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CANADA HEALTH JOURNAL,

A MONTHLY MAGAZINE OF
PREVENTIVE MEDICINE,

—EDITED BY—

EDWARD PLAYTER, M.D.

Public Health and National Strength and Wealth.

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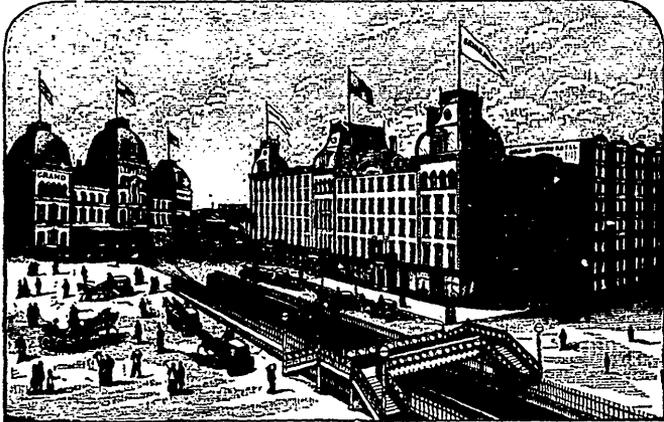
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THE CANADA HEALTH JOURNAL.

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MAY, 1887.

No. 5.

ON THE HIGH DEATH RATE IN CANADA AND ITS PREVENTION.

AN ADDRESS TO THE MEMBERS OF THE PARLIAMENT OF CANADA.

LAST year I took the liberty of addressing you in relation to the desirability of some special means being taken for the prevention of the excessive loss of human life in Canada from year to year from preventable diseases, as compared with the mortality in England. As it appears to me to be a subject of very grave importance, and one which most naturally concerns the members of the highest parliament of Canada, I feel constrained to venture to again address you upon it.

During the year that has since past, the rate of mortality in the twenty odd Canadian cities and towns which have made now for the last three or four years regular monthly reports of their deaths to the Department of Agriculture in Ottawa, has continued to exceed by 20 per cent. or more the mortality in the chief cities in the mother country. If, as seems reasonable to suppose from reasons given below, the same rate of mortality that is recorded in these Canadian cities and towns prevails throughout the Dominion, this implies a loss in Canada every year of at least twenty thousand human lives, over and above what it would be were the mortality in Canada not proportionably greater than it is in England.

Twenty of the chief Canadian cities and towns which made these monthly reports during last year (1886) com-

prised an average population for the year, I assume, of not more than 640,000. In order not to understate the population of these cities and towns, I have estimated on the basis that the rate of increase during the five preceding years, 1882 to 1886, inclusive, was the same proportionately as it was during the decennial period between 1871 and 1881, according to the census in each of the last named years, and then added 50,000 more to allow for any possible increase over and above this estimation. These twenty cities, with their 640,000 people, reported to the Department of Agriculture here a total for the year of 16,018 deaths, or a mortality at the rate of 25 per 1,000 of population. If there were any errors or defects in the mortality returns from these cities and towns, they would be those of omission; and indeed, it is not unlikely that, at this early period of the registration of mortuary statistics in this country, a number of deaths remained unrecorded: if so, the rate of mortality, I need hardly write, was still greater than this.

In the twenty-eight largest cities or "towns" in England, with an estimated population of over 9,000,000, there were recorded, during the same year (1886), 189,610 deaths, as shown by the Registrar-General's weekly reports; equal to an annual death rate of

20.9 per 1,000 of population. There the system of registration is most perfect, and few, if any deaths are unrecorded.

In the Canadian cities therefore the mortality was 20 per cent. greater than in the cities in England; and over 25 per cent. greater than in great and crowded London, where it was less than 20 per 1,000 of population.

In the previous year, 1885, with the small-pox epidemic, the mortality in the Canadian cities was about 30 per 1,000 of population, or nearly 50 per cent. greater than in the English cities.

This high mortality in Canadian cities was largely due, to be sure, to the higher death rate (probably largely, too, of infants) in Montreal, Quebec, Ottawa, St. Hyacinthe and Sorel; although in the "Queen City," Toronto, the mortality was 20 per cent. higher than in London, England.

In deaths from zymotic diseases, which are the best indicators of sanitary conditions or requirements, the Canadian cities show to a still greater disadvantage. They returned a total record for the year of 3,852 deaths from this class of diseases; equal to an annual death rate from these causes alone of over 6 per 1,000 of population.

In the English cities the total mortality from zymotics alone was 2.9 per 1,000 of population for the year, or less than one-half that in the Canadian cities.

The rate of mortality from diphtheria in the Canadian cities was nearly ten times as high as in the English cities; and that from diarrhoeal diseases more than twice as high, and from fevers nearly twice as high, in the former as in the latter.

Now we have no reason to believe that the mortality in the rural districts in Canada is any lower than it is in the

cities and towns, with the exception that, in the cities during the warmest season, the infantile mortality is probably greater than it is in the country. On the other hand, the mortality from diphtheria and typhoid fever, two commonly prevailing diseases, is found to be usually greater proportionately in rural than in urban districts; while on the whole in cities, more attention is commonly given to health matters, than in the country, and many causes of disease are more prevailing in the latter than in the former.

The total number of deaths then, annually, in the Dominion, with its 5,000,000 of people, can hardly be much less than 125,000; estimating at the rate of 25 per 1,000 of population, the rate, certainly, of the cities and towns.

Now with proper sanitary administration and reasonable attention to the ordinary rules of health, there is no reason why the mortality should be higher in Canada than it is in England. We have here a healthy, invigorating climate, with hardly any overcrowding or destitution. But while in Canada, with the exception of Ontario and a few of the principal cities, where some slight effort has been made, no general attention whatever has been given to public health measures, in England, on the contrary, for the last quarter of a century or more, a great deal has been done, both by the Government and the municipalities, for the prevention of disease and premature deaths. Consequently, as most people know, the mortality in England has been gradually falling lower and lower during many years last past, and hundreds of thousands of lives have been saved.

With the same practical health measures carried out in Canada that are exercised in England, what reason

could there be why the mortality in this country should not be reduced to as low a rate as it is in that? None whatever.

Hence it follows that, by failing to put into practice in Canada suitable measures for promoting and preserving the health of the people, from 20,000 to 25,000 human lives are every year destroyed in Canada by preventable diseases; or in other words, that number of lives might be saved, and so the average of life be prolonged, twenty per cent. beyond its present length.

When an epidemic breaks out and destroys two or three thousands of lives in one locality in a few weeks, it is regarded as a dreadful calamity, creates great excitement, and prompt action is taken to suppress the epidemic.

If it were shown that 20 per cent. of the horses, or cows, or sheep, or hogs in the Dominion died every year from some cause or causes which might be prevented, would not action soon be taken with the view of preventing such destruction of animal life?

Yet it has been clearly shown on more than one occasion that at least 20,000 human beings die every year in Canada from preventable causes—that at least 20,000 more die than should die, and yet hardly an effort has been made to prevent this destruction of life; although much has been done in the way of importing lives from other countries.

Last year I pointed out the money value of these 20,000 lives, and the direct loss sustained by the country through this number of premature deaths, in accordance with estimates put upon the value of human life, the costs of sickness, etc., by political economists in England and the United States, and gave, in detail, the costs of

maintaining a portion of the lives up to the different ages of five, ten and twenty years, at which a fixed portion of them die, before reaching the useful or productive period of life, which is all lost by their death, and the direct loss of the labour and usefulness of those of the 20,000 who live on to more than twenty years, into the period of labour and usefulness—to 30, 40 and 60 years of age, and also the money value of the lost time in the sickness preceding these deaths, the costs of sickness in all—in doctors' bills, medicine, nursing, etc.,—and the expenses of funerals, and showed clearly that on a low estimate, the premature death of these 20,000 individuals is a direct loss to the Dominion of over fifty millions of dollars every year; or in other words, by preventing these 20,000 premature deaths, and thus prolonging, by 20 per cent., the average length of life in Canada, there would be thereby a direct annual gain to the Dominion of over fifty millions of dollars.

Furthermore, if we could so improve the public health by practical sanitary administration and the education of the public in health rules and proceedings as to reduce the mortality to 17 per 1,000 of population per annum, as in England they expect to be able to do in a little time, the most eminent scientists believing that the average of life should be such as to give, at most, only this ratio of mortality, this would be equal to a saving of over one hundred millions of dollars a year.

Enormous sums these may appear, but nevertheless I have based my calculations on the estimates of the best authorities and the lowest estimates have been taken. Again, we all know how costly sickness and death are, and how large an amount of sickness would precede the death of 20,000 or 40,000

individuals, besides the loss of the time of the older ones.

In the calculations, I omit entirely the pain and anguish and bereavement caused by the sickness and deaths. I take no notice of the widows and orphans. These are beyond calculation. These add incalculably to the loss.

I have not taken into account the loss from any special epidemic, over and above the ordinary average annual mortality. This is sometimes enormous, when including the suspension of business and trade. And all or much of it would be prevented by proper attention to public health proceedings.

Another enormous loss to the country arises from want of economy in selecting and cooking foods. A little knowledge distributed amongst the masses of the people in reference to the selection, preparation and cooking of food, besides preventing much sickness, and intemperance in the use of spirits, would save each family many dollars every year, and many millions of dollars would thereby be saved to the country. Some systematic health organization, besides attending to the usual, ordinary and well-known sanitary wants of the people, could do a great deal in the way of assisting the Commissioner of Inland Revenue in the prevention of food adulteration, which with meats and milk often bad from want of careful, systematic inspection, are slowly but surely sapping at the life of the people, and more especially of infants. Consumption among cattle is believed to be more common than is generally supposed. In the ninth annual report of the Agricultural College and Experimental Farm at Guelph, Ont., it is stated that, "The extent to which this disease exists among the better breed of cattle in this country

is alarming, for many reasons; not the least one of which is the danger to which the public are exposed from the consumption of meat from such animals." Much could be done, even by means of simply educating the people, in the way of preventing the spread of this disease, as well as other diseases of animals; and as well amongst animals themselves as from the diseased animals to man. It is well known that many diseases of animals may be, and doubtless often are communicated to man. But I have already exceeded the space to which I thought I would limit myself in this address, and to enumerate all the ways in which the health of the people could be promoted, would be to too greatly exceed my limit.

What can be done? Who are to take action toward the prevention of this enormous annual loss?

Whether wisely or otherwise, the power to enforce sanitary measures, it appears, has been placed in the hands of the provinces. But what is to be done when the provinces fail to act upon the powers conferred upon them. Last year I endeavoured to bring together the views of the late Senator Brouse and others, in reference to what might be profitably done by the Federal authorities. It is universally believed that much more can be done in the way of preventing disease, by investigating the causes of diseases and the collection of vital statistics, and by this and other means educating the masses of the people in the ways and rules of health, than can be done by coercion. There are many people, it is true, who require to be forced to attend to ordinary essential sanitary requirements, but a larger proportion neglect these requirements through ignorance of the evil effects of inatten-

tion, and of the good effects of proper attention, to them, and through ignorance of the causes of disease, and of the means by which disease may be avoided or prevented. The great and chief thing is the systematic EDUCATION of the masses of the people in the rules and ways of health. To do this effectually, a system of vital statistics is most essential, though much educational progress may be made in advance of the statistics.

I would most respectfully urge upon the Federal parliament and the gov-

ernment in particular the desirability of some early action on behalf of these thousands of human lives who every year fall victims to PREVENTABLE disease and for preventing the great loss to the Dominion thereby entailed. At least a commission or a committee might be appointed to consider the question. It is a question of much greater importance to the people of this Dominion than that of "Temperance" or "Prohibition," which indeed form but a part of the greater one of Public Health.

WHAT RAGS MAY DO—THE NECESSITY FOR GREAT CAUTION IN THEIR IMPORTATION, &c.

THE report, issued in pamphlet form of the special committee of the American public health association on the disinfection of rags, at the meeting in Toronto in October last, gives some very suggestive and instructive histories of rags and clothing and the serious part such often play in the spread of infectious, malignant diseases. Following are some extracts from the report :

In 1870 the first cases of small-pox that appeared at Breda were among persons who had been washing infected clothing from a small-pox patient, coming from an infected district. In 1870, 1881, and 1882 the same thing happened at Utrecht.

In 1873 a pillow infected by a small-pox patient caused several cases of small-pox to appear at Goreem, while in that same year a rag-picker's daughter was attacked after having bought some rags from a person who had had small-pox, and caused also a new epidemic to break out. The appearance of the disease at Ohe and Laak, and at Olkmaar, was also due to the importation of infected clothes from infected

localities in Belgium and at the Hague.

The origin of the small-pox epidemic in 1871 at Heerde and Epe the medical inspector attributed to rags. In that same year Schyndell and Rozenburg were invaded with small-pox by the importation of infected clothes from Schiedam. The cases of small-pox that broke out in 1873 in the hospital at Utrecht were traced to insufficiently disinfected bed-quilts, which had been infected by small-pox patients treated there in 1872. The same origin is given to the Tilburg epidemic in 1873.

In 1870 and 1880 consecutively were attacked with small-pox persons who, while working in a paper factory at Maestricht, had been handling rags, or had visited the locality where rags are selected, whereas during all that time no other case of the disease was known in Maestricht, but only in Belgium, whence the suspected rags were partly coming. In 1880 a dealer in rags conveyed small-pox from Rozindal to Vouw. In 1881 the infected rags from Gouda caused an epidemic at Baren-

dreht, etc., etc. It would be a waste of time to cite all the cases where rags and infected linen have brought on epidemics.

And when we look at the report on cholera, we are amazed to see that its origin and propagation are always traced to the influence of clothing, dresses, and the traffic in old garments and rags. Thus, a rag-picker from Amsterdam, where cholera was raging, introduced it into the city of Tilburg in 1885 in a truck-load of infected clothes. At Druten a rag-picker was the first victim in that commune. At Mearssen the first one attacked with cholera was a ragman. Again, at Heusden, Oudenbosch, Hindelopen, Nieuisburg, Leeuwarden, and Bois-le-Duc cholera was propagated by the handling and washing of old clothes, clothing, bed-clothing, etc.

In England, France, Germany, etc., the same facts go to prove the propagation of diseases, and principally of small-pox. One of the most interesting works on this subject is certainly Doctor Gilbert's report on the epidemic at Marseilles, that had exactly the same characteristics as the small-pox epidemic of 1874 and 1875, and proved beyond doubt the great influence of rags on epidemics. So, to cite only two facts, in 1874 there were 117 rag stores in Marseilles, of which 46 were in one district. In that district the number of deaths from small-pox was three times larger than in any other district, while of 167 cases of death 64 occurred in rag-pickers' houses, or in houses in close proximity to rag-pickers or rag-stores. In that district Gilbert found a cellar, a secret store-room for rags, which infected six persons, of which four died.

Kriegstetten is a small village in the Canton of Solothurn, at eighty to one

hundred kilometres' distances from Zurich, and not connected with this town either by water (lake, river or marsh), or by trade and industrial commerce. There is a paper mill at Kriegstetten, and a workwoman, who had to tear the rags, was suddenly taken with cholera, and died the following day. The following days sixteen more workwomen (all occupied in tearing the rags) were taken sick; of these, eleven died. A careful examination showed that all of these rags went from Zurich, and from cholera houses; therefore, the whole mass of rags was disinfected by boiling. After this no case of cholera occurred. The large establishment of the paper mill, as well as the village, remained free. I mentioned the fact in a little address to the Swiss people, which I have the honor to send you; and nobody doubted the fact or made any opposition. The fact was known everywhere in Switzerland.

The *British Medical Journal* of May 11th, 1878, speaks of "rags as disseminators of disease," and refers to "the measures taken by the Austrian Government to prevent the spread of disease by obtaining the adoption of uniform precautions in all the neighboring states, in the shape of strict enforcement of sanitary regulations and the prohibition of the importation of rags." "The authorities of Austria," the article remarks, "have for some time forbidden the importation of rags." Vol. I., page 863, of the same journal says: "An epidemic of small-pox, which spread somewhat widely, broke out at Abenheim, in the canton of Worms, Rhenish Hesse. Almost all the patients at the outset were five women, who worked in a rag-factory cutting up and assorting rags. The cases were investigated, and it was found that a portion of these rags came

from Marseilles, where small-pox prevailed to a serious extent."

The *British Medical Journal* of July 3d, 1880, says: Girls who worked at storing rags at Canterbury contracted the disease and communicated it to twelve others. The then health officer said that during the period of three years there had not been a case of small pox in the city the origin of which had not been traced to the factory. In 1878 cases originated in the same factory. In 1879 another case occurred there. Dr. Butterfield, in his last annual report on the health of Bradford, wrote: No case of small-pox had occurred in the borough for many months, when a girl who had not left the neighborhood was taken sick. In a few days another young woman employed in the same work exhibited symptoms of the disease. March, 1878, several persons, residing apart, but working in the same room at a rag-warehouse, were simultaneously affected with small-pox, and from them extended to about thirty others. At Whittlesford, in 1873 and 1875, there were two outbreaks of small-pox from the same cause. At Thetford an epidemic of six months' duration, and from which sixteen or seventeen deaths resulted, was traced by Dr. H. J. Hunter to two women engaged together in cutting up some foreign rags, and who fell ill the same day.

Under date of January 20th, 1883, the *British Medical Journal* said: An outbreak of small-pox has just taken place at New Cathcart under peculiar circumstances. A local firm of paper-makers received in December last a quantity of rags from Königsberg via Leith. The workpeople in their employment have been engaged in cutting them up recently, and within the last few days four of them have sickened

with what is feared will turn out to be the same disease.

John Barnes, a laborer, had been suffering for two days from diarrhoea and cramp, when, on December 23th, he was taken ill with the symptoms of cholera and died. The next day Barnes's wife and two other persons who visited the sick man were seized with cholera, but recovered. The son of the deceased man then arrived. It appears he had been apprenticed to his uncle, a shoemaker in Leeds, and that his aunt died of cholera fifteen days before, her effects having been sent to Barnes without having been washed. The trunk containing the things had been opened by Barnes in the evening, and the next day he was taken ill and died.

In 1854 cholera was not known in the county of Bedford, when it broke out in the village of Kidgmont, and eleven cases occurred, all of which were fatal. It was ascertained that the first case occurred in a man whose son had died of cholera in London a week or two before, and whose clothes were sent down to the country. The poor man unwrapped the bundle of clothes himself; he was seized with the disease and died. This case was the nucleus of the others. An instance of similar nature was reported from Lustheim, near Munich, where the first case of cholera was generated in the house of a laborer, one of whose daughters was in service at Munich. The latter sent her parents clothes belonging to a family some members of which had just died from cholera. These old clothes were at once appropriated and worn. Three days afterward (September 21st, 1854) the father and mother were seized with cholera and died. On the 22nd and 25th other members of the family took the disease. Dr. Lebert reports

the case of a man who was attacked with cholera, having worn the clothes of a person who had died of the disease two months previously.

On the 24th of December, 1848, a woman and two children died of cholera in Suon Fields, Southwark. The clothes of the child were sent to Boston for the use of a third child living with its grandmother. The old lady and child unpacked the parcel and both were attacked with cholera. There were no other cases in Boston until eight months afterward.

It is well authenticated that during the epidemic in the United States in 1873 cholera was introduced in effects of emigrants. The vessels which brought them were in perfect sanitary condition. Passengers were healthy, and remained so after landing and until

they reached Carthage, O., Crow River, Minn., and Yankton, Dak., where their goods were unpacked. At each place, within twenty hours after poison particles were liberated, the first case appeared.

Many years ago, in one of the early outbreaks of cholera in the then Northwest, a mattress soiled by a cholera patient was thrown overboard from a vessel on or below Lake Huron. The mattress floated down the St. Clair River, and being seen from the shore, a man went out in a boat and brought it to the shore, where his wife washed and cared for it. This man and his wife both contracted the cholera. I had this information from Capt. E. B. Ward, from whose vessel the cholera-soiled mattress was thrown overboard.

PROHIBITION A DELUSION—NEITHER PRACTICAL NOR EFFECTUAL—SOMETHING BROADER DESIRABLE.

THE following remarks from the *Journal of Inebriety*, a work of high standing, is opportune and in full accord with our own views. We hope the time will come when prohibitionists will take broader views and embrace in their well intentioned efforts means for the physical development of the people and the prevention of disease amongst them. If the efforts which have been put forth by the temperance people had been directed toward the promotion of the public health generally, very much more good would have been done, as well in the prevention of intemperance and sickness as in prolonging life.

Like an army unexpectedly attacked and thrown into confusion, or a ship struck by a squall, in disorder until the authority of the captain is asserted, the temperance moralist and reformer

are astounded at the sudden alarming prevalence of inebriety. In the confusion of this discovery they seize on the wildest means for relief, and follow the noisiest enthusiasts and the most impracticable schemes. Leaving to one side all the various means of cure by prayer and pledge, they turn to politics, and are trying to unite their confused efforts into political party, which will enforce by law their theories of the causes and cure of inebriety.

This prohibition movement, from a scientific point of view, has never attracted much attention. But to-day it assumes such arrogant claims of power to remedy the evils of drink, condemning all who differ, that it most naturally invites the scientist to examine its pretensions and theories.

In this inquiry the *Journal of Inebriety* has no political interest or theory

to sustain. As the organ of men who are making inebriety a scientific study, it demands the facts, and the evidence upon which they are based must be presented and compared before the truth of any phase of this subject is accepted. Any views supported by facts are welcome, and the kindest sympathy is extended to all measures and movements for the relief of inebriety, no matter how crude or impracticable. All such efforts are regarded as agitations and revolutionary struggles incident to every advance of science.

The prohibitory movement is based on the theory that inebriety is only caused by alcohol, and that this drug is a luxury which can be withdrawn at will, thus removing the evil. Also, that inebriety depends upon the manufacture and sale of alcohol compounds, and will disappear when the supply ceases. The remedy is to drive out the maker and seller of spirits, and banish alcohol. It is a curious fact that prohibitory legislation has been tried for over a thousand years, from time to time, against alcohol, tobacco, tea, coffee, cocoa, and opium. Moral, social, theological, and governmental forces have most fiercely and violently tried to suppress the use of these drugs. Despots who held the lives and thoughts of their subjects, and controlled all their acts, have failed to break up the use of stimulants and narcotics. Even the Chinese despotic rule failed to stop the use of opium. Kings and Popes have combined against the use of tobacco, only to be defeated, and over and over again legislation against the use of alcohol has been unsuccessful. Now and then temporary, local, and limited success follows, but after a time this disappears, and the evil continues in even

greater proportions than before. Thus history repeats itself in the movement of prohibition to stop the evils of inebriety.

The theory of prohibition is not sustained from a study of the inebriate and inebriety. Alcohol is not a luxury, to be used or not at the will of anyone. It is a narcotic spirit which has been used in all ages, climes, and by all people, to soothe and relieve the wearied brain and unstable organization. Alcohol and its compounds have ever been used to supply some demand of brain and nerves, some defect or debility. This demand is not created by the form or the prevalence of alcohol, it is an inherited or acquired defect. The army of inebriates are recruits from states and conditions of life far back of the distillery or saloon. In this country they are often victims of our high-pressure civilization; of continuous nerve strains and drains, which not only exhaust but cripple the race and its descendants. The demand for relief which is found in spirits brings out the manufacturer and retailer to supply it. They may increase this demand, but they do not create it.

When once the victim finds relief from this drug, law and moral suasion are powerless. Banish the maker and dealer of spirits, and the current is turned into other channels equally dangerous. Opium, ether, and other drugs come to supply the demand.

The chemists of to-day are constantly discovering new and endless varieties of alcohols, which will always have a place in the arts and sciences and wherever they are found to bring rest and quiet to this abnormal craving of the race they will be used under all circumstances. No prohibitory measures can discriminate in this field, and no present knowledge will indicate the

alcoholic compounds that are dangerous or safe which should or should not be sold.

Prohibition is a delusion when it assumes that to stop the manufacture and sale of alcohol is to break up inebriety and cure the inebriate. It is a delusion to expect that party, politics, and law can break up the disease of inebriety, or that a knowledge of the evils of inebriety will point out the causes and remedies. It is a delusion to suppose that the evils of inebriety can be remedied and controlled when its causes and nature are practically unknown. Opinions, theories and beliefs by earnest enthusiasts can not bring the authority of knowledge based on well-observed facts.

Until inebriety is made the subject of exact study, and the laws which govern its rise and progress are ascertained, and the complex causes and conditions of life from which it springs

are pointed out; prohibition will fail to prohibit, and every means of treatment not founded on exact study will die out. Prohibitory legislation may act as a dam to the drink current for a time, and the stream appear to be stopped, but the certain breaking down of the dam and overflowing ruin that follows point to the error of not beginning back to the source. The drink problem can not be solved by moral suasion or prohibition; it is a question for science and scientific study. In the march of progress, beyond the noise and enthusiasm of temperance reformers, the great forces of civilization are seen recruiting inebriates along lines of causes and effect as fixed as the motion of the stars. In the same range the scientists catch glimpses of the laws of prevention and cure, from which in slow, measured steps inebriety and its evils can be reached, cured and prevented.

OVER-WORK AND WORRY.

THE following valuable extracts are from an excellent periodical, the *Alienist and Neurologist*: There is doubtless no class of diseases more largely preventable than diseases of the nervous system, and though the causes of these disasters are sometimes remote, yet they are usually traceable to violations of the laws either of mental or bodily hygiene. Over-study in early life, without causing an immediate break-down, may dwarf the development and lay the foundation for future invalidism, and we believe that a considerable proportion of nervous disorder is attributable to such influences that, in early life when the nervous system is sensitive and impressible, check its normal growth and

leave it ever after irritable and unstable. The same considerations apply to over-work in adults. There is much brain failure now-a-days from what is called over-work, and yet much of it is probably due more to the *manner* of work than to the amount of work. Hard and prolonged mental labor is not injurious if carried on under proper conditions; the brain is strengthened by exercise, and the work of a man of an intellectual pursuit, if properly diversified, is recreation. The harm of mental labor is in working at wrong hours, or without system, or with both, and tension that wear upon the brain more than work. In this age men rush, and rush means high tension, and tension means rapid wear and

waste of vitality. Emerson says "all haste is vulgar," and he might have said it is injurious to health, and those who work with that high pressure which haste invites, are certain to suffer for it. It should be considered one of the beatitudes of mental physiology, that systematic, deliberate mental labor is normal; it develops the brain and prolongs the period of its activity in old age, and the converse of this is also true, that mental labor performed with anxiety, haste and high pressure is exhausting and is certain, sooner or later, to produce injurious results. Those who deal much with nervous disorders know how large a share of these troubles is due to the habit of worrying. People fall into the habit of worrying about those little mishaps that of necessity come up in the life of every one, and the habit once formed is a difficult one to overcome; worry, above all things, consumes vitality, and disarranges the harmonious working of the functions; it leads to loss of appetite,

to sleepless nights, to irritable nerves, to impaired nutrition; it robs the disposition of attractive qualities, it lessens the mental vigor and it not infrequently is a factor in the production of nervous disorder. Sensitive people, those who are easily wounded and discouraged, are most apt to worry when affairs go wrong, and yet they are just those whom worry will harm the most and who will lose the most in life by indulging in it. Trials and reverses may destroy the over-sensitive or the weak, unless such persons prepare for them by the cultivation of patience and courage. Those, however, who are not fretted and depressed by the small mishaps and adversities of life are the better for encountering them, for they are a part of the necessary and kindly discipline of experience that helps us to build up character, and strengthens it, as the storm that bends the vigorous tree strengthens and consolidates its health fibre.

CONSUMPTION, IS IT CONTAGIOUS ?

SOME years ago we gave from time to time in this JOURNAL a great deal of evidence which seemed to show very conclusively that consumption is a contagious disease. We believe that the disease in its usual form is contagious and that it never arises in any other way except by means of infection, most probably the bacillus tuberculosis, being communicated from the sick to the well, or the susceptible. The following on the subject are a few extracts from a pamphlet on "Consumption and its Prevention in Man and Animals," by the editor of this journal, only a few copies of which have yet been issued:

From the period of the earliest records in the history of medicine, the

contagious nature of tubercular consumption has been believed in by physicians of the highest repute. Over two thousand years ago, (400 B. C.), Hippocrates, the "father of medicine," believed in it. Aristotle (320 B. C.) wrote that the Greeks in his day believed in it; and he asks why consumption, "sore eyes" and itch are common to persons who associate with others suffering from these affections. Later (A. D. 180), Galen wrote that it is dangerous to pass the whole day with a consumptive person." Coming down to much more recent periods, Morton, over two hundred years ago, wrote of consumption that "a contagious principle often propagates this disease, for,

as I have often found by experience, an affected person may poison a bed-fellow by a kind of miasm like that of a malignant fever." Riverius, about the same period of time, believed contagion to be the "chiefest" cause of consumption. "We may observe women to be affected by their husbands," he wrote, "and men by their wives, and all the children to die of the same, not only from infection of their parents seed, but from the company of him that was first infected."

The eminent Italian physician, Valsalva, a professor of Bologna, in the early part of last century, was himself predisposed to consumption, and avoided being present at dissections of the lungs of persons who had died of the disease. Valsalva's illustrious pupil, Morgagni, professor in the University of Padua, declared that he had never dared to make more than a few *post-mortem* examinations of persons who had died of this disease for fear of contracting it. A law once existed in Italy by which the proprietor of a house in which a consumptive had died could claim payment for his furniture, which was burnt. It was often difficult there for a person supposed to be consumptive to obtain lodgings.

Over a century ago a reaction regarding belief in the contagiousness of consumption commenced to show itself. Eventually, in Northern Europe and America especially, doubt developed into general disbelief. In the warmer latitudes however the opinion favorable to contagion never lost its hold; and the reaction has probably paved the way to more rational and accurate views, based on modern scientific investigations, which will be generally accepted. Within a comparatively few years the belief that the disease is contagious has again become very gen-

eral. The recent investigations of Kock have resulted in making belief in its contagiousness almost irresistible. If the bacilli are the cause of the disease, it can hardly be otherwise than contagious.

D. Wm. Buld, in an article on the nature and propagation of phthisis (London *Lancet*, Oct. 12, 1867,) takes strong ground in favor of contagion. He concludes that "tuberculosis is a true zymotic disease of specific nature, in the same sense as typhoid, scarlet fever, typhus, syphilis, etc., are; and that, like these diseases, tuberculosis never originates spontaneously, but is perpetuated solely by the law of continuous succession. The evidences of this he finds in,—(a) Considerations based on the pathology of phthisis, consisting in the evolution and multiplication in the organism of a specific, morbid matter, with a tendency to elimination, and casting off of the same, like zymotic diseases generally. (b) Actual instances in which there is evidence to show communication from one to another. (c) The geographical distribution of phthisis in past and present times, and especially its fatality now in countries which were entirely free from it when first discovered by Europeans. (d) Its greater prevalence in low levels and crowded communities, and entire absence, except by importation, at high levels—the same conditions which govern zymotic diseases. (e) Its high rate of prevalence in convents, harems, barracks, penitentiaries, etc., *i. e.*, in the same social conditions known to propagate zymotic disease."

"As facts proving his statement about geographical distribution (c), he adds that when the South Sea Islands were first discovered, there was no phthisis there; but that since the aborigines have come into contact with Europeans

the disease has become so wide-spread as to threaten their extermination. This is a striking contrast, only to be explained, he thinks, by the importation of a new and specific morbid germ. The late Dr. Rush, of Philadelphia, who made accurate inquiries, satisfied himself that there was no phthisis among the American Indians when America was discovered, whereas now it is very common and very fatal among them.

"Furthermore, in Africa, everywhere along the seaboard, where the blacks have come into constant and intimate relations with the whites, there has been a large mortality from the disease; but in the interior, where there has been only occasional contact with a few great travellers; the disease has not been found. Of this fact Dr. Livingston and other African travellers have given Dr. Budd positive assurance." ("Is Consumption Contagious," by H. C. Clapp, A. M., M. D., Boston.)

Dr. Bowditch, late chairman of the state board of health of Massachusetts, a number of years ago made some investigations relating to the cause of consumption, by sending a list of questions to prominent physicians in active practice in several of the States and in London and Germany (Fourth annual report of the state board of health, Mass., 1872). Of 210 physicians who replied, 28 did not answer the question on contagion. Of the remainder, 110 answered in the affirmative; 45 in the negative; and 27 were doubtful. Many besides answering "yes" or "no" wrote something like the following: "I am a firm believer that consumption is a contagious disease, much more so than is generally believed. I have in my mind several cases where there was almost positive evidence of contagion." "In very many cases, I have the opin-

ion, from my own observation, that consumption is communicable by contagion or infection." "I am more inclined than I was at one time to attach importance to the influence of contagion." "I am thoroughly convinced that phthisis is frequently caused by contagion and deserves to be classed with typhoid fever in this respect. I have seen unmistakable evidence where a healthy wife contracted this disease, and *vice versa*."

In 1878, Dr. Holden, of New Jersey, made some similar investigations. Out of 250 answers to a list of questions, 126 physicians answered "yes" in reply to the question on contagion, 73 of whom were emphatic, and gave cases in confirmation; 74 answered "no" and 50 were doubtful or could not form an opinion.

Dr. Holden himself commenced practice, it is stated, with the idea that consumption was communicable only from parent to offspring, but at length wrote as follows: "I can enumerate at least a score of cases which have been watched with this very object in view, and in which the result has been the same. Wives after husbands, husbands after wives, intimate companions and faithful nurses, who slept in the same bed, or wore the same clothing, have fallen victims. Of course, it is not to be intimated that all, or even a majority, can be affected by contagion any more than in those diseases now indisputably contagious. Malignant scarlet fever, diphtheria, and cerebro-spinal meningitis are braved by faithful nurses and friends, who escape in *more* than a majority of instances. To prove contagion now, is no easier than when the non-contagiousness of erysipelas had its defenders, and the records of the surgical wards of the hospitals of Paris, and Berlin, and London, had accumu-

lated a fearful mortality ere the obdurate prejudices of the profession were awakened to a new belief."

Dr. Clapp, of Boston, in a recent work ("Is consumption contagious" 1881), records the history of 25 cases, illustrative of the contagious nature of this disease, which he selected "from among those which can be found on record scattered through the annals of medical literature." In the history of the 25 cases, mention is made of 66 persons who became consumptive seemingly through contagion. 54 of these were distinctly stated to be free from hereditary taint, and of the others, "probably some would have been found to be likewise free if their family histories could have been obtained."

THE LATEST RECORDED EVIDENCE.

A paper on the question of the contagiousness of consumption, by Dr. Brochin, translated from *Le Journal de Medicine de Paris*, by F. R. Campbell, A.M., M.D., is published in the May issue of the *Buffalo Medical and Surgical Journal*, of which the following are extracts:

No question is of greater importance to the practitioner and sanitarian than that of the contagiousness of pulmonary consumption. I am surprised that the subject is not more frequently discussed in our scientific societies, and that the report of our eminent confrere, M. Valin, is not taken as the basis of further researches.

While the profession is still divided on this question of the contagiousness of tuberculosis, the number of "contagionists" is daily increasing. If each physician would search through the records of his practice there would be discovered such a number of cases pointing to the propagation of consumption by contagion that the most skeptical would be convinced.

We do not mean to say that con-

sumption is as contagious as small-pox, scarlatina, typhoid fever, or even erysipelas. If it were, we would all die of tuberculosis. But we cannot conscientiously deny that consumption is often propagated from person to person where the surrounding and physical conditions of those exposed are suitable. It is, therefore, the duty of physicians to take certain precautions to arrest the ravages of this dread disease.

I will now submit some facts tending to demonstrate that pulmonary tuberculosis is contagious. In October, 1885, I was called to attend Madame G., a school teacher, who for some time had complained of a cough and a feeling of fatigue. She was a lady 25 years of age, married three years, having had two children. Since her last confinement she had had a cough, and lost weight and strength. A physical examination of the chest revealed undoubted signs of tuberculosis in its first stages. Her grandmother and a sister had both been affected with lung disease. Her duties as teacher in a large school exhausted her strength very much. She lived with her husband in the basement of the school building, in rooms badly lighted and ventilated. The disease increased so rapidly that in January, 1886, her husband informed me that she passed whole nights in coughing and spitting, and her perspiration was so excessive that it was necessary to change her clothing several times every night.

She died in March, and her husband, who was absolutely without any tendency to consumption as far as family history and physical conformation was concerned, became tuberculous and, at his writing, March, 1887, has an enormous cavity in his left lung and tubercular granulations in the larynx.

This fact appears to me to be demonstrated, that a healthy man, without

any constitutional predisposition to phthisis, if exposed for a long period to the exhalations of a tubercular patient will acquire the disease himself if the hygienic surroundings are unfavorable.

Madame Y., aged 31 years; father and mother died of consumption, became tuberculosis itself, and died after an illness lasting four years. Her husband, aged 33, was a strong, healthy man, without any history of tuberculosis in his family, occupied the same room with his wife up to three months before her death. Even before she died he was affected with a cough, lost his appetite, became emaciated, and had night sweats. On auscultation I discovered a consolidation at the apex of the left lung. How could the disease have been acquired except by contagion?

Madame P.; aged 25 years, married three years, two children, exhibited signs of tuberculosis in November, 1884. After careful and prolonged treatment, her condition improved and she renewed her household duties, but continued to cough. Her husband, aged 30 years, hitherto in the best of health and without any hereditary tendency to lung disease, was attacked with what was apparently acute bronchitis. But alarming symptoms of consumption soon developed, and in spite of energetic treatment he died of phthisis in July, 1886. His wife is still living, but has a cavity in her left lung. Her children are in good health.

This case relates to the history of one entire family. The father, aged 35, printer by trade, was obliged to work many hours a day to support his wife and six children. Of these children, two died of tubercular meningitis when two years of age. The third year the father became ill, and died of consumption in six months. The eldest son, who assisted his mother in the house, died of acute tuberculosis. This

was the fourth death from tuberculosis in three years in this family. You will say that heredity might explain all, but how will you account for the following:

The mother, an extremely robust and energetic woman, with no hereditary tendency to consumption, continued to do her utmost for her husband and children. She soon became phthisical, and in a short time died. One of the remaining three children, a girl 16 years of age, is already pale, emaciated, and seems to be tuberculous.

In this history, we can explain the disease of the father, who was the son of a consumptive, and of the children, by heredity. But what other cause than contagion can be invoked to explain the affection of the mother? Will you say that overwork and grief was the cause? These may be contributing causes, but are not sufficient to explain the appearance of tuberculosis in a robust woman, hitherto in the best of health, and without a family history of the disease.

I could give many more examples of the contagiousness of consumption which I have observed in my practice during the last fifteen years. But it is a subject so extensive that prolonged study and deep research are necessary to clear up all the factors in these cases. I have only desired to call attention to some facts pointing to the contagiousness of phthisis, and I would be very happy if other members of the profession would publish their observations on this subject. If it can be demonstrated beyond question that tuberculosis is contagious, it becomes our duty to provide separate wards for consumptives in hospitals; to insist on the isolation of our patients in private practice, and to employ disinfection and antiseptics in the treatment of these cases, matters which have been hitherto entirely neglected in this country, although carried out in Germany and England.

CONSUMPTION AND ITS PREVENTION.

CONSUMPTION we always have with us. Not less than ten thousand deaths are caused every year in the Dominion by this disease. Small-pox comes now and again, in limited localities, and causes much alarm. Cholera threatens and alarms too. Hygienic precautions, sometimes very active, are taken to prevent the spread and mortality of these diseases. But where one death is caused by either small-pox or cholera, ten, twenty or more are caused by Consumption. It is such a terribly prevalent and fatal disease in almost every country, in both man and animals, that few questions are of greater importance than that which relates to its prevention. It is a question which concerns every individual, of every age, high, low, rich and poor alike, for no one is exempt from the disease and its influences. Moreover, Consumption seems to be almost everywhere on the increase; which fact makes the question a still more serious one. The disease is now almost universally regarded by the medical profession as a preventable disease, and the subject of its prevention becomes one of great practical importance.

It is very strange, indeed, considering the great fatality of this malady and the large proportion of sickness and of deaths it is continually causing in almost every country, that more general attention has not heretofore been given by sanitarians to its prevention. Those taking interest in public health proceedings—in the prevention of sickness and premature death—bestow their thoughts and time chiefly on those diseases which prevail epidemically and in a short period of time destroy many lives in a few days or a few weeks, while this dreadful

disease, Consumption, which is daily cutting off, after months and years of almost hopeless suffering, vast numbers of lives—often the brightest, most useful, most valuable lives, has not received from practical sanitarians the attention it demands.

It is very sad to contemplate the carelessness and indifference manifested with reference to the prevalence of this malady and that no special means have heretofore been adopted to stay its progress or prevent it. If the same amount of mortality caused by Consumption in one year were brought about in a month or two by some epidemic, or more clearly contagious disease, with a brief period of sickness, panic-stricken citizens would flee before it and from their homes, and active measures would be enforced to check its spread. "But it is not so with this insidious flatterer; as by stealth it fastens itself upon the victim, while all around appear to be unconscious of its presence, and look upon it with as much careless complacency as though it as much belonged to humanity as the ravages of time itself." And so it stalks on, counting its ten thousand victims at least yearly in Canada alone.

Health Boards and other organizations for the prevention of disease, issue by thousands and distribute amongst the people pamphlets containing brief instructions, by which different epidemic diseases may be prevented. Pamphlets for the prevention of small-pox, of scarlet fever, of diphtheria and of cholera have been issued from time to time by the State board of health of Michigan, and of many of the other States; and our own Federal Government, many years

ago issued a pamphlet on the prevention of cholera. Why should not measures of this kind, and other measures, be put into practice for the prevention of Consumption? Probably no disease is more preventable by proper hygienic means than is this one.

The very fact of its slow development renders it especially controllable. It is to be hoped that health boards will, in the near future, turn their attention more especially to the prevention of Consumption.

MISCELLANEOUS EXTRACTS AND SELECTIONS.

DR. MARY WALKER earnestly recommends that measures be taken to induce people to leave money when they die to go into a fund for the suppression of the use of tobacco.

A GREAT number of micro-organisms inhabit the mouth in the normal state; a still greater number may be found there accidentally introduced either by the food or by the inhaled air, and from want of cleanliness. M. Vignal (*Arch. de Phys*) found in the buccal coating and in the dental tartar eighteen different species of micro-organisms, and from these he succeeded in isolating seventeen. Hence the importance of cleaning the mouth is obvious.

A VERY bad and serious habit, which appears to be spreading, is arsenic eating by young women. The attention of the New York Board of Health has repeatedly been called to the promiscuous use by young women of arsenic wafers. Dr. J. T. Nagle recently received a letter from a lady in Harlem, who writes, My daughters for some time past have been eating arsenic wafers. I understand that thousands of women are eating those wafers, and that as many more are resorting to other less expensive although more powerful poisons. This practice is not unknown in Canada, and a loud note of warning should be sounded by the press.

DELIRIUM TREMENS FROM TEA.—*Good Health* gives the following on this:

Theine, the toxic principle of the common beverage, tea, is not less than two hundred times more powerful as a poison than is alcohol; that is, a few grains of theine will produce as deadly effects as two hundred times as much alcohol. A strong cup of tea has more intoxicating properties in it, than an equal quantity of beer. Notwithstanding the poet's eulogy, "The cup that cheers and not inebriates." An English writer tells of a party of London newspaper correspondents who meet regularly on Saturday nights, and have a regular spree on tea. Some of them are generally found under the table in the morning. The London *Lancet* tells of a young lady who recently suffered with delirium tremens from chewing tea leaves. How much more evidence is needed to convince our skeptical, tea-loving friends.

NOSTRUM VENDORS will have a hard time in Russia. A list of patent medicines, drawn up it appears by a committee of physicians, the importation of which the Russian Government has decided to prohibit, has recently been published. It consists of about eight hundred preparations of English, American, French and German origin. Pills, plasters, hair restorers, cough drops, medicated foods, ointments, and many miscellaneous preparations for a great variety of ailments, are all classed together in one "long medical index expurgatorius."

THE APPETITE A NEGATIVE GUIDE.
 —(*Am. Practitioner*) The appetite is a good guide no doubt, but better perhaps as a negative than a positive guide; better to be heeded by the sick in its vetoes than yielded to in its supplications. No doubt since the student days of Hippocrates, stories have been going the rounds of the profession, and the laity too for that matter, of astonishing cures produced by some tabooed article of diet. One has a story to tell of some perishing child that snatched a plate of bacon and greens and ate them with such greedy relish that the doting mother could not control her sympathy enough to restrain it, more especially as the doctor had told her "it could never get well any way," and which yet thoreafter went right on to recovery. Another patient, after making his will and taking leave of friends, had been seized with a craving for buttermilk, and after drinking a liberal amount was promptly restored to health. And so on, till a volume might be written of such stories. But on our dull understanding the force of the whole argument is lost. When our patient begins to crave bacon and cabbage or beef and turnips we are always much pleased with the request that makes the craving known. We take it as an omen of good, showing that the crisis has passed and the healthy functions of the system are re-established. Notwithstanding, it doesn't follow by any means that he gets them.

POISONOUS arsenical wall papers doubtless often give rise to trouble, and sometimes serious symptoms, the cause of which is unsuspected by either patient or physician. Prof. J. R. Chadwick reported recently to the Suffolk District Medical Society the result of an experience in his own family, by which he was convinced that

protracted ill-health of two of his children—dyspepsia, colicky pains, headaches, palpitation of the heart, pallor and debility, were due to the presence of arsenic in the wall paper of the nursery in which much of their time had been spent.

PHILADELPHIA, the *Sanitary Era*, informs us, with its comparatively low death rate on the whole, is exceptionally high in typhoid fever. According to comparisons published by Dr. Chas. Smart, U. S. A. The typhoid death rate has increased for the last two decades, having averaged 5.58 in the former and 6.61 in the latter; keeping pace with the progressive contamination of the water. At the same time, New Orleans, with its extreme disadvantages, but with rain water only to drink, has diminished its typhoid rate from 4.15 to 2.46.

THE best goods are the cheapest and goods which appear to be the cheapest are generally the dearest in the end. This is perhaps more especially the case in regard to food stuffs, in which too the health is concerned. The *American Analyst* "has steadily maintained this position and is gratified to find that its efforts have produced a decided change for the better. Those manufacturers who are ever on the alert for an improvement in the quality of their goods, but, who, while suffering in consequence of the competition of inferior goods at lower prices have resisted the temptation to lower the quality of their own products now begin to realize the good fruits of their integrity."

It is claimed that the popular drink of the future, says the *N. Y. Medical Times*, will be milk charged with carbonic acid. It is said that milk thus carbonated will keep an indefinite length of time.

ANY readers of this JOURNAL who are intending to visit Naples this year will be pleased to learn that medical statistics quoted by the *Pungola* represent the public health of the city as being greatly improved. The number of deaths, which in February of last year was 1551, this year did not exceed 1407. The diminution of infectious disease, too, is noteworthy. Much attention has of late been given to the sanitary improvement of the city.

FEW realize how largely the diet influences the entire human organism. One of the "fundamental truths" laid down by Brillat Savarin, in his famous *Physiologie Du Gout*, published in 1825, was that "animals feed, man eats; the man of sense and culture alone understands eating." Savarin was himself the most abstemious in the matter of table gratification, but none ever understood better than he the principles which underlie the cultivated taste for eating, and which render that obligation an intellectual pleasure far removed from the grossness of mere sensual indulgence. "Notwithstanding the mass of literature, practical and speculative," says the *American Analyst*, "to which the preparation of food for human use has given birth, and despite the universal attractiveness of the subject itself, it is a lamentable fact that excepting among a very restricted class of the world's population the art of dining is not sustained on the elevated plane it is entitled to occupy. When we observe, as we do so frequently, how many persons even among those recognized as belonging to "good society" are destitute of the aesthetic instinct which should govern them when taking part in that most important of all social observances, we can readily conjecture how comparatively few they must be who understand the

art of providing the meal itself, and regulating it so that every requirement of health, comfort and enjoyment—mental as well as physical—shall be attended to on behalf of those who are to be its participants. The first principle which should govern dinner giving and dinner eating are therefore a subject in which all mankind—and especially all womankind—are deeply concerned."

THE DISPOSAL OF SEWAGE.—Dr. C. W. Chancellor, of Baltimore, has been in Europe inspecting sewerage. He finds that of about four hundred different systems the best, and one which is used in part in Paris, is the pneumatic system. The principle of this system is that there are a number of stations, into which flows the sewage. At the central station is a powerful suction which draws the sewage into a large reservoir, to be disposed of by cremation or any other way desired. In some places, where the sewage is used for irrigation, he states that the land is kept green, but it is not a success, as it is kept too moist, and the water is not purified to the extent supposed by some of the irrigation enthusiasts. Chief Engineer Allen of Worcester, Mass., presented his report upon the sewage problem of that city. He spent several months in Europe in examining different systems in use there, and since his return he has examined the broad irrigation system of Pullman, Illinois. In his report he favors the same plan that has been recommended for Providence, namely, chemical precipitation.

INTERMITTENT DOWNWARD FILTRATION.—The *Sanitary Record* describes this process, which is very common in England, in the following way: Intermittent downward filtration may be termed a natural system of purification

of sewage by means of the filtering and aerating action of the soil; it is carried on by discharging (with or without previous precipitation) upon a properly prepared area, the sewage of the town under drainage. This sewage is conducted upon the prepared area by a series of carriers, and then allowed to filter through the land into drains laid about 6 feet under ground, from whence it (as an effluent) is conducted to its outfall, mostly a river. The action upon the sewage is threefold—viz., evaporation, aeration, and filtration, and if properly conducted should give an effluent of a very high standard. As to the amount of land requisite for the purification of the sewage of a town of 20,000 population, authorities differ, but taking the daily amount of sewage per head at 50 gallons, and the average of five persons to each house equal to 250 gallons per house per day, then the fact that this quantity must be got rid of in about eight hours, it would not be safe to reckon less than 1,000 gallons per house. Then taking 4,000 houses, there would be 4,000,000 gallons of sewage to deal with, which could be successfully treated on 5 acres of such land; but it would, of course, require that a very far larger amount should be provided, as no land could be expected to be constantly under treatment, and the least amount should be five times this quantity, so as to have only one-fifth under treatment. Great diversity of opinion exists upon this subject, and no very hard and fast line can be drawn. Each case must rest upon individual merits and local circumstances.

DISINFECTANTS AND THEIR USES.—Dr. Alfred Carpenter delivered an address at the last monthly meeting of the Association of Public Sanitary Inspectors on "Theory and Practice as

to Disinfection." He urged (*Brit. Med. Jour.*) that sanitary inspectors, who had very great power if they used it carefully, should reason out the grounds of the application of any particular mode of disinfection, rather than give a blind obedience to a written order. With regard to small-pox, he pointed out that germs of living protoplasm in the breath of a patient would take root if immediately transplanted to the membrane of a susceptible person, but if floated about in the air for 100 yards they would lose their vitality? Isolation, with ventilation, as rapidly as possible, was necessary in such cases. For disinfecting the furniture of a house after infectious disease, steam was preferable, and he advised all local authorities to provide themselves with the means of applying steam heat. Dr. Carpenter did not recommend carbolic acid as a disinfectant in cases of disease, for it was found that the acid preserved the dormant germ from decay. This also held good of alcohol; the use of spirituous liquors as a protection against the evils of impure water was no protection at all. The same argument applied, though in a minor degree, to sulphurous acid. The best disinfectant was a solution of bichloride of mercury. It required to be used with care, but it was rapid in its action, and so powerful that a solution of 1 part in 5,000 of water would in fifteen minutes destroy every living germ, dormant or otherwise, with which it came in contact. The best disinfectant for sewers was sulphate of iron.

RECENT STUDIES ON THE BAGILLUS OF TYPHOID.—At a recent meeting of the Société Médicale des Hôpitaux, the *Philadelphia Medical Times* informs us, M. Chantemesse presented some interesting statements of the result of his

studies, in company with M. Widal, upon the bacillus typhosus. It is enlarged at the extremities, extremely mobile, and offers strong resistance to the usual modes of staining. It can be developed in meat broths, better in gelatin, but best of all upon the potato, upon which it shows itself as a moistened thread after three days, sometimes not until after fifteen days. Slowness of development is specially characteristic of this bacillus. Reproduction takes place readily in pure water, especially if the water be sterilized. It resists cold, and will endure a temperature of 45° C. without perishing. It is destroyed by a temperature of 80a C., as well as by boiling for several minutes. It increases more rapidly in a moist than in a dry soil. As to the action of antiseptics upon its vitality, a 1/2000 solution of corrosive sublimate will prevent its culture; a 1/800 of sulphate of quinine will produce the same effect; while the 1/400 of carbolic acid will have no effect at all upon its multiplicator in a culture-fluid. By adding a two-per cent. solution of hydrochloric acid to the culture the growth of the bacillus is retarded, but it does not die, for, on dropping a little of the fluid containing it into an alkaline broth, it will begin again to multiply with all its original vitality.

CHOOSING A PHYSICIAN.—Estelle Mendell writes in an exchange as follows on this subject: A physician is a necessary adjunct to most families, and he should be selected with care or the loss of life and treasure may be great. Too frequently, in cases of emergency, the one "handiest by" is called, and if he is of pleasing address and serves us well in this particular case, he is installed the family physician without further knowledge of his

fitness. True, the majority of people are too ignorant to sit in judgment upon an M.D., fluent with physiological terms and latinized remedies. Still, it would seem that common-sense might aid us here. But that it does not always, or that it is totally lacking in some, the following incident goes to show. "I see you have changed doctors," remarked a lady to her neighbor. "Yes, I got so tired of Dr. Brown. He was always asking what I gave Freddie to eat, the first thing, and what he drank, and all such things. Now, I want a doctor to *doctor* and not interfere with my eating," she said rather pompously. This expresses the feeling of too many. We want a physician who will *patch us up*, and most anyhow will do, only he must not interfere with the habits that are wrecking us and making his services necessary. A New York physician turned from his coffers hundreds of dollars, by telling a butterfly of fashion that he could not cure her of a nervousness that threatened to become dangerous, as long as she wore the unnatural, high-heeled shoes. She left his office in anger, declaring him a "fanatic and an ignoramus." And we are sorry to say that such any physician will be dubbed, who has the courage of his convictions and dares tell one of these wasp-waisted, padded and painted bundles of weaknesses, that all she requires for her thousand-and-one ailments, is light, loose clothing, wholesome food, sunshine and exercise. Fortunately for the tempers of this class, though unfortunately for their feeble bodies, they can always find those who will cater to their caprices. But beware of such a doctor. He who flatters you and humors you is most unworthy your confidence, and not to be trusted with the health and lives of your family.

THE PUBLIC HEALTH FOR APRIL.

MORTUARY RETURNS FROM TWENTY-SIX CANADIAN CITIES AND TOWNS.

THE total number of deaths in April in the twenty-six chief Canadian cities and towns which make monthly returns to the Department of Agriculture in Ottawa was 1377; a number greater by 40 than that recorded in March. This shows a mortality for the month at the rate of 25 per 1,000 of population per annum.

While in Montreal and Quebec the mortality in April remained almost identically the same as in March, in Toronto there was an increase in the month of over one per 1,000, and in Ottawa, where the mortality was low in March, there was an increase of nearly 7 per 1,000, or 40 per cent., in April, above the previous month. In St. John, in London and in Kingston there was a marked increase in the mortality, while in Hamilton and Halifax there was a decrease. In Montreal, Hamilton, Three Rivers, Sorel and St. Hyacinthe the mortality in April was above the average, 25 per 1,000; in Toronto it was just equal to the average, and in the other cities and towns it was below it.

From zymotic diseases there was an increase, in the totals, of 34 per cent., or from 153 deaths in March to 206 in April. This increase was made up almost entirely in Montreal and Toronto, from measles and diphtheria in the former city, and diphtheria in the latter.

Still, no deaths are reported from small-pox, it is most satisfactory to note. It is nearly a year now since a death has been recorded in any of the cities or towns in Canada from this loathsome disease. This is complimentary to the management of the quarantines (confirmatory of the high compliment paid to them a few years ago at an Amsterdam conference of

quarantine officers, by Dr. Van Leent and also to the efficient manner in which the disease and its infection was stamped out in the cities and towns in which it was prevailing early last year.

Measles caused 34 deaths in April in the places under notice; an increase of 35 per cent. as compared with the previous month. There was a large increase in the mortality from this cause in Montreal; while there was a decline in Hamilton, and an entire cessation in Sorel, in both of which the disease was very prevalent in the previous month. There was no increase in the mortality from scarlet fever.

From diphtheria there was an increase of 65 per cent in the mortality:—there having been 46 deaths from this cause in March and 75 in April. Of the 75 deaths in April, 20 were in Montreal and 24 in Toronto.

If measles and diphtheria caused the same fear in the public mind as, and the same precautions were taken to prevent their outbreak and spread as are taken for the prevention of, small-pox, they would be as rare as small-pox, for they are equally preventable, as by means of strict isolation and, especially in the case of diphtheria, absolute cleanliness—with pure air and pure water.

There was not anything more of special note in relation to the public health in April in the principal cities and towns.

THE Assembly of Wisconsin have passed a bill appropriating \$15,000 as a contingent fund to be used, if necessary, in the next two years by the State Board of Health in preventing the introduction of cholera into that State.

WHEAT GERM MEAL, a new cereal food manufactured by Messrs. Ireland & Son of Lachute, Que., is by far the most delicious preparation for porridge we have yet eaten. We had been using a "germ wheat" manufactured in Cincinnati, U.S., but consider that now prepared in the Lachute Mills decidedly superior, as it is freer from dark specs and of a richer, more "foody" flavour. It is most delicious and delicate, and we have heard it called "angels food." If Messrs. Ireland & Son can keep up the quality equal to that we have used, it should command a large sale. We have pleasure in recommending all who desire a pure, nutritious, digestible breakfast dish to ask their grocer (who can always obtain it) for this food and try it.

In recommending foods or any thing else in this JOURNAL, we need hardly write, that we cannot be bought, that no sum of money however large, would induce us to recommend anything, for anybody, which we do not, from personal knowledge, believe to be all we recommend it to be. When we do not of ourself know, we may give the opinion of others. Knowing well the importance to health of the diet, we are particularly interested in good and pure food stuffs.

IN MILK, we have taken much interest, thinking of the innocent little lives so often depending upon it—so often, alas! we fear, destroyed by its bad quality. Long before "bottled" milk was sold any where in Canada, we urged in Toronto the advantages of the practice, to which we have more recently repeatedly drawn attention. Not long ago we submitted a bottle of Mr. McTiernan's milk (an ordinary bottle, as usually left at our house) to the examination and analysis of a most competent practical analyst and were pleased to find, as we had expected, but wished to make sure, that it was a good, pure milk, of high standard, and we think it due to Mr. McTiernan in his efforts to supply good milk, to make this known to the public.

THE Ottawa River boats—the "Empress" and "Prince of Wales," are now again on their route. From experience we can state that the condition and management of these boats are unexceptionable in every respect.

A trip on them between Ottawa and Montreal, or between Montreal and Carillon, or Ottawa and Grenville, and return, affords a most pleasing and refreshing holiday.

ANOTHER very pleasant trip, we understand, from a number of reliable persons who have taken it, is that between Ottawa and Kingston, on the "Ella Ross," and also the round trip from Montreal to Kingston by way of Ottawa, and then from Kingston to Montreal.

ORDINANCES OF THE CANADA HEALTH JOURNAL.

Pure Air: The complete destruction of all waste organic matter, by fire or otherwise; no collections any where of bodily excrement—perfect sewerage or daily disinfection or deodorization with frequent removal; through ventilation of all buildings, public and private; complete isolation and disinfection in all cases of infectious disease.

Pure Water: Strict prohibition of the pollution of all inland waters—rivers, lakes, streams—by sewage or other waste substances; thorough filtration of all public water supplies; closing of suspected wells.

Pure Wholesome Food: Prompt and severe punishment of all adulterators of food, with frequent and repeated analyses; thorough inspection of foods—meat, milk, flour, bread, fruits, &c., with punishment of all offering impure or bad food; improved methods of preparation and cooking food.

Education of the Public in all Matters Pertaining to Health.

HEALTH MAXIMS FOR DAILY PRACTICE.

DO not shut out too closely with shutters or blinds, the sunshine from your rooms.

NEITHER rooms nor the human body can be long in good condition without abundance of sun light.

GO not into cold water when you are much heated, nor when cooling fast, but wait to get somewhat cooled, yet still warm.

DRINK not freely of iced or very cold water, especially when much heated or after a meal, but sip it slowly.

PUT ice around, instead of in, the water jug, as ice is often impure.

Canada Health Journal.

A MONTHLY MAGAZINE OF PREVENTIVE MEDICINE.

THIRTEENTH YEAR of Publication.

NINTH VOLUME.

Specially designed for medical and other health officers, heads of families and all interested in promoting the public health. The only Health Journal in the English language published in Canada.

ITS AIM.—To prevent sickness and promote public and individual health.

Communications solicited on all sanitary subjects.

Local health officers would confer a favor by sending to the Editor copies of their reports, brief notices of their sanitary condition, improvements, or events in any way connected with health.

See Club Rates to Health Boards and others on advertising page.

All communications, with remittances or otherwise, should be addressed,

"Health Journal," Ottawa, Can.

A blue cross opposite this indicates that the subscriber to whom it is addressed is indebted for this year's subscription (from Jan. to Dec.), and all such will confer a favor by kindly remitting, for which we shall feel obliged.

We cannot undertake to make out accounts and send them by mail or otherwise and only charge \$1.50.

All not remitting during the early part of the year—the first month or two—must expect to pay \$2.00; we must insist on this in common fairness. Physicians pay \$3.00 for their Medical Journal, containing no more reading matter than this one.

\$1.50 now is worth more to us than \$2.00 many months hence, with cost of time, bills and postage.

Will all friends please think of this, and help us in the work by an early remittance.

ADVERTISEMENTS of unexceptionable character taken to a limited extent and at reasonable rates; advertisements of "patent medicines," not accepted.

EDITORS' SPECIAL CORNER.

With duns the space of this journal has not often been occupied. But it would seem as if some people like to be dunned. To a large number of the subscribers no accounts were sent last year at all, and many are two and three years in arrears. During the last two or three months accounts have been sent to most of these and to many of them (necessity compelling) two and even three times, in closed envelopes, the postage alone amounting to quite a large sum. To most of these we know a few dollars, at any time, is a small matter, and they could pay just as well at one time as another. A kindly, most respectful appeal was made to them for an early remittance, as paper and printing jobs cannot be obtained for nothing, and have to be paid for. Hundreds of these have quite disappointed, and really, in the circumstances, much surprised us, by not paying or giving, apparently, the slightest attention to the appeal made. To these we would simply suggest the good, and in all human intercourse the BEST, old "golden rule" and ask them to endeavor to imagine the position of themselves and that of the publisher reversed, and to try and think how they would feel if they had been treated as they are now treating the publisher. Would they think the treatment approaching that of common fairness? If any had forgotten or overlooked the little matter, they can now mend it very much by remitting at once. We hope other readers to whom the above does not apply will pardon this necessary "digression."

THE holiday time is at hand; at hand, alas! ever only for the few. In this rushing age, when almost everybody is burning the candle of life at both ends, almost everybody should at least once a year suspend their labours and take a complete holiday—a vacation; make a void in their life and be for a time free from service. Such is a most wonderful restorer and renovator. It only wants the will and almost any one could command the time, and yet do as much if not more work in the year and with much more ease and pleasure. If there could be proclaimed from some sufficiently authoritative source a month's holiday for everybody every year, and the month could be spent by all reasonably well, and at least free from dissipation, by this means alone life would be made happier and sweeter and longer, and insanity would no longer increase from year to year. Most men are over taxed, either by work or anxiety or worry. Women are less so. More women than men live to advanced age, their average of life is longer, fewer of them become insane, fewer commit suicide. Men especially should endeavor to rest more, and to shake off their anxiety and cease to worry. What is life for? Not alone to acquire wealth and position. Seek happiness for TO-DAY, not for to-morrow. Every man should make it a rule to go away from his work for a "holiday" every year at least and take his family, who has one. Excepting the farmers, who can best take a holiday at another season, July and August are on

the whole the best months for a rest, as then the system is most relaxed from the heat and the least fitted for labour, mental or physical.

WHITHER then shall the weary flee? It is not at all necessary to go far for change and rest. The great majority can not. To breathe the pure air from the sea is doubtless a great advantage for those who can do so, provided, always, there is no crowding, that there are well ventilated rooms, pure water and good, well-cooked food; few of which essentials can be obtained at the ordinary "watering-places," where, indeed the opposite conditions are very liable to prevail, with too much dissipation. Small towns on the shores of lakes are often resorted to, but the water and the drainage in these is frequently bad, and there are often more inconveniences than comforts. Wherever one decides to go, the sanitary conditions of the locality and the lodgings should be well looked after, and often medical advice on these points, from disinterested physicians, might be profitably obtained. There is in Canada a great want of well located and well constructed buildings where summer lodgings could be obtained at reasonable rates.

CAMPING-OUT is becoming common. And perhaps after all there is no better, while after the outfit is once obtained, there is certainly no more economical way of spending a holiday. Almost any man who can obtain a tent or two, or rough boards for the construction of a shelter from rain, can go from his home during the warm season, with a family too, and live for a few weeks at less expense, as a rule, if he desires to do so, than he can live at home. High ground should be selected, the higher the better, a safe distance from any swampy locality, where abundance of good water may be readily obtained. In many such localities good milk and eggs can be procured, and in some of them, fish. With a supply of good bread, or flour with which to make it, and carefully selected canned meats and fruits, with lemons and other little luxuries, according to circumstances, no one could suffer for want of "good living" and ought not to desire anything more. In this way, many thousands of professional men, artisans and even hard-

worked laboring men, and their families, might secure the blessing of a change and a vacation.

THE Caledonia Springs is the favorite Canadian watering place with many on this continent, a large number visiting them annually from the United States. They are highly spoken of by many leading physicians, both in Canada and the "States." Dr. Grant, of this city, who is, we need hardly write, one of the foremost of the Dominion, writes as follows: "At this season of the year most people who can take a holiday are looking forward to the selection of some place where change and rest will, if possible, renew the vigor of life. Two points are usually most attractive to the lover of change—our sea side resorts and our mineral springs. One naturally asks, where am I to derive the greatest benefit? Sea bathing and sea air are certainly invigorating in a sense, but after careful observation it has been ascertained that the greatest degree of benefit is brought about by first enjoying, for two or three weeks, the influence of some of our mineral springs, in order to place the internal system in a healthy and vigorous state, by washing out the great organs and thus giving increased power and activity. Most people are quite content with bathing, as usually adopted, without giving due attention to the washing out process, which is just as necessary, in the great internal organs of the system. The springs of all others, now attracting attention, and well merited too, are the Caledonia, owing to the excellence of the sulphur and saline waters, and the extensive modern appliances for their use in every form."

IMPURE ICE is doubtless often a source of disease. People for the most part are quite indifferent as to the source and condition of the ice they use for cooling drinks. It is well known that the frost does not destroy all bacteria that may be in water before freezing. Ice may appear absolutely clear and yet contain dangerous substances. People swallow ice when they would turn in disgust from the water of which the ice is formed. It is a good practice to cool pure water in bottles or other receptacles surrounded by ice instead of putting the ice into the water to be swallowed, and this practice should be universal until ice is made artificially from purified water.

OBSERVATIONS AND ANNOTATIONS.

THE Sanitary Convention, in connection with the first Annual Meeting of the Ontario Association of Health Officers, held in Woodstock on the 17th and 18th of this month, was attended by a fair number of able medical officers who ought to have drawn a better attendance of those for whose benefit chiefly the convention was held, namely the people of Woodstock. Among the health officers present were, Drs. Elliot, of Orillia, Coventry, Windsor, Griffin, Brantford, Daniel Clark, Toronto, Yeomans, Mount Forest, Burrows, Lindsay and McLellan, Trenton. In the absence of the President of the Association, Dr. Sweetland of Ottawa, owing to sickness in his family, we understand, the first Vice-President, Dr. Coventry of Windsor, read the annual address. A number of valuable papers were read and discussed, a synopsis of some of which we hope to give in the next issue of the JOURNAL. Dr. Coventry was elected President for the ensuing year.

THE attendance of the public at the Woodstock Convention, we are sorry to learn, was on the whole not large, indeed a local organ states that it was small, and "anything but a success," although at the evening session it was fair, with "quite a number of ladies." The apathy of the people in matters of this kind is marvellous. The only way is to "keep at them." The general interest however in subjects relating to health is certainly on the increase, especially in some of the cities and towns where they have active health officers. Health conventions in Michigan have been numerous and largely attended. There they have an active and popular State Board of Health which is continually, in various practical ways, awakening an interest amongst the people.

THE Toronto Local Board of Health's Report for last year is by far the most respectable volume that has been issued by the City Health Department for many years. The Board "forbade the public in future placing privy vaults on their premises," but should have gone further and prevented the use of such entirely. There is no reason why some of the inhabitants should be permitted to use them and not

others. The Medical Health Officer's Report contains much useful information, on the outbreak of small-pox during the early part of the year, on vaccination and on the work of inspection. The health of the city ought to improve, but very much yet remains to be done. A better water supply and a purified bay are indispensable to the city's health.

THE contagiousness of consumption which we strongly favour, and the fact that physicians and others are so frequently exposed to the infection and yet do not contract the disease, may be explained in the following way, as shown by recent experiments. The bacillus of consumption is a slowly developed organism, requiring about ten days when cultivated artificially before it begins to grow. If applied to an open wound it will be almost certain to be removed by washing or otherwise before it has time to establish itself; but if injected under the skin, local tuberculosis develops itself, and this is followed, later, by a general infection. In like manner it may be in the case of the lungs. "When a healthy individual inspires the materies morbi, it is removed by expectoration, before it has time to establish itself and grow. But when a portion of the lung remains consolidated for a length of time, as after a catarrhal pneumonia, then the tubercle bacillus finds a suitable nidus, and time to grow, and foci of infection are thus established." So likewise, persons who respire but imperfectly and do not expand and use the apex of the lungs, the organism may chance to remain almost undisturbed in that locality until it develops and multiplies. Thus, as we have long contended, "it would appear," as the *Canada Lancet* says, "that the disease is not *per se* hereditary, but the pre-disposition to such conditions of the lungs as favor the reception and growth of the cause of the disease, is hereditary."

THE CENTURY has added another to the list of services it has done its readers. In its issue for May it publishes the first of a series of papers by Prof. W. O. Atwater, of the Wesleyan University, Middleton, Conn., on the Chemistry of Foods and Nutrition. Prof. Atwater makes an exhaustive study of the chemistry of foods,

at the instance of the United States National Museum in behalf of its food collection, and it is said that he has studied food and nutrition as no other student in this country has studied it. His chief aim is to show the economic value of foods, a subject little understood even by the intelligent. He says, "I have been led to the conclusions that, in this country, many people, not only the well to do, but those in moderate circumstances also, use a needless quantity of food; that part of this excess, however, is simply thrown away, so that the injury to health, great as it may be, is doubtless much less than if all were eaten; that one great fault with our dietaries is an excess of meats and of sweet meats; that even among those who desire to economize there is great pecuniary loss from the selection of materials in which the actual nutrients are really, though not apparently, dearer than need be; that many whose means are limited make still more serious mistakes in their choice of food, so that they are often inadequately nourished when they might be well fed at less cost; and what seems the most painful thing of all, that it is generally the very poor that practice the worst economy in the purchase as well as in the use of their food.

REST and sleep, as we have long contended, is the great restorer. Dr. J. Leonard Corning, of New York, in the proceedings of the Medical Society of New York, says:—"Prolonged sleep may be set down as the cardinal principle of physiological brain rest. It must be combined with systematic and scientific feeding, in order that repair of the exhausted brain may proceed in a physiological manner during the interval of unconscious repose. He secludes the subject in a darkened room, eventually for from ten to fifteen hours at a time. The amount of sleep is progressively increased by habit, moderate medication and hydrotherapy; but he never resorts to forced sleep by the reckless use of sedatives. When the patient awakes, nourishment is administered, but always in an easily digested form. The few hours of wakefulness are devoted to some form of amusement, but all forms of mental exertion are strictly prohibited.

SIR HENRY THOMPSON says, "I have come to the conclusion that more than half

the disease which embitters the middle and latter part of life is due to avoidable errors in diet...and that more mischief in the form of actual disease, of impaired vigor and of shortened life, accrues to civilized man...in England and throughout central Europe from erroneous habits of eating than from the habitual use of alcoholic drink considerable as I know that evil to be." Again he says: It is a failure to understand, first, the importance of preserving a near equality between the supply of nutriment to the body and the expenditure produced by the activity of the latter; and secondly, ignorance of the method of attaining this object in practice, which gives rise to the various forms of disease calculated to embitter and shorten life.

DR. ALFRED CARPENTER of Croydon, Eng., write as follows in a late number of the *British Medical Journal*:—"In your annotation of my address to the "Public Sanitary Inspectors," in the Journal of April 9th, published on another page of this issue of the JOURNAL, there are two references which may mislead if not explained. The microbes which spread small-pox will in ordinary instances lose their vitality in the air in much shorter distance than "100 yards" when they have been detached from feverish patients. It is only when they are dormant, or in a condition in which the active agency of life is suspended, that they may be wafted some distance and retain their vitality. As to carbolic acid, I did, and do, recommend it as destroying the living growing germs; but I stated that in dilute solutions it had no destructive effect upon the dormant spores, that something more than carbolic acid is necessary to effect this object, and that the over-advertised nostrums which are being pushed by manufacturers are not able to put an entire stop to infective agencies; nay, they are assisting to preserve the dormant seeds from decay, so that in such cases, when trusting to such, we are trusting to broken reeds.

"A VALUABLE SERIAL, which ought to be in the hands of every Mayor, Alderman, Town Councillor and Health Officer in the Dominion." So it is stated of the CANADA HEALTH JOURNAL in a Report on Epidemic Diseases, &c. By J. T. Bell, Esq., late Chairman Board of Health, Belleville.