

A lecture on a healthy skin : delivered before the members of the Balloon Society of Great Britain at the Royal Aquarium, London / by James Startin.

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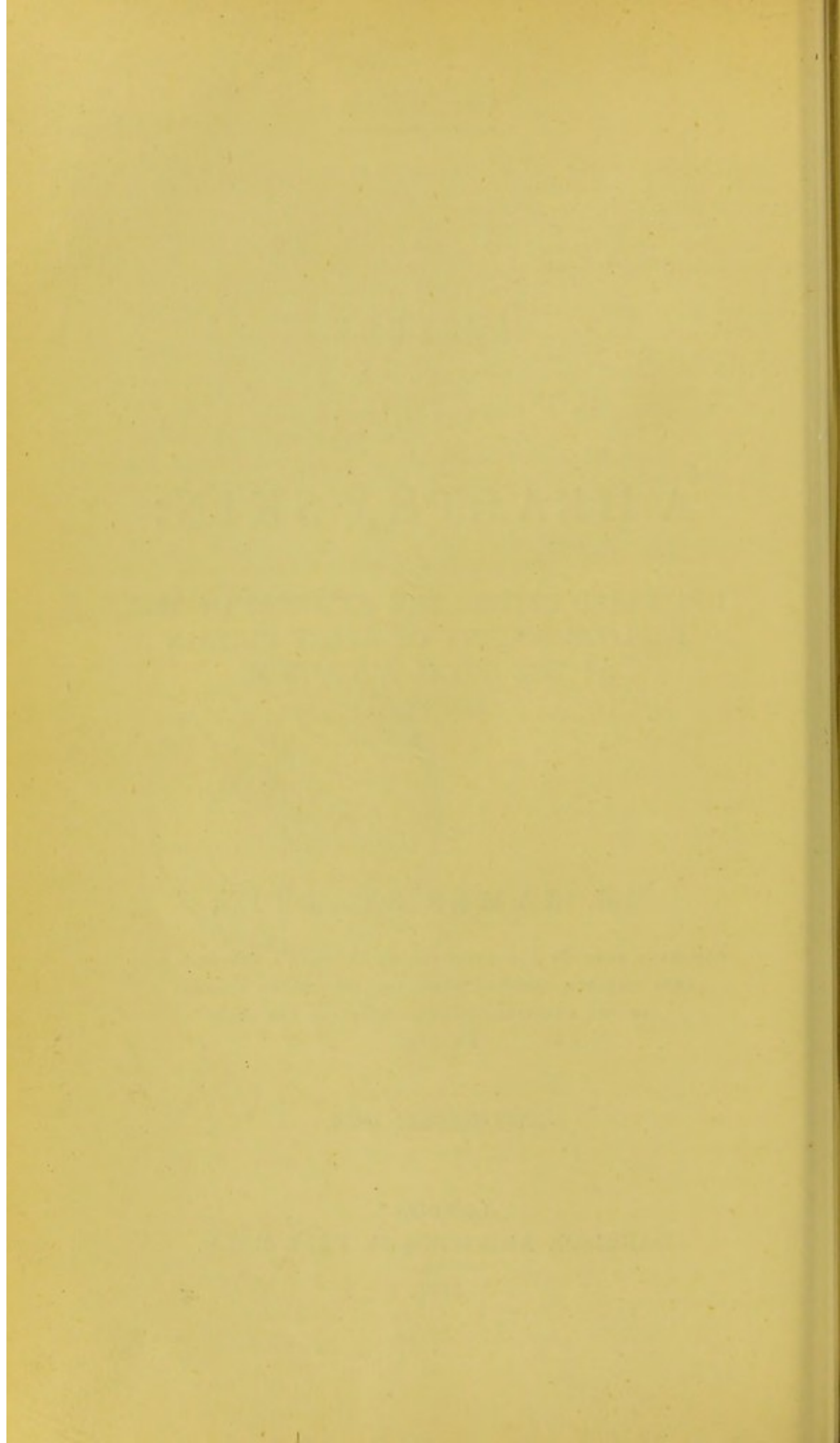
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A HEALTHY SKIN.

LADIES AND GENTLEMEN,—What a wonderful provision of nature the Creator has given us in our skin! It is one of the most important means by which our health may be influenced. We may define health, *if we can*, but it is indefinable. “It is that state of our bodies in which the functions of it go on without our notice or observation, and in which existence is felt to be a pleasure; in which it is a kind of joy to see, to touch, and to live. This is health. Yet the skin is apt to be looked upon and attended to, by the greater majority of the community, less than any organ of our bodies. It should not *only* be considered as a mere covering to defend us from the effects of heat or cold, but as one of the most important organs of our body, without the constant activity and agency of which we must neither look for health or long life; and in the neglect of which, in modern times, lies the secret source of numberless diseases and evils that tend to shorten our existence.” And from whatever cause they result, the morbid phenomena of eruptions of the skin show themselves at all periods of life, in every rank and in all conditions of civilization. But it is the working-classes of the community who are mostly exposed to their influence, and consequently it is mostly amongst the poor that the greater number of these diseases are found.

The artizan in his *several trades* finds a fruitful source of skin disease in the dust and dirt in which he labours—often

very irritating, and from which he cannot, or very imperfectly, protect himself, or escape from, unless he gives up that employment which furnishes his daily bread. Not only the artizan, but *the drapers, grocers, dyers, bakers, skin dressers*, and other traders find that their assistants occasionally suffer by absorbing the dust from their trade into the skin.

The skin is the greatest medium for the purifying our bodies ; and every moment of our lives a multitude of useless, corrupted, and worn-out particles evaporate through its numerous small vessels in an insensible manner. This secretion is inseparably connected with our lives and the circulation of our blood, and by it the greater part of all the impurities of our bodies are removed. If, therefore, *it be* inactive, and its pores be stopped up, an acridity and corruption of the juices will be the inevitable consequence, and most dangerous diseases may ensue. A very common public error is, that all disorders of the skin are somewhat contagious. Servants and workpeople turn aside and avoid any one in the same service if affected in this way.

Numbers of poor girls are thus driven into any asylum they can manage to get in, and the union is the only place of refuge from a prejudice most undeserving. Men-servants also suffer too often by this uncalled-for avoidance. Some people, especially nervous, weak-minded individuals, *the vicinity*, even the bare mention, of skin disease seems to upset their equanimity. But let me reassure all rational people : few eruptions of the skin are really contagious, and even these are hardly ever seen by the public in an actual condition of contagiousness.

If anything further might be said, or any inducement needed, to urge us to the consideration of this important subject, it might be found in an invasion of that terrible and devastating disease, Asiatic cholera. Nothing that we can do, is so likely to preserve us from that dire disease—and, indeed, of every disease of an epidemic or contagious kind—as a proper and judicious care of the skin.

The instructions laid down by our sanitary boards for

securing our country against cholera are happily so good, and they contain recommendations having reference to the personal maintenance of the skin in a state of cleanliness, warmth, and health; and it is only by a knowledge of the nature and functions of the skin that we can safely hope to succeed completely in effecting this object. With regard to cleanliness, if there is one thing which distinguishes an English man or woman more than another it is this universal habit of cleanliness—the use of the bath; but of this I purpose speaking later on in this lecture.

History.—It would appear that, at first sight, skin eruptions in ancient times were either more common, or that the disgust with which they are commonly regarded had a greater influence on the community at large than is at present the case. At the period of the establishment of our Royal hospitals (St. Bartholomew, Bethlehem, and Bridewell), the *leper*, as the unfortunate individual was called who was afflicted with a skin eruption, had a place allotted to himself—"To keepe him out of ye citie." He was in a manner confined to a district beyond the bounds of which he dared not venture under the penalty of death; indeed, so severe was the law in such cases (leprosy having been held one of the five plagues under the Sanitary Code in most European countries, and I believe in our own), that any one convicted of having had communication with a leper rendered his life a forfeit to the State. Common sense in modern times, however, has long since exploded the belief that the affection called leprosy is contagious in temperate climates. After the Crusades every disease of the skin became an object of suspicion, without discrimination, or even a cursory inquiry into its nature. Under the general denomination of lepers thousands of helpless wretches, whose only crime was poverty, were condemned to noisome imprisonment and banishment from all ties of friendship and kinsmen. At that time the number of lazarettoes in Europe amounted to 21,000; and we read, in Paris, that in the façade in such a building a gibbet for such as dared either enter or escape without permission was erected.

It may be interesting to state that the site of St. James' Palace was anciently occupied by one of these leper-houses, and that the parks adjacent formed part of the domain from whence it derived its support, until Henry the Eighth, in his kingly wisdom, converted this ancient charity into the palace it still continues. Such was the charitable care of the suffering community in ancient times. But it is only within the last few years that special notice has been taken of these diseases by medical men, and the establishment of special hospitals and special departments in our large hospitals for their alleviation. With regard to our animals, our horses and dogs, the most ignorant person is convinced that proper care of the skin is indispensably necessary for the existence of our horses and other animals. For if they become meagre and their coats dull, the first thought is whether there is not some neglect or want of care in regard to the combing them, or attending to them. Such a simple idea, however, seldom occurs to the attendant with regard to his children.

Character.—The soft yielding texture or integument forming the external covering of our bodies, well-known by common designation as the skin, though apparently one membrane of evidently complex structure, in reality consists, throughout its whole extent, of three layers, one over the other, which besides performing the important office of protecting the parts beneath from injury, constitute at the same time the seat of the sense of touch and the organ of sensible and insensible perspiration, and we are here reminded of the expressive lines of Pope—

“ In human works, though laboured on with pain,
A thousand movements scarce one purpose gain ;
In God's one single can its end produce,
Yet serves to second, too, some other use.”

The apparatus for cutaneous absorption, imbibition as it is called more properly, the *three* layers, besides furnish a locality for innumerable glands or bulbs producing hair and the down of pubescence, everywhere covering the body and adding

so much softness and grace to feminine beauty ; for a class of little cavities, which secrete the unctuous matters to lubricate the skin, called sebaceous glands, and, finally, for the sudariparous or perspiratory glands.

Yet with so great a variety of offices and parts, the extent and services of this interesting membrane are not confined to the outer surface only, for the skin is found to be continued inwards at all the openings of the body and to become the lining membrane of the viscera, forming the mucous membrane of the mouth, nose, throat, lungs, stomach, bowels, and other organs ; so that the cutaneous surface may be said, like a circle, to have neither beginning nor end, but forms one beautiful investing membrane for the whole body, inside and out, which so admirably accommodates its services to the various parts, that, perhaps, no structure could be imagined more illustrative of divine arrangement, by combining unity of purpose and design with diversity of functional offices, and so gracefully adapting itself to the different and varied movements of the body, without wrinkle or inequality, as to have furnished Burke in his essay on the sublime and beautiful with one of his happiest illustrations.

Though the skin is so surprisingly yielding and delicate, it is well constituted to resist external agencies, which property is marvellously increased by education or habit ; to the horny palm of the smith, for example, the dew drop and the red hot metal prove nearly equally innocuous in their action.

Yet so wonderfully sensitive is the organ of touch in the skin, that in the blind, deaf, and dumb it has furnished a medium of communication, which in minuteness of perception it has nearly rivalled, while it affords a substitute for the lost senses.

Whilst thus the skin may be said to connect each of us with the external world, it affords at the same time the safeguard and protection of the parts within, offering, according to their several necessities, great density of texture for a shield or defence, as before instanced in the hands and feet ; or a delicate and wonderful tenacity, as on the lips and other

organs where exquisiteness of sensation constitutes the prominent function to be developed.

The ends of the fingers may here, perhaps, present themselves as seeming exceptions to this statement, but when we speak of the anatomical arrangements of the skin, we shall at once perceive increased cause for admiration of these facts, and wonder at the contrivance for admitting free exercise of the sense of touch in parts so thickly covered by cuticle.

Of the three layers or divisions of the skin, the *first*, or outermost, that which meets the eye, is the scarf-skin, the cuticle or epidermis; the *second*, in which the colouring matter of the different human races is deposited, is called the rete-mucosum, or malpigi (after its discoverer, Malpigi); and the *third* is called the true skin (the cutis vera, dermis, or chorion).

The cuticle, when separated by a blister or other means from the living body, is found in all races of men, blacks as well as whites, to be a diaphanous, elastic, white or greyish-white membrane, rather darker, however, in the negro races, and from the grooves intersecting it, apparently reticulated, the outer surface being somewhat convex and polished from the oily matter thrown out upon it by the sebaceous glands or follicles, the inner surface concave, rough, and irregular, an appearance which, if regarded with slight magnifying power, is found to arise from numerous small points or processes like the pile of coarse velvet; these are the hollow tube-like continuations of the cuticle dipping into the pores and inequalities of the rete-mucosum, the second membrane of the skin, and into the true skin or dermis; the third membrane, as it were, forming the medium of communication between all these parts and channels through which the hairs and sebaceous and sweat ducts pass, each of these minute tubes or processes being like an inverted finger of a glove, the duct, hair, &c., perforating its apex something after that manner.

By a beautiful provision of nature the cuticle may be said to be a sort of varnish, perfectly insensible, which protects the

more delicate parts of the skin and the organ of touch from injury. Were our bodies without this covering, not only might any noxious weed we crush in our progress produce lethal effects, but we could scarcely perform the common offices of life without risk. In our profession, this protecting membrane daily and hourly exerts its preservative influence; with this safeguard we can handle with impunity not only deadly poisons, but sources of contagion themselves.

Thus we see the advantage, nay the necessity, of our well being, of bearing about with us an inanimate exterior, and can admire the wonderful wisdom of the Creator in this external adaption of our bodies to the world without. We now come to the question as to what is the soundest state or condition of the skin, or that which most contributes to it, and in its turn indicating a high state of health. It does not depend upon whether the person is of a sanguine or bilious temperament, of ruddy or sallow complexion, *but* whether the skin exercises its functions in a proper manner. I will now endeavour to show you how it may.

The conditions, therefore, necessary to maintain the skin in a sound and healthy state, to restore it when disordered, to second our efforts when engaged in treating some of the many eruptions to which it is liable, may be classed under three heads—

1. That the body should be, if possible, well and judiciously nourished.
2. That no undue tax or strain should be put upon the skin.
3. That the skin be put under proper rules of management as to diet, clothing, exercise, and general hygienic surroundings.

Now with regard to *diet* I should like to say a few words, as the health of the skin is much influenced thereby.

In the first place, our food is in a double manner a source of *warmth*, by supplying the material requisite to balance the continual waste going on in the body, and, secondly, by conveying into the system those elements which, by their

chemical composition, elicit heat ; and to ensure these results, our food must be wholesome and sufficient, and must combine all the varieties, animal and vegetable, which are bestowed upon us, viz., the aqueous, the albuminous, the saccharine, and the oleaginous. The first is necessary, and enters largely into the component parts of our body ; the second, from our animal food ; the third, from the vegetable ; and the fourth, from both the latter. Let me give you a good maxim, "*Happy is the man who only eats when he is hungry and drinks when he is thirsty.*"

The periods of taking food usually adopted in our country, in accordance with convenience and recurrence of hunger, are those which are best suited for the purpose of health, viz., the morning meal, the mid-day meal, and the evening meal.

The morning meal, or breakfast, should be taken between 8 and 9 ; the mid-day meal, the dinner of our forefathers, the second breakfast of the French, the lunch of fashionable life, is generally, and should be, taken between 1 and 2 o'clock ; and the evening meal, the supper of our forefathers, the dinner of the present day in fashionable society, between 7 and 8 o'clock.

Amongst the ancient Greeks the three meals of the day were called the "ariston," the first, or morning meal, taken at sunrise ; the "deipnon," the chief meal, dinner ; and the "dorpon," the evening, or sunset meal, supper.

The Athenians took meals as the French, and they called them "ariston" and "deipnon," excluding the "dorpon," and sometimes the "ariston" was regarded as luncheon, the prandium of the Romans.

As regards the quantity of food to be taken at all times, no doubt it is best to err on the side of moderation, and I have no hesitation in condemning too great a variety at a single meal, however much variation of diet may be useful. A variety of dishes is simply an injurious device for overloading the stomach. Before I commence referring to special articles of food, let me urge upon you the great importance of *regularity of meals and sufficient time to eat them.* Upon

this rule depends to a great extent our health. Irregularity in this respect produces, as you know, indigestion, flushing of the skin, and one of the most disfiguring eruptions, and that, on the face. It is not all red faces and red noses that proceed from strong drink, though many do.

The diet for any one who suffers with an eruption should be fairly good; above all, the day should be commenced with a substantial breakfast of light food, but not with hot roast meats, as is the custom in England with some persons; the stomach is not able then to digest it. Fish, boiled bacon, eggs occasionally, cocoa or cocoatina, coffee for some, tea for some, for few persons are able to digest the same things—some coffee, some tea. Some take porridge, but my experience shows me it cannot be taken regularly south of the Tweed. It is much too heating in the south of England; indeed, I have seen eruptions caused by eating it, especially in children.

Now *milk* is a mixture of the four staminal principles of food that I have mentioned before; in it, therefore, we expect to find a model of what an alimentary substance ought to be. Some cannot digest milk—then I recommend them to take soda water with it. It forms a very suitable portion of our daily food therefore. *Coffee*, if properly made, is a wholesome beverage, but it requires making. It, the berry, of two or three kinds, should be freshly roasted and ground, and thoroughly boiling water passed through it immediately before it is required. Those of you who know this must know how vastly different it is to the stuff called coffee as it is bought, and often mixed with that wretched drug chicory. If *tea* be preferred, it should be made with some variety of pure black, India or China, tea, not green. It should never be allowed to stand or draw; from two to five minutes after boiling water is poured upon it makes a correct infusion. Let me urge you to try these methods, and I vouch you will not be disappointed. Tea is not good for all, especially the dyspeptic, and some teas are so loaded with starch that when allowed to stand a few minutes they are like thin arrow-root. Do not take tea too often, either. Some people I know

take a cup in the morning first thing, then two or three at breakfast, sometimes again at lunch, and three or four, or even more, at tea time. Can you expect ever to have good digestions or complexions if you do this? For *solids* variety is best, not eggs and bacon, or bacon and eggs every morning, or eggs alone, as they are too bilious to take regularly. Take fish (not kippered fish) one morning, boiled bacon, almost as good as cod-liver oil to weak persons, another, and so on. Now the business man, the busy professional man, should always make a good breakfast, or he will soon pay the penalty with bad digestion. And let me say a word to those who come into this great city by trains: do not hurry or run to catch a train the first thing in the morning, one of the worst things that we can do before our machinery is set in motion. I have seen two or three fatal consequences take place alone from doing this, besides causing acute indigestion and rough skins. Another thing, the fashionable lady who gets up from her dinner table at 10 o'clock, and often eats but little during the time she spends at the ball or reception, often until 3 and 4 o'clock in the morning, must not expect to keep her complexion.

The rule is, therefore, our food should be *fair in quantity, and good in quality*, but light.

A fair amount of meat should be taken, but never in excess. The people of England are accustomed to take far *too much beef* and mutton without variation, which only stimulates the skin to gross and unhealthy action and appearance. Servants, where so much meat is consumed in well-to-do families, make *good* patients to the *doctors*. All rich and heating foods taken in excess, such as roast pork, salt beef, veal, jugged hare, many soups, badly-cooked pastry, shell-fish, new cheese, raw vegetables, dried fruits, sweetmeats, should be studiously avoided by those who have any tendency to eruptions; but even in health, the skin often becomes red and irritable after such things.

We should take a more mixed and vegetable diet; and let me tell you, ladies, that vegetarians possess the finest com-

plexions of any people in the world, not that I advocate vegetarian diet in itself alone. The tendency, as I said before, is to take too much red meat, and too often. We should take much more vegetable diet than we do, and more fish—that essential nerve and brain-supplying food, fowl, wholesome unadulterated bread, wholemeal bread and brown bread, once cooked meat, potatoes well cooked, all sorts of green vegetables, marrows, celery, tomatoes, leeks, and others so little known, rice, farinaceous food, beans, peas, light puddings of all kinds.

All this has been most ably brought forward in the lectures on cooking at the late most successful International Health Exhibition. No person can expect to have a nice complexion who eats meat—beef and mutton—day by day without variation.

I now come to a very important element in our diet, viz., drink. To those who wish to keep their complexion fair, I should advise them never to drink spirits. I mean by this, those which contain absolute alcohol, viz., brandy, whisky, gin, rum, which are all more or less poisonous. "Spirits should never be taken except as physic."

My attention has lately been much drawn to the fact that in my practice how many disfigurements of the skin are entirely due to drinking intoxicating drinks to excess, and amongst the upper ranks of society, too; and, further, it is a painful fact to relate that there are 50,000 prisoners in our jails. Sixty per cent. of the inmates of our lunatic asylums are victims to its direful influence; and there are 1,000,000 paupers in our workhouses and elsewhere, and plenty ready to follow them, only through excess in drink. I find more than 60 per cent. of the dreadful cases of eruption in my hospital are either brought about by its influence, or those eruptions that are either inherited or acquired are materially influenced to the bad by its abuse. Alcohol has a direct specific action upon the nervous system, the circulatory system, and so, upon the skin; and being a most active generator of heat, has its evil influences on the capillary circulation, *i.e.*, the surface-circula-

tion. Do we not see it in the red nose and face of the drunkard, as I have said before? not that all red noses are necessarily drunkards' though.

Instead of the vile concoctions called spirits, and that wretched stuff which is sold as ale to our working-classes, scarcely ever unadulterated, if we could prevail upon them to take less intoxicating drinks, of which there are so many, how much less we doctors should have to do. This advice applies to the upper as well as the lower ranks of society. A young American medical man, who had just come from the medical schools of Germany, visiting the practice of my hospital, told me that in the whole course of his three years' study and residence in Germany he never saw a drunken man or woman in the streets, or a woman enter a public-house. I am sorry to say we cannot say this.

Sir Andrew Clark says: "Is it possible that the teaching of science or the dignity of our profession, any more than the calls of patriotism, humanity, love to our neighbour, morality, and religion, can prove that we are wrong, when we advise those that come in contact with us, as patients or in other capacities, to abstain from the poisonous and pernicious use of alcoholic drinks?"

Health.—I venture to say to you that there is a certain joy of existence; a sense in which one feels what a pleasure it is to look, for instance, upon green fields and happy birds, to hear pleasant sounds, to touch pleasant hands, to know that life is a satisfaction. This is a state which, in my opinion, is always injured in some way or other by excess in alcoholic drinking. This is a state in which, sooner or later, the music goes out of tune, as regards its influence upon the health of our skin. Perfectly good health will, in my opinion, be always injured by alcohol; injured in the sense of its perfection and loveliness. The complexion soon loses its bloom and the countenance its cheerfulness.

Now, with regard to *clothing*. Next in importance to a judicious and rational diet, as a means of maintaining the health and temperature of the body, is the raiment—the

clothes we wear. A common, a very popular, error there is—that of putting too many clothes on our bodies. No man or woman's skin can be kept thoroughly clean and healthy who puts too much clothing on his or her back or hips. It is a fact that clothing in itself has no property of bestowing heat, but is chiefly useful in preventing the dispersion of the temperature of the body, and in some instances in defending it from the atmosphere. This power of preserving heat is due to the same principle, whatever form the raiment may assume—whether the natural covering of birds or animals, or whether the most beautiful and elegant tissues of human manufacture. In every case it is the power which coverings possess of detaining in their meshes atmospheric air; that is the cause of their warmth.

All clothing should be such as shall permit free transpiration from the skin, and, moreover, convey the transpired fluids from the surface; otherwise colds, irritation of the skin, and other bad consequences follow. And every one is practically aware that a loose dress is much warmer than one that fits tightly. The explanation is obvious: the loose dress incloses a thin stratum of air, which the tight dress is incapable of doing. The maxim, therefore, is, that we should not wear our clothes too tight. I notice many ladies of the present day and present fashion *do* do so; but they will find what I say true when the really cold weather comes. They not only lace themselves in too tightly, but wear too tight and too pointed-toed boots and shoes. If they only knew how serious a matter it is: destroying their livers and displacing all their internal organs, causing pale, sallow complexions, and the pointed-toe tight shoe utterly destroying the shape of the foot in a few years. I suppose women when they have got a husband do not mind this, but the husbands do.

To those whose skins are able to bear it, fine wool or flannel is the best material to wear next the skin (never red flannel, and I will tell you why presently), by reason of its absorbing and conducting-heat properties; to those who cannot, then cotton or merino is best in winter, and fine linen in summer.

For the outer clothing, woollen stuffs are by far the best, retaining the heat longer than other materials. There is scarcely any organ of the body that may not be affected by undue or irregular action, excited in some portion of the surface-circulation of the skin; how necessary, therefore, it is, for our health's sake as well as our skin, we should be most careful with what we put on.

Now, as regards *colour*, especially in clothes that are worn next the skin. It is remarkable to note the influence which colour exerts over our clothes as modifying its power to preserve warmth. It is a known fact that dark colours absorb more light and more of the sun's rays than those of a lighter shade. Dark colours are good radiators of heat, and their conducting power varies according to the nature of their material. White reflects the rays of the sun, consequently it turns the heat; it is therefore well adapted for summer wear.

But do people study the colour of their clothing for the purposes of comfort always? I think not.

It is fashion, no doubt, that is answerable for the colours and materials of dress of the present day, no matter how outrageous the colour or how injurious to the skin, or disagreeable to comfort; if it be fashionable or orthodox no other apology is necessary. No laws are so blindly obeyed as the dictates of fashion amongst a certain class of people, especially amongst those "who are striving to get on in the world," as "Punch" has it. Fashion has decreed that men and women shall wear bright coloured socks and coloured stockings, and coloured gloves, coloured chest flannels, coloured neckties, coloured vests, coloured under clothing of all kinds, and so great is the demand for these bright colours in the present day that the supply must necessarily be great, and I venture to state that manufacturers of dyes and dyers are not sufficiently careful in taking care what injurious or poisonous ingredients goes into their dyes, or what injurious matter is employed in goods to fix those dyes.

Let us note some of the inconveniences which are known, and have been known from time immemorial, by medical men,

to have origin in the material or chemical pigments with which these things are dyed. Red flannel when worn next the skin has been frequently the cause of serious inflammation, which has without doubt resulted from the use of colouring matter of modern uses, derived from coal tar dyes, commonly called aniline dyes, amongst which are reds, blues, magentas, of much beauty. During the last few years articles of dress, especially those worn next the skin, as stockings, gloves, drawers, and other under-clothing have been dyed with colours derived from these coal tar dyes, and as long as they are worn externally they produce no impression, save admiration, but this application to articles of dress such as named above and worn in contact with the body, has shown that they are capable of producing inflammation, irritation, and eruptions of the skin, and in some instances severe constitutional disturbance. Many of these aniline dyes, as they are called, are derived from benzole and other products of coal tar from which are obtained reds, blues, and magentas, *some* of which and their mordants when brought into contact with the skin by means of perspiration act as powerful irritants, more in some instances than others. The dye or its mordant is soluble in the perspiration, and hence it becomes absorbed into the skin. Some of the magenta dyes also contain arsenic, that compound being used in this preparation. It sometimes happens, as in one of the cases shown by myself at the International Health Exhibition, that the colour and pattern of the stocking is transferred to the skin, and is represented by lines and figures of inflammation. This inflammation is sometimes propagated to different parts of the body in the same individual, and is often of a severe and intense character, and still greater annoyance often results by reason of its recurrence after the skin has apparently recovered. It is a strange fact, I or my confrères never have had a case brought to us in which the dye was proved to be vegetable, but invariably mineral; whether it is the dye or the mordant used to fix it, it matters not to you or I, if it causes injury.

Why should we wear anything that is likely to cause injury?

Bathing and Baths.—Now as to bathing, we should pay the uttermost attention to cleanliness, for the greater part of our poisons (contagions) are conveyed to us through the external surface of our bodies, and it has been proved, that poison already communicated has been, by cleanliness, removed before it could actually produce any bad effect. I here allude in particular to frequent washings and bathing. What keeps the skin in such good condition as bathing?

The Romans, who were renowned for their luxurious and beautiful baths, prided themselves greatly on their skins, especially the women.

The outer skin or scarf-skin is being constantly cast off from our bodies in minute powdery scales, but these, instead of falling away from the body, are retained against the surface by the clothing, and become mingled with the perspiration, which unites together, forming a thin crust, which by its attraction causes all sorts of particles of dust and foreign matter from the air, so that the whole body in the course of the day is covered with these particles; the consequence of which is, the pores of the skin become blocked up, and its respiratory action prevented.

In the second place the skin must become irritated, and damp, and cold, from attraction of the saline particles, and if any poisonous gases, infectious vapours, find their way to the skin then, they will find a suitable medium for their transmission.

If therefore the pores be chocked up, the elements of the transfused fluids will be thrown upon the system, and consequently removed by other organs than the skin—by the lungs, kidneys, liver, &c. Thus it must be obvious to us all, that habits of uncleanness become the cause of consumption and other serious disorders of vital parts, and cutaneous eruptions and diseases of all kinds may be contracted. With such grave considerations as these before us, bathing and washing frequently becomes a necessity and needs no further argument. Now as regards the *water* we bathe in, it necessarily must be pure, and is spoken of as soft and hard; the softest

water is distilled water, then rain water, then river water, lastly spring water. Hard water may be known by its property of curdling soap, but it may be rendered soft by adding to it a little potash or soda. *The softer the water the better it is for the skin.*

There are certain substances for which water has a natural repulsion, namely, oily matters, such as those given off from the skin. The chemical power which we require to reduce these oily particles is *soap*, which renders them easily dissolvable in water, and hence is an invaluable agent for purifying the skin. It is indispensable, for no other substance can cleanse the skin like it. I am not going here to enter upon the comparative merits of different kinds of soap, for the names and kinds advocated are without number. No doubt the purest and best are the safest; those that contain glycerine are, in my experience, the most beneficial, and those that contain the least possible cosmetics and scents. Tar and thymol are both valuable adjuncts to soap, for they are valuable disinfectants, and lately "eucalyptol" has been introduced, one of the best disinfectants. The unpleasant qualities often attributed to soap are dependent upon the temperature and character of the water.

In this, as in most other rules of health, extremes should be avoided. As regards frequency of ablution, the face and neck from their necessary exposure to the atmosphere and the impurities which the latter contain, cannot escape with less than two washings in twenty-four hours; the feet, from the confined nature of the coverings, require at least one; the armpits, from their peculiar formations and secretions, one; the hands and arms as many as refined taste may dictate.

Now let me advise you how to wash the face. Fill the basin two-thirds full of fresh water, dip the face in the water, then the hands; soap the hands, and pass them, with gentle friction, over the whole face, for there is no washing glove like the hands; dip the face a second time and thoroughly rinse it. A little lemon juice adds very

greatly to the effect of this washing upon the skin of the face when added to the rinsing water.

Now as regards the *drying*, a moderately soft and thick towel should be used; a very rough towel is not desirable, nor a very thin one. A coarse towel will often produce excoriation to a tender skin. Such, then, is washing as intended for the purpose of cleanliness, but nothing is more refreshing than a thorough ablution, for as Thompson in his poem on the "Seasons" has it—

" Even from the body's purity, the mind
Receives a secret sympathetic aid."

The *wetted sponge* is one of the simplest and best methods of applying water to the skin of the weakly and delicate, and one by which the smallest extent of surface is exposed. The whole body may in this way be quickly subjected to the influence of water and to the useful process of friction consequent.

A person of weakly constitution should commence a system of daily ablution in spring or summer, and by the winter he will be able to endure cold water without inconvenience; but this even should never be done without a medical man's sanction.

The second form of ablution is by means of the *sponge bath*. The same precautions should be taken with this bath as the preceding, as to temperature and the constitution of the patient.

They who desire to pass the short time of life in good health ought often to use *cold bathing*. I can scarce explain to you how much benefit may be had by cold baths taken with care. For they who use them, although, perhaps, growing old, have a strong pulse and high complexion, are active and strong, their appetite and digestion are good, and all their natural actions are well performed; as Sir John Foyer says, "They reach the very soul of the animal, rendering it more brisk and lively in all its operations."

Of the *shower* bath I shall not say much, as it is only

suitable for very vigorous constitutions, and should be advised by the medical man with the greatest care.

The *swimming bath*, both in fresh and salt water, taken at suitable times of the year, is one of the most healthy and invigorating of all kinds of bathing, and let me advise you fathers and mothers to have your children all taught to swim, both girls and boys.

When the cold bath is disagreeable to the sensations of the skin of the bather, it may be raised in temperature to suit his feelings. It then alters its character, to the temperate 75 to 85 degrees; tepid from 85 to 95 degrees; warm, 95 to 98 degrees; hot, 98 to 105 degrees. To those who have passed the middle period of life, have dry skins, and begin to emaciate, says Darwin, "The warm bath for half an hour, twice a week, I believe to be eminently serviceable in retarding the advances of age."

The *vapour bath*, or *Turkish bath*, so valuable in many disorders of the skin, is next in order. The bather seats himself in a chair, or sits in a hot room, and the vapour is turned on gradually, from 90 to 110 degrees. The vapour is breathed, and thus brought in contact with every part of the lungs. The first sensation is one of oppression, with some slight difficulty of breathing, but soon the perspiration bursts through the pores, and all becomes agreeable. The perspiration rushes out on the skin. From this, the bather goes into a tepid bath, there remaining for ten minutes. He then quits the bath, and dries himself with warm towels. Sometimes cold affusion is added to this by the advice of the medical attendant.

With reference to cold bathing Sir George Le Fevre makes the following judicious caution:—"Do not wait until the body becomes cold before you plunge into the water. It is in this stage (the cold) that there may be danger, for the external excitement has passed away, and the body cannot resist the depressing influence of cold."

Now with regard to the physiological effects of bathing. When the body is moistened with sponge, or wetted with

cold water, the skin immediately shrinks, and all its tissues contract. As a result of this contraction, the blood is thrown back on all the internal organs and nervous system, which are stimulated by this flow of blood, causing a more energetic action of the heart and the blood-vessels of the skin. This reaction is the prime object of all forms of bathing, and upon it depends the healthy action of the skin.

In order to increase this reaction various methods and manipulations are resorted to. The operation of shampooing is a good one; as in the Turkish bath, *many an imaginary ailment and stiffness of body or limb, many an eruption, is caused to vanish by this means, especially when aided by skilled treatment.* Indeed, in my experience, many so-called incurable eruptions will yield if treated rationally and carefully.

Let me now, in conclusion, give you a few words of advice as to the essentials of bathing and the time to bathe:—

1. Undress quickly.
2. Immerse the whole body, not forgetting the head.
3. Rub the limbs and body gently while in the bath; in the swimming bath swim, do not loiter about.
4. Never stay in too long. Twenty to thirty minutes is quite long enough, whether in an ordinary or swimming bath.
5. Dry the body gently, with moderate friction, beginning with the head, then the arms and body, then the legs and feet.
6. Friction is valuable for three reasons: it moves the circulation, it exercises the muscles, and it rubs off the dirt and loose skin.
7. Do not dress until the body is perfectly dry, and do so leisurely, as it gives the skin time to breathe.

To sum up—

“Dress deliberately, walk away slowly, reflect on the blessing you have enjoyed.”

Now as to time—

The bath may be cold, tepid, or warm.

1. The *cold* bath, or tonic bath, should be taken in the

early morning, soon after rising from the bed; it sharpens the body for work. This bath all depends upon the reaction it induces to the bather. If reaction is slow it should be stimulated by friction, or a sharp walk.

2. The *tepid* bath should range in temperature between 80 and 95 degrees; is a soothing and restoring bath. It may be taken any time in the day, especially in the afternoon or evening; it refreshes and tranquillizes the nervous system, removes restlessness and fatigue. This is one of the most useful baths we can take.

3. The *warm* bath is taken at a temperature of 90 to 98 degrees; is soothing, but has tendency to relax the skin, and is more suited for invalids, and should be taken at home at night.

4. The *hot* bath (temperature 98 to 100 degrees, or blood heat) should only be taken under medical advice.

The bath should never be taken directly after a meal, lest it produce faintness or sickness. The proper time is before a meal, or three hours, at least, after a meal. If the bather is in a state of perspiration he should always take a tepid bath before he resorts to the cold; and if exhausted or fatigued, take a tepid bath—*never a cold one under these circumstances.*

The morning bath is the bath of work, the evening bath is the bath of rest and repose; the first should be therefore cold, the last tepid.

In the short space of this lecture I have endeavoured to show you how the skin may be kept in a healthy condition. I have told you what health is. I have shown you, by drawings, some of its evils—what the working-classes have to suffer—some of the popular fallacies as to the contagious nature of eruptions—the character of the skin—the essential principles of diet, both with regard to eating and drinking. In this part of my lecture I may seem to be somewhat severe, but I see the necessity for it, and I hope I may have been able to give you some useful advice in these matters. I have spoken about clothing, the colour and dyes of clothes; shown

you some of the offending articles, taken by myself from cases "red handed;" and shown you how very necessary a part the health of the skin depends upon *cleanliness and bathing*; and I hope I may have been able to interest you in showing you how to keep *a healthy skin*.

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