for be sain geneits in discriminate use, the same high authority says:--" It will not be doubted by any physician resident in the vicinity of the sea, that in the case of no other remedy are greater mistakes committed and greater mischief produced than in the use of the cold bath'

Now, this liability to produce mischief is inseparable from the very nature of the cold-water bath, and when we consider the character and extent of the mischief that arises from its promiscuous use-such serious mischief as follows from an undue shock to the system; the inducing of excessive chill and nervous derangement; the disturbance of the circulation; the consequent torpidity of reaction, and exposure of the internal organism to congestionwhen we reflect on these mischiefs to which indiscriminate bathers are necessarily, more or less, exposed, surely it is not consistent with sound judgment to recommend such a bath for general use by the working classes, or population generally.

Nor is the warm-water bath more suitable. So far from it, indeed, its use is especially unsuitable for those who are exposed to fatigue as the result of bodily labour. A different opinion is prevalent, because, at first, the sensation of warrth received from the heated water is grateful; but this feeling soon begins to subside, and gradually vanishes with the falling temperature of the bath, and is followed by an acute sense of discomfort, which can only be relieved by a fresh supply of water at a higher temperature. This process must be continued while the bather remains in the bath, and such repeated changes of temperature—water being the medium—is exhaustive, excites drowsiness, and is attended frequently with unpleasant consequences.

But the great objection to the warmwater bath, as adopted for general use by working men, is, that it has unquestionably a relaxing effect. Instead of being tonic and bracing, and exciting feelings of vigorous buoyancy, which is what working men more especially require : it has a decided sumnific tendency, induces lassitude, untunes the system, and renders it highly susceptible to the influences of cold.

Now, in every respect, the hot air bath possesses a totally different character. It is decidedly tonic and bracing. It elevates the spirits and excites a pleasurable sense of exhilaration and buoyancy, while it so strongly invigorates the system, and fortifies it against the influences of cold, that bathers may leave the hot room with its temperature at 160 deg., or far higher, and, reeking with perspiration, plunge into the coldest water, or roll in snow, without the slightest apprehension of injurious consequences.

In fact, as every one knows who has indulged in the luxury of the cold plunge. after having passed through the process of the hot-air bath, the rapid transition from the extreme heat of the one to the extreme cold of the other is most enjoyable, and fraught with no danger whatever. The ss must be ins in the of tempem—is exis attendsequences. ne warmal use by stionably ing tonic of vigorking men a decided tude, unit highly ld. t-air bath acter. . It. t elevates ble sense hile it so and fortiold, that with its. her, and, into the hout the 13 conse-

has inplunge, rocess of ion from extreme ble, and r. The immediate effect is highly tonic, and the very reverse of the lassitude and fatigue caused by warm-water bathing, while there is no susceptibility to cold induced, To catch cold indeed, under such circumstances, is simply impossible, for as Erasmus Wilson, one of the ablest writers on the subject, says:—" the bath properly conducted cannot give cold." In truth it is one of the great recommendations of this form of bath, as particuliarly suited to the condition of the working man, that by no other means can the human body be so well fortified against the injurious effects of cold and the vicissitudes of our humid climate.

Dr. Armstrong has observed that : "The fatigue from hot-water baths is frequently fatal," while, at the same time, he bears testimony that "the hot-air bath does not fatique." Surely, no more need be said in proof of the immense superiority of hot air. in comparison with warm-water as a bathing medium, for is it not self evident that a mode of bathing which produces fatigue, relaxes the system, causes an enervating. lassitude, and induces an unnatural susceptibility to atmospheric changes, cannot, with any semblance of reason, be considered as adapted for general use, much less as calculated to prove beneficial in the case of working men ?

If we now consider for a moment the contrast between hot-air and water, when employed for purposes of healthful recreation and cleanliness, for which the public generally resort to bathing, the immeasur able advantages derivable from hot-air will become more apparent. Both water and air, as bathing mediums, act directly on the skin, but in ways essentially different and with results equally so. To make this perfectly clear, it is necessary to consider for a moment the structure of the skin and its peculiar functions. It is a law of all organized matter that the constituent particles of which it is composed should exist in a state of incessant motion, and of perpetual mutation. Thus, the existence of mere organized animal life necessarily implies continual action and change, in which are involved two vital processes, the incessant wear and tear-decomposition, and decaythat the very existence of life necessitates in every part of the human organism; and simultaneous there with, in order to replenish the waste, the assimilation by those parts of a nutritive supply derived from the food we eat and the air we inhale. These vital processes call into action several separate organs, among which are notably those of digestion, secretion, absorption, and excretion. It is from the organs engaged in the digestive process that the nutrient supply is obtained by which our bodily mechanism and animal life are sustained, while it is the peculiar duties of the organs of excretion to free the system from the deleterious waste matter caused by the action of life, as well as from the excrementatious products of digestion. Now, the blood is the medium by which nutrition is conveyed to every part of the human body. The suphot-air will water and ectly on the fferent and ke this peronsider for kin and its of all ornt particles exist in a f perpetual of mere ormplies conich are inincessant id decayecessitates oism; and er to repleby those d from the e. These veral sepatably those n, and exged in the nt supply echanism hile it is of excreeleterious of life, as products the meveyed to The sup.

ply derived from the digestive process first enters the blood, aud then, for the purpose of repairing waste and sustaining life, is carried to every part of the system by means of the wonderful organism of arteries capillaries, and veins. the combined ramifications of which extend with microscopic minuteness over the whole body. In its marvellous and healthful course the blood, while it conveys a nutritive supply for the reparation of waste by the mysterious process of assimilation, also collects the products of decomposition and deposits them for expulsion through the organs of excretion; for if this deletérious matter was permitted to remain in the system, blood-poisoning would necessarily ensue, and inevitable death. north forma fisted will restricte a

Now, besides other offices with which we are not concerned at present, the skin is a principal organ of excretion, and so vitally important are its duties in this respect, that their non-performance is incompatible with the continuance of life.

The skin consists of separate layers. Underneath the inner layer, or true skin, are situated an amazing number of little glandular organs, in which are collected the impurities for excretion. Communicating with these organs internally, and extending from them externally over the whole surface of the body, are an innumerable quantity of minute tubes about a quarter of an inch long each, when stretched out, the apertures of which open through the outer or scarf skin, and are popularly known as the pores of the skin."

Now, the deleterious matter secreted by the vast network of glandular organs that he beneath the true skin is eliminated through these pores, and this excretory or ganism is so wonderful in extent, simplicity, and adaptation for its purposes, that it forms one of the many marvels observable in the constructive design of our bodily system which bears the unmistakable impresse of omniscience.

By means of the microscope, Erasmus Wilson, the first authority of the day on the skin was enabled to count the number of pores in a square inch of bodily surface, and hence to estimate with a close approach to accuracy the total number in the whole body of an average-sized person. These he found to be not less than seven millions, and as each pore represents a little tube a quarter of an inch long, it follows that the total amount of excretory tubing in the skin organism is little short of twenty-eight miles in length.

Such, briefly, is the wonderful system of cutaneous sewerage which nature has provided to eliminate from the body impurities that otherwise would not only derange health, but destroy life. In addition, however, the skin has other most important duties to perform. It has been called "the assistant apparatus of the lungs," because it performs analogous respiratory functions to the lungs. It is also a medium for the reception of impressions on the nerves, its creted by gans that liminated retory or simplicis, that it bservable ir bodily cable im-

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system of has proimpuriderange on, howortant duled "the Decause it functions for the erves, its

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whole surface being one vast network of those mysterious organs, hence the intimate relationship and dependence between the healthy skin action and mental equilibrity. At the same time, the skin affords a ready and pleasant medium by which, in the case of disease, the whole internal organism can be promptly reached and powerfully acted on ; and, since study and experience have elevated and systematized hydropathic practice, it has been found a far safer and surer-and, beyond comparison, a more agreeable-medium, than the long suffering stomach, into which it has been the wisdom of ages to pour every nauseous abomination pharmaceutical ingenuity could discover, or skill compound. Thus, the skin is at once an organ of secretion, of absorption, and of sanse, as well as of excretion ; and such being the all-important character and extent of the functions it has to perform, it will require but slight examination to determine whether the purposes its organism is designed to serve can be better aided by employing hot air or water as a bathing medium.

Warm water, applied to the surface of the body, can, at best, produce mere surface cleanliness. The dead scarf skin, which impedes sanative action, is only very partially, if at all, removed; the internal organism is not directly reached, nor is it acted on, even indirectly, to any appreciable extent. It is evident, therefore, that such bathing is not calculated to afford much aid to the skin in the performance of its vital functions, and perhaps the most sensible benefit derived from such a process is the temporary sensation of surface cleanliness that is obtained.

With hot air the case is very different indeed. The immediate action on the skin is at once stimulating and soothing. Perspiration is gently excited, without bodily fatigue, and poisonous impurities are rapidly exuded through the twenty-eight miles of tubing that compose the perspiratory system, while simultaneously a genial exhilarating influence is shed over our whole being. In this way the skin is assisted in the performance of its functions, and the whole organism is benefited thereby .... Not only are the apertures of the pore-tubes opened and freed from the encumbrance of accumulated mad scarf skin, but the tubes themselves are flushed, as it were, throughout, and this highly sanative action is materially increased by the stimulus given to the skin secretions, and it can also be further facilitated by drinking cold water, for which a healthful and pleasurable desire is generally created, midded and monthly

Thus, the conclusion which science and experience warrants respecting the comparative merits of water and hot-air baths is, that, for all purposes, sanative, sanatary, and recreative, hot air is incomparably superior as a bathing medium. But if we consider which is most suitable for general use, it will be found that the hot-air bath is singularly well adapted to meet the condition and wants of the working population,

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to become, in fact, a great national sanatary institution—the true people's bath.

It will be understood, from what has been already said, that, in addition to its own peculiar merits, such as are inherent in the use of hot air as a bathing medium, the bath so composed, combines, at the same time, whatever is beneficial in the mere water bath, whether cold or warm. In fact, it is only as water is applied in hydropathic practice that its full hygienic virtues become developed, and are made available; so it is that the hot-air bath, properly administered, has the singular advantage of combining, with its own peculiar merits, all that is valuable in water bathing; because, practically, while it is a hot-air bath, it is also a warm and cold water bath the virtues of all the forms of baths combined in one. The process is briefly this :--this skip is first brought into healthful action under the benign iufluence of pure heated air, after which a thorough soapwashing, with or without shampooing, takes place; then follows copious douching with water, ranging in temperature from warm to cold, which may be followed at pleasure by a cold plunge; and this, with proper friction in drying, and cooling sufficiently before dressing, completes the process of ordinary hot-air bathing. All the benefit therefore, that is derivable from water bathing, is to be found in the use of the hot-air bath, and a vast deal more besides; and that, too, without incurring any risk of injurious consequences, such as it

would be almost impossible to guard against were water-bathing indiscriminately resort. ed to by the public at large.

It is this singularly happy characteristic of universality which attaches to the hotair bath that renders it so well adapted to become a truly national institution for the use of all. No other form of bath is comparable with it. Equally applicable to the healthy, and, with rare exceptions, to the infirm, neither youth nor age circumscribes its utility, and few, indeed, are the individuals whose constitutional peculiarities would render its beneficial use at all dubious. Contemplating it in this light, as capable of being made an inestimable boon to humanity, Dr. Thudichum declared - " It is for the benefit of all men." At the same time adding -" the sick will have a large share of its blessing." And, without doubt, the bath is truly calculated to be a solace in sickness to all classes, but more especially to the poor; for, when skilfully employed, it is a most powerful and comforting thereapeutic agent, and it will, indeed, be a blessed boon to the suffering poor when it hecomes an established institution in every dispensary district throughout the country. At present the want of free bathing is a great, and by no means a creditable anomaly in the administration of our medical charities. The neglect in the treatment of the poor of a remedial agent so simple and safe, economical and salubrious, as the hotair bath incontestibly is, becomes the more anomalous and reprehensible when we con.

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sider to what an extent free drugging is allowed to prevail.

No matter how desirable a dispensary practitioner might consider a hot-air bath for a patient, either as an active therapeutic agent in the treatment of disease or as an efficient auxiliary, he is powerless to employ it. He may be thoroughly persuaded that, in many cases, bathing would be far preferable to drugging, yet, by the consumate wisdom that regulates the administration of our medical charities, he is absolutely precluded from availing himself of the bath agency, while drugs he can administer at will.

Apart from its remedial utility, it is surprising that, on the mere ground of economy, dispensary baths have not been established, for unquestionably they would tend to relieve the rates, by materially diminishing the cost of sicknes.

A gentleman who has had extensive experience as a dispensary and hospital practitioner, and whose high opinion of the hotair bath is based on his knowledge of its medical virtues, says :--- 'I am an ardent advocate, from medical principles and practice, of hot air baths, and quite concur in the statement of the British Medical Association that there ought to be baths of hotair in every city, town, and village. No medi cal institution can be worthy of the name without baths, for disease is not to be cured by mere drugs alone."

It must be admitted, however, that a great deal of the apathy that has hitherto

existed on this subject has arisen, not so much from an indifference to the interests of the sick poor, as from a want of knowledge concerning the great therapeutic and prophylactic properties of hot-air which is. to be found prevailing in all classes of society. This can only be remedied by the gradual enlightenment of public opinion ; and it is something that, during the few years the hot-air bath has had a revived existence among us, its high sanitive merits have been amply tested, and gladly recognized, by many able medical gentlemen connected with our hospitals, lunatic asy. lums, workhouses, and other public institutions, and thus, although its use has not become as general as it ought to be; its progress must be so far regarded as highly encouraging. and the satisful pur not hand

Indeed, when we consider how very hard it is to contend against the pride of professional dogma, which clings with superstitious reverence to old habits of thought and practice, and also how exceed+ ingly difficult it is to surmount opposition that arises from popular ignorance and prejudice, as well as to overcome official inertia, we are much less inclined to lament the tardy progress of the bath towards becoming a national institution for the relief of the sick poor than to rejoice that, without any adventitious aids and in defiance of all impediments, it has made its way so successfully; if slowly, yet surely, and more especially that, among the rising generation of medical practitioners, its great reisen, not so he interests t of knowapeutic and ir which is asses of sodied by the ic opinion; ng the few a revived itive merits dly recoggentlemen inatic asy. ublic instiise has not be; its proas highly MOF Staller

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It is not, however, with the merits of the bath in sickness that we are now chiefly concerned, but more particularly with its transcendent value as affording the means of healthful recreation for the great mass of our industrial population, who supply the bone and sinew, the intelligence and skill, that constitute the foundation of national prosperity, wealth, and greatness.

One hundren years ago, the illustrious Franklin proclaimed the great truth, that public health and public wealth have an inseparable relationship; yet so slowly does such truth permeate society, obtain a guiding influence over public opinion, and bear its good fruit in the policy of statesmen, it is only now that our leading public men are beginning to give signs of their minds being enlightened by a glimmering of its vast importance. At a meeting in Manchester last year, Mr. Disraeli said : " I. consider the health of the people to be the most important subject that can engage the attention of statesmen. It is a question which really almost comprises every object which we wish and desire. Properly conducted, it refers to human habitations, to purity of water, to purity of air, to the non . adulteration of food, to all those subjects which, properly treated, may advance the happiness and comfort of men; I therefore, impress upon you, above all things, beyond all our party differences, even superior to those great political questions which party differences must yield, to consider that the greatness of this country depends upon the maintenance of the integrity and power of the English race, and that the health of the people is at the foundation of all our greatness and splendour."

At the opening of a new hospital near Liverpool, Lord Derby took occasion to'refer with admirable effect to the same subject. Everything. he declared depends on national health. " It is," he said, " by continuous and persevering labour alone, handwork and headwork, that England holds its position against other countries more favoured by nature; but without a high standard of vitality-and that, as you know implies more than a mere lengthening out of life-labour such as we require cannot be kept up. Again, when you have to deal with men in masses, the connection between vice and disease is very close. With a low average of popular health, you will have a low average of national morality. and probably also of national intellect. Drunkeness and vice of other kinds will flourish in such a soil, and you cannot get healthy brains to grow on unhealthy bodies. Cleanliness and self-respect go together, and it is no paradox to affirm that you tend to purify men's thoughts and feelings when you purify the air they breathe."

While giving expression to these valuable truths Lord Derby had the candour to admit the backward state of public intelligence on such subjects. Mr. Disraeli had previously confessed the short comings of the sider that the nds upon the nd power of health of the ill our great-

ospital near casion to resame subdepends on d, " by conalone, handgland holds tries more out a high you know hening out uire cannot ave to deal . nection beose. With a u will have 1. and prorunkeness ish in such brains to liness and s no paraify men's ourify the

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Legislature respecting sanitary matters :--"I am bound to say we are idle on this subject in the House of Commons," were his words. But why this idleness ? Simply because public intelligence is not sufficient. ly enlightened to compel legislative attention being given to subjects of such transcendent importance. As the stream cannot rise higher than its source, so legislation as a rule, must be the reflex of the knowledge and intelligence Parliament represents. Hence, sanitary legislation is only in its incipient state. It is true that of late years a good deal has been done towards bettering the habitations of the people, and placing the means of healthful recreation within reach of the dense populations that swarm in the hives of manufacturing industry. In this, and some other respects, improvements have been effected, but as . yet scientific knowledge has had but little. to do with inspiring and directing our sanitary policy.

The great question of public health, as based on the observance of the immutable laws of physiology, has received, as yet, scarcely any consideration at all, owing to the ignorance so generally prevalent concerning those laws; ignorance not confined to what are called the "lower orders," but which, unfortunately, pervades all classes, and is equally inveterate, while much more pernicious, in the middle and upper than in the more humble ranks of society. It is needless to complain of popular ignorance concerning the laws of health, and of the manifold 'evils their violation causes, while those who may be socially regarded as "fortune's favourites" are scarcely more enlightened.

Forty years ago Dr. Southwood Smith. a principal leader among the noble band who pioneered the cause of sanitary reform, complained that general physiological knowledge, which should form an essential part of an accomplished education. was totally excluded from schools - and colleges. " Excepting as à qualification for the practice of surgery and medicine," he said, "in the curriculum of no'school or college in the kingdom is an explanation of the structure and functions of the human body included." Yet this knowledge is most essential to the legislator-to all public men, indeed, and it lies at the root of all valuable sanatary improvement. The acquisition of such knowledge should be deemed necessary to the education of a gentleman. The phenomena of life, the structure and functions of the organs on which those phenomena depend; the circumstances that are conducive to health, the agents that ordinarily produce disease, the means by which the operation of those agents may be avoided, counteracted, or controlled, the relationship between physiological organization and psychological well-being and the immutable laws which influence, regulate, and govern both-these are subjects of vital moment to the rational human being; yet respecting them the collegian is generally not much better intheir violation ay be socially vourites'' are

hwood Smith, e noble band f sanitary real physiologiuld form an ed education, schools - and qualification d medicine," of no school explanation of the human nowledge is -to all pubthe root of ment. The e should be cation of a of life, the organs on d; the cirto health, ce disease, on of those eracted, or ween phychological ws which oth-these e rational m the colbetter in-

formed than the casual attendant at a ragged school. While such remains the case, we can have but faint hopes that an effective system of sanitary improvement will be carried out. We must remember, too, that the wisest legislation cannot do everything, for there is a point where, as regards sanatary enactments, the responsibility of Parliament ends and, as regards sanatary observances, individual responsibility begins. Parliamentary legislation can do a vast deal, but not everythingmore especially as regards the preventibility of disease, which naturally falls within the sphere of household and individual action.

Such sanatary measures must always largely remain a matter to be dealt with by individual conscience and intelligence; hence, the urgent necessity for the dissipation of popular ignorance, and the spread of knowledge on such subjects. This is really preliminary to a true sanatary influence pervading the social and moral life of the nation. As Lord Derby, on the occasion already referred to, truly observed :--- "The conviction which sanatary knowledge brings with it as to the preventibility, in general, of disease, is one of quite incalculable importance. Men are very slow to learn the extent to which their destinies are in their own power." They are apt to be astonished if you point out to them that nine-tenths of the calamities that have afflicted the human race are directly and obviously the work

of men's own hands. They are inclined to confound that feeling which we all res. nect-that of cheerful acceptance of the inevitable-with that other kind of resi. gnation to evils which are not inevitable. which is mostly laziness and apathy, and the prevalence of which is one of the most characteristic distinctions betwen the say. age and the civilized man. And why do I say this? Because I am deeply convinced that no sanitary improvement worth the name will be effected, whatever Acts you pass, or whatever powers you confer on public officers, unless you can create a real and intelligent interest in the matter among the people at large. In the first place, you cannot get laws effectually put in force where they interfere with the profits or convenience of individuals, unless they are supported by opinion. In the next place, whatever administrative measures can do for the public health-and they can do a great deal-they can never supersede the necessity for personal and private care."

In these sensible observations we have the pith of the whole case. To the enlightenment of public intelligence alone can we look for the success of an effective sanatary system. Ignorance at present is prolific of evil, respecting matters of health, in every class of society; and, with that ignorance, we have the laziness and apathy Lord Derby complained of—that irrational contendedness characteristic of savage life, which finds consolation in attributing to an angry Providence calamities that result are inclined to h we all res. ptance of the kind of resi. ot inevitable, d apathy, and ne of the most twen the sav. And why do I oly convinced ht worth the ever Acts you u confer on create a real natter among st place, you put in force ne profits or less they are next place, sures can do ey can do a persede the ate care." we have the

we have the enlightenone can we ve sanatary s prolific of h, in every ignorance, athy Lord tional conavage life, ibuting to that result from our own wilful blindness and stubborn perversity. To the absence of an enlightened public intelligence alone can we attribute the little progress made in providing for public use such sanitary in. tiiutions as baths and wash-houses, though it is now more than a quarter of a century since the Act 9 and 10 Vic., cap. 74, was passed. In the preamble of that Act the establishment of baths and wash-houses is stated to be "desirable for the health, comfort, and welfare of the inhabitants of populous towns and districts." The baths referred to are, of course, water baths; and, though several have been established in towns and cities, still, considering the national wants, comparati. Ily little has been done towards providing a supply. The Act has not been fairly carried out, simply because it was permissive, not compulsory-the adoption of its provisions was left to the voluntary action of the local authorities, instead of having been made compulsory, as all public sanitary measures ought to be.

It is, nowever, so far satisfactory that the Legislature has declared the establishment of publics baths to be a desirable sanatary measure. This granted, the question then arises—what kind of bath is best calculated to realize the intentions of Parliament by promoting "the health, comfort, and welfare of the inhabitants of populous towns and districts?" This is a question not to be lightly decided in accordance with old formulas of prejudiced opinion : it must be considered in the light of physiology.

Therefore, we must bear in mind that the primary object of bathing is the preventi. tibility of disease-of disease to which the inhabitants of populous towns and districts are more especially exposed. There is. in fact, a constant tendency in the crowded populations of towns and cities to degene. rate-a perpetual gravitation of the stan. dard of vitality towards a lower level-deteriorating influences continually at work to impair physical organization, and stunt mental growth; hence the great necessity for some counteracting power capable of arresting such degeneracy by operating on the causes that produce it. Now, one of the most valuable results of sound sanitary knowledge is a thorough conviction of the preventibility, in a large degree, of the vast mass of diseased conditions which contribute to the deterioration of the inhabitants of ovércrowded towns, cities, and districts. One great means of effecting this is bathing; but, in deciding on 'the form of bath best calculated to produce so desirable a result—to aid in promoting popular "health, comfort, and welfare"-it is obvious that we must be mainly influenced by the merits the particular form of bath inherently, possesses as a prophylactic agent in preventing disease.

This being so, we think, from the evidence already adduced, the reader will be prepared to concur in our conclusion, that the merits of the hot-air bath are, in this respect, such as to admit of no rivalry. The immense advantages it possesses over every

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m the evider will be lusion, that are, in this valry. The over every other form of bath are attested by such an overwhelming weight of medical evidence that the more public intelligence is directed to the subject, the more clearly will appear its transcendent superiority. And in no point of comparison is that superiority more remarkable than with respect to its wonderful prophylactic virtue—the inherent power it possesses to preserve health by counteracting the deleterious influences which are always more or less active in their tendency to impair the health of crowded populations.

There is much wisdom surely in the proverbial saying, that " prevention is better than cure," and especially is this the case with respect to disease. Now, as a general rule, all disease is manifested in the incipient stage by slight functional derangements, often so slight, indeed, as neither to excite alarm, nor suggest the adoption of precautionary measures, yet certain, if neglected, to increase and develop into established disease. It is at this point -this incubating stage, so to speak-that the hot-air bath is all-powerful in arresting the progress of evil by eliminating morbid matter from the system, and restoring healthful functional action. This is peculiarly so with respect to the diseases that are generally prevalent among the poorer classes of the population; such as are caused by exposure to wet and cold, and by contagious poisons, respecting which that emiment authority, Erasmus Wilson, says: -" The faculty of preventing disease, as

exercised by the skin, besides being direct and operating on the general health of the body, is also indirect. The skin repels the depressing effects of cold, of alternations of temperature, of extreme dryness or moisture, by virtue of its own healthy structure,, by its intrinsic power of generating heat; and it also repels other causes of di sease, such as animal and miasmatic poisons, by its emunctory power, which enables it to convey them directly out of the body."

Thus, by stimulating the healthful functions of the skin, as already described, the hot air bath exercises great prophylactic power in preventing disease, while it fortifles the body to resist climatic changes and escape the evils that generally follow from exposure to the morbid influences of malaria. Mere ordinary water bathing could produce no such effect on the skin, and therefore has no such remedial and prophylactic influence as hot air possesses. On this point the testimony of Dr. Sheppard, the able superintendent of Colney Hatch Asylum, is valuable. . "There are," he says, "more clean skins (relatively clean), in the ratio of twenty five to one among the artisans of London than there used to be twenty years ago. This is a great move in the right direction. But more remains to be done yet. The true bath of hot air and then of water, by which the skin is rendered absolutely clean, must become a great national institution. Before it our prejudices will fall, and our ignorans being direct health of the skin repels the alternations of yness or moisealthy structuof generating or causes of dimiasmatic poier, which enactly out of the

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Such, then, is the general character of hot air as a bathing medium-of the sanative and sanatary properties it so largely possesses, and its adaptability to meet the bathing wants of the people at large. That it offers advantages attainable by no other means is adnitted by all who have tested its merits and are therefore best acquainted with their value; and assuredly the most direct, effective, and economical way to promote the " health, comfort, and welfare" of our industrial population, would be to construct hot air chambers in connection with all the public baths that are already established. This would involve little cost. and be a good commencement towards having proper baths erected in every dispensary district, which will yet be done, and prove an inestimable boon to the people.

In an address to the London Medical Society, Dr. Thudichum said, respecting the hot air bath :---" A boon to mankind, your nation, and every individual in this room, hot air, combined with cold effusion, with shampooing, with exposure of the body to light and air, await your approval as medical agents, and your application to those who are under your care. I hope you will seize the opportunity, and secure for this society a share in the merit, similar to that of which Hippocrates was proud, of having introduced the bath in the treatment of disease." When we consider these observations, so

justly eulogistic of the therapeutic virtues of the bath, are equally true of its invaluable merits as a powerful prophylactic agent in repelling the approaches of disease, surely it cannot be held consistent with the prac. tical intelligence and aims of our day, that so potent, so general, so economical, and so salutary an agent for good should be over. looked or neglected by those who are charged with the responsibility of attending to the sanatary condition of the people. Health is the working man's capital, in the preservation of which society at large is deeply interested ; and by what means can health be better protected than by the prevention of disease? There is little wisdom in "locking the door when the steed has been stolen;" yet somewhat akin to it is the wisdom that guides the administration of our-medical charities-little is done for the prevention of disease ; but once it becomes developed and painfully manifest in its victims, then, indeed, millions sterling are annually expended in maintaining hospitals; dispensaries, and asylums for its treatment. Surely it is the direct interest of every payer of rates and taxes that such an irrational and wasteful system should be changed.

In Ireland, the Baths and Wash houses Act bas remained almost a dead letter, yet there is no part of the empire in which equal facilites exist for salubrious bathing. This is owing to the enlightened policy followed by the late Dr. Barter, the reviver of the hot-air bath in western Europe, eutic virtues of f its invaluable lactic agent in disease, surely with the prac. f our day, that omical, and so hould be overwho are charattending to the people. capital, in the ly at large is hat means can n by the prelittle wisdom the steed has akin to it is iministration is done for once it bely manifest oillions stermaintaining vlums for its rect interest es that such tem should

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whose career as a public benefactor has vet to be aprreciated. The baths he was instru mental in establishing in Ireland have been of great public advantage, yet the good they have done only serves to show how much yet remains to be accomplished. We want cheap baths for the people. The Barter baths are well constructed and well conducted, but they are more for the wealthier classes than for the industrial population. This can only be remedied by making baths an essential adjunct in every dispen sary district, both in town and country. This would. indeed, be a blessing to the poor.

In England, the hot air baths that pass under the name of "Turkish," are generally of a very inferior description. We have visited several in various provincial towns, and found some very good, and others very bad; so bad, indeed, as to be wretched caricatures of what a proper bath ought to be. Even in London, where a better order of things might be expected. there are gloomy, inl-ventilated, noisome cells, called "Turkish Baths," into the like of which we would not put our domestic animals in Ireland. Yet the generally of London bathers know no better, and the consequence is, that such dismal holes get the bath proper a bad name. It is not uncommon to hear parties who have been in imperfect baths, declaim against the hot-air baths, because it made them feel sickish. and suffer from the headache. We have repeatedly felt the same ourselves in London baths. It is the natural result of a foul bath atmosphere. Without an abundant supply of pure hot-air it is impossible to obtain a salubrious bath. Pure air and pure water are bathing essentials. If you enter a badly-constructed bath, you have a fetid atmosphere, reeking with foul moisture, because surcharged with excrementi. tions impurities, the products of perspiration, which have not been carried off by a proper system of ventilation. Such an atmosphere is deeply oppressive instead of exhilarating. Nausea and headache are naturally caused by it, and ignorant persons attril we such unpleasant effects to the bath proper. Thus the character of the pure hotair bath is injured in public estimation; and we are aware that a good deal of the prejudice still existing against the use of the true bath has originated in this way.

We must now bring our observations to a close, and shall do so by briefly summing up the reasons which induce us to recommend the hot-air bath as admirably adapted to become the bath of the people :—

Because, as a general rule, it is congenial to the constitution of almost all men, and, therefore, capable of nearly universal use, without the fear of such injurious consequences as too frequently follow from water bathing.

Because it does not debilitate nor weaken, but exercises a restorative, strengthening, and invigorating influence over the wearied body, soothes nervous iritability, and imparts a buoyant, healthful tone to the whole result of a foul t an abundant s impossible to Pure air and entials. If you ath, you have a vith foul moisth excrementi. ts of perspiraarried off by a . Such an atsive instead of eadache are na! norant persons ects to the bath f the pure hotic estimation; od deal of the ast the use of in this way.

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And finally, because, independently of its acknowledged therapeutic merits in the treatment of disease, it is the very best prophylactic agent that has yet been discovered for the preservation of health. Its habitual use fortifies the system to repel deleterious influences that are active in propagating disease; —such baneful influences as arise from malaria, epidemic poisons, like cholera, and atmospheric impurity, otherwise engendered—as well as from the more ordinary effects of wet and cold, to which in our variable climate, the working classes more especially are, to a large extent, necessarily exposed.

These reasons make the hot-air bath, as Erasmus Wilson expressed it—"a boon to humanity;" but it is needles for us to say, that we have been dealing with its use, in a general sense, by men who are well, and desire to keep themselves so. In cases of actual disease, the bath, as a remedial agent, ought never to be employed, save under competent medical direction.

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SPECIAL ATTENTION devoted to the treatment of CHRONIC DISEASES, such as DYSPEPSIA, and its complications, TOR-PIDITY of the LIVER, CONSTIPATION, PILES, etc., INCIPIENT CONSUMPTION, WEAK LUNGS, AMPERFECT CIRCULA-TION, NERVOUS DEBILITY, UTERINE DIS-PLACEMENTS, and othar Weaknesses, DE-FORMITIES, NEURALGIA, RHEUMATISM, PARALYSIS, etc., etc.

A limited number of patients accommodated with rooms and board, or other who may desire to learn or to live healthfully may obtain board at the Institute.

DAVID B. A. MACBEAN, M.D.,

Proprietor.

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