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THE CANADA
HEALTH JOURNAL.
(PUBLIC HYGIENE AND STATISTICS.)

Vol. V. TORONTO, JANUARY, 1881. No. 4.

FUTURE GENERATIONS OF CANADIANS.

In the first number published of this JOURNAL, July, 1874, we quoted from a leading contemporary the two following sentences: "We ought to build up a nation which in sheer physical stamina would be unsurpassed. Nor can anything prevent this being our destiny but softness, indulgence, luxury, and want of attention to the laws of health." And we then added, "There is not one probably, who would doubt the truth of the above extract,—doubt that we are at least able to build up such a nation. Nothing indeed need prevent but want of attention to the laws of health.

"But in order that future generations of Canadians may be as healthy, well-developed, hardy, and vigorous, mentally and physically, as may be desired, it behoves us, of the present generation, to commence, as it were, at the beginning; to look after the health and development of the infants, children, and youths of the present age; to teach the young the value of health and the art of preserving it; to go back indeed still further, and awaken the attention of mothers to the necessity of giving heed to the health of their little ones while yet unborn."

Yes, to build up a healthy, vigorous race we must commence with the mothers. A very large, an unusually large, proportion of mothers, as the statistical returns for Ontario show, die here during the period of maternity, or from the age of 15 to 45, from consumption; a hereditary and a contagious disease. Think of the effects upon the children. It is necessary to commence with the mothers: instruct them in the art of taking care of their own health, as well for their children's sake as for their own.

The children must be constantly provided with pure air, wholesome food, and sunlight, and have judicious mental and physical exercise; and as soon as they are old enough to comprehend it, they should be instructed in the simple rules of hygiene. It is deplorable that amid the many subjects taught in schools at the present time that of hygiene receives so little attention.

This subject of educating the people in the laws of health is one which our Legislatures must take up. Canada is now about the only civilized country in which the Government has not already fairly and fully commenced the work. It is a work of the very first importance. Who can say this subject of the public health is not of greater importance, or that work done in improving the public health will not have a greater influence over future generations of Canadians, than the construction of the Pacific Railway, which is receiving so much attention from our best statesmen? When will our legislators, Dominion and Local, see the importance of the work, or seeing, act?

In this connection we give below

an extract from a late number of the *Michigan Medical News*, on

THE PHYSICAL DEVELOPMENT OF CHILDREN.

The trite saying, "the child is father of the man," is usually regarded as having reference rather to the mental than to the physical in the individual. This is unfortunate, in so far as it may have a tendency to cause undue importance to be attached to the early mental development of the child. It is to be feared, and indeed thoughtful men are becoming aroused to the fact, that there is a grave radical defect in existing methods of educating the young. So much more influence does brain wield than muscle in the affairs of men, that the error of attempting to cultivate the former to the neglect of the latter, is one into which it is quite natural to fall. While the mental is superior to the physical, it is far from being independent of it. There may be the sound body without the sound mind, but there cannot be the sound, well-balanced, self-possessed mind without perfect physical well-being. There may be mental quickness and brilliancy in the weakly body, and indeed these qualities of mind, whether in the child or in the man, are usually associated with defective physical development; but the mind whose workings are deep, and whose products are calculated to endure is that which is contained in the sound body. So true is this, that the leaders of the day, as they have been in all times, whether in science, politics or government, are men of good body.

The human animal, very strangely, receives less attention from man than do the domestic brutes. The latter have been taken from a degenerate, wild condition. And by careful feeding and judicious mating, have been developed into the noble specimens of the modern stock farm—horses, cattle, sheep, and poultry, while man himself instead of developing, physically at least, has by being left to follow the blind dictates of his own passions, retrograded from the high estate of his barbarian ancestry. The necessity of a proper mating of the male and female, to secure the best result in offspring, and the proper care and feeding of the offspring, is all the secret of good stock. Defects in the female can be overcome in the offspring by superiority in the same points in the male, and *vice versa;* the breeder who would expect a good result in any particular regard from the union of two animals, both defective in that regard, basing his expectations on some mysterious "affection," which they might have for each other, would soon find his strain running down. And yet men and women have habitually for years done this! Is it any wonder, therefore, that while the inferior animals of to-day are far advanced over those of the past, the human animal should, instead of improving, have actually degenerated? The fact that men are no worse than they are, is doubtless attributable to the improvements during the past two hundred years in hygiene and sanitary matters.

There are, however, difficulties in the way of an intelligent stirpculture, difficulties which can only be removed by such a general diffusion of knowledge on these points as will keep men and women from falling in love with their physical incompatibles. The time of such a diffusion lies very indefinitely in the future, but against that time there is another remedy which it is largely in the powers of legislatures to apply—the proper feeding and training of the young. On general

principles, the paternal form of government is not to be recommended, but as all government should be for the best interests of the governed, the governed should be compelled to submit to what is conducive to those interests. The first few, say five or six, years of the person's life, determine his physical being. The under-fed and poorly nourished and imperfectly clad child. is stunted, and seldom or never recovers its growth. This law is recognized by the stock raiser, and the illustrations of it in the human species are of lamentable frequency.

The question of how the thousands and hundreds of thousands of infants of this country now improperly cared for, shall be placed in such a condition and so cared for as will favor their growth into such citizens as it is to the interests of the republic to develop, is one for the statesman rather than for the physician. It is for the latter to indicate the necessity for reform, for the former to devise the means.

THE MILK SUPPLY IN WINTER.

In the summer time, when the milch cows run free in the fields and subsist on green fresh grass, the quality of the milk, as it comes from the cows, except in cases of diseased cows, is usually good, however much it may be fouled by the carlessness of milkers, or adulterated through the dishonesty of dealers. The cows too are then usually milked in the field, and the milk is sent from the field or open yard direct to the consumers, and the risk of spreading specific infection—as of typhoid or scarlet-fever, in case any members of the dairyman's household happen to suffer from such disease, is comparative but little.

In the winter, there is greater danger in the milk supply. The cows are housed, for the most part, in dark, unventilated, foul stables; their food is often not appropriate, and disease is not infrequently soon developed in the cows; while the milk is taken to the dairymen's dwelling, and is there liable to contamination with germs of specific disease, as well as with less serious impurities

Milk forms, usually, a large proportion of the food of young children, who should always be provided with the very best quality of food, and it is of the utmost importance that heads of families look well to the source of their milk supply at this season of the year.

The London, (Eng.) *Medical Times and Gazette*, of Dec. 4, reports that scarlet-fever was prevalent in the Orniskirk district, and that the Rural Sanitary Authority had been applied to by the Medical Officer of health, of Southport, for co-operation in watching over the milk-supply. It stated that over twenty cases of fever had broken out in Southport, and the whole of the persons affected had obtained their milk from a common source. A farm from which milk was sent to Southport had been visited, with the result that the fever was found there.

In *The Sanitarian*, for December, on the subject of Tuberculosis, or consumption, as an infectious disease, we find that the *Lancet* recalls previous contributions to this subject, and in particular to a very interesting and exhaustive paper, so long ago, as October, 1875, from the pen of Mr. Fleming, then Veterinary Surgeon to the Royal Engineers, which appeared in the *British and Foreign Medico-Chirurical Review*. In that paper, evidence as to the infectiousness of tuberculosis and its accidental transmission from diseased to healthy

animals was given, as well as experimental proof of the production of the disease, not only by inoculation but also by feeding with tubercular matter and milk from tuberculous cows. Both in that article and in his work on Sanitary Science, published in 1875, Mr. Fleming has insisted upon the urgent necessity that exists for preventing the consumption of the milk and flesh of diseased cattle. In a paper recently read by him at Norwich, he has adduced further proof of the extreme danger to the public from this source, and these proofs are certainly startling and worthy of notice. We learn that tuberculosis among cattle is greatly on the increase, and especially in the higher bred stock; some authorities going so far as to assert that five per cent. are affected. As dairy cows are never inspected as to their state of health, as they furnish by far the larger proportion of phthisical bovines, there can be no doubt as to the gravity of the question in its relation to human tuberculosis. As the pig, an omnivorous creature like man, and bearing a close analogy to the lord of creation in other respects, is most readily infected by feeding with milk or tubercule, there is every reason to think that mankind, and particularly children, may be as susceptible as the porcine tribe.

It is somewhat strange, continues the *Sanitarian*, that though the note of warning was sounded so frequently and so long ago, it should not have excited attention. It is not too late now to adopt precautions if what is reported be correct. It is high time that the sanitary condition of milk and flesh producing animals was ascertained. At present there is ample scope for free trade in these diseases and death-dealing articles of food. What with private slaughter houses and unvisited dairies, there is no check whatever.

The same authority in the October number, says, "Quite recently, Dr. Paine, of Cardiff, has called attention to a disease of the throat which he claims to have traced to the use of milk from cows affected with certain diseases of the feet or of the mouth. It is not diphtheria, for in no case has the false membrane, peculiar to that disease been observed. It consists of a vesicular eruption seated on the uvula, the tonsils and over the whole surface of the pharynx. It is not, by any means, so fatal as diphtheria. It was found in all these cases that when the milk from the diseased animals was discontinued the disease disappeared. In the diseased animals the quantity of milk was very much diminished, and the relative proportion of solid elements was very much lessened. Chemical tests are not very satisfactory; the microscope is the most reliable.

The same observer also found that, when diarrhœal diseases became epidemic in children, the milk, when carefully examined, was found to contain globules of pus and blood; in these cases, too, the udder of the cow, when examined, was found to be affected. As a further proof, he states that among the Irish residents of the district, who number about 10,000, there were only four deaths from this disease during the year, and this he attributes to the fact that they did not give their children milk. This is the more significant in confirmation of the suggestion thrown out by the article in THE SANITARIAN: "That the milk of cows affected with tuberculosis is likely to induce that disease, *usually commencing as intestinal catarrh*, is not only rendered probable by the experiments cited, showing that it has this effect

when fed to domestic animals, but this evidence receives additional strength from the *prevalence* of *fatal intestinal catarrh, common to infants fed on cows' milk, in most American cities.*"

Consumption is much more likely to develop, or the more strongly in cows in winter, from being housed in unventilated byres, than in summer. And there can hardly be a doubt that the milk from consumptive cows will communicate the disease to children who consume the milk, as we have before shown. As an eminent scientist, Dr. Vallin, editor of Revue, de' Hygiene et de Police Sanitaire, Professor of Hygiene, &c., says, "Is not this conclusion frightful, when we consider the great frequency of phthisis in man—one death from phthisis for every three deaths, under 30 years—and the frequency of abdominal diseases and especially of abdominal phthisis in children who are fed on cows' milk?"

We have here, then, the strongest reasons that can be advanced for a rigid inspection of all milch cows, as well as of the byres, and all cattle for slaughter, with the view of preventing the consumption of meat, as well as of milk from diseased cattle.

POISONING BY ARSENICAL WALL PAPERS.

We do not know whether or not much attention or thought has been given to this subject by physicians in Canada, but it is a highly important subject, Arsenic may be the cause of obscure symptoms with which patients are sometimes affected, and which not unfrequently puzzle the physician in endeavoring to find a correct cause for the symptoms. In Great Britian and the United States many cases of sickness from inhaling arsenic from wall papers have been from time to time reported, and it is not likely that Canada has escaped.

It is known that other colors besides green, such as the more delicate drabs and greys, it appears, contain arsenic.

A lady wrote to the *Sanitary Engineer*, in which paper articles on this subject had appeared, asking for explanations as to the symptoms of the poisoning, etc; the enterprising publishers of that valuable periodical referred the enquiry to Prof. Edward S. Wood, of Harvard Medical School, who sends the following answer: under date *Nov.* 8, 1880.

Your correspondent's query in reference to the effects produced by arsenical wall paper upon persons subjected to its influence has been received. It is, of course, impossible to give any description of this affection which will be applicable to every case, since, as with almost every disease and almost all forms of poisoning, the symptoms of chronic arsenical poisoning differ to a certain extent in different cases. Some individuals are affected much more easily than others; two persons apparently in the same state of health and subjected to percisely the same conditions with reference to exposure to arsenical dust and vapor, such as occupying the same room for about the same length of time, sleeping in the same bed, etc., may be and usually are affected very differently, one feeling its effects very quickly, while the other may not suffer at all, or not for a long time. As a general rule, however, children are more susceptible than adults and females than males.

The time required for the first appearance of the symptoms varies greatly. In some cases sitting in a room papered with an arsenical paper for a single evening has been sufficient to produce marked symptoms, while in other cases several

months have elapsed before any decided effect upon the health has been noticed.

Undoubtedly arsenical wall paper produces its effects upon persons occupying rooms papered with such paper, chiefly by means of minute particles of dust being set free from the paper and coming in contact with the skin and mucous membranes, whence a portion may be inhaled or swallowed. That such particles of dust are detached from the wall paper may be easily shown by drawing a handkerchief across the top of a door or window frame (places which are not frequently dusted) in a room ornamented by an arsenical green paper, when the green dust can readily be seen adhering to the handkerchief. The effects produced by arsenical compounds thus applied are two-fold: local and general. The local action is an inflammation or irritation caused by the contact of the arsenical compound with the skin or mucous membrane; the general action is due to the effect of the arsenic upon the system after it has been absorbed into the blood. The inflammatory action is most noticeable in those parts with which the dust can most easily come in contact, such as the mucous membrane of the eyes, nose and throat. An eruption upon the skin is frequently seen in workmen engaged in the manufacture of wall paper or artificial flowers; this eruption is most liable to occur upon the hands and arms, or upon those portions of the skin which are soft and liable to be kept moist by perspiration, and, therefore, more liable to retain the dust which comes in contact with them.

The symptoms of the local action of the poison are at first usually those of an ordinary cold with or without a cough. The dust comes most easily into contact with the mucous membrane of the eyes, nose and throat, producing an irritation or inflammation of these parts; this inflammation is often the most marked symptom of chronic arsenical poisoning, and differs from the ordinary inflammation due to exposure to cold by its long duration and resistance to ordinary treatment. Sometimes, if the dust is inhaled, a bronchitis is produced and shows itself by the usual cough and expectoration. After a while by the continued irritation of the stomach caused by the small amounts of arsenical dust swallowed with the saliva, more or less indigestion is produced, with, perhaps, diarrhœa from its action upon the intestines, and chronic inflammation of the stomach and intestines has been seen as one of the results of wall paper poisoning.

Later the general effect of the poison is shown chiefly by disturbances of the nervous system, which vary very much in different cases. Most frequently, perhaps, these disturbances take the form of neuralgia in different parts of the body; if this action is severe, cramps and even convulsions may take place. Severe headache, great debility, emaciation and even paralysis have been seen as symptoms of the severe or long-continued action of the arsenical emanations from wall paper.

Finally death may ensue, either from exhaustion or from some intercurrent disease, which the patient is unable to withstand, on account of the low condition of the system produced by the arsenic.

If, while suffering from these symptoms of arsenical poisoning, a change of residence or of room is effected for a time, marked improvement takes place, while previous to such removal numerous remedies and a variety of treatment may have been used without avail; in such cases a return to the former home or apartments will be followed by a recurrence of the symptoms.

The earlier and milder symptoms are so obscure and similar to those which may be due to so many other causes, that an accurate diagnosis is exceedingly difficult. The absence of any definite cause, such as exposure to cold, etc., to account for the head and throat symptoms, the persistence of the symptoms in spite of treatment, the amelioration or disappearance of the symptoms upon removal from, and their recurrence upon return to, a certain room or house are important points to be borne in mind in making a diagnosis. Finally improvement and recovery after the removal of an arsenical paper will render it almost certain, that former symptoms were due to the action of poisonous emanations from the paper.

On this subject Dr. John R. Clarke writes, Nov. 19th, 1880, as follows to the *London E. Medical Times and Gazette*. Will you allow me to call the attention of the profession to the fact that arsenic is now more largely used than ever in the manufacture of wall-papers, and to warn them to bear in mind the presence of the poison as a possible cause of disease, or of complications of diseases? A large number of cases of suffering from this cause have come under my notice of late, and I was at a loss to understand them until I tested the wall-papers and found in them quantities of arsenic, and was unable to make any impression for good on the patients until the wall-papers were removed.

Smarting in the eyes, though a fairly constant symptom, was not always present, and when present was not always a leading symptom. Deep general debility, a continued feverish state, chronic coryza, hæmoptysis, sickness and retching, cramps, spasms, diarrhœa or constipation, I have observed in various cases.

It should be remembered that it is not the green papers alone that contain the poison. It is largely used in the manufacture of other colours. I have found in it yellow, pink, blue, and drab, and no doubt it is to be found in many more.

It is surprising how many houses there are, especially among those of the poor, which have arsenical papers in one or more rooms, and it would be well if every practitioner had one of the simpler tests for arsenic always ready for use. It would, I have no doubt, afford a solution for many a trying case, and save an immense amount of needless suffering.

AMERICAN PUBLIC HEALTH ASSOCIATION.

PROCEEDINGS AT THE EIGHTH ANNUAL MEETING HELD IN NEW ORLEANS, DEC. 8 TO 10, 1880.

The following extracts from papers read at the late meeting of the American Public Health Association at New Orleans, we take briefly from the *Democrat*, kindly forwarded to us by Dr. Baker, Secretary of the Michigan State Board of Health. We are sorry we have not space for some of the papers in full, as they would interest many of our readers. We purpose giving more extracts in a future number; especially from a paper by Dr. Baker, on "Relations of Schools to Diphtheria."

The President, Dr. J. S. Billings, in his address, remarked upon the flourishing condition of the Association, and on the growing interest shown in its meetings and in its work; numbering as it does among its members nearly every practical Sanitarian or person specially interested in public health matters in the country. He said, our constitution declares that "The objects of this Association shall be the advancement of Sanitary Science and

the promotion of organizations and measures for the practical application of public hygiene." Science, sanitary or other, is advanced by the increase, or by the diffusion of knowledge. The work of such associations as this, is mainly the diffusion of the knowledge of the discoveries made by individual investigators, by providing an audience for those who have something to tell us about the causes of disease or the best means of avoiding or destroying them, and by this educational process, on the one hand stimulating research, and on the other securing practical results.

Until quite recently, very little has been done in this country towards increasing our knowledge of the causes of disease by observation and experiment directed to that end. . . . .

The work of educating the people as to the importance of sanitary measures has progressed well during the past year, and has been carried on not only by physicians, but by the pulpit and the press.

The growing interest of the clergy in public health matters is very satisfactory, since it is desirable for the sake of both religion and hygiene, that clergymen of all denominations should be practical sanitarians.

Foul air, food badly cooked, impure water supply and dirty skins are responsible for a vast amount of sin and crime, and ignorance and filth are Siamese twins.

All clergymen recognize the facts in a theoretical sort of way, but many of them do not see that it is their duty to qualify themselves to give to their parishioners practical advice to secure cleanliness as well as godliness.

Nor is the necessity for such advice confined by any means to the occupants of shanties and tenement houses. The health and cheerfulness, and consequently the morality of the families of many of those who pay for the best pews in our most fashionable churches, would be greatly improved if they had purer air to breathe in their houses. A faulty system of house drainage will produce not only actual sickness and death, but lassitude, want of appetite, weariness and fretfulness, dissatisfaction among and with the servants, and a pessimistic state of mind with regard to things in general, upon which the weekly sermon will have very little influence. . . . .

Dr. Elisha Harris, of New York, gave the following gist of a paper he had prepared, entitled,

"A MEDICAL VIEW OF THE DOMESTIC PESTILENCES, WITH REFERENCE TO THE SANITARY WARFARE AGAINST THEM."

During the past many years diphtheria, scarlatina, small-pox, measles and puerperal fever have destroyed from 9,000 to 12,000 lives annually in the State of New York, and probably not less than from 70,000 to 100,000 in the United States. This sacrifice of human life occurs at the ages when it seems most precious and full of hope, and it has been made by these from diseases which are widely transported and spread abroad by their specific contagia. However widely differing from each other, and spontaneous as each of the two first and two last-mentioned may seem to be in their occasional outbreak, each of these five maladies ranks as a domestic pestilence.

It is for the reason that, as regards each of these destroyers, the infection attribute which works the perilous effects that mark their progress is in every case propagated in enormous quantities by the suffering patient, and attaches to or permeates the fabrics and furniture

of the sick-room, and especially all clothing and other textile materials which are upon or in the presence of the sick, that the expressive term domestic pestilence properly applies to them. Even to the last of these diseases, viz., puerperal fever, Dr. Oliver Wendell Holmes applied this title a quarter of a century ago.

Several other diseases have their contagious factors, respectively, and were the general dependence of the prevalence of them so nearly within control of physicans and sanitary officers that the medical and official duties concerning them could control or prevent their spreading a persistent propagation, then, certainly, should they too be in the same category as the four maladies to which we now invite attention. But, while measles, whooping-cough and typhoid fever do certainly spread by means of an infective factor, that infective attribute but furtively attaches itself to the sick-room, and it rarely lingers long in one domicile. Yellow fever and typhus fix their deadly virus in closed apartments and in porous material, each in its own pestilent way; but we have no occasion at present, in the State of New York, to refer to them.

Before discussing any points of sanitary practice concerning each of the four diseases we have selected for a special consideration, there should be clearly determined in every medical and official mind some of the conditions under which both the medical and hygienic doctrines—rational practice will be found to depend. We have to take notice of certain essential and accepted facts in the etiology, and indeed in the pathology of each of these maladies, in order to find and define a general principle of medical and sanitary procedure from the repressions and prevention of the controllable causes of them. Under this head we have:

First, In the natural history or etiology of each of these, as in many other infectious diseases, the admitted fact is that so far as the present state of our knowledge of causation of them is concerned, each of them may and sometimes does appear without any known or even suspected dependence upon any other individuals then or recently sick with the same malady; and yet, that as respects small-pox, no physician or naturalist doubts that the virus of a person sick or dead with small-pox is in every instance the inevitable and only cause of every case of that malady. It is almost as firmly believed by accurate students of disease and of natural history that scarlatina equally depends upon antecedent cases of that disease; but for practical uses of sanitary science it is not necessary to even presume there is such a dependence invariably, while as regards puerperal fever, even the most specifically infectious or fatal, it is a fact beyond dispute that initial cases do occur from inflammatory and septic causes, which, from their aucthonic development into a malignant infection virus, begin and spread the fatal child-bed fever. Dr. Burdon Sanderson's experiments show that the development and intensity of the infective attribute may in particular lines of perpetual animal virus be regarded as a concomitant, if not a result of intensity, and products of intense and destructive inflammations. Mr. John Simon's words on this point are emphatic. He says: Dr. Sanderson has found that inflammations, in order to be most formidably infective, need not have been first started by contagion from any pre-existing case of like sort, nor in any immediate innoculation with foreign putrid matter, but might, it seemed,

be highly infective merely in accompaniment of being highly intense. . . . And Dr. S. has now succeeded in clearly showing that it is a quality which may be artificially cultivated, and that, starting from purely chemical lesions, it may be developed in higher and higher degrees by successive innoculations until there presently results one of the most tremendous morbid poisons which the mind of the pathologist can conceive.

We have to admit that morbid poisons may be cultivated up to a terrible degree of infectiveness, and that particular tissues, and more especially the blood itself, may offer opportunity or field for specific manifestations of fatal diseases, as in the puerperal fever, etc. It is not improbable that in diphtheria and scarlatina, of the malignant degrees, there may be a superadded virulence because of the special infectiveness incident to the malignancy of cases from which the spreading of the malady begins.

But whence the initial cases of diphtheria and scarlatina come, and how and where the specific contagium was sequestered and set afloat so as to give the apparently new point of departure for the specific disease, who shall reveal? For the present we have to accept the fact of these initial cases as a first truth, while few of us doubt that every such initial case actually depends upon some previous case. But sanitary duties begin with the initial cases, and they must never be relaxed until all propagation from such cases terminates.

Second—The commencement or outbreak of single or initial cases of any one of the domestic pestilences (just as in the occurrence of initial cases of any local or pandemic infectious disease) must be regarded as the time and the place for instituting systematic sanitary and medical duty for suppressing the extension and activity of the portable infection attributes of the malady, and of removing or neutralizing all contributing causes of infection. For the question is, how to remove combustibles and distinguish the fire at once, and not how, possibly, did the fire originate. The infective factor is not to be disregarded, simply because, like the wafted thistledown, the very winds may bear unwelcome germs. All germinal sources of disease that chemistry and cleansing can attack must be controlled or destroyed.

Third—The evidence is significantly cumulative and abundant that the degrees of malignancy and the tendency to rapid, virulent and epidemic spread of each of the domestic pestilences depend in some great measure upon accumulated or active infectious elements, whether germinal or otherwise virulent, together with other factors of causation which admit of human control; while whatever be the agencies, telluric or other, which do not admit of such control and yet facilitate the propagation of these diseases, they can be neutralized as regards any power to propagate any disease alleged of them. After much research and ample experience this is the conclusion of the ablest hygienists and naturalists. Whoever holds the old fatalist views, or becomes a pessimist in etiology or hygiene, will do no masterly service for the public health.

Fourth—All experience and all that science can explain and apply in practice, fully support the opinion that the infectious factor of each of the domestic pestilences is greatly aided and intensified in its action by local, personal and atmospheric conditions which are recognizable and controllable.

Fifth—That the sanitary control of these maladies necessarily com-

prises the suitable treatment of these tributary causes, and that no prevention and protection measures are adequate which do not control the factors of causation.

Sixth—The prophylactic individual sanitation may largely enter among the general means of protection of the public health; and, as regards small-pox, the protection effect of vaccination is the supreme example of such individual sanitation. In the near presence of scarlatina, diphtheria, and puerperal fever, the individual sanitation is not in vain.

ON THE "MANAGEMENT OF CONTAGIOUS AND INFECTIOUS DISEASES IN MILWAUKEE,"

By O. W. Wright, A.M., M.D. of Milwaukee, Wis.: He said, In response to an invitation by the president I have undertaken to explain, in the briefest way, my method of managing contagious and infectious diseases in the city of Milwaukee.

The city charter empowers the commissioner of health "to forbid and prevent all communication with any house or family infected with any contagious or pestilential disease, except by means of physicians and nurses."

The charter also requires "each and every practising physician in the city of Milwaukee to report in writing to the commissioner of health every patient he shall have laboring under any pestilential contagious or infectious disease within twenty-four hours after he shall ascertain or suspect the nature of such disease."

The charter also enables the commissioner to prescribe the form of such reports and to issue general orders in regard to various matters pertaining to the public health.

A city ordinance provided that "It shall be the duty of the commissioner of health to cause a notice, printed or written in large letters, to be placed upon all the outside doors of any house in the city of Milwaukee, in whhich any person may be affected or sick with small-pox, scarlet fever or diphtheria upon which shall be written or printed the name of such disease; and such notice shall remain upon such house until the case shall cease to exist and such house shall have been thoroughly disinfected; and if any person or persons shall deface, alter, mutilate, destroy or tear down such notice, without permission of the commissioner of health, such person or persons shall be liable for each offence to pay a fine of not less than twenty-five nor more than fifty dollars; and the occupant of any house upon which such notice shall be placed or posted as aforesaid shall be held responsible for the removal of the same, and if the same shall be removed without the permission of the commissioner of health, such occupant shall be subject to the like fine of not less than $25 nor more than $50, unless he shall notify the commissioner of health within twenty-four hours after the removal of the said notice."

The ordinance further provides that "when from current rumors or from any other reason a suspicion exists" that such diseases prevail in any family or household "it shall be the duty of the commissioner of health to ascertain personally whether such is the case," and to enforce the law.

At the beginning of my administration, in the spring of 1878, I issued a circular to all the practitioners in the city, notifying them that the law requiring them to report cases of contagious and infectious diseases within twenty-four hours would be strictly enforced. Half a dozen prompt prosecutions convinced the profession that the health department was in earnest.

One quack, unable to give bail, lay in jail till the day of his trial. One haughty and fashionable "doctor" was driven on the witness stand, under cross-examination, to swear that he had no diploma and that he was a mere pretender.

Physicians in the city are gratuitously furnished with postal-cards, on the backs of which is a blank to be filled, showing the name of the patient in full, sex, nationality of parents, patient's birthplace, number and street, ward, age, married or single, disease and date. It requires but a brief time to fill out this blank at the bedside. The postal-card can then be dropped into the first letter-box which the physician passes after leaving the house, and it is sure to reach the health officer within a few hours.

At the time of placarding the house the assistant medical officer makes a sanitary inspection of the premises and reports in writing.

As often as reports of contagious cases come in from the city practitioners, notice thereof is immediately sent by means of postal-card blanks to the public and private schools in that neighborhood, the teachers of which are under orders not to admit pupils from infected houses under penalty of prompt prosecution in the Criminal Court. The same notice is also sent to the public library.

When a case of contagious disease recovers, the attending physician usually sends notice to the health office, although he is not obliged by law to do so. If he neglects to perform this service the family is sure to give him a sinister blessing, for the placard then remains on the door for a month, when it is looked after by the health department. Some of the doctors, to please their patrons, have reported recovery suspiciously early; in which case a visitation will be made by the health commissioner, or one of his medical assistants, and, if suspicion is verified, a severe rebuke be administered to the practitioner who dares to trifle with the public safety. Burke, who murdered his fellow-creatures in order to sell their bodies for dissection, was a Christian and a gentleman in comparison with the medical fiend who connives at the spread of contagious disease in order to increase his practice.

When a case of infectious disease terminates, by recovery or death, a trained person is sent from the health office to disinfect the house and take down the placard. Disinfecting is done by the approved process of burning sulphur in the rooms, closed as tightly as possible. A reliable and careful man is employed for that special purpose.

Public funerals are strictly prohibited in cases of death by contagious diseases. All the undertakers and clergymen in the city are under stringent orders to this end. Two or three threats of arrest were sufficient to enforce the orders.. Funerals, in such cases, are now quietly conducted at the homes of the deceased, and no young person is allowed to act as pall-bearer. The transition is very great in a city where, four years ago, small-pox funerals were held in churches. The enlightened majority of the clergy are entitled to credit for efficient aid in this part of the sanitary work.

Railroad officials, expressmen, public carriers, and all other persons are forbidden to bring to Milwaukee any person laboring under an infectious disease, or the remains of any person having died of such disease.

The circulars left with families by the assistant medical officers, at the time of placarding their houses, give pretty full directions for the hygienic management of the different infectious diseases. These cir-

culars have been compiled from the best sources. In this way useful information concerning infectious diseases is diffused among the people. A family afflicted with a contagious malady is generally in a mood to receive such information and profit by it.

In dealing with small-pox, vaccination of all exposed persons is added to the procedure already described. In fact, there has not been a case of small-pox in Milwaukee since two years ago last July. When I took charge of the health office of the city, in the spring of 1878, I found small-pox in half a dozen different localities. It seemed determined to linger, till I made use of the extraordinary power conferred on the department by the Legislature of the State in the municipal charter, "to forbid and prevent all communication with any house or family infected with any contagious or pestilential diseases, except by means of physicians and nurses." By such a rigid system of domiciliary quarantine the foul disease was "stamped out," and has not returned.

The advantages of the system may be briefly stated—

1. It enables the health department, and the public through the health department, to know every day in the year the exact number of cases of infectious diseases in the city and their precise location. Rumor and sensational exaggeration in regard to the prevalence of contagious maladies, which are liable to alarm the people needlessly and to interfere with the pursuits of life, can then be corrected by facts. And the truth of a violent epidemic cannot be suppressed in the interest of commerce to the criminal endangering of the outside world.

2. The exact percentage of mortality is constantly known, revealing the severity or mildness of an epidemic.

3. The system affords especial means of studying the conditions under which contagious diseases flourish, or to what extent they are influenced by sanitary surroundings.

4. It diminishes the spread of contagious diseases by protecting large congregations of children in schools from the presence of those bearing infection in their persons or clothes; by preventing exposure of the living at public funerals; by revealing to all who can see and read the places where such diseases may be caught, and by destroying the lingering germs of contagion in sick rooms by means of thorough disinfection. My experience convinces me that a community will give a wide berth to small-pox, scarlet fever or diphtheria if you will only let them know where it is. I have frequently seen quite small children cross over to the other side of the street when approaching a house on the door of which was placed a placard revealing the existence of contagious disease within. It is wicked to conceal from God's little ones the fountains of infectious suffering and death.

The difficulties of carrying out the system are considerable, but not insuperable.

1. While the majority of educated physicians are ready to co-operate with the health authority in carrying out any reasonable system of protecting the public from contagious diseases, the negligence of many and the perversity of a few must be overcome by the unflinching execution of law. To the credit of the profession in Milwaukee it must be said that no one has raised the question of fees for reporting contagious diseases to the health office. An unseemly discussion of that question is now going on in Great Britain. The medical

practitioner depends upon the patronage of the public, and should be willing to do for the public at large a service that costs very little time and trouble and is attended with no expense. It is a fortunate feature of the law that it requires the attending physician to report a contagious disease as soon as it is suspected. For that reason the public receives the benefit of a doubt. The necessity of reporting to the health office all deaths, with the causes, in order to get a permit to bury, puts the doctor on his good behaviour. A few attempts to return croup for diphtheria, spotted fever for scarlatina, &c., have been met with an order for a coroner's inquest. Inability to make a diagnosis has sometimes been urged as an excuse by delinquent quacks, but one or two criminal trials soon revealed to them that the responsibilities of assumed knowledge cannot be avoided by a plea of ignorance. In some instances doctors have prematurely reported recovery. The law of duration in contagious diseases is too well known to allow such heedlessness to escape notice and rebuke. It is sometimes disagreeable to supplement the mental and moral defects of a portion of the profession by the terror of criminal law, but faithful sanitary administration requires it.

2. At first the people objected to having their houses placarded, as a violation of personal liberty. A little argument convinced reasonable citizens that no man has the natural or acquired right to expose his neighbors to deadly contagious disease by concealing it in his own house. Personal liberty to give small-pox to somebody else had better be abridged as soon as possible. Personal liberty to send scarlet fever into a school with your child is rather diabolical than beneficent. Personal liberty to infect a church with a diphtheria corpse is tempting Providence to start an epidemic. But many were beyond the reach of argument. A fortunate accident of legislation solved the problem. The alternative was placed before them of quietly submitting to the placarding process, as provided by city ordinance, or of being subjected to absolute quarantine in their houses, as provided in the charter. A law-abiding community submitted, and today the system of placarding, if it were left to an election, would receive an overwhelming majority of votes in its favor. Experience proves its value in many ways to the citizen. He knows and feels that, by reason of it, his family is more secure against diseases that cost money, anxiety and sorrow.

ESSAY ON THE ADULTERATION OF FOOD AND DRINK.

In the December number of this JOURNAL we gave extracts from the report of the Committee of Award in connection with the prizes offered by the U. S. National Board of Trade for the best Act, accompanied by an essay, for regulating the sale of food and drugs. Below we give one of the essays sent in; the author of which is O. H. Wright, M.D., Health Officer, Milwaukee, Wisconsin. From Supplement to the *Sanitary Engineer* for Dec., 1880.

"Truth, like a torch, the more it's shook it shines." In discussing adulteration of food and drink, the best way is to tell the truth about the subject, or so much of the truth as one happens to know. Any exaggeration of statement, with the mistaken view of arousing public attention to an increasing evil, only alarms the innocent, while it produces no effect upon the guilty. An attempt to allay public fear, by making light of a real danger, only increases the apathy of the many,

while giving prolonged security to the avari of a few.

USUAL ADULTERATIONS OF FOOD AND DRINK.

DANGEROUS ADULTERATIONS.—Lead in canned vegetables and meat; corrosive sublimate in the rind of cheese (used to destroy "skippers"); poisonous colors (such as arsenite of copper and chromate of lead) in candy and confectionery; caustic lime in lard; analine colors in fruit jellies, preserves, sauages; and wine; salts of tin in sugar; *cocculus indicus* and tobacco in beer and ale; salts of copper in pickles; and sulphuric acid in vinegar, are adulterations of food and drink found in this country, which are even dangerous to life. Their use should be prohibited under severe penalties.

DELETERIOUS ADULTERATIONS.—All of the adulterations mentioned above, even when in too small quantities to be dangerous, are also deleterious or injurious to health. Alum in bread and in baking powder; copper in butter; artificial essences in candy and confectionery; oxide of iron in cocoa and chocolate; alum in flour; red lead in cayenne pepper; spirits of turpentine in gin; chromate of lead in mustard; water in milk (by depriving infants of nutrition); crude brandy and "platrage" in wine; red ferruginous earths in annatto; red lead in currie powder; sulphuric acid in glucose syrups; lead in cider; Prussian blue, black lead, and salts of copper in tea; sulphuric acid, alum, aloes, and picric acid in beer; and some other deleterious adulterations of the food and drink of man, are met with in this country more or less frequently. It is an impossibility to measure the amount of injury thereby caused to the public health. Doubtless some of them turn the scales of life and death against delicate infants and invalids, which fact might be a sufficient reason for transferring them to the list of dangerous.

FRAUDULENT ADULTERATIONS.—The object of dangerous and deleterious adulterations is gain, and they may therefore be reckoned also among the fraudulent. Sago, tapioca, potato and other fecula in arrowroot; soap, sulphate of lime, and all sorts of starch in annato; mustard husks in allspice; water, burnt sugar, etc., in brandy; potatoes, inferior flour, etc., in bread; lard, tallow, water, starch and oleomargarine in butter; vermilion, venetian red, ground rice, and turmeric in cayenne; excess of water in canned vegetables and meat; annatto, other coloring matters, oleomargarine, and "vacuity of cream," in cheese; glucose in candy and confectionery; corn starch, sago, tapioca, animal matter, and cheaper kinds of arrowroot in cocoa and chocolate; chicory, burnt sugar, and roasted peas in coffee; ground rice in currie powder; salt and sugar in gelatine; turmeric, cayenne and mustard in ground ginger; flour, glucose and cane sugar in honey; gelatine in isinglass; starch, stearine, salt, and potato in lard; flour, turmeric, cayenne, and yellow lakes in mustard; turnip in horse-raddish; apples, pumpkins and molasses in preserves; linseed meal, different flours, ship bread, and mustard husks in pepper; potato starch in sago; water, cayenne, burnt sugar, etc., in rum; rice flour, sand, and glucose in sugar; molasses, cochineal, armenian bole and other coloring matters in various sauces; flour and starch in spices; sand, magnetic oxide of iron, spent leaves and foreign leaves in tea; arrowroot and clove stalks in cloves; ship bread in pimento; spent bark in cinnamon; water and burnt sugar in vinegar; molasses, water and salt in porter and stout; glycerine in beer; and

things innumerable in liquors and wines, are adulterations that touch the economy of every household, if they do not bring a visitation of the doctor, and involve the services of an undertaker.

THE EFFECT OF THESE ADULTERATIONS ON HEALTH AND ON TRADE.

ON HEALTH.—From dangerous adulterations, a few die. Deleterious adulterations cause or intensify the ill-health of many. It is not necessary to translate into popular language long chapters from the National Pharmacopœia, from a treatise on materia medica and therapeutics, from a standard work on toxicology, or from an authoritative system of medicine, in a vain attempt to estimate, even approximately, the number of deaths and the amount of sickness caused by adulterations of food and drink. The articles used in adulteration are known, and the effects of such articles when taken into the human body are known. Other essential factors, as quantity employed, percentage of admixture, chemical modifications by culinary processes, habits of individuals, etc., are unknown, and conclusive generalizations become impossible. Speculation in the midst of such chaos tends, on the one hand, to sensational exaggeration, and, on the other hand, to belittle a real public danger. Here, as elsewhere, the true scientist awaits facts and avoids alike the creation of a public panic or the infusion of a false sense of public security.

ON TRADE.—It is not necessary that mankind should eat and drink things dangerous to life and injurious to health that trade may flourish. In fact, trade flourishes best under a policy of honesty. Tradesmen and the community are mutually responsible for the evils of adulteration. The people greedily ask for cheap and attractive goods. The supply adapts itself with measureless cunning to the demand. One more unscrupulous than the rest attracts customers by colors that do not reveal to ignorance the poison lurking within. Others must follow his example or retire from the field. A daring dealer imitates the flavor of a genuine article by a cheaper mixture, and his neighbors must follow suit although they may know that they are scattering the seeds of sickness among the unconscious. The greater part of mankind find the struggle to obtain the necessities of life so hard that any apparent opportunity to economize is eagerly seized. Purveyors of food and drink compete with each other, not only by reduction of profit, but by cheapening quality. He who reduces quality most in reality and least in appearance can win in the great battle of the "survival of the fittest." Human ingenuity is taxed to the utmost; the whole earth is explored to obtain and put to use the means of success. Men have come to look upon fraudulent adulteration as commendable enterprise. Injurious adulteration is winked at by most. Necessity of trade is pleaded as an excuse for dangerous adulteration, even when its prevalence is deplored. The mutual concealments and deceptions of producers and consumers tend to educate the public in dishonest ways. The heart of man is hardened towards his neighbor whom he cheats, and the conscience is deadened when gain is secured at the expense of another's health or life. As the world's commerce would not be diminished by cessation of adulteration, it is very evident that the net residue of the practice is to corrupt and deprave trade, without increasing its profits. Much the greater portion of the manufacturers and merchants of food and drink would

prefer to make and handle genuine goods, if they were not driven to an opposite course by the unscrupulousness of a few. When people learn that a dollar's worth of a pure article is more valuable than three-fourths of the same quantity would be when mixed with ever so much useless, injurious or dangerous foreign material, when dishonest producers are restrained by the strong hand of well administered and just law, then we may expect to see trade become the minister of something better than material civilization. Reputation for integrity is even now of equal value with capital in trade. And the nation that first establishes a character for honest goods will reap a rich harvest of profit in the world's commerce.

BEST MEANS OF DETECTING AND PREVENTING ADULTERATIONS.

DETECTING.—Several means of detecting adulterations should be combined. (1.) The people must be wisely instructed as to the existence, nature, and extent of the adulterations of their daily food and drink. The wise way of instructing the people is to tell them the exact truth, the whole truth, and nothing but the truth. The press of this country is ever ready to publish interesting facts without price. There are intelligent individuals in every community who have facts to give to local newspapers and periodicals for the public. The exaggerations of sciolists and charlatan reformers, and of constitutional alarmists, are to be avoided if possible; also, the denials of interested parties, and the venal pleadings of the paid advocates of corrupt commerce. With the great mass of the people as a disinterested jury, these two forces will finally neutralize each other in the interest of truth. Valuable treatises on the subject of adulteration of food and drink have already been written, and are in the hands of a large number of earnest co-workers. Popular books, by well-informed and sober-minded teachers of the people, written so as to attract as well as to instruct the masses, are greatly needed. (2.) The medical profession, already aroused to the importance of preventative medicine, are beginning to impart needed information on this subject to the people in a multitude of homes. Their teaching is daily becoming wiser, being grounded in more ample knowledge. The profession, whose words are authoritative in so many households, will in time break the bread of sanitary life to such a number as will constitute an all-powerful public opinion. (3.) National, State, and municipal boards of health are not only giving sober information on this subject to the people, but are training communities to co-operate in the administration of sanitary law. The work of such boards is full of promise for the future. (4.) Detection of adulteration in special cases must depend upon skilled chemists and trained microscopists. Of course it is not necessary to repeat here processes and methods found in every text-book. Spectrum analysis will also in time play an important part. (5.) Government has already done something incidentally for the detection of adulteration, by providing for the organization of boards of health, and by appropriations for special investigations. Sustained by enlightened public opinion, it will do more in the future. (6.) The tide, once turned, trade itself will turn detective, and contribute its experience in exposing adulterations that have brought reproach upon it, and stand in the way of its higher progress.

PREVENTING.—The preceding paragraph indicates the means of preventing, as well as detecting, adul-

terations. ENLIGHTENMENT OF THE PEOPLE on the subject is likely to increase the demand for pure articles of food and drink. Increased supply is sure to follow. Healthy public opinion thus formed will also sustain comprehensive measures of legislation. In time, the adulteration of the "daily bread" of man will become infamous, and the practice will cease, except as an occasional crime, against the organic community, called the State, to be punished by law. Hand in hand with the healthy growth of public opinion, government must do its part by the enactment and execution of appropriate statutes.

BIBLE HYGIENE.

PUT AWAY THE EXCRETA.

"Thou shalt have a place also without the camp, whither thou shalt go forth abroad: and thou shalt have a paddle upon thy weapon; and it shall be, when thou wilt ease thyself abroad, thou shalt dig therewith, and shalt turn back and cover that which cometh from thee: For the Lord thy God walketh in the midst of thy camp, to deliver thee, and to give up thine enemies before thee; therefore shall thy camp be holy; that he see no unclean thing in thee, and turn away from thee"—12, 13 and 14th verses of the 23rd chapter of Deuteronomy.

In this present enlightened Bible age, when millions of copies of this book are distributed amongst the people, and it is recognized as the guide book in the life of millions, is it not somewhat strange that the above three verses are so rarely brought into practical life? Were practical sermons preached from the pulpit from those verses as a text, much good might follow.

That most eminent sanitarian, Dr. Parkes, writes in his valuable work on hygiene, "it is highly probable that to the barbarous and inefficient modes of removing the excreta of man and animals we must partly trace the great prevalence of disease in the middle ages, and there is no doubt that many of the diseases now prevailing in our large towns are due to the same cause."

Instead of having the excreta destroyed and rendered innoxious by being mingled with the earth, as the Israelites were directed to do, it is now allowed to accumulate in vaults of one sort or another near our own doors and wells, or other water supply (in Toronto in the bay for example), or it is sent away by the nearest water route to be deposited in the proximity of a neighbor's dwelling place. "Barbarous," indeed. So the products of its decomposition, instead of being absorbed by and mingled with the earth, are taken into our bodies with the air breathed or water consumed and act as a most dangerous poison in the blood. When sickness and death come through filth diseases, say not that it is a "dispensation" or "visitation of providence."

Careful study of the Bible would discover rules of Hygiene, commonly entirely disregarded, which, if followed, would prevent sickness and prolong life.

VARIETY IN FOODS.

Most persons are ready to admit that there is an almost universal practice, in most or all civilized countries, of over-eating; ready to admit that nearly everyone eats more than is healthful. There are two things which contribute to this over-eating:—they are, fast eating and variety in foods. The first hardly needs a word here; everybody knows fast eating is injurious to digestion and to health; it is not

everybody though by far, who benefits by the knowledge. Many people, however, have mistaken views about variety in foods, thinking variety is nece ssary to keep off starvation.

Millions of people live their whole life though, in good health and vigor, with only two or three articles of food, "all told," as perhaps rice and milk alone. We in America and in Europe, for the most part, must have three or four at least, or perhaps a dozen or more sorts of food at one meal, and hardly any two meals just alike during a whole year.

There cannot be a doubt but that too great variety of food, especially in the case of children, is a common and a frequent cause of sickness. Children and many adults after eating a fair meal off one dish, and who would be thus satisfied were there not other courses brought on, will commence and eat sometimes what would amount to almost another meal, because a false appetite is created by the flavor of new dishes; over eating is the result, and if this is persevered in, sickness is sure to follow.

Children especially should be taught to eat at each meal only two or three sorts of food; as milk and bread, or meat and some sort of vegetable, as potatoes. The more adults who do this too, the better they will be.

SKATING.

We are often asked if skating is a health-giving exercise. Almost any exercise which takes people out of doors promotes health. Skating in enclosed rinks, though these may be large and airy, is not equal to skating in the open air. Skating in the rinks even, however, is better than remaining in doors.

One important point in skating demands the special notice of medical men. Young ladies who wish to appear graceful—and which of them do not? are in the habit of skating often with the hands in a muff in from of the body: in this position they only get about half the benefit of the exercise. The upper extremities receive no benefit while the chest is liable to be somewhat compressed, and the lungs are not expanded to their fullest capacity, though it is most desirable they should be.

Cannot young ladies devise some graceful method of swinging the arms freely, and thus get the full benefit of the exercise. Leaders of style have in this no small degree of responsibility which it may be worth while for them to consider.

When all the extremities and the entire body are given full play, we believe no better exercise can be devised than that of skating. But it will be well to look somewhat to the place; skate out of doors when possible, or see that the rink is well ventilated.

VITAL STATISTICS.

Vital statistics furnish most unerring lessons as to the health, prosperity and morals o the people; they teach the influence of marriage on illegitimacy and morality, the vital force of the children, the duration of life with its expectation and value for all ages and races, the influence of meteorology, occupation and locality in generating disease and improving health, and thereby the removal of unfavorable conditions often found where least suspected, and the approach of morbific storms, by ignorance of which negligent cities and even nations have been destroyed. The only foundation of life insurance, vital statistics serve alike to guide the resident and the immigrant, the capitalist and the laborer,

the politician and the statesman, the moralist and the scientist. Ignored or disparaged too often, they have been advocated and supported by Napoleon and Thiers, by Bismarck and Cavour, by Gladstone and Disraeli, and their establishment has become a test of the degree of civilization reached by a people and their rulers—Chahille.

THE PUBLIC HEALTH.

In the table below we give the total number of deaths, and the numbers from diarrhœa and cholera infantum, in those cities and towns from which we were enabled to obtain returns, for the third quarter —(July, August and September,) of 1880.

NAMES OF PLACES.	Total number of deaths in 3rd quarter.	From Diarrhœa	From Cholera Infantum.
Toronto	382	46	47
London	47	4	7
Kingston	42	1	2
Brockville	53	6	8
Cobourg	12		1
St. Thomas	16	2	4
Chatham	51	2	
Barrie	21	1	3
Montreal	1059	174	103

Whooping cough appears to have been prevalent in many places. In Kingston there were 6 deaths from it; and in London, Cobourg and Chatham, one in each place. But few cases of dysentery or typhoid fever were reported. Barrie reports 3 deaths from diphtheria, and Montreal 17.

ON TEA DRINKING.

In reference to the extract on tea, from the London *Medical Times and Gazette*, in our December issue, a correspondent, who had previously consulted the editor of this JOURNAL in reference to somewhat obscure symptoms which had troubled him, and who had suffered from indigestion, sends us the following:

"I have abstained from tea and coffee for the last five months with such good results that I intend to continue it. My liking or craving for tea has entirely disappeared, I sleep better at nights, my nervous system is much quieter, and there is an improvement in digestion. This last result, however, may be due to other causes, because I have endeavored to be moderate in eating, without adopting any special regimen. As one must have hot drinks this cold weather, I use cocoa and kaoka—chiefly kaoka. I don't use alcohol in any shape. I am in a good deal better spirits now-a-days. The tea abstinence may be credited with a little of this, but not with the whole of it. I used to be fond of tea and drink a good deal, though I could hardly be called an excessive tea drinker."

"EPIZOOTY" IN MAN.

Geo. Wilson, a resident of Virgil, near St. Catharines, had a horse sick from "epizooty." Some of the matter from the horse's nose was rubbed into a scratch on Wilson's hand. His system became infected, his body swelled, and finally a large abscess formed on his side, discharging quantities of putrescent matter. Within a few days he had apparently recovered, but had a relapse, and his final recovery was doubtful. Later we learn that Wilson was poisoned about the tenth of November, and now 28th December, is better and able to walk about. Glanders was suspected, and we purpose making further enquiries of the physician in attendance in reference to the case.

THE LIQUEFACTION OF OZONE it appears has been accomplished by two French chemists. Ozonized oxygen is submitted to heavy pressure, when it assumes a blue color, which gradually becomes deeper and deeper; it liquifies under a pressure of 95 atmospheres; while pure oxygen requires a pressure of 300 atmospheres.

Book Notices.

TREATISE ON THERAPEUTICS. By A. Trousseau and H. Pidoux. Translated by D. F. Lincoln, M.D. Ninth edition, Vol. III.

DISEASES OF THE PHARYNX, LARYNX, AND TRACHEA. By Morell Mackenzie, M.D., London. Senior physician to the hospital for diseases of the throat and chest, Lecturer on diseases of the throat, &c. &c.

DIAGNOSIS AND TREATMENT OF EAR-DISEASES. By Albert H. Buck, M.D. Aural Surgeon to the New York Eye and Ear Infirmary, Instructor in Otology in the Col. of Phys. and Surg. N.Y.

The above are three more volumes of Wood's admirable series of Standard Medical Authors; referred to on previous occasions, and for which the profession should feel under a debt of gratitude, on account of the extreme low price—the truly wonderful cheapness, of the volumes: twelve handsome volumes for $15, or $1.25 per vol.; the last two named containing over 400 pages each. New York: Wm. Wood & Co.: Toronto: Willing & Williamson.

The third vol. of Trousseau's Therapeutics (the two first vols. we have already noticed) discusses anarsthetics, anti-spasmodics, neurosthenic tonics, excitants, sedatives, contra-stimulants, and anthelmintics, and constitutes the work one of the most complete and comprehensive yet published; and all for $3.75. We purpose referring in a future number to the author's treatment of coffee.

The author of diseases of the pharynx, larynx &c., is well and favorably known. In this volume he appears to have presented his readers with a very complete statement of the most reliable information which it has been possible to obtain regarding the subjects upon which it treats. Croup, he believes, is only a form of diphtheria, and to this subject he gives a large share of attention.

Dr. Buck in the preface to his work on Ear Diseases says it has been his "aim to present, in text-book form, a picture of diseases of the ear as they have appeared to him in private and hospital practice." Many interesting and instructive cases in practice are given. Altogether it forms an excellent treatise on ear diseases.

A TREATISE ON DIPHTHERIA. By A. Jacobi, Clinical professor, diseases of Children, Col. of Phys. and Surg. N.Y., Physician to Bellevue, Mount Sinai, and the German Hospitals: New York: Wm. Wood & Co.; Toronto: Willing & Williamson.

"Multum in Parvo" might properly be the motto of this neat little work, of about 250 pages; 8vo. In it the author has placed before the profession in a compact and readable form all that is of practical value as regards this very important disease. The author writes from much practical experience, which adds much to the value of the work. In reference to the Etiology of the disease, we purpose giving brief extracts on a future occasion.

MEDICAL RECORD VISITING LIST AND PHYSICIAN'S DIARY, for 1881. New York: Wm. Wood & Co.; Toronto: Willing & Williamson.

This list gives evidence that it has been designed with much care, and its beauty, conciseness and compactness should commend it to every physician. It appears to have in it all that, and nothing more than, is necessary in a pocket memoranda of a doctor's visits. It is an elegent and complete little list.

REPORT ON GLANDERS IN MAN AND in Domestic Animals. By Henry B. Baker, Secretary of the Michigan State Board of Health. Lansing, Mich: W. S. George & Co.

This is a valuable report, a pamphlet of about 30 large pages, a reprint from the seventh annual report of the Michigan State Board of Health.

REPORT ON OBSTETRICS AND ON GYNÆCOLOGY by Wm. Gardner, M.D., Prof. Medical Jurisprudence and Hygiene, McGill University, Montreal, &c. &c,

This was read at the late meeting of the Canada Medical Association and created a good deal of discussion.

Correspondence.

WINTER VENTILATION.

To the Editor of the Canada Health Journal.

SIR,—In your article headed "Winter Ventilation," in the December number of the CANADA HEALTH JOURNAL, you refer to the desirability of having a special inlet to supply fresh air in the place of the air taken away by the suction of fire-places, &c. The difficulty that has been usually felt about inlets for cold air, is their liability to cause unpleasant and hurtful "draughts." If in cold weather one lets down a window for a few inches at the top, the incoming current of cold air is sure to direct its course downwards, and to make itself unpleasantly felt on the heads and persons of the occupants of the room. The same remark holds good of every *horizontal* inlet; the weight of the incoming horizontal current of air brings it slantingly downwards in the shape of a draught.

Permit me to call the attention of your readers to a complete remedy for this difficulty, invented some years ago by Mr. Tobin, of Leeds, Yorkshire, England; and in mentioning it, I may say that I know nothing whatever of the inventor, and have no interest whatever in his invention. I first saw it referred to in a newspaper paragraph, and I have since tried it in my own house, with the most satisfactory results. It has been tried with success in some of the public schools and offices in this city. This plan is to bring in fresh cold air through small vertical tubes placed in the corners of the room, extending upwards about four feet from the floor, and having at the lower end an elbow, which communicates with the external air. The fresh air enters the outer end of the tube, passes round the elbow, and enters the room in a vertical current at a point about four feet from the floor; the current then passes undeflected upwards, until it reaches the ceiling, where it breaks, is deflected along the ceiling, and finds its way gradually and imperceptibly downwards. This plan is a perfect cure for draught, as far as it is itself concerned; and it has the additional merit of preventing or lessening the little knife-edged draughts that find their way through cracks and crannies of windows and doors, because air will always enter the easiest way. It is desirable to have the outside ends of the tubes protected by a covering from the direct action of the wind, otherwise too powerful a current may enter the room, when a strong, cold breeze is blowing outside. The tubes may be constructed of ordinary three-inch tin rain-water pipe; they can be painted or papered to match the walls, and are then scarcely observable, especially if the base-board is brought round outside of them. They are usually fitted with a tin disk inside, turned with a small handle from the outside, to shut off the current if desired; but the handle is very apt to get loose in the disk after a short time, and not to move it. I use the simple expedient of placing a small book on the top of the tube on the rare occasions when I need to close it. Three inches diameter and four inches for a large room is about the right diameter for the tubes. I notice that some architects in this city have carried the tubes up eight or nine feet from the flour, or to within two or three feet from the ceiling. I don't think this is advisable, because there is a danger of the incoming air striking the ceiling with such force as to be deflected in the shape of a draught.

An excellent system of ventilation for an ordinary-sized dwelling-room is an open grate or stove combined with two of these Tobin tubes—one in each corner opposite the fire. As the foul air is withdrawn from the room by the fire-place or stove below, its place is taken by the fresh air which descends gently and imperceptibly from above, heated by and partly mixed with the air of the room. Would not this plan remove, in regard to dwelling-rooms, the objection to outlets for foul air near the floor that you mention under the heading "Ventilation and Carbonic Acid" in the same number of the HEALTH JOURNAL? The constant downward current from the ceiling of the fresh air would surely counteract any tendency the carbonic acid gas

may have to accumulate at the upper part of the room. An important practical advantage of the plan is that the most expensive half of it, the open grate or stove, is already to be found in thousands of homes; and the inexpensive adjunct of the tubes is all that is needed to make the ventilation of the room almost perfect.

In large public halls it is of course desirable to have outlets both at the top and the bottom of the room, because the highly-heated products of combustion from the numerous gas-jets will ascend, and must therefore be taken away at the ceiling. But in the case of smaller rooms, I very much doubt if the preponderance of carbonic acid in the upper part of the room is so great as to warrant the very costly method of withdrawing continually the warmest air in the room, which is of course always at the ceiling. If the electric light comes into general use, it will considerably strengthen the argument of those who like to keep their feet warm and spare their purses by the economical method of putting their foul-air outlet where the coldest stratum of air is, at the floor level. Authorities may be quoted in support of both methods of outlet; but it looks reasonable to suppose that a fair share of so heavy a gas as carbonic acid will be found near the floor—sufficient, at any rate, to render efficient any ventilating outlet placed there.

Granting, however, your position for a moment, how far do you think the use of vertical inlet tubes goes to remove your own objection to the use of floor outlets? I should be pleased to see your opinion.

Trusting that some of your readers may find these hints useful,

I am, very truly yours,

PURE AIR.

Toronto, Dec. 15, '80.

IN REPLY: Where rooms are heated solely by an open grate fire, in cold weather, when a large amount of fuel would be consumed, creating a forcible down current, we should say unexceptional ventilation may be, and, indeed, would be, obtained by means of the Tobin system. But few comparatively are able or willing to incur the cost of heating by means of open grates or fire places alone; there being by this method such a large amount of heat lost, which escapes up the chimney. The great majority of houses in this country, schools, churches, halls and the like, are warmed by furnaces in the basement, by hall stoves, or by tight air stoves in the apartments. As wood for fuel becomes scarcer this will become yearly more the case. And hence the method of ventilation must be varied.

In inhabited rooms each volume of air, as it is exhaled from the lungs, has a temperature not much short of 100° F., and, as every one knows, quickly ascends; and we hold that, as a rule, it is much more economical—less force being required—to have it carried on out of the room by way of an opening in or near the ceiling. Occasionally fresh, warm air from a furnace is introduced into a room near the ceiling, while the foul air is withdrawn by means of a special opening near the floor. We do not believe this to be a good method.

Where a room is warmed chiefly or largely, as a very large proportion of rooms are, by a stove in the hall, with perhaps a very small grate fire, partly for the purpose of ventilating the room, it is desirable to have an opening in the chimney near the ceiling. Even with an upright "Tobin" shaft for bringing in fresh air, on the opposite side of the room to that at which the fire place is, very little fresh air would pass out of the upper opening; but it would probably all fall down and be diffused in the room.

In reference to the Tobin system, we desire to say that it has on several occasions been referred to in this JOURNAL, in early numbers, and it is undoubtedly an excellent method by which to introduce fresh air into rooms. Probably there is no better in cases where the fresh air is brought directly into the rooms and is not first warmed. But how many can be induced to put it into practice—to incur even the little cost and trouble of having tubes put into the rooms;—it is so easy to open the indispensible window.

Dr. Stevenson, M.R.C.S., &c., London, Eng., in a communication to the *Lancet* a

few years ago, mentions an improvement in the Tobin system, which he had adopted, and which was also referred to in this JOURNAL. It is that of lining small tubes with flannel, by which the air is filtered and all sound deadened. In cities and foul air localities, this would doubtless be an advantage.

In reference to window openings, we have recommended, and seen carried into practice, a plan of attaching a plate or sheet of metal (such as tin or zinc) to the upper sash, so formed as to turn the air entering when the sash is lowered up towards or against the ceiling. It works satisfactorily. When the lower sash is raised a little and the lower opening closed by a piece of wood, or in any way, the air entering between the sashes at the middle of the window is turned up towards the ceiling, and is not felt falling upon the head so much as when coming in through an opening caused by the upper sash being lowered.—ED. *C. H. J.*

COLLECTING AND STORING RAIN-WATER.

SIR,—Would you kindly inform me, in the next issue of your JOURNAL, as to the causes and prevention of the rapid deterioration of rain water stored in wooden tanks, as evinced by foul odour, which in a very short time becomes very marked.

In a country like this, where more expensive modes of storage are impossible to the masses, wooden tanks must for a long time be the most general and almost only means for accumulating and storing rain-water; and it is a most important sanitary consideration, the best and safest way to affect this with the means at our disposal.

I have subscribed for your excellent periodical, and to "start fair" with it, have secured the vols. already published. Some day, possibly, I may be able to contribute something of sanitary interest from the North West. At present one is bewildered to know where to begin, where nothing, so far, has been done in this country.

Yours faithfully,

"HEALTH."

Winnipeg, Dec. 6th, 1880.

THE CAUSE of the foul odor from rain-water is doubtless owing more to the decomposition of the organic matter in the water than to the effect of the wooden tank. Rain-water in falling becomes contaminated by washing the air it falls through, and by washing off the impurities which collect on the surfaces upon which the water falls, as the roofs of houses.

Rain-water washes the air, and carries down with it any impurities the air may contain, as vapours from marshes and decomposing vegetable and animal matters, germs, bacteria, &c. Rain-water falling near cities is more impure than that falling in the open country.

THE BEST MEANS OF PREVENTING the foul odors, therefore, is to filter the water before it enters the cistern. This is sometimes done. The first portion of a rainfall, which washes the air and roofs, may be rejected, and not allowed to enter the cistern, by having the water-spout movable. This will cause a great improvement. Some have two cisterns, one for the first impure portions of the rainfall, and the other for the purer after-fall.

Charring the inside of the casks helps greatly to preserve the water; and the immersion, from time to time, of small pieces of charcoal is an excellent plan, of which we can speak from experience. The charring can be renewed.

Cisterns should be ventilated; as by two tubes passing up a few feet from the top of the cistern, and these protected at the top by wire gause. The upper opening of the tubes may be at the sides instead of the top, when impurities will be less likely to get in.—ED. *C. H. J.*

THE LOVE THAT IS GONE.

Lo! a hand comes forth from the shadows,
A soft touch that I knew of old,
That could crown the loftiest fancies
With an aureola of gold,

And I think how that hand so loving,
That craved but to lie in mine,
Oft' met an impatient gesture,
Or found not the responsive sign.

And from yonder painted canvas
I catch the old wistful look,
So timidly, mutely jealous
Of the time that I gave my book.

Was I blind, or mad, or heartless?
Both the hand and the face are gone;
The light of my soul has vanished,
And I am utterly alone.

The brain that her glances kindled
Is bruised, and blighted, and chilled,
And the bright dreams of the future,
Now, can never be fulfilled.

Editor's Special Corner.

EIGHTEEN HUNDRED AND EIGHTY-ONE. By the time this number of the JOURNAL reaches its readers, the old year, another one, will have passed away; with its pleasures and pains, its joys and griefs. We wish all who read this a very happy new year, and many more of the same sort.

THIS SECOND ITEM in the "corner" alludes to that which concerms in no small degree the happiness of the editor—that by means of which the necessaries of this mortal life are for the most part obtained. It is not well calculated to promote the usual pleasing effect of the first greeting, above; yet we venture to hint that our happiness will be promoted at this season by being enabled to mark "paid up" opposite many names—old familiar names as well as new ones.

POSTAGE STAMPS are good in their way, and one cannot have too many of them; but we lose money on them when we have to dispose of them as we sometimes do. We would be glad if those who remit the amount of subscription would send paper currency instead of stamps, when possible.

ONE MEDICAL MAN we are glad to observe is "coming out" for alderman in this city. We trust he may be elected; whatever political leanings he may have, about which we know nothing. Were there three or four physicians in the Council and on the "Market and Health Committee," one might perchance sometimes see in the report of the proceedings of that committee that some allusion at least had been made by it to public health matters.

WANTED,—PURE WATER.—The people of Dallas, Texas, want a supply of pure water. The town is rendered unhealthy and liable at any time to an epidemic, says an exchange, on account of the entire absence of any arrangement for procuring clear water and disposing of sewage and foul water. Wells are used for water supply, and cess-pools in their vicinity for the filth and waste. There is a city not nearly so far away as Dallas, called Toronto, much in the same unenviable condition; the principal difference being that the people of Toronto do not, first, want for means of disposing of sewage and waste water, but team them into the source of the principal water supply; and, second, they do not seem to want a supply of pure water, at least they do not manifest very plainly such want, using the foul water drawn from the Bay into which the sewage is poured, or that, possibly worse, from wells near cesspools and privy vaults, and waiting patiently and submissively for the epidemic—the "visitation of providence," which is sure sooner or later to come, if there is not a great change brought about by somebody.

REGISTRATION OF INFECTIOUS DISEASES. We have many times urged the importance of this subject; it is one of the most vital in connection with the public health. Many cities and towns in Great Britain and the United States have adopted the plan. A year ago the Corporation of Edinburgh commenced a system of compulsory registration, and required physicians to report all cases of infectious disease, allowing for each report 2s. 6d. It the first six months upwards of $3,000 was thus disbursed. So convinced is the Corporation of the value of the informations obtained that the sum of $5,000 has been appropriated for the purpose during the coming year. The *Sanitary Record* reports that there is likely to be a satisfactory increase in the number of towns where registration is compulsory.

WE DIRECT THE ATTENTION of our readers to a paper in this number by Dr. White, Health Officer of Millwaukee, read at the meeting, in December, of the American Public Health Association, at New Orleans, which shows how they prevent the spread of infectious diseases in that Western City; by registration carried into practice.

GLASS CLOTHING appears to be among the near possibilities. A Pittsburg firm has succeeded in producing glass threads of sufficient fineness and elasticity to permit of their being woven into fabrics; and a tablecloth of glass is on exhibition in New York, so says the *Scientific American*. We cannot imagine glass making a very comfortable undershirt for cold weather.

SMALL-POX.—The National (U. S.) Board of Heath Bulletin reports that during one week in the middle of October there were deaths from this disease in England, Scotland, Ireland, France, Germany, Austria, Hungary, Italy, Canada, West Indies, Texas, Mexico, East Indies, Brazil and other places. In the United States deaths from it occurred in Philadelphia, New York, Troy, Chicago, Williamsburg, Va., and San Francisco. The *Pacific Medical and Surgical Journal*, says the disease appears to be increasing its range in nearly all parts of the world.

ON THE ADULTERATION OF MILK the English laws are very severe, and transgressors are made to feel the force of them. One man who had been fined seven times and paid $550 in fines, was on the eighth offence fined $100; his milk contained 14 per cent. of water. It is common to impose a fine of from $50 to $100 there. If milkmen here were so punished we would doubtless be supplied in a short time with a somewhat better quality of milk.

BROOKLYN, N.Y., is being devastated with diphtheria. There has been 1185 cases, and 483 deaths from the disease. Scarlet fever is also prevalent. The mayor recommended that the testimony of witnesses be taken in order to learn the causes of the disease. The *Sanitary Engineer* intimates that the causes are the want of traps on main drains and fresh air inlets; in short, sewer gas poisoning. Pure air, cleanliness and the avoidance of all persons likely to be affected with the disease are the surest preventive means.

BETTER THAN QUARANTINE.—M. DE Lesseps does not believe in the efficacy of quarantines. In 1834-5 in Egypt, although the foreign consuls managed the quarantine, they were unable by the most severe precautions to prevent the introduction and development of the worst plague that ever ravaged the Orient, carrying off in eight months one-third the population of Lower Egypt, while it made no victims in upper Egypt, although there was daily communication between the two parts of the country. He believes that sanitary precautions, improvement of food, air, and water, cleanliness and temperance are the best preventives against contagious diseases

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"The Crying Want is better education of the public in hygiene."—*Med. and Surg. Reporter, Phila.*

Sir Wm. Jenner, says, "To prevent disease is the most important aim of the science and art of Medicine."

Dr. Samuel Wilks, F. R. S., Physician, and Lecturer on Medicine, Guy's Hospital, London, says: "The idea of CURE is low-born and common-place." "CURE lies at the bottom of all quack systems." "PREVENTION is significant of higher intellectual advancement."

The purpose of this JOURNAL is to diffuse a knowledge of, and awaken public interest in, the Laws of Health, to discuss all questions pertaining to Health, Air, Water, Food, Drainage, Sewerage, Clothing, etc., etc.; to advocate Sanitary Legislation; in short, to make PREVENTION rather than CURE the FIRST object of both the physician and the public.

The Publisher solicits co-operation and assistance from all who are interested in the future well-being of the Canadian people, whom, it is hoped, will sustain efforts to supply a first-class Health Journal.