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## ON THE IMPORTANCE OF STUDYING TEMPERA- MENTS.

By SAMUEL WILKS, M.D., F.R.S., Physician and Lecturer on Medicine, Guy's Hospital. Read before the National Health Society, June 7, 1876.

On being requested a short time ago to give a lecture before your society (of whose existence I am bound to admit I was until then in ignorance), I was led at once to consent on observing the words of your motto, 'Prevention is better than cure.' I saw in this motto the germ of a principle which, if developed by an active society, might grow and fructify in every sphere of life. I am ignorant of their origin, but these words convey to my mind one of the most profound and important of doctrines, since they are applicable to man's being, whether he be treated physically, morally, or socially. They are as familiar to our mouths as household words, but perhaps there are none less acted upon, the masses of people and the ignorant never rising to a due conception of their meaning. The object conveyed in these words is the very highest at which the physician can aim; they interpret the thought of the best men in the medical profession when they attempt to frame a true doctrine of disease and its rational treatment. A society with such a motto is at once setting itself against quackery, for the word 'prevention' is put as it were in opposition to 'cure,' and the idea of cure lies at the bottom of all quack systems. They are all alike in this, that they do nothing else, and profess to do nothing else, than cure existing ailments, that is, to give a remedy for the alleviation of some present trouble. Now, as the tendency to quackery is in proportion to ignorance, it is clear that the idea of 'cure' is low-born and common-place, whereas the sentiment expressed in your motto is significant of a higher intellectual advancement. To per-

form a charm by words of incantation over a sick man is the act of a savage, and pouring a few drops of medicated fluid into his mouth betokens only too often an equally ignorant and debased mental condition. A rational system of treatment, founded on natural methods, and necessarily requiring time, comes only with culture and enlightenment.

I take it, however, that nearly all public work which has been rationally attempted for the health of the community by societies like this has had reference to the removal or avoidance of those deleterious influences which produce specific diseases, and the object has been to prevent the occurrence or spread of the latter by improvements in drainage, ventilation, and in similar measures of the kind; but there is another class of diseases besides the specific, which are far more important for us to consider, viz. those which are slowly and insidiously affecting us by causes inherent within us, and by influences which are continually surrounding us. There is, therefore, a natural primary division of diseases into two classes—the one in which our bodies are suddenly attacked from without by a subtle morbid agency, spreading its devastating effects over young and old; the other class in which the cause has its origin within us and the results are more slowly brought about. The destruction in the one case is like what happens in the body politic, which, although compact and united, is overpowered by the superior strength of the enemy; in the other case it resembles an internal decay arising from civil wars springing up in the midst of the community. An epidemic may now and then come upon us as a fearful scourge, and alarm us by its sudden fury, and by our futile attempts to ward off its blows; but the mortality produced by it is nothing compared with that which is caused by consumption, bronchitis, apoplexy, or liver disease. It is therefore equally important to endeavor to discover under what circumstances these common diseases are produced and by what means they can best be averted. Now in this attempt we have to consider the nature or temperament of the individual to be acted upon as well as the circumstances surrounding him which are prone to be injurious; and if a morbid condition or derangement of the system is set up we call that 'the disease.' Most of these derangements or maladies derive their name from the manifest disturbance of some particular organ, and we are accustomed to say that the seat of the disease is situated there; but we often mean nothing more than the derangement is most conspicuous at that particular spot. It has been said that life rests upon a triphod, this being composed of three vital organs, the brain, the lungs, and the heart, and that if

one of these fail the superstructure falls. This, no doubt, is true, it contains a self-evident fact, but the mode in which the statement is generally regarded carries with it an error which we should endeavour to eradicate. It seems to imply that the body may be otherwise sound and yet one organ be at fault; this is a most unlikely occurrence, and as a matter of fact only exceptionally true. In most instances when we speak of disease of an organ we imply either that that organ is the one selected on which the morbid change going on through the body is more particularly concentrated, or merely that the disturbance therein is more evident to us; so we say that through that particular organ the animal machinery is arrested. For example there are the so-called fatty degenerations where the whole body undergoes decay by a partial change into adipose matter, but since life depends upon the integrity of the muscle of the heart rather than upon the muscles of other parts of the body, the patient in such a case is said to die of disease of the heart. There are many other similar morbid states which effect the whole body, some of which we name fibroid, others lardaceous, and so on; and it is often, as far as we can tell, a mere accident whether the liver, kidney, or other organ should be the chief sufferer and so conduce to the more striking symptoms. In that very common form of malady known as Bright's disease, the popular view is that it is an affection of the kidneys only, but medical men know that disease of the blood-vessels is one of its constant concomitants owing to the want of purification of the blood, consequently the symptoms attending it have often no relation to the kidney at all but simply to the decay of these vessels. A rupture of a blood-vessel in the brain, styled apoplexy, with its resulting paralysis, is a most frequent termination of Bright's disease; there is also a form of sudden blindness due to the rupture of a small vessel in the retina, which is also a very frequent symptom of this *Morbus Brightii*. You will see, therefore, that apoplexy, or the pouring out of blood on the brain from the rupture of a blood-vessel, is, in reality, much more a kidney disease than a brain disease; in fact apoplexy and the paralysis which follows are not diseases of the brain at all; the organ being perfectly healthy before it was oppressed by the blood. I know they are to be found in the Registrar-General's list amongst nervous diseases, but they really belong to the vascular system and are secondary in many instances to disease of the kidneys. You will clearly see that a man may be said to die of disease of the brain when this organ up to the time when it became injured was perfectly healthy. There is no more brain disease in a person dying of apoplexy

than there is in the individual who is knocked down in the street and a cart-wheel goes over his head. In the latter case you could only have prevented his death by guarding him against the injury; and in the case of apoplexy, in the same way, your only action could be by preventing the occurrence of those conditions which shall end in overwhelming or destroying a healthy organ. I might give you many other illustrations showing, that although the marked symptoms and death may arise from implication of some particular organ, yet the antecedent causes are of a more general kind, and are to be averted not so much by attention to one part of the body as to a consideration of the health of the whole frame. There is, therefore, much good work to be done by those who may not have any profound medical knowledge, but may yet learn how to direct others in the path of health, that they may never require this special treatment and attention at the hands of the skilled physician.

I do not deny that there are special causes in operation which may involve the integrity of one organ alone, just as a good watch may stop from a breaking of a spring, but the chances are that when one part of the machine gives way the other parts are also worn, or that the apparatus, as a whole, is rusty.

Now, on being asked to give a lecture before this Society, and thinking of its aims in the prevention of disease (for this I apprehend is its object), I thought it would be useful to direct attention to the necessity of considering individual temperaments and the proneness of persons to one disease rather than another. In considering the question it occurred to me that although there might be founders of this Society who clearly saw their object and the meaning of their motto in all its comprehensiveness, yet that there might be others who had not given sufficient thought to it, and who might in consequence like the ground made still more clear for them. Although, therefore, I am delaying the question which I more especially have in hand, I think it will not be unwise to develop the subject further, as I first opened it to you, and which you will more fully understand now by the illustrations which I have given.

The very institution of a society like this implies that it was needed, and that the public required enlightenment. Now, what is the popular notion about disease and the relation of the medical man to the community? Why apparently this—that we poor human beings are subject to our frailties, to our various pains and aches and troubles, and we have doctors to go to for relief. The popular belief is, that if a particular part

of the body is deranged, all else being right, a dose of physic may remedy it; or that when a person dies suddenly from stoppage of the heart's action, or the rupture of a blood-vessel in the brain, death occurs in the midst of health. Now, both ideas are as absurd as to suppose that when a pipe bursts in your house, and the water or gas escapes, it was previously perfectly sound; you know it must have been undergoing decay for some time before the rupture. So with many other morbid conditions; a fatal obstruction of the intestines is frequently put down to indigestible food, but I never made a *post mortem* examination of a case of the kind where the cause was not of a most chronic nature. If disease came upon us suddenly in the midst of health, "prevention better than cure" would have no practical significance. It may be, that we are often unaware of chronic changes going on within us, but, nevertheless, the slow and insidious nature of all maladies is the important fact to take into account. Hippocrates, the father of medicine, had ascertained this when he said: "Diseases do not fall upon men instantaneously, but being collected by slow degrees they explode with accumulated force."

I may show what I mean by analogy, and when I take one natural fact to illustrate another I believe I do more than simply afford an explanation, for all the phenomena belonging to man, being under the operation of the same laws, have a natural relationship. I should say that to my medical mind it is as difficult to understand a healthy person dying of apoplexy, as it would be for the moralist to believe that a man who had led the strictest life of probity should suddenly become a thief, or that a happy, contented people should suddenly break out in revolution. The seeds of decay may not have been observed, a man's character may have been deceptive, and a people under the strong arm of despotism may have assumed a peaceful attitude; but, nevertheless, the slumbering, mouldering fire was there, ready at any moment to break into a conflagration.

I need not illustrate this further, but I assure you that the higher the study of medicine has reached, the more is this idea seized—that a true knowledge of disease, or as we say of pathology, is to be gained from the recognition of the slow changes going on in the body, and an attempt to discover the causes which bring them about. The true workers in my profession are making this their aim—they ask, for example, what are the circumstances which induce consumption, so that it may be prevented, and they ask the same of heart disease or liver disease; with these views what do they consider their relation to the public to be? I should say that they regard

themselves as the custodians of the public health ; in order to observe the character and peculiarities of those under their charge, to watch their surroundings, to judge whether these are operating for good or for evil, and then to advise accordingly.

This would seem common sense ; but, as a matter of fact, such an attempt to advise on the part of the medical man would be regarded as highly quixotic, and any physician who tried to practise it would starve for his pains. The community at large know nothing of what I have been saying, and therefore the more need of your society ; all they know is, they get ill and they wish to be relieved or cured. The patient has liver or stomach trouble, palpitation, pain in some part of the body, or headache ; if good advice be offered him as to the cause and prevention of these symptoms it is rejected, and he goes from door to door until he finds some one, who, to use his own words, thoroughly understands his complaints, and will treat his symptoms, giving him something for his stomach, something else for his liver, something to relieve his depression, and something else to make him sleep. This highly popular and vulgar view of disease and its treatment is well illustrated by the style of all quack books and advertisements ; the writers of these know only too well what are the immediate needs of sickly people, they describe very accurately the depression which is felt on rising of a morning, the want of appetite, and the general feeling of lassitude, or they enter upon the direful effects of the bile or the spasms or the wind, as if these were three spirits that were to be exorcised. Symptoms are felt and a remedy is offered, and all quackery depends upon this, that there are special medicines for special ailments. But to study the human frame, its mechanism, and its workings, to see how it may be deranged, and how these derangements may be obviated, is utterly opposed to this spirit of quackery. "Prevention better than cure" is its antidote. I might say that the same notions which pervade the vulgar mind, when people credit the statements of quack advertisements, and then swallow the pills and rub in the ointment, exist also amongst the better classes, when they peruse with satisfaction some book on medicine containing a system which may be grandly styled by the name of some "pathy" or other ; but in spirit it is the same, for its foundation rests on a system of cure, and even the regularly qualified men, I am sorry to say, have often never raised themselves to the true height which their position demands. What do I see daily, and I do not exaggerate the picture ? A lady, naturally weak-minded, and of no occupation, drifts by her mode of life into a bad state of health ;

she seeks advice, and if that which is offered to her do not accord with her own fancies, she discards it until she finds the man of her choice, who will undertake to relieve her of her thousand ailments, and the following is the course pursued: On waking in the morning she has administered to her a little rum and milk, mark! it is always "a little;" on rising she may perhaps have a cup of tea; but if she cannot take it, it is not her fault, for it is so often rejected; consequently, about eleven she has a glass of sherry (if a man or woman talks to me about their feelings at eleven o'clock, I read the whole of their history). Soon after, the doctor comes in, and gives her the first subcutaneous injection of morphia to relieve that dreadful neuralgia; at one o'clock she has a sloppy luncheon with some champagne or a little cold brandy and water, or rather a little whisky, which has superseded brandy as the favourite drink (and if "a little" and "cold," it can't do any harm). She soon afterwards takes her tonic or stimulating mixture, and has a little nap; her friends then come in, and she drinks several cups of tea; at dinner she eats most sparingly, and that of some made dish, but never refuses any amount of wine which is offered her. It is now time for the neuralgia to return, and the doctor to enter with his syringe; and of the good effect of this morphia dose no one has any doubt, for she becomes brighter, conversational, and, as midnight approaches, quite herself. She goes to bed, not forgetting to take her dose of chloral, or she would never sleep. She wakes in the morning in utter depression, with a clammy tongue and utter loathing of food, headache, pain in the back, and other miseries; the performance is again gone through, only the sedatives are increased in strength, and a few additional glasses of wine ordered, as the patient is getting so low. At the end of the year this miserable wretch is bed-ridden, and her body scarred all over with the syringe punctures, and dying from the effects of stimulants. Some of you ought to go into that lady's house, and replace half of the scripture texts on her walls by your motto, "Prevention is better than cure." Or a lady takes her daughter to a medical man, and he finds her suffering from ennui; she has no avocation, nothing to occupy her hours; that wonderful machine, the animal body, which she is keeping supplied by fuel, and a vast amount of force necessarily liberated, is to remain idle; it preys upon itself, it begins to work out its own destruction, and the victim, conscious of the utter derangement, seeks advice. The doctor, having your good maxim in his mind, prescribes accordingly. The mother insists that such a system cannot be carried out on her delicate daughter; what she



wants is a rule of life suitable for her condition, and nothing will please her but a most artificial method strictly applicable to the very peculiar state of her very interesting daughter. In this way all the evils are perpetuated or aggravated. I feel convinced that it is not the wish of the doctor that this system should go on. It is not to his interest or to the elevation of the medical profession that he should always give physic rather than advice. A moment's consideration will show you that this is true. If a medical man sets about the study of his profession in a rational way, by acquiring a knowledge of the healthy working of the human body and subsequently of its deranged states or diseases, he will discover the causes of their production, their progress and the amount of assistance he can afford by regimen, diet, or medicines. Now, you will see that if disease is to be arrested by some drug, it is not difficult for anyone, if he can learn its name, to give the prescribed pill or globule out of the domestic medicine chest; but suppose there be no such antidote, who is so likely to know the circumstances under which it may most favourably pursue its course as regards the best food, air, etc., as he who has made the disease his study? He alone who has spent years on its observation can rightly advise, for the knowledge cannot arise in one spontaneously. He only can know how long a typhoid fever or an inflammation of the lungs lasts, and what dangers accompany them, who has taken the trouble to study them in all their phases, and therefore he must be best acquainted with the measures to be pursued, which are most favourable for the cure. It does not seem a very monstrous proposition to declare that he who has studied disease will be better able to give advice as to its treatment than one who has been occupied in a totally different pursuit. You see what I consider to be the foundation of medical science, and that the administration of a drug is a mere adjunct to other methods. Sometimes we have a useful medicine for a complaint, and sometimes we have not, but a hundred different influences may be brought to bear upon a patient either beneficially or harmfully. All quackery is based on physic-giving, it may be utterly vulgar, as in the swallowing a pill, or it may be erected into a system for the more educated mind; that there should be a law of curing by drugs, which, if true now, must have been true from all time, is a mere fanciful refinement of vulgar superstition, and has no analogies in any other department of nature.

The distinction between the true and false system is broad and deep; the false one, the treatment of symptoms, your society sets its face against, for it is quackery under whatever

guise it appears. When your society says "Prevention is better than cure," you are co-operating with the best men who ever pursued the science and art of medicine, you are upholding the most philosophical views, you are fighting the battle of truth against falsehood. And not in medical matters only, for the facts of life are so intimately bound together, as I said before, that when seeking for analogies we are really discovering counter-truths, which assist one another in their application. If a man have a physical ailment, is it better to prescribe a narcotic for his pain or give advice for its prevention? is it better when a man is out of work to relieve his present necessity, or put him in the way of earning his livelihood? or if a lad be dishonest or otherwise depraved, to give him a week at the treadmill, or study his nature and the circumstances which induced his moral depravity? Whether you take man's physical, moral, religious, or social life, surely the means of improvement are not to be found, and its errors not to be eradicated, by some magic formula.



## PRACTICAL NOTES AND EXTRACTS ON HYGIENE.

(Continued.)

### THE PURIFICATION OF WATER.

Water may be purified in various ways: By distillation, by freezing, by chemical means, by boiling, and by filtration. When large quantities are required the two latter processes only are practicable.

Distillation purifies water most thoroughly; while freezing expels a large proportion of mineral ingredients.

The addition of two or three grains of alum to the quart of water is efficacious in removing suspended matters, both organic and inorganic. On these Parkes says its effect is very great indeed. The immersion or boiling in the water of certain vegetable productions, as those containing tannin, has a similar effect. Hence tea is useful in this way. Potassium permanganate is useful in destroying organic impurities and ammoniacal compounds by oxidation. It readily removes offensive odors arising from water kept in casks or cisterns. The immersion of pieces of charcoal also greatly improves waters of this sort.

The process of boiling destroys most vegetable and animal organisms that are found in water, expels poisonous gases, and precipitates calcium carbonate when present. All waters con-

tain more or less atmospheric air, acquired in passing through the air in the form of rain: the atmosphere of water possesses more oxygen than ordinary air, which gives to water its agreeable taste; while the "life" or "sparkle" which spring and well waters possess is due to carbonic acid, absorbed from the air in the soil through which they percolate. Boiling soon expels these as well the poisonous gases, and is hence rendered insipid. On being exposed to the air for a little time however water becomes aerified again.

Boiling will not destroy bacteria or their germs it appears. Sex found some bacteria still moving rapidly in water at a temperature considerably above the boiling point. It is yet uncertain how far boiling will destroy the contagiums of specific diseases. Histories of outbreaks of typhoid fever from foul water are on record in which it appeared those only who used the cold fresh water were affected, while those who used it only after having been boiled escaped.

Water should not be poured for use from a vessel while yet in a state of ebullition, but should be set off the fire for a time in order that any suspended matters may subside.

On an extensive scale, the purification of water is carried on only by means of filtration. Usually the water is received into settling reservoirs, where the most bulky substances subside, and then filtered through gravel and sand, either by descent or ascent, or both.

"The London water companies usually employ a depth of 3 to 5 feet; in the latter case, the upper stratum of 18 inches or 2 feet is composed of sand, the lower 3 feet are made up of gravel, gradually increasing in coarseness, from pieces the size of a small pea and bean to that of a middle-sized potato. If the filter is 3 feet in thickness, the upper 15 inches are sand, and the lower 21 inches are gravel.

"The pressure of water in these filters is not great; the depth of water is never above 2 feet, and some companies have only 1 foot; from 70 to 75 gallons is the usual quantity which should pass through in 24 hours for each square foot; but some companies filter more quickly, viz., at the rate of a gallon per 24 hours for each square inch, or 144 gallons per square foot.

"The sand should not be too fine; the sharp angular particles are the best. The action seems chiefly, perhaps altogether, mechanical; the suspended impurities, both mineral and organic rub upon and adhere to the angles and plane surfaces of the sand, which are gradually encrusted, and after a certain time the sand has to be cleaned. The effect on suspended matters, both organic and mineral, is certainly satisfactory. On dissolv-

ed organic matter it is less so. Mr. Witt's experiments show only a removal of about 5 per cent.—*Parkes Practical Hygiene*.

The water, says Wilson in his *Handbook of Hygiene*, second Edition, is delivered uniformly and slowly, and in order that the filtering process may not be carried on hurriedly, the pressure is always kept low, the depth of water being seldom above 2 feet, and in some cases only 1 foot. The speed of vertical descent should not be much above 6 inches per hour, nor should the rate of filtration much exceed 700 gallons per square yard of filter-bed in the 24 hours, although some water companies filter at a much more rapid rate than this. In large works there are always several filter-beds, to allow of some being cleansed while the others are in use. The sediment deposited on the surface of the sand requires to be scraped off at intervals, and at each cleansing operation about half-an-inch of sand is also removed. A fresh supply of sand is added when the depth of the layer is reduced to an extent which threatens to impair the efficiency of the filter. It appears that proper filtration, carried on according to this plan, removes suspended impurities, and a certain amount of dissolved mineral substances, but whether dissolved organic matters are destroyed, or oxidised to any considerable extent, seems doubtful.

“Small filters for domestic use may be placed in the cistern, in the course of the delivery pipe, or they may be filled by hand. As filtering media, various substances are used, such as animal or vegetable charcoal, a mixture of fine silica and charcoal, magnetic carbide of iron, sponges, wool, etc. According to Dr. Parkes, the best filters are made either of animal charcoal or magnetic carbide of iron. They are capable of removing almost all the suspended matters, and at least 40 per cent of dissolved organic impurities, together with a considerable amount of salts, such as calcium, carbonate and sodium chloride.

Of filtering media, well washed animal charcoal has been generally admitted to be the most efficient. It exerts on the organic impurities a chemical as well as a mechanical action. Dr. Frankland is so convinced of its value that he recommends its employment for the purification of water on a large scale for supplying cities, notwithstanding its cost.

Recent experiments on the action of Silicated Carbon filters show that this substance is possessed of singular power. Mr. J. A. Wanklyn writes in the *Sanitary Record*, July 8, 1876 :

On continuing my experiments on the action of “Silicated Carbon” filters, I have obtained results far beyond my most sanguine expectations.

A solution of sulphate of quinine of such a strength that one gallon contained 8.26 grains of soluble sulphate of quinine ( $C_{20}H_{24}N^2O^2H^2SO_4, 6H^2O$ ) was comparatively deprived of quinine by one single filtration through six inches of filter.

The liquid before filtration yielded 3.55 milligrammes of albuminoid ammonia per litre, and after filtration 0.02 milligrammes of albuminoid ammonia per litre.

A solution of the above strength is sensibly bitter to the taste, and after filtration is no longer bitter.

On the cleansing of filters, the following observations of Dr. Parkes will be useful:—"There is a limit to all purifying powers, and the action of all filters is therefore temporary. After a time, which depends on the amount of the impurity of the water, they become clogged; the substances which block them are organic matters (probably suspended) and lime salts. Sodium chloride, after being arrested for some time, may be given off again, and thus seldom long remains in a filter. Instead of taking the filter to pieces when they are clogged, the following plan may be resorted to:—Every two or three months (according to the kind of water) air should be blown through, and if the charcoal be in the block form it should be brushed. Then 4 to 6 ounces of the pharmacopœial solution of potassium permanganate, or 20 to 30 grains of the solid permanganate in a quart of distilled water, and 10 drops of strong sulphuric acid, should be poured through, and, subsequently, a quarter to half an ounce of pure hydrochloric acid in 2 to 4 gallons of distilled water. This both aids the action of the permanganate, and assists in dissolving manganic oxide and calcium carbonate. Three gallons of distilled or good rain water should then be poured through, and the filter is fit again for use."

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## ON DISINFECTION IN SCARLATINA.

By J. LANE NOTTER, B.A., M.D., Diplomat in State Medicine, University, Dublin, Staff-Surgeon, Army Medical Department.

There is perhaps no word in sanitary science so misapplied at the present time as the term "disinfectant." It is made to embrace not only disinfectants proper, but also antiseptics and deodorants, and this jumbling up of terms has caused no small amount of confusion and misunderstanding.

A "disinfectant" is "a substance which can prevent infectious diseases from spreading by destroying their specific poisons" (Parkes), while antiseptics are substances which check decomposition, deodorants, as the word implies, merely remov-

ing bad smells and preventing, perhaps, putrefaction. A true disinfectant will not only act as an antiseptic, but it will also destroy the products of decomposition and the vitality of germs. It is in this sense we shall apply the term here.

Unfortunately, perhaps, so much has been said of late years of the powers of so-called disinfection, that as practiced in many cases it has given a false hope of security, and may indirectly have been the means of making people careless in attention to minor details of importance. \* \* \*

The system so prevalent, nay, I may almost say universal, of placing sheets wrung out of a solution of carbolic acid over doors, is worse than useless, preventing, as they too often do, a free current of air, and closing one of the best means of natural ventilation, almost always compelling the unfortunate patient to breathe the air contaminated with the poison thrown off from his own body.

Too much stress cannot be laid on the importance of fresh air being supplied, as one of the most powerful means of cure, as well as of disinfection.

Carbolic acid is not a true disinfectant; it is an excellent antiseptic, and should be spoken of and used as such.

"Carbolic acid arrests the growth of fungi, though it will not completely destroy them; for example, I put some fresh fæcal matter, free from urine, in a bottle, and drew air, washed in strong sulphuric acid, over it; fungi appeared rapidly on the fæcal matter. I then passed air impregnated with carbolic acid over the fungi; they became discoloured, brownish, and apparently dead, but on again substituting washed air they revived."—(Parkes, 4th ed. p. 131.)

Recent experiments have shown that vaccine lymph may be kept in carbolic acid for some time, and successful vaccination be made with it afterwards.

Such would be absolutely impossible were carbolic acid a disinfectant; and used as above mentioned on sheets, etc., its effects on the contagia to the smallest extent may be very much doubted.

To be effective it must be in contact with the decomposing matter, when it will arrest decomposition.

Potassium permanganate, so frequently used on saucers placed on chimney-pieces and boudoirs, has a considerable power as a deodorant, but hardly any as a germicide. It readily absorbs sulphuretted hydrogen, but does not appear to have the smallest effect as a disinfectant.

Accepting, for want of more perfect data, the theory that the nature of the contagia is what Nagele has termed "Schizomycetes," in other words, bacteria, the difficulty of aerial

disinfection will be easily understood. As the plasma of bacteria is albuminoid, and as carbolic acid does not coagulate albumen, this may explain why its action is so limited.

If the air of a room is rendered impure, the simplest, surest way of disinfecting it is to change it, and substitute for a vitiated atmosphere one which will not only be free from contagion, but in which the patient himself breathing a purer air will have a tenfold greater chance of recovery.

The amount of vapour and gas which can be borne by anyone is so small as to be practically worthless, and the sooner we dismiss the idea of destroying or eliminating contagion by such means the better.

After what has been said, it is evident we place paramount importance on ventilation and air-supply, and after securing this we naturally inquire, can nothing else be done? Thanks to Dr. Wm. Budd, we are in a position to grapple with this disease.

He recognised the true principle of arresting the progress of the contagia, and I am persuaded if only carried out, it would do more for preventing the spread of scarlatina than anything else. Dr. Wm. Budd suggested that the true way to limit the spread of scarlatina was to attack the skin from the first, to disinfect or destroy the poison before it is thrown off, and for this purpose he recommends oily disinfectant inunctions of the skin.

I have personally had experience of the extreme value of his suggestion, and in every case that comes under my care I carry out this treatment.

The skin in scarlatina is extremely absorbent, and care must be taken to use only weak applications. This is all the less important as they are brought into actual contact with the contagia.

The one I always use is a weak solution of carbolic acid in camphorated oil; it is not unpleasant, and allays the irritation often so troublesome in the early stage. The throat should be frequently washed with a weak solution of sulphurous acid, and all sputa received into cups containing carbolic acid in some form. It must not be forgotten that the possibility of the contagion being carried by the excreta is now a matter almost removed from any doubt. The intimate connection of this disease with enteric fever is well expressed by Dr. John Harley as follows:

“Such is the association which subsists between scarlatina and enteric fever, an association closer and more frequent than is observed between the former and any other acute disease, and one which compels us to acknowledge some closer connec-

tion than mere accidental intercurrent" (Enteric Fever: "A System of Medicine," by Reynolds). On this account too great caution cannot be insisted on in thoroughly disinfecting all the excreta.

It must not be supposed that by adopting such measures we are at liberty to dispense with the one great means at our disposal of stopping the spread of this disease, namely, isolation. Isolation appears indispensable, as much a necessity as for small-pox; but under what conditions, in private life, those among the humbler classes can avail themselves of it, is better known to civil medical officers. My observation leads me to suppose that it can seldom be resorted to, as there are few places provided with the necessary hospital accommodation. Isolation must be effected as best we can, taking care to place our patient in the highest room in the house, if possible, with his bed in the centre of the room, and not against the wall, or in the corner; thus placed he will be in the best position to have a free current of air round and about him.

A word or two as to the mode of disinfecting clothes. By all means take advantage, if you can, of exposing the infected clothing to a high temperature. The temperature of 250° or 260° is the highest that ordinary clothes can bear, and it is usual to subject them to this for five or six hours; but in addition I would recommend also to steep or boil them in a solution of chloride of lime, or in fresh water containing benzoic acid. This latter is far superior to carbolic acid.

Dr. Calvert tells us that bacteria will move at a temperature of 300°, while a temperature of 200° has little effect on them. When the room is unoccupied, then, and not until then, can we hope to use with advantage aerial disinfectants. Sulphurous, nitrous or hydrochloric acids, or chlorine, may be used for fumigating purposes, and will act under the most favorable conditions for arresting or destroying the infection, inasmuch as we can submit both the house and clothing to the action of these gases in as concentrated a form as possible.

In conclusion, I will only add one passage from Hart's "Manual of Public Health":

"We can defile, but we cannot purify the air. If the atmosphere be foul, there is only one practical method of dealing with it, and that is to send it out and get in a fresh supply of air."—*Sanitary Record*.

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TAPEWORM AND ITS SOURCE.—M. Decroix, of Lyons, attributes the great frequency of *tænia mediocanellata* at the present day, as compared with instances of *tænia solium*, to the growing practice of the employment of raw meat as a therapeutic agent, and the fashion of eating undercooked meats.



## THE PHYSICIAN AND STATE MEDICINE.

Looking only to the part of hygiene which concerns the physician, a perfect system of rules of health would, I conceive, be best arranged in an orderly series of this kind.

The rules would commence with the regulation of the mother's health while bearing her child, so that the growth of the new being should be as perfect as possible. Then, after birth, the rules (different for each sex at certain times) would embrace three epochs; of growth (including infancy and youth); of maturity, when for many years the body remains apparently stationary; of decay, when, without actual disease, though, doubtless, in consequence of some chemical changes, molecular feebleness and death commence in some part or other, forerunning general decay and death.

In these several epochs of his life, the human being would have to be considered—

1st. In relation to the natural conditions which surround him, and which are essential for life, such as the air he breathes; the water he drinks; his food, the source of all bodily and mental acts; the soil which he moves on, and the sun which warms and lights him, &c.; in fact, in relation to nature at large.

2nd. In his social and corporate relations, as a member of a community with certain customs, trades, conditions of dwellings, clothing, &c.; subjected to social and political influences, sexual relations, &c.

3rd. In his capacity as an independent being, having within himself sources of action, in thoughts, feelings, desires, personal habits, all of which affect health, and which require self-regulation and control.

Even now, incomplete as hygiene necessarily is, such a work would, if followed, almost change the face of the world. But would it be followed?

In some cases the rules of hygiene could not be followed, however much the individual might desire to do so. For example, pure air is a necessity for health; but an individual may have little control over the air which surrounds him, and which he must draw into his lungs. He may be powerless to prevent other persons from contaminating his air, and thereby striking at the very foundation of his health and happiness. Here, as in so many other cases which demand regulation of the conduct of individuals towards each other, the State steps in for the protection of its citizens, and enacts rules which shall be binding upon all. Hence arises what is now termed "State

Medicine," a matter of the greatest importance. The fact of "State Medicine" being possible, marks an epoch in which some sanitary rules receive a general consent, and indicates an advancing civilization. Fear has been expressed lest State medicine should press too much on the individual, and should too much lessen the freedom of personal action. This, however, is not likely, as long as the State acts cautiously, and only on well-assured scientific grounds, and so long as an unshackled Press discuss with freedom every step.

A watchful care over the health of the people, and a due regulation of matters which concern their health, is certainly one of the most important functions of Government. The fact that, in modern times, the subject of hygiene generally, and State Medicine in particular, has commenced to attract so much the public attention, is undoubtedly owing to the application of statistics to public health. It is impossible for any nation, or for any Government, to remain indifferent when, in figures which admit of no denial, the national amount of health and happiness, or disease and suffering, is determined.—*Parkes' Introduction to Practical Hygiene.*

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FROEBEL'S KINDERGARTEN THEORIES.—A child is social, therefore he must have companions and not be left to the solitude of his home. He is active and fond of making—keep him busy and help him to produce things. He loves the earth—give him a garden patch. He is an artist—give him music, imitative action, and other appropriate means of expression. He is curious—teach him to think and discover. He is religious—lead him to trust in God. On this last he said: "God trust, rock-firm God-trust, has died out of the world. The Kindergarten shall bring it back so that the next generation of children shall be God's children."

Here is work for a child not against the grain, but with it; not in violation of God's law in the child's nature, but in loving obedience to it. Instead of punishing the lad that makes pictures upon his slate, the loving Kindergarten master puts him to making pictures, and gently shows him how to produce with his fingers the pictures that float in his brains. Instead of rebuking his curiosity and constructiveness, the Keilhau schoolmaster yokes them to his purpose. Instead of checking the child's sweetest impulse—the impulse to play—he consecrates it. Jean Paul has said: "Play is the child's first poetry." It was a wise and poetic saying of a poet. But Froebel was not a

poet, but a schoolmaster and a philosopher. He went deeper, and said the supreme word about play when he called it the "first work of childhood." It is the child's chief business. Use play to serve the ends of education you may, but to do away with it is the unpardonable sin of the prevalent method of teaching.—E. EGGLESTON—in *Scribner*.

**SPECIFIC ORIGIN OF TYPHOID.**—At Sedgely Park School forty-two boys became affected with 'genuine typhoid.' No nurse, no master, servant or adult of either sex were attacked. Why? they all lived in the same house, drank the same water, ate the same food, cooked in the same way, and several of the masters slept in the same dormitory with the boys. The boys, however, used closets opening into a cesspool emptied in the holidays. These had been used a hundred years and no injury had resulted. A boy one day complained; he had been only four days at the school. His illness turned out to be typhoid. All his evacuations were thrown into the cesspool which the boys used. All the masters, servants, etc., used closets at a distance. Hence the difference: the boys used closets into the cesspool of which typhoid evacuations were passed, and forty-one besides the first case, had typhoid fever. The masters and servants used other closets and did not suffer. The first case had been only four days in the school, and had therefore caught the disease elsewhere. Two years before a different kind of outbreak had occurred in the same school. This time, masters, servants and boys were all affected indiscriminately. There was diarrhoea, sickness, great languor, much prostration. Seventy persons were attacked. The water was found contaminated with sewage from a drain leaking into the well. This was remedied and the disease ceased forthwith. It was not typhoid fever, but another gastro-intestinal attack. During the next two years the health of the school was satisfactory.—Dr. Parkes, *Army Med. Dep. Rep.*

**INDICATIONS OF LONGEVITY.**—Let me now be permitted to delineate the portrait of a man destined to long life. He has a proper and well-proportioned stature, without, however, being too tall. He is rather of the middle size, and somewhat thick set. His complexion is not too florid: at any rate, too much ruddiness in youth is seldom a sign of longevity. His hair approaches rather to the fair than the black; his skin is strong but not rough. His head is not too big, he has large veins at the extremities, and his shoulders are rather round than flat. His neck is not too long; his abdomen does not project; and his hands are large, but not too deeply cleft. His

foot is rather thick than long ; and his legs are firm and round. He has also a broad arched chest ; a strong voice, and the faculty of retaining his breath for a long time without difficulty. In general, there is a complete harmony in all his parts. His senses are good, but not too delicate ; his pulse is slow and regular. His stomach is excellent, his appetite good, and his digestion easy. The joys of the table are to him of importance ; they tune his mind to serenity, and his soul partakes in the pleasure which they communicate. He does not eat merely for the sake of eating, but each meal is an hour of daily festivity ; a kind of delight, attended with this advantage, in regard to others, that it does not make him poorer, but richer. He eats slowly, and has not too much thirst. Too great thirst is always a sign of rapid self consumption.—*Hufeland.*

ARSENIC FROM CURTAINS.—An English physician discovered in a lady symptoms of arsenic poisoning. His attention was drawn to the calico lining of the chintz bedcurtains. This material was of a delicate green color, and, on examination, proved to contain a very large quantity of arsenic. This lady's husband used frequently to wake in the morning suffering from nausea, with a feeling of weight and oppression about the chest ; and his eyes became inflamed. These symptoms all subsided on removing the curtains.—*Med. & Surg. Reporter.*

THE English ivy, growing over the walls of a building, instead of promoting dampness, as many persons suppose, is said to be a remedy for it ; and it is mentioned as a fact, that in a room where damp had prevailed for a length of time, the affected parts inside had become dry when ivy had grown up to cover up the opposite exterior side. The close, overhanging pendant leaves prevent the rain or moisture from penetrating the wall. Beauty and utility, in this case, go hand in hand.—*Saniturián.*

BATHING AND SWIMMING.—No less than eleven deaths are reported from drowning in Scotland in one week. The *Sanitary Record* says :—“ It would be interesting to know how many of these untimely deaths were due to not knowing how to swim. The singular neglect of this branch of physical education always bears its crop of fatalities.

INSANITY.—In the Report of the Royal Edinburgh Asylum, for 1875, just issued, Dr. Clouston, Medical Superintendent, states that “ intemperance ” was by far the most frequent cause of alienation in the patients admitted during the year.

**BREATHED AIR.**—"We instinctively shun approach to the dirty, the squalid, and the diseased, and use no garment that may have been worn by another. We open sewers for matters that offend the sight or the smell, and contaminate the air. We carefully remove impurities from what we eat and drink, filter turbid water, and fastidiously avoid drinking from a cup that may have been pressed to the lips of a friend. On the other hand, we resort to places of assembly, and draw into our mouths air loaded with effluvia from the lungs, skin, and clothing of every individual in the promiscuous crowd—exhalations offensive, to a certain extent, from the most healthy individuals; but when arising from a living mass of skin and lungs, in all stages of evaporation, disease, and putridity,—prevented by the walls and ceiling from escaping,—they are, when thus concentrated, in the highest degree deleterious and loathsome.—*Birnan*.

**REGISTERING DISEASES.**—We have several times alluded to the necessity of registering prevalent diseases. The death rate does not represent the actual state of the public health in a locality. In Great Britain there has been much agitation on this subject. In the great majority of cases it is only when death has actually occurred from dangerous infectious disease that the sanitary authority is made aware of the presence of the disease. In the meantime, valuable lives are endangered, epidemics gain a start upon those charged with the duty of suppressing them. How to get the registration accomplished is a more serious question. The Massachusetts Board propose to ask the co-operation of the best physicians in each locality, those at once most accomplished and most busy. In the latter part of 1874 one hundred and sixty-eight regular physicians were selected, and a letter mailed them, explaining the plan and its advantages. One hundred and fifteen responded affirmatively; subsequently the number was increased to one hundred and ninety-eight. To each of these a form was sent, to be filled up each Saturday, containing the names of the following diseases: bronchitis, cholera infantum, cholera morbus, croup, diphtheria, diarrhoea, dysentery, influenza, measles, pneumonia, rheumatism, scarlatina, small-pox, typhoid fever, whooping cough. Two columns opposite these names bore the headings "mild" and "severe." When a disease was not prevalent, its name was crossed out; when prevalent, a cross was made opposite to it in one of the columns referred to. This plan worked very well, and will be continued.

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## THE TORONTO TRUNK SEWER AND THE DISPOSAL OF SEWAGE.

Some doubt has been expressed regarding the wisdom of spending so much money upon the proposed trunk sewer for turning the sewage of this city from its course to the bay and pouring it into the lake as will be required for its construction. The people naturally desire to know what they would receive for the large outlay, and if they would be likely to get full value. There cannot be any doubt but that much benefit would result to Toronto from the trunk, if it were constructed, and either continued far enough to carry the sewage well into the lake, or used for the purpose of collecting the sewage for utilization. Building it for the former purpose, however, would seem to be an unscientific, insanitary (notwithstanding the benefit), and positively wasteful piece of work, and ought not to be thought of. That there would still be at least a possibility of contamination of the present water supply during adverse currents, we fully believe; while the great evil of air contamination would only be partly remedied, the cause of it only removed a little further away. And furthermore, the effect of pouring all the sewage of Toronto, present and future, into one place instead of at a number of points over a distance of three or four miles, would have to be considered. For the latter purpose, collecting the sewage, the trunk would form a part of a greater work for utilization. But it might be advisable to consider whether it would or would not be a too costly *part*.

As regards the increasing necessity for utilizing the sewage of the towns and cities of Canada, very little need be said. Every one knows we should return to the soil the ingredients

we take from it with the crops. Canada exports food-stuffs largely, hence the greater necessity for utilizing the manurial proceeds of that which is consumed at home. Furthermore, the manurial value of human excreta and household garbage far exceeds that of the domestic animals. If there is not some change or improvement made in the way of returning this sewage or refuse of our towns, which are increasing in population it appears at a more rapid rate than the country, to the soil, this will ere very long become so impoverished that the yield will hardly be in paying quantities, and the country will suffer seriously in this way as have the Eastern States.

We propose to notice briefly three methods by which town refuse may be utilized. We have observed that a profit from this sort of thing has been sometimes spoken of. A good many manufactories have been established and carried on for manufacturing from sewage a manure that would be easy of transport and readily applicable to the soil; but none, it appears, yielded sufficient profit to warrant their continuance. The question of the value of the manure is of minor importance as compared with the health of the people. Sewage must be disposed of in some way. If the profit is not direct it will be derived eventually in the general improvement of the soil, of the air, and the water.

The most successful attempts to manufacture manure from sewage, as far as we can learn, is that at Coventry, England. The sewage is chemically treated, is allowed to subside in tanks, and the supernatant liquid is finally filtered through a bed of earth. The affluent water has no perceptible smell and is almost free from color. By treating the semi-fluid "sludge" with ground mineral phosphates, a manure can be produced of any desired value. It is said there is nothing offensive in any part of the works. The difficulty here would arise from the want of mineral phosphates.

The simplest method of utilizing sewage where the water-carriage system is in use for the removal of excrement, as is partly the case in Toronto, seems to be that of applying it fresh to the soil, as in sewage farming. In the vicinity of Toronto there are hundreds of acres of light, sandy, almost

barren soil, which could be so enriched by the sewage as to yield probably five or ten fold that which could now be produced on the land. The chief difficulty here would be the raising of the sewage so that it would flow onto the land by gravitation. We have no doubt that sewage farming can be carried on without injuriously effecting the health of the neighboring inhabitants, or creating a nuisance, and that it would ultimately pay, at least the costs of working.

This method of disposing of the sewage, and also that of manufacturing a portable manure from it, would of course require a trunk sewer.

The third plan we shall notice of removing and disposing of excreta is called the dry method, with admixture with dry earth or coal ashes, along with all household garbage; using the sewers only for storm water and the water used for washing, bathing, etc. The trunk sewer would hardly be required for this city, if this plan were adopted. We believe this to be the safest, most practicable, and most economical method, if properly carried out. The excreta from one part of the city of Glasgow, containing 80,000 inhabitants, are removed every day in this way, and sent long distances "at a profit." Many towns in Great Britain and on the continent have adopted this plan. With it poisonous sewer gases would be almost if not wholly unknown.

We submit that this method is at least worthy of consideration, before undertaking the construction of the Trunk Sewer. The advocates of water closets and the water-carriage system would probably be opposed to such a project, but we believe it can be demonstrated—taking all points into consideration, that it would prove to be the best one to carry out.

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### AMOUNT OF FOOD REQUIRED BY MAN.

So widely do individuals differ from each other in their capacity for food, that to construct a universal standard which would apply to every one, of the quantity of food necessary for maintaining the health of the human family under all the various circumstances of life, would be utterly impossible. It



is universally admitted, however, that almost every one eats too much. Intemperance in eating is undoubtedly a most prolific source of disease. It has been said that more premature deaths have been caused in this way than by the immoderate use of spirituous liquors; and this is probably true. We find that all those who lived to old age were always very temperate in eating. Hufeland looks upon "*immoderation* in regard to the diet as the first thing which can act as the shortener of life."

Over eating is prejudicial in many ways: it overtaxes the digestive powers and thereby eventually weakens them; it prevents perfect digestion, as when the quantity of food in the stomach is too great, the whole cannot be properly dissolved and assimilated, and inferior fluids generally and crudities in the alimentary canal are the consequences; it increases the *quantity* of blood beyond the requirements of the system, while its *quality*, by reason of the assimilating and secreting functions being over strained, soon becomes impaired, and the circulation accelerated and irregular. Hence arises a predisposition to inflammatory and febrile diseases, and the body is not in a condition to resist the numerous and various exciting causes of disease.

Experiments have demonstrated that under most circumstances, from ten to twelve ounces of carbon and from four to five of nitrogenized matter, estimating it dry, are discharged from the body of an ordinary adult male every day, and it is estimated that in order to replace this loss, there is required a daily consumption of from one and a half to two and a half pounds of solid food.

Dr. Abernethy used to advise his patients to read the writings of Cornaro; "who having naturally a weak constitution, which he seems to have ruined by intemperance, so that he was expected to die at the age of thirty five, did at that period adopt a strict regimen, allowing himself only *twelve ounces* of food daily." It is said Cornaro was told by his physicians, when he was thirty-five years of age, that he could not live two months; but by adhering to a "strict regimen," he lived to be one hundred years old, and for over sixty years,

subsisted on twelve ounces of solid food and thirteen ounces of drink per day. He took, however, with this, a moderate quantity of light wine.

It is said the Rev. John Wesley lived for many years on about sixteen ounces of solid food per day, and as he took no wine, his fare may perhaps be considered to have been as limited as that of Cornaro; while he led, in all probability, a much more active life.

Abstinence cannot be carried thus far by every one, however, and while most persons eat more than is essential, it must be remembered that too great a degree of abstemiousness will prove injurious to both body and mind.

Each must experiment for himself, and he may soon ascertain the amount of food actually necessary for health. There is usually more danger of estimating too high than too low. Most important of all, *eat slowly*, and at the same time carefully attend to the first feeling of *satiety*, or rather of *satisfaction*, which, in the healthy stomach will be manifested, especially if looked for, just so soon as enough, or as much as the stomach can digest with ease, has been eaten. "There is a moment when the relish given by the appetite ceases," observes Dr. Phyllip. But we must not confound appetite with *taste*. And herein lies a great objection to more than one dish at a meal; by the flavour and taste of new viands, the appetite is re-sharpened and a false desire for more food is thereby created.

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## FLANNEL CLOTHING.

By far the largest proportion of the people in this country wear woollen flannel next the skin, though there are a few who do not seem to understand or believe in the advantage of wearing it in this way. There are two special reasons why flannel should have preference to all other material for this purpose, in this country, with its variable climate,—its sudden changes. During the next few weeks when we shall have cool nights, following warm days, it will be particularly valu-

able as underclothing. For equalizing the temperature of the surface, protecting from cold and preventing sudden chills, it cannot be surpassed.

Air being a poor conductor of heat, and owing to the coarseness and porosity of woollen fabrics they retain within their meshes a large quantity of air, they are bad conductors of heat, and hence retain it next the body. This property renders flannel especially valuable in cold weather.

Another most valuable property possessed by flannel is its great capacity for moisture, which it takes up and gives off very slowly. It is well known that linen and cotton will become quite wet, while woollen under the same circumstances, will be only damp. For this reason it affords a much better protection against wet than either linen or cotton; and giving off its moisture at a much slower rate, it is much warmer while damp than these fabrics.

A portion of the water absorbed by all clothes is held *between* the fibres, water of *interposition*, and can be wrung out; while the other portion is retained within the fibres *hygroscopic* water, and can only be removed by evaporation. In its capacity for hygroscopic water, woollen very greatly exceeds either linen or cotton; taking up in proportion to its weight at least double the quantity. Hence the value of this material for wearing next the skin in the warm weather, when the perspirations are most profuse.

Practically, as experienced by the men in the army and navy, as well as theoretically, woollen has been proved to be the most valuable fabric in use for wearing next the skin in all seasons.

On this point Parkes says: "During perspiration the evaporation from the surface of the body is necessary to reduce the heat which is generated by exercise. When the exertion is finished, the evaporation still goes on, often to such an extent as to chill the frame. When dry woollen clothing is put on after exertion, the vapor from the surface of the body is condensed in the wool, and gives out again the large amount of heat which had become latent when the water was vaporized. Therefore, a woollen covering, from this cause alone, at once

feels warm when used during sweating. In the case of cotton and linen, the perspiration passes through and evaporates from the external surface without condensation; the loss of heat then continues. These facts make it plain why dry woollen clothes are so useful after exertion."

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## Annotations.

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### MICHIGAN STATE BOARD.

We have space only for a brief notice of the proceedings at the last quarterly meeting of the State Board of Health of Michigan, July 11th, 1876. Present: Dr. H. O. Hitchcock, President; Dr. R. C. Kedzie, Rev. J. G. Goodman, Dr. A. Hazlewood, and Dr. Henry B. Baker, Secretary.

There was considerable discussion over the present system of oil inspection in the State. Notwithstanding the great saving of life under the new law, the Board is not yet satisfied, but is striving for even better results. A thorough report on the subject was presented by Dr. Kedzie. He also presented a paper on "Means of Escape from Public Buildings in case of Fire," and presented a model illustrating his new plan for ventilating railroad cars. By his method the air is introduced free from all dust and cinders, is evenly distributed through the car in sufficient quantity without sensible draft, and at the same time the foul air is rapidly withdrawn.

Dr. Baker read a report relative to a portion of the work done in the office of the Secretary since the last meeting of the Board. The report showed general progress in the work of the office.

Dr. Baker presented a plan for the registration of diseases similar to that adopted by the State Board of Health of Massachusetts. This plan contemplates asking leading physicians in various parts of the State to report diseases prevailing during stated periods of time on postal card blanks furnished by the Board; also requiring such reports from the health officers of all cities in Michigan. The project was adopted.

Quite a number of papers, reports, and communications were read, when the Board adjourned. The Michigan State Board appears to be doing much valuable work.

**BREAD MAKING.**—Apropos to the article on bread in our July number, the *Sanitarian* for August, says: "Kneading Bread as commonly practised, is decidedly objectionable at

any time, but in warm weather, when the perspiration is in constant flow, it is the undoubted means of introducing into the most universal article of diet loathsome impurities, and, too frequently, the seeds of positive disease, from the body of the person making the bread. How many persons eat bread without so much as knowing who makes it, or whether the maker is infected with disease or not? It is not a pleasant consideration, but an important one. In the hard exercise of kneading bread and pastry, perspiration, with all those impurities which it is designated to carry off, are constantly exuding from the skin, and are mixed with the bread. It is no security that the hand is externally clean. The cleaner the skin the freer the perspiration. What ill effects result and what diseases are communicated in this way can be learned only by experiment and close observation. But that impurities of the blood are worked off through the skin is a fact so well recognized that specific diseases are treated by this means, and it is even proposed to eliminate from the system the virus of hydrophobia by a process of sweating. The pores of the hands are more open than those of many other parts of the body. The constant perspiration of the hand in warm weather, even when unexercised, will remind every one of this fact. When the hand is exercised it perspires freely, and physicians especially generally understand the danger of introducing putrid exhalations into the system, in ever so small a quantity. May we not hope the time is not far distant when other and more cleanly, as well as safer means of bread making will be universally adopted." In the last words, almost reiterating our own wish. It is quite probable the manufacture of aerated bread, as carried on by Mr. Nasmith in this city, is destined to revolutionize bread making. However that may be, those in Toronto who desire to avoid the risk and unpleasantness of eating hand made bread, can now obtain an excellent aerated article, made entirely by machinery, from the establishment of the above named.

CONTAGIOUS DISEASES ACTS AND SYPHILIS.—This is a subject which Canada will soon be forced to consider. The President of the American Medical Association, Dr. J. Marion Sims, in the late annual address (June, 6, '76,) in his remarks on State Medicine, draws an alarming picture of the spread of syphilis. A midwife with an ulcer on her finger communicates the disease to a large number of females; a young glass-blower with an ulcer in his mouth, infects a dozen or more of his fellow glass-blowers. Sir James Paget says it would be difficult to overstate the amount of damage these diseases

does to a population. Touching the benefits of the Contagious Diseases Acts in Great Britain, the *British Medical Journal*, July 8, says: "While at the eleven stations brought under the Act of 1866, the death-rate from this disease showed a *decline* of 21 per cent. between 1863 and 1872 (taking these years as the middle of the two periods of five years), the rate in the whole of England and Wales, exclusive of those eleven stations and districts, showed an *increase* of 21 per cent. Although, from the same numbers of deaths which are annually referred to syphilis, it would be unsafe to draw any important conclusions from returns for single years, by grouping these two periods of five years together the deductions drawn from the before mentioned figures should be trustworthy."

STATE BOARDS OF HEALTH.—Dr. J. Marion Sims, President of the American Medical Association, in the annual address at the last meeting of the Society, dwelt lengthily upon State Medicine and Public Hygiene. He urged strongly the importance of Boards of Health, and the efficiency of boards that know their duty, and, *having the legal power, dare to do it*; when acting upon the sound sanitary principle, "that *contagious diseases can be controlled by isolation of the sick, and the destruction of contagia.*" The President stated that already nine States had organized State Boards of Health:—Massachusetts in 1869; Louisiana in 1870; California in 1870; Virginia in 1872; Minnesota in 1873; Michigan in 1873; Maryland in 1874; Georgia in 1875; and Alabama in 1875. Let us hope, he said that the wise counsels of the American Medical Association may soon universally prevail in the several states, and that we shall, at no distant day, see them all falling into line, with State Boards of health, ready for mutual cooperation in the great work before them. Boards of health should take cognizance of, and have control of, any and every form of infectious disease, call it by what name you may. Has it a habitat? Can it be broken up? Has it the power of transmission from one to another? Can its transmissibility be arrested? Then it is the bounden duty of State medicine, with its organized health boards, to search out its abode, to take charge of and heal those already diseased; to prevent the spread of the infection to the well, and thus to eradicate the poison of contamination.

VALUE OF HYGIENE.—We fully agree with the *Canada Lancet* in its remarks on Homœopathy, as expressed below, and have long held the same view. In an article on "Systems of Medicine," after showing the seeming absurdity of the *similia similibus curanter* pathy, the *Lancet* says:—"From

the attention, however, that homœopathists pay to hygienic laws, diet and regimen, much good must result ; and herein is their tower of strength. In this the allopathic physician should learn a profitable lesson, for, although taught from the most ancient times, yet it has not been insisted on as it should have been by our own profession, and as it must be by all scientific and successful practitioners. The practice of homœopaths has demonstrated with great clearness, the value of proper hygienic treatment and the observance of correct sanitary laws, while it is a complete vindication of the late Sir Benjamin Brodie's views concerning the great power of the *vis medicatrix naturæ*, and shows most forcibly the inestimable value of diet and regimen as auxiliaries in the treatment of disease."

**INSTRUCTIVE.**—The last annual report of Dr. Vacher, the medical officer of health for Birkenhead, shows the total deaths and the deaths from zymotic diseases in each of the 267 streets, &c., of the town. From a careful analysis of this table it appears that in 70 of the most fatal streets, of 247 deaths registered from all causes, no less than 153, or 62 per cent., were the result of zymotic diseases. In 103 streets, the proportion of deaths from zymotic diseases was equal to 49.5 per cent., whereas in the remaining 164 streets, &c., the proportion did not average more than 17.1 per cent.

**MILK AND DISEASE.**—At the recent meeting in Philadelphia of the American Medical Association, in discussing the subject of milk supply, in the section or state Medicine, Dr. Jones, of Ohio, regarded the subject of milk as most important. One of his own children was fed on the milk of a particular cow, which appeared healthy, yet the child became ill. When the child appeared beyond hope the cow died, and immediately the child began to recover. No cause could be assigned for the condition of the cow ; in every way all appeared right. He believed fearful mortality in infancy arose from diseased milk.

**DR. JOHNSON'S "Mrs. Thrale,"** Mrs. Piozzi advised the Rev. Mr. Davies thus, concerning her nephew :—"Let Parkinson look to his mouth directly, for it is so constructed he shows his teeth every time he speaks, and there *are those* who regard *them* more than the *words*, you know, which will *at any rate* come with a better grace from between two clean rows of fencibles in fair uniform, than from an ill-formed and masked battery of black fascines. Take care of his mouth, therefore, and let nothing odious either go in or come out."

**OTTORRHOEA AND LIFE INSURANCE.**—Dr Thomas and others, in the *British Medical Journal*, on account of the not unusual connection between ottorrhœa and epiletiform convulsions and cerebral or cerebellar abscesses, suggest that insurance companies should insert in their forms a question on the subject of ottorrhœa, as it has been abundantly proved that death may occur as an indirect result of ottorrhœa at any period or lapse of time after its first appearance.

**TOBACCO AND ANGINA PECTORIS.**—Dr. Dickson, (*St. Louis' Med. Journal*, November, 1875) quotes the observations of McBean, published in 1862. These observations were quite numerous and showed that cigar smoking, by impressible persons of sedentary habits and over-worked minds, is especially liable to produce angina pectoris. Two years later, Dr. E. Decaesin presented a series of one hundred cases respecting the pernicious action of tobacco smoking upon the heart.

**THE ANNUAL DEATH-RATE** in London last week, (*Lancet*, July 8,) was 17.6 per 1000—a lower rate than has prevailed in any week since Sept. 1874. Of twenty large English towns, Leicester is to be congratulated on having the very low annual death-rate of 9 per 1000. During the last week in June the death rate in Glasgow was 22 per 1000, and the previous week only 21; last year at that date the rate was 27 per 1000. So much for sanitary administration.

**GOLDWOOD**, a village of 200 people, on the Bombay and Baroda Railway, has been the scene of one of the most frightful outbreaks of cholera ever known. Over half of the population died in three days. Gross neglect of sanitary measures is the apparent cause, as it is stated that the people were living in inconceivable filth. Cholera appears to be unusually prevalent this year in various parts of India.

**THE CONGRESS OF HYGIENE AT BRUSSELS.**—The Organization Committee of the *Congres d'Hygiene et de Sauvetage*, to meet at Brussels next September, has published its regulations. The subjects to be discussed come under the three heads of hygiene, saving of life and property, and social economy. The Congress is to sit for six consecutive days. Experiments, demonstrations, and technical explanations are reserved for special lectures.

**AT A MEETING** of the Salford Board of Guardians, the work-house hospital surgeon reported that out of 400 cases of small-pox he could not find one in which the patient had been attacked after revaccination had been successfully performed.



THE ARCHBISHOP OF CANTERBURY recently proposed in the House of Lords the appointment of a Select Committee to inquire into the prevalence of habits of intemperance, and into the manner in which they have been affected by recent legislation and other causes; and the Government accepted and supported the proposal.

THE *Lancet* says: An instructive lesson comes to us from the other side of the Atlantic, in the shape of a report detailing a serious outbreak of an intestinal disorder caused by the contamination of drinking water by means of impure ice. An analysis of the water derived from the ice in use was made, and it was found to be horribly foul.

PROGRESS.—The New York Board of Health has passed a resolution appointing 50 physicians in addition to those already serving, to act as inspectors for one week or longer, if necessary, to visit the various tenement houses of the city, examine the sewerage connections, mode of ventilation and general arrangement, and make such changes as would render diarrhoeal diseases less frequent.

After the funeral of Lord Brougham's grandfather in 1782, the then Duke of Norfolk, who acted as chief mourner, took the chair at the feast. Dinner over, the Duke rose and said: "Friends and neighbours, before I give you the toast of the day—the memory of the deceased,—I ask you to drink to the health of the founder of the feast—the family physician."

THE INTERNATIONAL SANITARY EXHIBITION was formally opened on June 26th by the King of the Belgians and the Count of Flanders, honorary president. It is to remain open nine months. A congress in connection with the exhibition will commence September 27th, and terminate on October 4th.

AN INTERESTING table has been published in which is given the range of temperature observed at different stations at various quarters of the globe during the year 1875. As a general rule, it appears that the range of temperature is widest in the centre of continents, less on the coasts, and least of all on small isolated islands.

In the island of Dominica, a hill-top not more than 1500 feet high is always healthy, even when the fever is epidemic at its base. In San Domingo similar observations have been made. The highest elevation at which yellow fever has occurred in the United States is 460 feet in Arkansas.

A public meeting was held in London, on Thursday, 13th July, to take steps for forming a Sanitary Institute of Great Britain. The Duke of Northumberland presided.

## NOTES, QUERIES AND REPLIES.

INVESTIGATIONS on the action of Flowers in the Production of Atmospheric Ozone, demonstrate that the disciples of Empedocles were not in error when they planted aromatic and balsamic herbs as preventives of pestilence. Herodian has recorded that "in a plague which devastated Italy in the second century, strangers crowding into Rome were directed by the physicians to retreat to Laurentum, now San Lorenzo, that, by a cooler atmosphere and by the odour of laurel, they might escape the danger of infection.

HASTENING TO CATCH THE TRAIN.—This is a dangerous proceeding for anyone advanced in years, or for those unaccustomed to active exercise, as well as for those with heart diseases, who are often warned of the danger by their physicians. Recently in England a lady, aged 70, hurried to a railway station and purchased a ticket, but fell dead before she reached the platform.

COOK.—In preparing dishes for the table it is of the first importance to avoid mingling together several different sorts of food, as they are thereby rendered more unmanageable in the stomach.

NICOTINE.—We have long held the opinion that the effects of tobacco on the physical constitution of man, are more repugnant and injurious than the effects of alcoholic beverages.

THE EVANGELICAL CHURCHMAN, a Canadian family newspaper, conducted under the direction of a committee of the Church Association. Address, Robt. Baldwin, Hon. Treas., Toronto. We have received several numbers of this new church paper and trust it will receive such patronage as will warrant its efficient continuance. It appeals to all who love the Church of England, as restored at the Reformation.

MICROSCOPIC PHOTOGRAPHS IN HISTOLOGY.—We have to acknowledge the receipt of the two first numbers, April and May, of this excellent publication; they are really very beautiful and the letter press concise and to the point. To physicians who cannot devote much time to the microscope this publication will be very valuable. Monthly, J. H. Coats & Co., 60c. per number, \$6.00 a year.

### COMMENDATORY LETTERS TO THE EDITOR.

The following are copies of, and extracts from, a few of the many letters to the Editor, received from time to time, from medical men and others, regarding the SANITARY JOURNAL, unsolicited, of course, and, with two or three exceptions, the writers being personally quite unknown to the Editor :

TORONTO, December 7th, 1875.

DEAR DR. PLAYTER :— . . . Please send me your receipt for the enclosed two dollars, for your valuable Journal. I wish all in the profession valued it as I do. . . .

Very truly,

JOSEPH WORKMAN, M.D.  
(Late Supt. Toronto Lunatic Asylum.)

TORONTO, February 9th, 1876.

To E. PLAYTER, Esq., M.D.

DEAR SIR:—I am much obliged to you for sending me your very useful, much needed, and thoroughly practical Journal. I gladly enclose you my subscription.

Truly yours,

S. H. BLAKE.

(Vice-Chancellor.)

BOWMANVILLE, June, 1875.

DEAR SIR:—I am much pleased with your Journal . . . I look upon it as one of the most useful periodicals with which I am acquainted, and especially to the medical practitioner, who wishes to keep pace with the advancements of science.

Yours truly,

W. ALLISON, M.D.

(Member Medical Council, Ont.)

GLANFORD, ONT., November 22nd, 1875.

DEAR SIR:—Enclosed you will find \$2, to be applied to SANITARY JOURNAL. . . . I think your journal is doing a good work, and that such a magazine was much needed in Ontario. Wishing it every success,

I remain, yours truly,

ALEX. BETHUNE, M.D.

(Member Medical Council, Ontario.)

OAKVILLE, March 18th, 1875.

MY DEAR DOCTOR:—Enclosed please find one dollar for your really valuable Journal. . . . Accept my best wishes for the success of your new enterprise.

Yours faithfully,

D. D. WRIGHT, M.D.

DUNDAS, September 10th, 1875.

MY DEAR SIR:—Please receive the enclosed \$2 for the SANITARY JOURNAL. Your moderately-priced monthly contains much that is of interest to the reading public of all classes. . . . Much valuable information as well fitted for the general reader as for the professional student. It ought to receive a large measure of support, and I heartily wish it every success.

I am, my dear sir, yours truly,

JAMES HAMILTON, M.D.,

(Late Member Medical Council, Ont.)

LANSING, MICH., August, 12th, 1875.

DEAR DOCTOR:—I am much pleased with your Journal. . . . I read it with interest, and satisfaction, and sincerely hope its circulation may be increased, believing, as I do, that the interests of public health will be advanced thereby.

Very respectfully,

H. B. BAKER, M.D.

(Sec'y Michigan State Board of Health.)

TORONTO, December 13th, 1875.

Dr. PLAYTER,—Dear Sir:—Enclosed find amount of subscription to the SANITARY JOURNAL. I am much pleased with it, and feel that I cannot say too much in its behalf. . . . I hope the publication will receive the support its merits deserve; it should be carefully studied by every man, woman and child.

Yours very truly,

DONALD McDONALD.

(Senator Dom. Can.)

WARKWORTH, November 17th, 1875.

DEAR SIR:—I appreciate your Journal very much. It contains information but little understood by the mass of the profession. I give you my best wishes.

Yours truly,

P. D. GOLDSMITH, M.D.

**The following are Notices of the Sanitary Journal by the Press.**

THE CANADA LANCET says:—"The SANITARY JOURNAL is very well got up and contains good articles on Public Health. We wish our contemporary every success."