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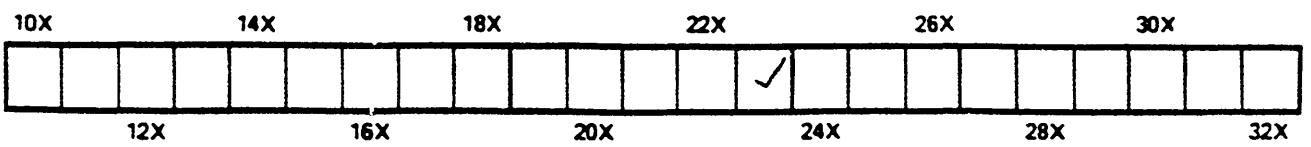

CANADA

HEALTH JOURNAL

A Monthly Review and Record of

SANITARY PROGRESS

——EDITED BY——

EDWARD PLAYTER, M.D.

Public Health and National Strength and Wealth.

For Contents see next page.

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VOL. XII. OCTOBER, 1890. No. 10.

CONTENTS:

CANADA HEALTH JOURNAL.

A Monthly Record of Sanitary Progress.

VOL. XII. OCTOBER, 1890. No. 10.

WANT OF WINTER VENTILATION AND THE HIGH MARCH DEATH-RATE.

IN this temperate climate the dwelling houses are all closed up about this season of the year, for the winter, and in most cases with double windows. Many thousands of people, indeed a large majority of the people, are closed up in the dwellings, or in shops or offices, and from this until April o May breathe but little of the pure, fresh, invigorating outer air, but breathe daily, over and over again, the same, often overheated, atmosphere of the closed rooms. The consequence is that in March and the early part of April—just when the beautiful, cheery spring has already broken up the winter frosts and almost everything in nature is full of vigorous life—we have in Canada, every year, as shown by statistics year after year, the highest death-rate of the year, in all ages and classes, with the most sickness, especially lung diseases, "colds," &c. There is no doubt whatever about the relation of cause and effect in this matter. The debilitating effect of breathing and rebreathing the same foul air of closed rooms for a few months renders the human system an easy prey to disease of various sorts, and more especially to disease of the respiratory organs which are so directly affected by the foul over-warmed air of the rooms. The wonder is, that so many can tolerate the foul air and that so many survive. This can only be explained by the well known power of the human organism to suit itself in a large measure to circumstances and environment. Night and day the foul air breathing goes on. While some get a respite for an hour or two a day in the open air, many, as of the women and children, but rarely go out at all. And as the British Medical Journal (of Sept. 27 '90) puts it, whilst the importance of keeping pure the air of living-rooms during the day is recognized by a large majority of the educated classes at the present time, it is to be feared that there are still very many who by preference sleep at night in closely shut bedrooms. "The conviction that night air is unwholesome and should be rigidly excluded, once so prevalent, probably now only survives amongst the unlettered and ignorant. It doubtless had its origin in times when undrained swamps and malaria-breeding mists, arising at nightfall, were characteristic of large tracts of rural England, and is thus a survival of a belief founded more or less on the results of observation and experience: but at the present day it cannot be too strongly asserted that . . . night air is as wholesome as that of the day, and may even be said to be purer, as it is more free from dust and spores raised from the ground by winds, human traffic, and evaporation." The occupation of close bedrooms the Journal continues, putting it very mildly, creates an atmosphere often sufficiently vitiated to cause weariness and drowsiness in the early morning, instead of that feeling of renewed life and vigour that should be experienced, and much of the headache and neuralgia so constantly met with may be reasonably credited to the same cause. If anyone will take the trouble to return to his shut up bedroom after spending ten minutes in the fresh morning air outside, he will be surprised to find how close and disagreeable is the atmosphere in which he has spent the last eight or nine hours.

What is the remedy? Ventilate—provide means for letting out or drawing off the once breathed, foul air and letting in the

fresh and pure. It is a very simple process. It costs a trifle to be sure to warm the fresh cold air from out of doors, but as we have said repeatedly on former occasions it is better to pay a fuel bill for warming pure air than either a "butcher's" or a "doctor's bill." Provide at once an opening through the wall of every occupied room into a chimney flue that will be usually warm, or cut an opening into a stove pipe, if one pass through the room. This will draw off the foul air. Even if you use a grate or open fire, such an opening into the chimney above the grate will be very useful. If you have but one fire, probably a stove, in the dwelling, have a good sized opening (say 4 by 6 inches) cut in the pipe, with a sliding door to partly close it in very cold weather when you have on a large fire. In many houses in severely cold weather, with this outward draft creating a vacuum within, enough pure air will come in through the cracks and crevices about windows, doors, etc. Often a window should be opened a little too. This is not a first-class method of ventilating, but if it alone were commonly practiced, it would prevent a vast amount of sickness and save very many lives. When there are outer or storm windows, have them so arranged as to open wide (the so called small "ventilator" in the lower bar of the sash is hardily worth naming or using) and open all doors and windows once a day and flush the rooms. Do this for just a minute or two or longer, daily, when the fires are good and walls all warm, and little or no discomfort will be felt, even by an infant. Whatever you do get the fresh air to breath constantly in some way.

ON THE BEST MANNER OF SEWAGE DISPOSAL—AN AGRICULTURAL QUESTION.

IT has been well said that sanitation is purely an agricultural question. Sanitation consists mainly, almost wholly, in the proper and safe disposal of all the waste used-up matters of individuals and communities, and in so far as this disposal is concerned, it is, or should be, purely an agricultural question In like manner, *en passant*, as we have herein stated, the physical man, that part of man to which sanitation directly relates, is a direct product of the soil, just as are any of the lower animals, and that, therefore, the subject of public health administration is more properly associated with the State Department of Agriculture than with any other of the Departments.

Soil purifies the sewage, while the sewage fertilizes the soil. The soil purifies sewage partly by filtration, partly by oxygenation and partly by the action of growing crops. The oxidation process, called also nitrification, depends on the presence and action of multitudes of microscopic vegetable organisms. The black mould on the surface of the earth consists very largely, in fact mainly, of these organisms —a million of them being found in about 25 grains of earth. The dead, waste excremental matters thrown on the surface of such soil become the food of—are consumed by—these saprophytic fungi which so abound in the soil. Solid matters, even pieces of wood and leather, upon the surface of the earth, become softened and permeated by these fungoid growths and finally crumble away and become the fertile "humus" which "is the only source of permanent wealth in any country;" the source whence we derive all materials for our food and clothing.

The living vegetable mould on the surface of the earth forms a filter of the most perfect kind, and sewage filtered through it in proper proportions is purified in the most perfect manner. The oxygenation and purification of sewage in the soil is a process analogous to fermentation. Cobbett has told us that "the earth begins to ferment in the spring," and that before sowing the seed a thorough tilling and mixing of the upper strata of soil is very necessary,

with a view not only to the pulverizing of the soil but to "a thorough leavening of the whole mass with fermentable matter." Hence, in order to keep the soil in a healthy state, and to "keep up its appetite for dirt" and its power for digesting or disposing of it, the one thing necessary is tillage—cultivation. In this way, with a small beginning of "humus," with a proper disposal of waste excrement upon it, it will increase gradually from year to year, as the yeast plant increases by fermentation.

As relates to disinfection in the soil: Some of the bacteria in soil are injurious to mankind; but organisms that flourish in the human body usually cease to multiply in the soil, which is unsuited for even their survival for any length of time; and "the great doctrine of the survival of the fittest holds good for them as for all other organisms." The pathogenic or poisonous bacteria must be mingled by soil cultivation with the other or saprophytic bacteria by which the former are destroyed. As was said at the annual congress in August last of the Sanitary Institute of Great Britain, in an address on "The Living Earth," by the President, Dr. G. Vivian Poore, "well cultivated soil, which is compelled to produce good crops, has never yet been convicted of causing any danger to health, in any circumstances.

It was further said by Dr. Poore that "he was convinced that in their sanitary arrangements they had not sufficiently distinguished between the living mould and the dead earth of the subsoil. When they perforated the living humus with a pipe and took their dirty water to the subsoil, they, as it were, pricked a hole in their filter.

"In 1848 the advice to drain was tendered with a light heart by the pioneers of modern sanitation.....The panacea for all sanitary ills had been and still was 'drainage,' and the only scavenger in favour was water, notwithstanding the fact that sanitation by water had for its main characteristic incompleteness. Their houses were flushed, but they paid for it by fouling every natural source of pure water... The Thames, the Liffey, the Clyde, the Mersey, and the Irwell were standing testimony to the failure of these great engineering schemes, and the last scheme put forward with regard to the sewage of London, to convey it all to the Essex coast and cast it into the sea, was an experiment which, like its predecessors, might be productive of unforseen results."

It may be regarded as a distinctive mark of man's obduracy that he is so slow to take up with this best and only natural method for his sewage disposal—this method of applying it, or returning it, in some way, to mother earth; which the cyclic character of the processes of nature plainly indicate as the only true method —in which we return again to the earth what we take from it.

All other methods, so far, it appears, have been failures; even those in which it was aimed to provide a manure. Electrolysis promises good results, but however scientific and valuable, it is not "natural," any more than the various chemical processes—the "A, B, C," the lime, or the iron—are natural. Sewage farming, where it has been understood, and so, properly carried out, has not been a failure, and we venture to predict that it must become, soon or later, the one universally accepted process for sewage disposal. Possibly time, with science, may give rise to an artificial "living earth" or humus for treating sewage, but that time is yet far away in the future.

A STRONG POINT ON INFECTIONS.—This is given in the following concise way in the Sanitary Era: There is too much carelessness in letting children visit other children who are sick before it is definitely known whether they have an infectious disease or not. Even when it is announced of the sick child that "it has nothing but a slight sore throat," the prudent mother should hesitate before sending her child to the sick chamber and into a possible danger lying in ambush. Scarlet fever and diphtheria sometimes put off their characteristic appearance and masquerade in the form of a "slight sore throat" retaining, however, their capability of communicating infection which may reproduce the diseases in their more usual and more frightful forms. The truth of this is emphasized every year in the histories of outbreaks in our own State. A word to the wise is sufficient, it is said, but we find that the world needs frequent repetition of words.

THE time is at length come when towns in Canada which pour their sewage into the nearest stream are liable to get into legal difficulties. It is a pity that the time had not come long ago. London is in difficulty from so disposing of its sewage. Action for preventing the fouling of Ontario streams had to be commenced somewhere. Why not in London? If London is exceptional now in this regard, it will, in all probability, not be long so. Other small towns, it appears, are threatened; and Montreal may not long tolerate the sewage of Ottawa. We have been consulted in a number of instances by interested persons in the smaller towns relative to the best manner of sewage disposal, in order to avoid nuisances. We have long, indeed always, protested against the vile practice of turning the sewage of one town in a direct course to what is or may probably soon be the water supply of a neighbouring town, and insisted that such a practice could not possibly be long continued. Long ago there should have been legislation—legislation put into practice—for preventing this murderous way of disposing of excrement, which has already, without any doubt, cost in Canada thousands upon thousands of human lives.

What is to be done? It has been suggested that the Ontario Government appoint a commission to investigate, consider and report upon the best means of sewage disposal for the various cities and towns of the Province. Had not a great deal been done already—vast sums of money expended, in England with a like view, as relating to that country, reports of all of which have been made public, and from which all interested may fairly benefit, this suggestion would be a good one; but as it is, we cannot see what could be gained by such a course, with the reports of such investigations in England before us.

Towns must not expect to get rid of their excrement, even after it has collected at the mouths of the sewers, in such an easy manner as that of simply dumping it into the nearest stream of water, regardless of the comfort and health of their neighbours. People will congregate together in large communities, and they must expect to pay for having the refuse of their bodies and households safely disposed of after it has been collected either by a water carriage, or any other system, so that it shall not be in any way or degree a nuisance to others—to neighbouring communities.

Individuals and communities must be taught in the most impressive manner that such refuse is *not* disposed of when it has been deposited in the back yard, in a cesspool or in a stream of water, or even in a lake, and that as taxpayers they must incur some outlay for the further treatment or destruction of it.

There are two special points to be constantly borne in mind in relation to sewage: one, that the sewage—all waste, used up matters of every sort—in the interests of health and life if not of comfort, must be safely or properly disposed of—indeed, destroyed; the other, that to so dispose of it there must be, at the present time, with only our present knowledge, some special outlay of money by all ratepayers for the purpose. The first point is at last becoming evident to everybody. The chief difficulty is now as to the best and most economical manner of treating or destroying the sewage. There certainly should be some special authority which should advise with and guide the various towns in the different provinces in this regard. The second point must be calmly thought over and squarely faced. However the sewage may be disposed of, the proper disposal will involve some outlay upon the people. Even a sewage farm in the most favorable circumstances will hardly yet, with our present knowledge, pay all expenses of working it. And this is probably the best and most profitable or economical way of treaing sewage. Elsewhere we have discussed the subject at greater length.

AUTHENTICATED CENTENARIANS.

NOT ONLY A LONG LIFE BUT A COMFORTABLE AND HAPPY ONE. FROM THE BRITISH MEDICAL JOURNAL.

THE belief in centenarianism has now pretty well recovered from the shocks it received a few years ago. Those shocks and the resulting scepticism were not a little due to the exaggerated statements made, and the insufficient data upon which accounts of extreme age were accepted. It was only to be expected that the narratives respecting Herbert Jenkins, reputed to have died in 1670 at the age of 169; of Old Parr, who is said to have died in 1635, at the age of 152; of the Countess of Desmond, at 140, and the like, often repeated, should bring centenarianism into disrepute, and throw a doubt upon all who laid claim to it, and should even lead to the question as to the possibility of human life being so far extended. Lady Smith at length came to the rescue, and by an unquestioned prolongation of life and health to 103, made an onslaught on the sceptics, in which she was followed by Miss Hastings at the same age, and Sir Moses Montefiore at 100. Several well authenticated cases have been given by Professor Humphrey in his work on *Old Age*, based upon the results of inquiries made by the Collective Investigation Committee of the British Medical Association; and many more might be added; indeed, we are hearing of them every day, and the more correct registration of births and deaths will enable a truer estimate of the proportion of centenarians to the rest of the population to be formed. One of the interesting and cheering results of that investigation is not only that persons frequently attain to the age of a hundred (women more often than men), but that those who do so are commonly cheerful and happy, without malady, enjoying the evening shade of life and the tranquility that accompanies it, and that they, in most instances pass away without struggle, and without the tedium of long illness. The candle often goes out with scarcely a flicker. The old man is comfortable and happy one day and is gone the next. Perhaps he goes to sleep and does not wake, or a slight cold, or indigestion, a little over-fatigue, even a fit of laughing or a fit of choking or coughing shakes out life's flame, and brings about the dissolution after a manner much to be envied by those who traverse the longer and more painful roads to the same end.

All qualities and tendencies are more or less hereditary, and longevity is well known to be so in a marked degree. It hence follows that there are probably racial predispositions influencing the duration of life. The Irish, as far as evidence at present goes, seem remarkable for a large proportion of centenarians, and the same is stated with regard to natives of certain districts of South America and Jamaica. There are not, however, at present sufficient data to make sure of this; and many other circumstances and surroundings, as climate, mode of life, diet, and occupation, must be taken into account.

It is not a little curious that many persons have attained to great age under very insanitary conditions—in defiance of them as it were; and we not infrequently hear the great ages of certain persons in a district, or graven upon the stones in a churchyard, quoted as evidence of the sanitary state of the village or town, and as an argument against the necessity of improvement in that particular, and the expenditure of money upon it, whereas a further investigation may not improbably show that the death-rate by no means accords with the inference. A large proportion may have died young, while some survivors, inured to the evil surroundings, may have attained to great age, thus exemplifying the ability of the human body to adapt itself to varying and even unfavourable conditions. It is, as we know, upon the sensitive and receptive frames of the young that noxious agencies most exert their killing influence; and the immunity of old persons from them is no evidence of their non-existence. A man may live to 100 in the very house in which he had typhoid fever himself

when young, and in which many of his children and grandchildren have since died of it.

One interesting and remarkable observation resulting from Professor Humphrey's inquiries is the reparative power after injuries and diseases which is shown by persons at very advanced age, even by centenarians. Though sudden and fatal depression may be, and often is, produced in them by slight shocks, nevertheless they often tide over greater trials, and make surprising recoveries from injuries and maladies. Their fractures unite often as quickly as in younger persons, and their wounds and ulcers heal even more quickly. It seems as though the nutritive efforts requisite for the work of healing take place more quietly and smoothly, with less of nerve irritation and of that haste which is incompatible with good speed or safe progress; and the recoveries of the aged from congestive, apoplectic and even paralytic attacks, from bronchitis, pneumonia, erysipelas, and other affections are often most unexpected and surprising. This is probably to be accounted for by the fact that all the organs in those who have attained to great age are usually sound, work well and harmoniously, and have long been accustomed to supply one another's deficiencies, if there be any, like veteran troops who pull well together and bear reverses under which younger soldiers would give way.

HABIT.

DR. Wesley Emerson has said: "Habit is like a boat; it has to be built, but when it is built it will carry you." Again it has been said that the majority of people die of bad habits—bad habits of eating or drinking or sleeping; by neglecting to do things which they ought to do, as well as by doing things which they ought not to do.

The following from a lecture by J. H. Kellogg, director of the Sanitarium, Battle Creek, Michigan, is suggestive: The majority of people hardly appreciate how much we are creatures of habit, nor how much habit has to do with our daily lives; yet it is our habits which give us our individual characteristics, and which make us differ one from another. Habit even affects our walk and the carriage of our body, and one can often tell a man's trade or occupation by observing his manner on the street. The old farmer, who has used the muscles of the chest more than those of the back, becomes stoop-shouldered, and he carries his arms half-flexed, because his work has developed the flexor mucles and not the extensors. There is excuse for this, but sometimes a mere foolish physical habit becomes so fixed that it is most difficult to root out.

It is to habit, also, that we owe our characteristic expression of countenance. It is mental habit which makes one face happy and another sad; that gives one a penetrating expression and another a vacant stare; that makes one savage and fierce, and another calm and mild. When one feels cross most of the time, the muscles which are under the control of the "bad-tempered" centers of the brain, put an habitual frown upon the face. The muscles which draw the face into the perpendicular wrinkles of the scowl, become so much stronger than the muscles which are used in smiling, that one can hardly smile if he tries. On the other hand, he who is in a happy frame of mind most of the time, is educating the muscles of his face which draw or the horizontal wrinkles, which are at right angles with the vertical wrinkles of ill temper. A person's face in sleep always assumes the habitual expression to which he has been educating his muscles, and so reveals in this way much of his inward nature. These facts show the intimate relation between the inside and outside, and that the face is merely a mirrior of the mind. The study of the lines of the face is of importance, then, as well as of interest, since the per-

manent, fixed expression of the face corresponds with the permanent, fixed condition of the mind.

Other muscles, like the heart, can be wrongly educated. If by running and other violent exercise long continued, it gets into the habit of working too hard, it will pump away at that rate all the time; and besides the damage of forcing too much blood to certain parts, it will wear out too soon. A person may also acquire the habit of eating enormous quantities of food, and may distend his stomach to accommodate the burden, until, by and by, it becomes relaxed and habitually torpid. It is first slow from necessity, and by and by becomes slow from force of habit. As an opposite extreme, sometimes people coddle their stomachs too much with soft, bland food, and too little in quantity, until it looses its ability to digest a good meal. Such a stomach needs a course in gymnastics, by giving it an increased amount of work to do upon substantial food. We do not mean that improper food should be put into the stomach, for this or any other purpose. Rich pastry, mince pies, fried foods of every description, should never be eaten. But an invalid need not live perpetually upon milk and gruel. . . . .

Another serious consideration is that habit is transmitable by heredity, and we owe a duty to posterity as well as to ourselves. Our children should be given a good inheritance and proper training. It may be helpful to bear in mind that good habits are just as firmly fixed as bad ones, and if the training of a child has been wise and right, he will go steadily on in the right way. The proper way to break a bad habit is to put a good habit in its place. It is the surest and safest antagonism.

MISCELLANEOUS NOTES AND EXTRACTS.

CANCER AND SMOKING.

SINCE the death of President Grant, a constant smoker, cancer of the tongue and cigar smoking have been closely associated in the public mind. A "prominent American physician," whose name has not transpired, is reported to have said lately: "The only cases of cancer of the tongue that I ever saw were of persons who never smoked. The majority of them were women, and the half-dozen men who were afflicted were not confirmed smokers at all." This man has had probably very little experience with the disease. In relation to the assertion the British Medical Journal says: This apocryphal utterance is contrary to current opinion. There are no statistics that show clearly the relative liability of smokers and non-smokers to cancer of the tongue. Surgeons of experience, however find that the disease is far more frequent in persons who have been in the habit of smoking. The disease appears to be about six times more common in males than in females. The affection known as "smoker's patch" is common; a good description will be found in Mr. Butlin's *Diseases of the Tongue*. It is a slightly-raised oval area on the forepart of of the tongue, a little to one side of the middle line, just where the end of the pipe rests or where the stream of smoke from the pipe or cigar impinges on the surface of the tongue. The patch is usually red, but it may be bluish or pearly-white. It lasts for years, but tends to spread over the surface of the tongue if the irritation be continued. When diffused in this fashion, it constitutes leucoma of the tongue. Leucoma is certainly a predisposing cause of cancer. There is, however, no evidence to prove that smoking is the sole cause of leucoma, nor do the majority of cases of leucoma become cancerous.

ALCOHOL AND CHILDHOOD—HEREDITARY EFFECTS.

PROFESSOR DEMME, of Berne, at the recent International Alcohol Congress at Christiania, presented an interesting report of an investigation which he had made as to the influence of alcohol upon children. Having unusual opportunities for this study from his position as superintendent of a hospital for children, he selected two groups of ten families each, under similar

external environment. One group of 57 was manifestly affected more or less by alcohol; the other of 61 was unaffected, or very little affected. Of the 57 who exhibited the affects of alcoholism, 20 had inebriate fathers, the mothers and grandparents being moderate drinkers. Only 45 per cent. of these (9) had healthy constitutions: 31 had inebriate fathers and grandfathers, but temperate mothers and grandmothers. Only 2 of these, or a little over 6 per cent., were healthy. Six children had parents and grandparents intemperate: 1 of these survives, a sufferer from epileptic seizures. In remarkable contrast is the state of the 61 children belonging to temperate families, 82 per cent. of whom enjoy good health, 3 have died, and 8 are in bad health. Prof. Demme also reported the results of an experiment on several children, from whom all intoxicants were kept during eight months, and to whom the usual allowance of wine and water was given during the remaining four months of the year. These children were reported to have slept more soundly and longer, and to have appeared in better spirits and more active, during the non-alcoholic eight months than during the alcoholic four months.

ATMOSPHERIC BACTERIA

The following important conclusions with regard to atmospheric bacteria (from *La Riv. Internaz. d'Igiene*) are formulated from a series of experimental valuations of sea-air, made by Prof. Roster in the island of Elba: 1. The atmosphere of an island contains a much less number of bacteria than that of the main land, and this irrespective of the direction of the wind with regard to the point of observation. 2. The oscillations of atmospheric bacteria are much stronger on an island than on the main land, owing to the alternate prevalence of sea and land breezes. 3. The number of bacteria diminishes to an extraordinary degree when the wind blows from the sea, and correspondingly increases with the setting in of the land breeze. 4. A very small extent of sea will deprive of bacteria air that has passed over the island. 5. A passage of 10 meters over land will charge the atmosphere with bacteria. 6. Atmospheric bacteria increases in numbers with the velocity of the wind. 7. Rain is a most effective agent for diminishing the number of atmospheric bacteria, whether by direct action in liberating the atmosphere of suspended germs, or by consecutive action in rendering the earth humid and impeding the passage of bacteria from the soil to the air. 8. The great reservoir of atmospheric bacteria is the superficial soil, from which they are detached and transported by the wind. Other factors, less energetic than the direction and force of the wind, rain, and the humidity of the soil, but which must be taken into account, influence the quantitative oscillations of atmospheric bacteria. The night air contains fewer bacteria than the air of the day, and the atmospheric bacteria are more abundant in August than during the months of September and October, when the temperature is lower and the fall rains begin.

TYPHOID FEVER AND FILTH.

Dr. McHenry, in Tennessee Board of Health Bulletin, says: I have now been engaged in the practice of medicine twenty-seven years, and I speak from positive knowledge when I say that, in every instance where I have been called to to treat typhoid fever, I have found it to have had its origin from filthy surroundings; and as my practice has been entirely in the country, I have nothing to say about sewer gas and other sources of animal miasm. People in the country—and I doubt not in the city—can appear very neat, well dressed and apparently scrupulously clean, but as soon as you look into the cellar, closet and hidden places, you find them full of rottenness and all uncleanness. The door yard is full of chickens, many of them drooping with cholera, their poisonous droopings getting into the well. Ducks and geese holding a party in a greenish-black pool, which is constantly filtering back into the well out of which the family takes its daily supply, and from which, were you almost perishing with thirst—as I have been many times—you could not drink, nor would you let your horse drink. Is this common? Oh, no; but quite common enough to keep up a supply of typhoid fever in any given neighborhood. I have been twice in my time dismissed from the families wherein was typhoid fever, because, in as gentle a

manner as I knew how, I insisted upon cleaning and disinfecting the house and surroundings, in one of which, afterwards, there were eleven deaths from typhoid fever. Yes, it is a delicate matter for you to insist that the homes of your patrons are filthy aud must be c eaned, and I care not how gentle you go about it, you are likely to give offence, especially if it be a young doctor or a strange one, and should they never have heard of such a thing before, you will likely fail to convince them.

THE BRITISH MEDICAL JOURNAL ON SUPERFLUOUS EATING.

Growth and waste and repair go on in a nearly uniform way the whole year through, but the amount of food necessary for these operations or purposes is surprisingly small. The generation of bodily heat requires a most variable quantity of food. In winter, with the temperature of the external air at zero, the temperature of the blood in healthy persons is 98.3 degrees, and when the heat of summer drives the mercury of the thermometer nearer to or above that mark, the blood still registers 98.4 degrees. The marvellous mechanism by which this uniform blood temperature is maintained at all seasons is not necessary to consider: but it must be evident to every one that the force needed to raise the temperature of the whole body to nearly one hundred degrees in winter is no longer needed in summer. The total amount of food needed for repair, for growth, and for heating, physiology teaches us, is much less than is generally imagined, and it impresses us with the truth of the great surgeon Abernethy's saying, that "one-fourth of what we eat keeps us, and the other three-fourths we keep at the peril of our lives." In winter we burn up the surplus food with a limited amount of extra exertion. In summer we get rid of it literally at some extra risk to health, and, of course, to life. We cannot burn it. Our vital furnaces are banked, and we worry the most important working organs with the extra exertion of removing what would better never have been taken into the stomach."

FEAR OF DISEASE AS A CAUSE OF PREVENTING ITS MORTALITY.

"That which they fear people seek to protect themselves against," is a great law pervading the people. Dr. R. G. Eccles, in the Popular Science Monthly, gives the following illustrations of this law. No one fails to send for a physician in typhus, yet only six persons in a million die of this disease since efforts were made to suppress it. Four hundred and twenty-eight in a million die of whooping-cough because it seldom frightens patients. and neighborly old ladies of both sexes give advice. Three hundred and forty-one in a million die of measles because it so frightens as to induce the friends to send for a doctor oftener. Two hundred and twenty-two in a million die of scarlet fever, because medical advice is sought sooner and more implicitly obeyed. One hundred and sixty-eight in a million die of diphtheria, because it frightens still more than the other disease, and induces people to send for a doctor sooner. and follow his directions for its spread to other members of the neighborhood. Thus we might class diseases as more or less fatal as the people are afraid of them and seek the doctors advice to both prevent and cure. If people are not afraid of diseases, they act the part of fools by not seeking medical knowledge and skill, and so give the disease a chance to kill more people. Were it possible to cause people to so generally fear syphilis, etc, as they have been taught to fear diphtheria, their ravages would be diminished to a surprisingly large extent. It may be that in frightening people the quack has a place in the world, but it would be more desirable if this end could be accomplished by persons and measures more in accord with honor and truth.

SOME FAMOUS MEN ON TOBACCO.

An Exchange gives the following, of interest to smokers: Gladstone "detests smoking." Philip Gilbert Hamerton says: "I shall never resume smoking. I never use any stimulants whatever when writing. I believe the use of them most pernicious; indeed, I have seen terrible results from them. When a writer feels dull, the best stimulant is fresh air."

Charles Reade declares that he has seen many people the worse for smoking, and adds, "I never saw anybody preceptibly the better for it."

John Ruskin has always had a repulsion for the practice for the reason that "a cigar or pipe will often make a man content to be idle for any length of time."

W. D. Howells never uses tobacco except rarely a cigarette where others are smoking.

M. de Fleury denounces smoking without reserve, and declares "that tobacco leads to all crimes." "One begins," he says, "with the cigarette, continues with the pipe, passes on to brandy, then to absinthe, and ends on the scaffold."

Balzac, Goethe, Heine, and Michelet abhorred tobacco.

M. Alexandre Dumas, *fils*, says that "tobacco is, with alcohol, the most formidable enemy of intelligence." The elder Dumas never smoked.

Victor Hugo condemns the use of tobacco because "it changes thought into reverie, and to replace thought by reverie is to confound poison with nourishment."

The story is told of the poet Swinburne that searching in vain one day for a room in the Art Club where he could find a clear atmosphere in which to write, he at last exclaimed indignantly: "James the First was a knave, a tyrant, a fool, a liar, a coward; but I love him, I worship him, because he slit the throat of that blackguard Raleigh, who invented this filthy smoking."

PRIVATE RIGHTS AND INSPECTION.—There is scarcely a movement inaugurated in the interest of the public welfare but that there is opposition urged on the grounds of its invasion of "private rights," says the Sanitary News. Such opposition generally comes from those who have no idea of what private rights consist, and who are not conscious of any duty to furnish their individual shares to the welfare of the general public. Whatever exists of private rights in this country must be found in such individual immunities as do not conflict with the public good, or retard general progress. Inspection, in a sanitary sense, means the procurement of intelligent information of existing conditions, in order that proper measures may be employed in providing for the public safety. Sanitary inspectors are selected with regard to their proficiency in matters with which they have to do, and of which the public may be considered ignorant. Conceding for the present that a man has the right to place cheap skin-plumbing in his house, and, with polluted water and contaminated air, poison his family, no one will claim that he has the right to endanger the health and life of his neighbors.

SANITARY TEACHING.—The N. Y. Medical Times says: The greatest obstacle to the correct application of sanitary principles, is either the ignorance or carelessness of those likely to be benefited. Men of general intelligence will allow their farm yards, their cellars, their ponds and drains to be breeders of disease, which may endanger not only their own lives but that of the neighborhood, simply through carelessness, or fear of temporary expense. It is true the health boards have been of inestimable benefit to the community where they are located, but if every physician would constitute himself a health officer in the neighborhood where he resides, pointing out the breeding places of disease, not alone in pond and ditch and swamp, but in the houses and the out-door premises of his patients, he would have a much more satisfactory, if not as lucrative, practice. If the masses of the people possessed that education in sanitary matters which every physician should be prepared to give, the death rate in the rural districts especially would be very much lessened.

STERILIZATION OF WATER.—The conclusions of Charles C. Currier, M. D., in a paper on this subject are as follows, (San. News): Unless extraordinarily resistant, water becomes sterilized if it be at or near the boiling temperature for fifteen minutes. If the same degree of heat be maintained for five minutes, all harmful micro-organisms will have been destroyed. Still less time serves to destroy the disease-producing varieties which are recognized as being liable to occur in water. Thus, merely raising to the boiling point, a clear water containing micro-organisms of malarial disorders, typhoid, cholera, diphtheria, or of suppurative processes, and allowing it to gradually cool, insures the destruction of these germs. They are also destroyed by keeping the water from a quarter to half an hour at a temperature of 70° C. (148¼°.) When is is desired to destroy every micro-organism that may be present it should be heated for one hour and allowed to cool slowly. Then it may be used for cleansing wounds or for alkaloid solutions which will keep sufficiently if no germs be introduced after the solution has been heated.

ON THE CAUSES AND PREVENTION OF TUBERCULAR CONSUMPTION IN MANKIND AND THE DOMESTIC ANIMALS.—*Continued.*

ON THE INTERCOMMUNICABILITY OF THE DISEASE BETWEEN MANKIND AND THE DOMESTIC ANIMALS.

That this disease may be communicated from man to the lower animals and from these animals to man has been long believed, and now appears to be a well established fact.

As already has been stated tuberculosis in the bovine race, once known as the "pearl disease," is now universally regarded as being identical with the tubercular disease of man. Not only are the bacilli in the two cases indistinguishable under the microscope, but their growth in various culture media and their biological characteristics are identical.

Theoretically, and from our present knowledge of comparative physiology, we may naturally conclude that any parasite finding a favorable soil for its development in the cow or other domestic animal would find the soil of the human organism about equally favorable; and *vice versa*. The bacilli all appear to be very tenacious of life, and a difference of two or three degrees in the temperature of the different animals they would doubtless readily reconcile themselves to, and likewise to any other such slight physiological or chemical differences existing between the internal structure or condition of the human body and that of the lower animals.

There is a large amount of the most conclusive evidence that the disease is communicable from man to the domestic animals. Besides instances of observation, in which it was plain that poultry had contracted well-marked tuberculosis from eating the sputa from the human lungs, the bacillus from human sputa has been, time and again, cultivated and inoculated into various animals, with the result of giving rise in them to unmistakable tuberculosis.

THE BOVINE RACE, AND ESPECIALLY THE COW, AS A POSSIBLE CHIEF SOURCE OF THE INFECTION.

This disease is the most common of all diseases, except the ordinary infectious diseases of childhood, and the sources or vehicles of it must be proportionately common. What are they? Dr. E. F. Brush, who is, I believe, connected with the Bureau of Animal Industry at Washington, besides being himself a stock grower, and who, as he states, has long been compelled to devote his attention to the subject of diseases afflicting dairy stock, declares it as his "candid opinion" that tuberculosis "is all derived from the bovine race." During the last two or three years he has frequently brought this subject to notice in the medical press and before medical societies, and has brought out a good deal of evidence in favor of this theory.

The human race is almost everywhere very closely associated with the cow. As Dr. Brush words it: "We are veritable parasites on this animal. We milk her as long as she will give milk, and we drink it; then we kill her, eat her flesh, blood and most of her viscera; we skin her, and cloth ourselves with her skin; we comb our hair with her horns, we fertilize our fields with her dung, while her calf furnishes us with vaccine virus for the prevention of small-pox. The cow has tuberculosis and we have tuberculosis. If we regard her as a possible common centre of the infection, we have a reasonable and full explanation of the commonness of consumption."

The inhabitants of the steppes of Russia, who have no cows, have domesticated the horse, using its milk, meat and skin, and it is said a case of pulmonary tuberculosis has never been known to exist among them. The Esquimaux have no cows, neither have they pulmonary phthisis, and it appears to be a fact that where the dairy cow is unknown, consumption does not prevail.

Dr. Brush contends that the bovine race provides the special favorite soil of this tuberculous parasite. He shows that in lands like Egypt, the indigenous inhabitants retain immunity while associating for long periods with consumptive immigrants, while on the other hand in regions like Australia and the Sandwich Islands the inhabitants have become infected after the introduction of dairy cattle. In all dairy countries the prevalence of tubercular consumption is a settled fact, while the only countries at all in doubt are those where the dairy consists of other than our domestic cows. The poor Chinese as a people do not use milk, while the Tartars in that country are meat and milk consumers, and therefore the observations of medical men are confusing, and they can not understand why the disease prevails among the dominant Tartar class and not among the poorer Chinese. In South America, where cattle are numerous, but the use of milk is almost unknown or used only after being boiled, the natives still enjoy an immunity. He takes a geograpical square of ten degrees, embracing Spain and Morocco, and contrasts the two countries, the climatic conditions being pretty nearly equal: Morocco, where there are no European dairy cows, is exempt from tuberculosis; while in Spain and Portugal, where dairying is carried on in the European style, tuberculosis prevails.

Evidence that a certain amount of relation exists between the death-rate of man and bovine animals respectively from consumption, and that this relation may be materially affected by the use of tuberculous flesh for human food, is afforded in a chart issued by the authorities of the Grand Duchy of Baden in the year 1881. The chart applies to fifty-two towns, and shows that where tuberculosis was prevalent among cattle, it was proportionately prevalent among the human population, and was particularly so in towns in which the number of low-class butchers was greatest.

In a recent debate in parliament in Great Britian, Sir Lyon Playfair pointed out that it is a "significant fact that when tuberculosis in cattle increases, consumption of some form or other, but especially of the mesenteric and intestinal form, also increases amongst children."

MODES OF DISSEMINATION OF THE INFECTION OR BACILLUS AND ITS ACCESS INTO THE BODY—HOW THE DISEASE IS SPREAD.

Practically, as regards the prevention of the disease, this point is a most important one and demands much consideration.

It has been clearly established that there are at least three ways in which the bacilli or infection of tuberculosis may enter the body and be enabled to develop there and give rise to the disease, as follows:—(1) By inhalation into the air passages and lungs; (2) by swallowing into the stomach and alimentary tract or system; and (3) by direct introduction under the cuticle (the outer or true skin) or under the epithelum (which covers the inner membranes) and so *into* the skin or mucous membrane, as by means of a scratch, abrasion or "sore" in the skin or lining of the mouth; while some believe the bacillus may be directly transmitted by (4) heredity, which is probably doubtful.

RELATIVE TO THE FIRST METHOD—INHALATION OF THE BACILLUS:

It is the general opinion that transmission of the malady in the human species takes place most frequently by the dry expectorated tubercular matter being accidentally reduced to powder and carried by the atmosphere into the lungs. Owing to the fact that the signs of the disease are most commonly found first in the lungs, inhalation appears to be the commonest way in which the disease is contracted. This method of infection has been proved by experiments, in which animals inhaled tubercular secretions minutely divided so as to admit of the bacilli being distributed in a current of air, thus imitating that distribution of the virus which occurs when a tuberculous subject coughs; the results of the experiments being that the animals breathing such infected air nearly always succumbed to the disease.

The bacilli have been found repeatedly in the sputa or spittle of consumptives, and physicians now habitually examine the sputa of patients with the microscope in order to diagnose the case or prove that it is one of tuberculosis, or otherwise. They have been found on the walls of rooms inhabited by consumptives, wherein the sputa had dried upon the floor and the sweepings had carried the germs into the air and to the walls; and they have even been found in the dried fly-specks on the windows of rooms inhabited by consumptives, where the flies had fed upon the sputa. The sputa have been pulverized and sprayed into the air and dogs compelled to breathe the air and have thus contracted the disease and died. It is recorded that, recently, when Tappeiner was performing these experiments on dogs, a robust servant, aged forty, laughed at the idea that consumption could be communicated in this way, and in spite of all warning went into the inhaling room, breathed the sputum dust, and caught the disease and died in fourteen weeks of consumption.

As bearing upon preventive measures, it is probable that this manner of infection, through the air passages by means of the dried secretions of diseased subjects, is of the first importance, but recently,

INFECTION BY SWALLOWING THE BACILLUS

With the food consumed, especially with the flesh and milk of tuberculous cows, has attracted a great deal of interest both on this continent and in Europe. The facts that cows are very prone to the disease, that a certain amount of relation has been observed between the mortality of bovines and that of human beings from consumption, and that the Jews who exercise such great care in the inspection of the meat they consume are exceptionably free from tuberculosis, are enough to give rise to a strong suspicion that the disease is not infrequently communicated to man by means of the flesh of infected animals being used as human food. Suspicion of this has given rise to a great deal of discussion, investigation, and a vast number of experiments, and it is now almost universally believed by good authorities that both the flesh and milk are a possible and even probable, if not common, source of the infection in the human body.

That tuberculosis could be communicated to the human body by means of the flesh of tuberculous animals used as food has evidently been suspected from the earliest records. There existed in the Mosaic laws strict legislative rules condemnatory of the flesh of an animal affected with the disease. The laws embodied in the "Mischna" (the oldest part of the Talmud) distinctly refer to the prohibition of the use of such flesh. From that time onward various ordinances have been instituted with the object of checking the use of consumptive flesh, especially in France and the German States, and even in Spain, Italy and Switzerland; and severe punishment has at different times been inflicted upon butchers and others who have wilfully sold such flesh for human food.

It has been argued that there is no direct proof of the transmission of tubercle from animals to man by the consumption of flesh and milk. Such proof, it need scarcely be said, urges Prof. Walley, of the Royal Veterinary College, Edinburgh, "cannot for manifest reasons be obtained, but the mass of indirect proof in favor of such supposition is enormous." He adds, very recently a most striking example of the effect of consuming the flesh of a tuberculous animal has been brought to light by a French physician in the case of a young woman who rapidly became consumptive as the result of eating the imperfectly cooked bodies of tuberculous fowls.

The question of the infection of tuberculosis being conveyed by milk is of greater importance than is infection by flesh, for the two-fold reason that the former is so largely consumed by infants, and generally in an uncooked state. The danger of contamination by milk will be more clearly comprehended when it is known that the tubercle bacillus can be readily detected in the lactiferous product

of animals in whose udders tubercular lesions exist: and also, as has been shown by Professor Bang of Copenhagen, in women whose breasts are tuberculous. Of six hundred cows examined by Dr. Woodhead and Prof. McFadyean, in six cases they demonstrated the presence of tubercle bacilli in the milk.

Prof. Walley says: "In 1872 I lost a child in Edinburgh under circumstances which allowed but of one explanation, viz., that he had contracted mesenteric tuberculosis through the medium of milk." A Mr. Cox of the Army Veterinary Department, England, has related the particulars of a case which led to the same conclusion; as also has Mr. Hopkins, F.R.C.V.S., of Manchester. Fleming has referred to a similar case as occurring in the child of a surgeon in the United States; and a short time ago, says Walley, a case of mesenteric tuberculosis by the imbibition of milk occurred in the child of a well-known veterinary officer of the Privy Council. At a meeting of the Edinburgh Medico-Chirurgical Society, held last year, Dr. Woodhead referred to some undoubted cases of transmission to man and the pig by the medium of milk. Many other cases of a similar character have beeen reported.

A most striking case was recently reported by Denune, of Berne (Med. Press & Circ). An infant aged four months, with no tuberculous tendency, died of tuberculosis of the mesenteric glands, popularly called consumption of the bowels, proved by a post mortem examination, the bacilli being found in the glands. The child had been fed only with milk from a cow which was then killed and found to have tubercles in the lungs, while the milk pressed from the deep parts of the udder contained the tubercle bacilli.

According to Prof. Bang and others, the cream and butter, and also the buttermilk, from tuberculous cows has been shown to be as infective as the milk, if not more so. This is of the most serious importance of all: for although the milk and flesh can doubtless be so cooked as to be rendered safe, it is not so practicable to cook cream and butter.

Year after year for many years interested persons, and some others with strong incredulous tendencies, have fought against rejecting the flesh, milk and other products of tuberculous animals. First it was conceded by these persons that there might be danger in using the flesh when tubercles were actually found in the flesh, but that tubercles in the viscera only could not affect or injure the flesh. Then it was contended that it was safe to use the milk so long as the udders were free from tuberculous formations. But science and those with a deeper and nicer regard for the public health have beaten them all at every point.

The best authorities now consider it unsafe to use the milk or any part of the carcase of an animal which gives clear evidence of the disease in any part of the body. This because it is believed that the bacilli once having developed in the organism, circulate more or less freely in its fluids to all parts of the organism.

This was the decision in an important case tried last year (1889) before the sheriff of Glasgow. Some carcases of beef had been condemned by the Inspector, and the owners of the carcases appealed the cases. A large number of expert witnesses was examined on both sides, but the weight of evidence, of that especially from the most experienced and noted physicians and veterinarians, was decidedly in favor of rejecting all parts of a carcase in any degree tuberculous. The leading medical journals endorsed and commended the sheriff's decision; and the British Medical Journal in a lengthy article showed how weak was the evidence on behalf of the appellants. This was considered a test case, and, it appears, is now regarded, in Great Britain especially, as a guide and precedent for action in the inspection of carcases.

DIRECT INFECTION OR INOCULATION.

This is not a common method of spreading this disease; although a number of

cases of it have been recorded. In one case a young girl contracted general tuberculosis from wearing the ear-rings which had been worn by a friend who had died of the disease. The disease is sometimes communicated through a slight wound while making a post mortem examination of the body of one who had died of tuberculosis.

HEREDITY

Will be most conveniently considered a little further on, in connection with predisposing causes of the disease.

ON THE PREDISPOSING OR MORE REMOTE CAUSES OF TUBERCULOSIS.

The tubercle bacillus although regarded as the immediate direct cause of tuberculosis will not develop in the animal organism and give rise to the characteristic symptoms of the disease except in certain conditions of this organism —except the soil be suitable. Hence it seems clear that certain other causes are essential and operate and have their effect in the production of the malady. These causes may be considered under the heads of (1) Heredity and (2) Personal Habits and the Conditions and Surroundings of life.

HEREDITY has long been regarded as a cause of tuberculosis. While it is undeniable that the disease is more common in certain families or strains than in others, there is still doubt as to whether this is only because of some special physical hereditary condition of the family or strain—some peculiar condition or structure of the cells or of the tissues or fluids of the body, either favorable to the nourishment of the bacillus or rendering the body unable to resist the inroads of the microbic parasite, or whether the bacillus is actually contained in the ovum of the parent and so becomes directly a parasite of the embryo and fœtus in the womb of the parent.

Baumgarten it is said has in the case of the rabbit observed the bacillus within the ovum, and Prof. Johne, of Dresden, in an unborn fœtal calf of seven months' intra-uterine growth, found numerous tubercles, showing that if the ovum had not been inoculated, the bacillus must have passed through the placenta (after birth), from the mother. Against the view of the infection of the ovum and embryo it has been urged that the disease-producing influence of the bacillus would prevent the development of the ovum, or destroy it.

It seems most probable that, usually at any rate, it is only the predisposition to the disease which is inherited; the predisposition consisting probably chiefly in a want of resisting stamina and vigor for repelling the invading bacillus—a natural morbid delicacy of tissue or constitution, yielding readily to the inroads of the parasite.

There is a considerable evidence favoring the view that in man the predisposition is largely due to a want of full respiratory capacity, from small contracted lungs and chest, with probably a small weak heart, and, so, a weak circulation. It has been found, and is a very common belief, that nearly all consumptives have relatively a small chest, and consequently small lungs, with probably a small heart. Moreover, in those predisposed to consumption the disease has often been apparently warded off or prevented by the greater development of the chest and lungs by means of vigorous, outdoor exercise and gymnastics.

Cows bred especially for giving an abundant flow of milk instead of for general robustness, highly fed, and given but little exercise which developes respiration, are the animals in which tuberculosis is most common. In this way a predisposition to the disease becomes hereditary.

PERSONAL HABITS, CONDITIONS OF LIFE, &C.:—Of the causes which may be enumerated under this head the principal are the following: Impure air—more especially air which has been once breathed, as in unventilated rooms; improper diet; excessive labor—mental or physical; deficient exercise or idleness; mental depression; improper clothing; intemperance in the use of spirituous liquors or any

other excesses, especially with exposures; want of sunlight; and any causes which depress and debilitate the system. A humid atmosphere favors the development of consumption, and a residence on a damp, undrained soil or in a damp house is often an important factor in causing the disease.

IMPURE AIR, in unventilated apartments, is, perhaps, of all exciting causes, the most important—the most common cause of this disease. "A celebrated French physician, Baudelocque, writes that, the repeated respiration of the same atmosphere is a primary and efficient cause of scrofula—consumption being one of its most common forms; and that invariably it will be found on examination that a truly scrofulous disease is caused by vitiated air, and it is not always necessary that there should have been a prolonged stay in such an atmosphere. Often, a few hours each day is sufficient; as sleeping in a confined room when the air has not been renewed. Large numbers of the pupils at a school in Norwood, England, some years ago, fell victims to scrofula, and on investigation it was decided that insufficient ventilation and the consequent atmospheric impurity was the cause. Twenty years ago, consumption was very prevalent among the British soldiers. A sanitary commission, consisting of men of the highest standing, after investigation, declared it was caused by over-crowding and deficient ventilation;—in other words, by re-breathing breathed air. When this cause was removed,—more space in barracks and better ventilation provided—the number of cases of this disease materially diminished" (Playter's Physiology and Hygiene).

A great many facts are upon record which prove that the re-breathing of breathed air acts a most important part in the development of consumption.

IMPROPER DIET.—Among the causes of consumption, Sir James Clark writes: "Imperfect supply of food holds a conspicious place." But we have rarely an opportunity of seeing the effects of this alone, he adds, "because when the means of procuring proper nourishment are wanting, there are generally other causes of the disease in action at the same time; such as residence in ill ventilated and dark apartments, exposure to cold from imperfect clothing, &c.; the whole of which are often combined, and hence more speedily effect the deterioration of the health. Food in excess, or of a kind too exciting for the digestive organs, may also induce tubercular cachexia,—a circumstance which is not sufficiently attended to,—we may say not generally understood, even by medical men: nevertheless we hold this to be a frequent cause of scrofula and believe that it produces the same effects on the system as a deficient supply; the imperfect digestion and assimilation in the one case and the inadequate nourishment in the other, being equally injurious; the form and general characters which the disease assumes may differ, but the ultimate result will be the same in both cases. The adaptation of the food, both in quality and quantity, to the age of the individual, as well as to the powers of the digestive organs, is too little considered; and the evil consequences of this neglect are often evident in the children of the wealthy classes of society, who are frequently allowed an unrestricted use of the most exciting kinds of animal food."

OF OTHER CAUSES, it is difficult to say whether continued over exertion or deficient exercise ranks next, as a cause of this disease. Amongst the poor, in their struggles for existence, and sometimes amongst the well-to-do in their struggles for wealth, excessive labor prostrates the vital powers until there is not vigor enough in the body to enable it to resist the invasion of the immediate specific cause of the "fell destroyer." So it is with idleness or inactivity, a like effect is produced and like results follow. Too close application to study frequently operates as a cause, chiefly from want of physical exercise. And it is not difficult to understand how deficient or improper clothing, the abuse of alcoholic liquors, or any depressing habits, may so reduce the bodily vigor as to make it an easy prey to tuberculosis.

APROPOS OF "SLEEPING-CAR EXTORTION," as the Graphic, of Chicago, puts it, the Supreme Court of Minnesota has sustained the ruling of the Railroad Commissioners of the State, directing that the upper berths in sleeping-cars should be closed when not occupied. This decision affects travellers in the State of Minnesota only, and it is thought the matter will be brought to a legal test in another form. The other form should be to compel Railroad companies to provide for each passenger at least as much cubic space as is now required by law for public school pupils, on an average about 300 to 400 cubic feet. But so long as the individual public will permit himself or herself to be coffined up for a night in a space of only about 50 or 60 cubic feet, men and "companies" will always be found ready to do this undertaker's work for good pay.

NO MODERN OUTRAGE now inflicted upon a "long-suffering," forbearing public is greater than this one directly connected with sleeping car—or indeed any other "car"—over-crowding and want of ventilation. Provincial and State Boards of Health are fairly plentiful, some of which we believe have made some effort to prevent over-crowding among the human family and provide fresh air in schools and common lodging houses, and while abundance of fresh air for cattle in cattle cars has been long legally provided for, it appears, we have not yet learned of any particular effort being made by Health Boards to prevent Railroad companies half-suffocating the travelling public, especially at night. Probably there is not a city on this continent which would permit a common lodging house in it to accommodate so many human beings, for a night, in the same space, as are commonly sardined in a modern sleeping car.

THE DAY CARS are better only from having men in them sometimes wide awake enough to see that the "ventilators," so called, are properly arranged (as properly as they permit of) and, which is of much importance, from the doors being often opened by which the cars are permitted to be flushed—the foul air swept out by an entering stream of pure air. But here some designing enemy of travelling humanity has intervened and almost destroyed this chance of thus obtaining an occasional breath of fresh air by planting his abominable vestibule in the way. When with the small cubic space now tolerated in railway cars and the very imperfect methods provided for changing the air in this contracted space, we are, in such space, liable to be exposed, as every body knows, to some lingering malignant infection—tuberculosis or small-pox possibly—the whole arrangement may be best characterized, in plain English, as a bad nuisance, which health boards or authorities should take up, or, in fact, should long ago have attended to.

A MEDICAL OFFICER is "wanted" in Toronto by reason of the resignation of the late officer, Dr. Canniff. Seemingly, or to an ordinary observer, there is a desire, on the part of the Local Board of Health, to have a good *selection* made for the position. The knowing ones, however, say it is all pretence, that the appointment is now as good as made and that the present acting officer will be retained by a majority of the council—in short, that it is all "cut and dried" to suit the wire pullers, regardless of the city's interests. Would a really first-class man, of long experience and well known high standing as a physican and sanitarian, such as the city needs at the present critical time, answer an advertisement and "apply" for the position, and with the present salary? Some say, no. If the present acting officer be a good enough man, and we know nothing to the contrary, why go through the form and expense of advertising, appoining a medical committee to select one, &c., and put other people to a great deal of trouble for no useful purpose? And is the local board really in earnest in its expressed desire that the medical officer shall analyze the water and air? Well, any qualified physician would be able to do that, but is the city prepared to spend the large sum of money absolutely necessary to provide apparatus to have such analysis, chemical and biological, *properly* made.

TORONTO is now paying dearly for the manner in which its authorities have managed the Health department. A leading daily paper states that the statistics show that there are three times as many cases of typhoid as ever before, and that the disease is "alarmingly on the in-

crease," and diphtheria and other diseases are also on the increase and very prevalent. But the city will probably suffer much more before the people awaken to a sense of their condition and sanitary needs and compel the authorities to make a very radical change in the Sanitary department. The late medical officer writes to a medical journal thus: "During all my period of office I found that it was with the greatest difficulty that I could get any matter discussed except along the lines of its possible effect upon the interests of the individual alderman whose constituent any special offender against the laws might be; nor indeed, in many instances was it possible to obtain the board's permission to take active steps for removal of many flagrant nuisances since some one's particular friend would thereby be, in his own estimation, financially injured." The whole sanitary system of Canada is at fault, or such a state of matters could not exist. But in Toronto are there not enough good men to rise up at election times and crush out such scandalous mismanagement?

A TORONTO LADY, writing to a friend in Orillia of the death of a member of her family, says (Orillia Packet):—"Our hearts are very sore and it is almost impossible to speak calmly of our dear one taken from us, yet it is not because we repine. Always delicate, and of highly nervous temperament, he might yet have lived to a happy old age but for the vile typhoid poison that is allowed almost to decimate our young people. There is where I cannot be resigned. We can spend thousands of dollars in carnivals and other absurdities and puerilities, while our sewers empty their vile contents into our slips and poison our children on their way to fresh air recreations ..... The money that the carnival cost would have built more than one crematory, and our dear ones, instead of being struck down in the full pride of life and youth, might be still ours and the world's. *This* is not God's doing, but ours

OTTAWA is at last moving for provision for public baths. It is to be hoped it will prove to be a more rapid movement than that for a street railway has been; and also that it will bring forth a useful system of bathing for cleanliness among those not having good facilities for such at home, and not more of a place for amusing young people. The late Sir Edwin Chadwick, of London, Eng., who recently died at the age of 90, believed that what faith is to the Christian religion, soap and water are to the Gospel of health. He believed that the immunity that nurses and internes of hospitals have from infectious diseases comes largely from their daily baths. He said: "I cannot tell you how strongly I believe in soap and water as a preventive of epidemics. If an epidemic were to occur I would proclaim and enforce the active application of soap and water as a preventive."

JUDGING from the official report of Health Officer Davis to the Michigan Board of Heath, the portion of the state in which he resides is experiencing the good effects of the State Board. He says: "There has not been enough sickness here in the last two years to do much good. The physicians find time to go to Milwaukie on excursions, some as jurors in justice courts, others sit around on dry goods boxes, buy tobacco, chew gum and swap lies. A few sporadic cases of measles have existed, but they were treated mostly by old women, and no deaths occurred. There was an undertaker in the village, but he is now in the state prison.

HE KNEW, but would'nt: A young man all broken down through a course of dissipation, recently called up a noted physician of the French capital for advice. The doctor, having ascertained what the patient's habits had been, laid down a set of hygienic rules to be followed, assuring his patient that if he did so he would soon be entirely cured. The young fellow looked at the *savant* in disgust for a moment and then said, "Any d——d fool would know he'd get well if he did that, but I don't want to do that; I want to do just as I have been doing and have some medicine to cure me."

ON CLIMATOLOGY, the following very sensible conclusions are given by Dr W. E. Smith (in Boston Med. & Surg. Jour.): In tracing a connection between the weather and disease, the tendency is to go too far and ascribe to atmospheric conditions more of a causative influence than we can prove ..... To assume that the weather controls health and causes disease by its influence upon the respiratory organs alone, is utterly to ignore the vascular and secretory systems of the body with their important functions. The assumption being unwarrantable, all conclusions and inferences based upon it are illusory.

IN COMMENTING on the Benwell murder, the British Medical Journal says: "The theory of the prosecution was that the deceased had been murdered on the spot where the body was found, and that the rigor mortis had probably set in within four hours—a theory quite in accord with the circumstances in which the death took place, and one which the prisoner's counsel was quite unable seriously to impugn.

SANITATION in the church. At the meeting of the Church Congress, held in Hull, Eng., the first week of the present month, the social aspects of sanitation was one of the subjects discussed, and the following programme adopted: Acquaintance with and Obedience to Sanitary Laws a Christian Duty; Present Condition of Labourers' and Artisans' Dwellings in view of Recent and Proposed Legislation.

WITH the view of checking the adulteration of food, the municipal authorities of Rome have recently passed an enactment that the names of all makers and vendors of alimentary substances injurious or dangerous to health or adulterated shall be published in the daily papers. We believe it has been suggested to the Inland Revenue Department of Canada that this plan would have a good effect in the Dominion. We trust it may be adopted here.

THE Medical Department of the Russian Ministry of War has decided to establish movable laboratories of toxicological chemistry and bacteriology attached to each army corps. In these laboratories all food supplied to the troops will be analyzed.

AT a recent meeting of the Odessa Town Council a resolution was introduced demanding that all local dealers in old clothes should be permitted to sell their articles only after a thorough disinfection in the town disinfecting chamber. Every piece subjected to the treatment to be furnished with some mark, without which no article should be sold.

THE LANCET referring to the recent experiments of Brown-Sequard in condencing the organic matter of the breath and determining the degree of its poisonousness says that, "it is quite probable that a man excretes from his skin and lungs in twenty-four hours more poison, though in a more diluted form, than a snake manufactures in the same time."

DR. TURTON, Chairman of the Sanitary Committee of the Brighton Town Council, read a paper on "Some Points in Relation to Septic and Infectious Diseases," in which he said that all collections of putrescent organic matters were equally capable of producing symptoms of septic poisoning, though the putrefaction of sewage was, for obvious reasons, by far the commonest cause of such poisoning.

IN noticing Practical Sanitary and Economic Cooking, the Lomb Prize Essay, by Mrs. Abel, the Montreal Medical Journal says: There is no doubt great waste and little comfort in American cooking, and we regret that it is our duty to charge the American housewife with being the principal cause of the national dyspepsia. No household is happy if the husband is uncomfortable and cross, and no husband can help being uncomfortable and cross when his digestive apparatus is up in arms and carrying on a warfare with a mass of ill-cooked food.

THE BRITISH WHIG says, "A letter from Belleville informs us that typhoid fever is very prevalent there and that several deaths have resulted from it. It is unnecessary to ask about the cause of this affliction. We can surmise it —bad milk, bad water or bad drainage, or all three combined. The misfortune of our neighbors should be a warning to us"—in Kingston.

IN THE Union Medicale, M. Lyon, an eminent French physician, has shown by careful researches that tobacco lessens the contractility of the walls of the stomach; thus not only producing indigestion, but a tendency to dilatation of the stomach and chronic disease of that organ.

DR. SAGE says: Worry kills more than work. The appetite for millions keeps a man on the keen jump, and knocks his tissues into a cocked hat. By the time he gets all he wants he finds out that he doesn't know what he does want, and so tumbles into apoplexy and gives his impatient heirs a chance.

A SUGGESTIVE THOUGHT for daily habitues of street-cars is the fact that Dr. Nichols, of Baston, found more than twice the amount of carbonic acid gas in the air of passenger cars than in the Berkeley street sewer.

IN Bulgaria there is a law to the effect that if a patent medicine, which is advertised to cure a certain malady, fails to do so, the vendor of the

remedy is liable for damages, and may also be sent to prision for publishing an untruth to the injury of the public.

THE new law of the State of New York forbidding the smoking of cigarettes by youths under 16 years of age came into force on September 1st. The Municipal Council have instructed the police to enforce the law in the strictest manner.

River-water was substituted for spring-water in one of the quarters of Paris several times last summer. In every instance, according to the Semaine Medicale, an increase of typhoid fever was observed.

"Faith healing" seems to "pay" if it be true as stated that an ex-preacher of Pittsburg, U.S., has by its practice accumulated about two million dollars.

THE New York City Board of Health destroyed last year six thousand quarts of adulterated milk, and over six million pounds of fruit and food.

BERGMANN says that the diseases of wounds are principally due to infection from physician's hands.

NOTES ON CURRENT LITERATURE.

THE ILLUSTRATED NEWS OF THE WORLD, (reprint of the Illustrated London News) has given as usual during the last few weeks some admirable pictures besides the numerous, usual illustrations of current events. Among others are three very pretty—"Repose," "Pitty-sing" and "A Breeze off the Land," each full page; with three large double page ones—"A Sea-side Retreat," portrait of the late Cardinal Newman, and, very fine, "Caiaphas Accusing Christ before Pilate," as given in the Ober-ammergau "Passion Play" during the summer in the Bavarian Highlands.

THE CENTURY company are making unusual efforts to make their magazine for the coming year, commencing in November—the twentieth anniversary of the founding of the magazine, an extra good one, which is saying a great deal. The October number is quite up to the usual high standard of this monthly.

THE POPULAR SCIENCE MONTHLY for October is an unusually good number. Among many other good articles it contains one on the "Ancient Dwellings on the Rio Verde Valley," profusely illustrated, and others on "Mothers and Natural Science," "Invisible Assailants of Health" and "Irrigation in China."

SCHOOL LIFE IN RELATION TO GROWTH AND HEALTH is the title of a paper by Prof. Axel Key, of Stockholm, to be published in the November Popular Science Monthly. Prof. Key maintains that the studies of children, as now ordered, do not allow enough time for rest and growth.

THE GRAPHIC, Chicago, a weekly not second to "Harpers," gives in its issue of October, 11 the "Fire anniversary number," numerous illustrations of the great Chicago fire of nearly twenty years ago. This excellent Weekly is now in its third volume. It is sent postage prepaid to Canadian subscibers for $3 a year. It gives some handsome illustrations. One in a recent number, "An Idyl of Venice" is very fine.

ST. NICHOLAS never flags in its supply of good things, for old as well as young people. The Brownies are out again in full swing—or tow, on the canal. The October number is very good, with its "Chief bread baker to the king" and "Tale of a tub," both profusely illustrated.

THE CANADIAN QUEEN is making tremendous efforts to increase its circulation, with its free trip to Europe, seal jacket and pony. It is a really good little monthly, gives good value for $1 a year, and deserves support.

THE BRITISH MEDICAL JOURNAL now issues 16,000 copies weekly, a circulation far larger than any other medical publication. It has commenced to issue a weekly "supplement," an "Epitome of Current Medical Literature."