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# THE SANITARY JOURNAL.

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[No. 11.]

## THE CHOLERA—WHEN IT MAY BE HERE AND THE BEST PREVENTIVE MEASURES.

The dispatches received daily from the East regarding the cholera epidemic are naturally exciting a great deal of attention, and giving rise to no little alarm in this country as well as in Europe. The feeling of impending danger is so great that already some people have decided where they will go out of the cities to escape it when it comes. People generally are considering the sanitary condition of localities, and there will probably be such a general cleaning up as never has been before. As the Philadelphia *Medical Times* has it, in so far as this fear of the visitation of an epidemic of cholera "leads to increased private and public attentisn to the practical application of the principles of sanitary science and state medicine, and a better appreciation of their importance," it is calculated to do a great amount of good. Public sentiment for the time supports the various health-boards, and means will be willingly provided for the needed improvements and details of sanitation, which on ordinary occasions are too commonly treated by communities with indifference and neglect. The impetus given to sanitary work may, therefore, to some extent, be regarded as an indirect compensation for the existence of epidemics; the influence for good thus transcending the actual limits of prevalence of the disease, just as electrical disturbances extend far beyond the track of a storm." In the early part of July, Earl Granville stated in the House of Lords that he had received a letter from Sir William Gall in which that gentleman assured him that the outbreak of cholera in Egypt was of a local character, and that there having been no epidemic in India there was no reason to fear its importation into England. But, as stated in the *Medical Times and Gazette* (Lond. E.) "Sir Williams opinion is no more than that of a physiaian who has had no better opportunities for forming

a judgment than any other of his professional brethren. The Egyptian epidemic, continues the *Times and Gazette*, "is local only in the sense that, having been imported from some country (perhaps from India) where it is endemic, it has found a state of things consequent on a recent campaign, unusually favorable to its development—we mean land and water polluted by unburied corpses of man and beast together with want, and other evils consecutive on war. There may have been no extraordinary epidemic of late depopulating the plains and cities of Hindostan, but cholera is never absent from India; and the pilgrimages, which far exceed in their magnitude and horror anything that ever was witnessed at Mecca, are invariably attended by an amount of cholera which in any other country would be deemed an epidemic. These pilgrimages are confined to no part of the land or season of the year; they are everywhere in constant operation, until scenes and consequence that would excite consternation elsewhere, cease by familiarity to be even noticed. It is thus only that we can account for the fact that many Indian surgeons question the propagation of cholera by human intercourse, and are inclined to seek the cause of its outbreaks on an unusual scale in aerial, terrene, or other meteorological conditions. The fact is, that they do not enjoy the advantages we in Europe possess of tracing its progress under conditions analogous to those of an experiment admitting of exact scientific observation, but are in the same position that we are in with regard to measles, which we believe to be always propagated by infection, but the source of which we too often cannot trace. Cholera is contagious in the same sense as is enteric fever; *i.e.*, the poison—bacterial, possibly—resides in the evacuations, and is occasionally inhaled, but more often imbibed through contaminated water. In India we have every condition requisite for its perpetual maintenance—a high temperature; a soil saturated with organic, and especially fæcal matter, and a water-supply almost invariably of the foulest kind; a hundred million persons daily defæcating on the open ground, and often by preference in temporarily dry water-courses; heavy rainfalls from time to time sweeping the excreta into rivers, into which the carcasses of men and animals are thrown by thousands, the water of these or of tanks used for bathing constituting the drink of the whole population. Improved water-supplies, such as that now at Bombay, would do much to limit the ravages of cholera in the great cities, and among the European residents; but many generations must elapse before, if ever, the habits of the Hindoo population

are changed. Besides pilgrimages, the countless fairs serve to maintain local foci of infection, whence the disease is carried in various directions ; and the annual caravan of Afghan merchants, or Provindahs, slowly traveling from fair to fair through the cities of Northern India, easily convey it to Persia and to Central Asia, whence, as we have seen, it has so often entered Russia. Once imported into Europe, it depends on the sanitary surroundings whether it establish itself or no. The actual carriers are usually pilgrims, the lower class of seamen, and steerage passengers, dirty in their persons and their habits, their clothes and baggage also serving as fomites. If, as in the smaller towns and villages of Europe, the old system of cesspool and well is still in favor, nothing more is wanted than the arrival of an individual suffering from the initial symptoms to set up an epidemic like that of Altenburg in 1865."

#### WHEN IT MAY BE EXPECTED.

The probabilities are, according to those best able to judge, that the epidemic, if it is to come here at all, will not reach us before next summer. "The injudicious attempts to create a panic among the people by sensational publications should therefore be discountenanced by the medical press, at the same time that every encouragement is given to the general adoption of prophylactic measures and the enforcement of sanitary requirements."

Usually the progress westward of epidemics of cholera have been slow, and several years have been required for them to extend around the world. The great epidemic which commenced in Jessore in 1817 did not reach this continent until fifteen years later, 1832. The means of inter-communication however are now so much more numerous and modes of transit so much more rapid, that the disease may spread as far in a month as it did in a year half a century ago.

The epidemic is only likely to reach this country by way of Great Britain. The disease has not usually come into Europe and Great Britain by way of Egypt, but by way of Persia and central Asia to Russia, and thence westward. On its first and second appearance in England it showed itself only in fifteen months after its introduction into Europe. It first reached Europe by way of Egypt in 1865. At that time it became epidemic in the Hadjaz in May, appeared in Alexandria, Malta, Smyrna, and Constantinople before the end of June, and in Spain, Italy and France in July. It spread somewhat widely in Europe in August and reached Southampton on the 17th

of September. On the 3rd of November it first reached this continent and broke out in New York.

Early the following spring great preparations were made in Toronto and other Canadian cities to prevent its appearance and spread. Reports were made upon it, preventive measures suggested and stringent by-laws passed, and it is probable there was then such a general cleaning up as never had been before. This was certainly the case in Toronto it appears. There was no epidemic, hardly any if any cases of genuine Asiatic cholera in Canada at that time nor since.

The extension of cholera from Northern Arabia was next threatened in 1871, and there were then many deaths from it in Russia. In 1872-73 there were half a million cases of it in Poland and Hungary and seventy thousand deaths in Prussia. England escaped, though there were some cases of the disease in New Orleans. Since that time it has occurred several times amongst the pilgrims in the East, but has not established itself in Egypt nor prevailed in Europe.

#### GENERAL PRECAUTIONARY MEASURES.

Regarding these the *Medical Times and Gazette* gives the following:—"A supply of pure water removed from all possible means of pollution is the first requisite for prevention, and a well-constructed and arranged sewerage provides an additional guarantee. The duty of the local sanitary authorities is to remove promptly and frequently all deposits and accumulations of organic matter from dustbins, yards, markets, and streets; to inspect and order the cleansing of all closets and water-butts or cisterns, providing for the decent maintenance of the same; to flush, say weekly, not merely the sewers, but the drains of courts, small streets, and tenement dwellings, the gutters and surface of streets, courts, and yards in crowded quarters; to rigidly inspect markets, shops, and especially coster stalls for the sale of food; to look up all overcrowding and occupation of cellars; to offer facilities for the speedy and gratuitous treatment of diarrhoea; and generally to give greater discretionary powers and liberty of action to the parish surgeons, medical officers of health, and sanitary inspectors, such as, with frequent meetings of the sanitary authority, should minimise the friction and delay. Whether disinfectants are supplied to the public or not, they should be encouraged rather to complain of offensive emanations and seek the removal of their causes, than to trust to masking them by carbolic acid and like substances. In seaport towns the port medical

officer should, personally or by deputy, board and inspect every vessel arriving from abroad, and, regardless of clean bills of health, satisfy himself that the crew and passengers are free from suspicion of being already attacked. Whether they shall be passed at once or detained for a few days must depend on the time that has elapsed since the vessel left, or called at, an infected port. Ships on board of which cases have actually occurred should on no account be allowed to enter the port, but be ordered to land their human freight, and to undergo purification at some isolated part of the coast that shall have been selected as a temporary quarantine station."

The free flushing of the sewers is a very desirable preventive measure to which too little attention is given in Toronto and other Canadian cities. The gratings or catch-pits in connection with street gullies should be frequently looked after and cleaned and disinfected, and disinfectants might be used in the sewers with benefit. Dr. Saunders, medical health officer, London, Eng., has just recommended that the roadways be daily sprinkled with water containing some "germicide"; the courts and alleys flushed and deodorized daily, and the entrances and side-walls of the narrower courts lime-whitened occasionally; all house refuse removed daily, and the regulations for the removal of all kinds of animal and vegetable refuse from taverns and restaurants stringently enforced. All places where fruit is kept and all butcher shops should be very closely looked after. In short, *every particle* of waste organic matter, even to the wash water, should be removed out of the cities and towns and far away from dwellings *every day*.

#### THE PRIVY VAULTS THE WORST OF ALL.

If the people of Toronto or of any of the other cities, or of the towns and villages, in this country are in earnest and mean to make a thorough cleaning up and be prepared for a possible visitation of cholera this fall or more probably next summer, in order that the putting in order may be thorough and complete, it will be absolutely necessary to remove every vestige of filth, and the very worst sort of filth is that of the privies. It will not be enough to clean the yards and lanes and streets, which after all are of little importance when compared with the closet excrement. Nor will it be enough to clean out the filth holes or vaults of these closets and permit them to be used again; they must be thoroughly eradicated—the foul soil immediately adjoining removed and the excavations filled in with clean soil. This may seem like a great undertaking to those

especially who have a row or rows of houses, but after all it would not prove to be such if gone about systematically, and there is no getting over the absolute necessity for it, if fair cleanliness is to be secured, and it must therefore be faced; besides, even if the cholera does not come, the cleaning will "pay" in any place, in the reduced general sickness-rate, many fold. What if it cost in Toronto, say, a hundred thousand, or five hundred thousand, dollars, the interest on such would go but a little way in paying the costs of an epidemic, to say nothing of the loss of life. Better to do it before than after an epidemic.

#### THE CHEAP LODGING HOUSES.

Another source of danger, usually overlooked, is in the common cheap lodging houses. These are often crowded with the most unclean of human beings (and when human beings are unclean, they are more truly unclean than any other animals), and the air in them is most intolerable and poisonous. It is in these that such diseases are most likely to break out, and the virulence of the disease and the disseminating force of the contagium will be proportionate with the foulness of the rooms. We would urge upon sanitary authorities the necessity for looking closely after all such places. Have them ventilated, disinfected (with sulphur probably best) and whitewashed.

#### AFTER THE DISEASE HAS MADE ITS APPEARANCE.

"In every town where cholera has made its appearance, or which is specially exposed, a building, or buildings if necessary, should be secured in central situations as a hospital. The instant a case is detected, whether by day or by night, it should be removed thither, the other male members of the family receiving (if of the indigent class) orders for admission to a common lodging-house, and the women and children to a refuge temporarily provided. The key of the room being taken by the sanitary inspector, it and its furniture should be thoroughly disinfected and cleansed; all bedding, clothing, and other articles which may have come in contact with vomit and excreta being inventoried, destroyed, and replaced by the local authority; after which the family may be allowed to return.

"The success attending such measures was well illustrated under the direction of Dr. W. Budd and Mr. D. Davies in Bristol, and in St. Giles, London, under Dr. George Buchanan. Into the former town a number of cases were introduced from abroad and from London, and the disease raged at the village of Pill (practically a part of the port of Bristol, about six miles lower down the river),

but not a single inhabitant of the town fell a victim. In St. Giles no fewer than eighty genuine cases of algide cholera appeared in as many distinct houses, and would naturally have acted as so many foci of infection, but, being instantly isolated, were not followed by others. On three occasions only, if we remember rightly, were the patients, being in more easy circumstances than the others, left to the care of their relatives; and in each of these the disease spread to other persons in the house, and in one to the laundrywomen who washed the soiled linen."—(*Med. Times and Gaz.*)

The best authorities are very generally agreed that during a cholera epidemic in a city the most common and great carrier of the contagion is an infected water supply. In the words of the *Philadelphia Medical Times*, "The Broad Street pump during the invasion of 1854 in London has become almost classical, since the conclusive demonstration of Dr. Snow, as the local source of many cases of the disease; and Frankland and others have shown that the mortality from cholera in London during the last two epidemics was connected directly with the amount of contamination of the water. It is generally directed, therefore, that when cholera is epidemic all drinking-water should be boiled previous to use; and careful attention to this would doubtless reduce the number of patients. But attention to the drinking-water is not enough; *all* water employed for household purposes should be raised to the boiling temperature, in order to render the disease-germs innocuous before it is used. As pointed out by Lebert, it is just as important that the water used for washing dishes should be germ-free as that which is used for cooking or drinking. We consider it of especial importance that dairy-men and dealers should conscientiously refrain from diluting milk with water which has not been previously boiled, even though every other precaution be taken to insure its purity." We fear this last suggestion will not be commonly carried out.

#### INDIVIDUAL PREVENTIVE MEASURES.

Every individual may lessen the tendency in his or her own body, remove any "predisposition" to the disease, by strict personal hygienic measures. Such as absolute cleanliness of body by daily attention to the condition of the skin; and by keeping the digestive organs in a healthy condition by the use of a judicious diet of plain, wholesome, pure or *sound* foods, partaken of slowly and in moderation. Iced drinks and iced foods should be avoided or used very sparingly. Use only water or other drinks that have been thoroughly

boiled. Keep the bowels regular, and prevent chilliness or tendency thereto by suitable clothing. Avoid over-heating and over-work and all irregular habits; take moderate exercise and sufficient sleep. Observe the strictest *temperance* in regard to alcoholic liquors and indeed everything else, and take no preventive medicines or drugs of any sort.

THERE IS A SMALL MORAVIAN COLONY, called Sarepta, in a bend of the river 'Volga, in the midst of Kalmuck hordes, eulogized for its minute cleanliness and for "all other fortunate and laudable features of character." The cholera seems to respect this sacred spot (simply because there is no soil there for its growth) and passes by it again and again, though at the same time committing terrible ravages around it.

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## BACILLI—GERMS OF INFECTIOUS DISEASE.

(*Concluded*).

### GENERAL CHARACTERISTICS.

In the July number of the JOURNAL allusion was made to a class of organisms, called saprophytes, which includes the various forms of bacteria, of which the different varieties of bacilli are species, and which constitute the essential agents in all fermentations and in the decomposition and decay of organic matters. The wonderful power of multiplication of bacilli was referred to, and the peculiar manner of propagation of the bacillus anthracis by sporing was described. We will now notice briefly those general characteristics of bacilli which are of most practical importance to the sanitarian, and how bacilli may best be destroyed. The bacillus anthracis described may be taken as a specimen from which a good idea may be obtained of the form and many of the peculiarities of other bacilli.

The tubercle bacilli, those of consumption, are rod-like, but only about half the length of the bacillus anthracis, or  $\frac{7}{10}$  of an inch, their breadth about  $\frac{1}{3}$  or  $\frac{1}{4}$  of their length. They are more or less rounded at the ends and have a beaded appearance, indicative of sporing, the number of beads averaging about six in each rod. Most of the rods are straight but some are curved. The bacilli to which typhoid fever is believed to be due are rod-like it appears. From the quite-recent investigations of a Brazilian physician, Dr. Frieze, the organism of yellow fever is of a different species, but probably belonging to the same group or class of organisms, though

seemingly more like the animal structures. They were observed in the blood in different phases of development, from small black points to large round cells with fringed margins and bright transparent centres. Investigators have at different times stated that the bacillus of cholera, of dysentery, and of a number of other diseases had been discovered, but nothing positively reliable has yet been made known regarding them.

Next to the marvellous propagating powers of bacilli is the great tenacity of life possessed by their spores. It is well known that in the higher organisms the seed will retain vitality sufficient for after germination and development in circumstances that would destroy the life of the plant itself. In like manner it is with these disease organisms; the parent rods are easily destroyed but the spores are possessed of wonderful vitality. It has been found that while living septic monads (the minutest organisms known) are killed by a temperature of  $140^{\circ}$  F., the spores of one variety, which are so minute that they cannot be seen except in groups by the highest powers of the microscope, will germinate after being subjected to a temperature of  $300^{\circ}$  F. for ten minutes. The spores of some of the bacilli however are, it appears, destroyed by a temperature much below this, and very fortunately so. Facts are wanting to prove what degree of heat the spores of the organisms of ordinary diseases can withstand without destruction. Here is a wide field for investigation.

As to the effect of frost on bacilli, Dr. Klein, F.R.S., in his recent experiments with the *bacillus anthracis* exposed in a capillary pipette fluid full of spores to the influence of ether spray, and having thus kept the fluid frozen for several minutes, he injected it into the guinea-pig and rabbit with fatal result. He then subjected spores in the same manner to repeated freezing, each time for several minutes; but these spores nevertheless retained their full virulence. Before forty-eight hours were over the inoculated animals were dead of anthrax. He placed a capillary tube filled with spores in a mixture of ice and salt, and kept it there for one hour exposed to a temperature of  $21^{\circ}$  to  $27^{\circ}$  F. below freezing point; after thawing, the material was injected into the subcutaneous tissue of a guinea-pig. This animal died of typical anthrax on the third day.

It is reported that the same living organism has been subjected to a temperature of  $-32^{\circ}$  F., a temperature never reached in our climate, and yet the frozen liquid has, on being thawed, remained as potent for self-multiplication and for harm as before. It is also recorded in the same article that in Livingston Co., N. Y., animals

had died of anthrax "while the temperature was below zero, after they had licked the frozen blood" from a boat on which the hide of an anthrax steer had been carried.—(*Sanitarian*).

#### HOW BEST DESTROYED.

On the destruction of bacilli we will not here enter into details. Notwithstanding the resistance to heat of the spores or germs of some forms of these low organisms, heat is regarded as the best and safest disinfectant for destroying them. It has been found that in outbreaks of typhoid fever from contaminated water, for example, that those who used the water only after it had been boiled escaped the disease. Heat—dry or that of boiling water, is considered as the most reliable disinfectant for the destruction of contagiums in clothing, bedding, etc. Sunlight and excess of oxygen are inimical to the development of various forms of bacteria; hence abundance of light and fresh air favor their destruction. Aerial disinfection in the sickroom is of doubtful efficacy, as if the air is sufficiently impregnated with the disinfectant to be destructive of the bacilli it cannot be safely respired by the sick or the attendants. All the excretions from those suffering from contagious diseases however should be received in strong solutions of some disinfectant—carbolic acid being probably the best on the whole.

Many have been hopeful that means would be discovered by which bacilli and other forms of bacteria might be destroyed when within the human body, as by the administration of certain anti-septics, but the best authorities agree that "at present we should devote our chief attention therapeutically to keeping the bacteria out of the body, rather than attempting to destroy them when they have once entered it."

We shall probably make the various ways in which the bacilli of different diseases, respectively, enter the body, and the means by which their entrance into it may be best prevented the subject of another brief paper.

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#### DISPOSAL OF EXCRETA IN TOWNS AND CITIES.

Parkes, the most eminent authority on sanitary questions, has said "it is highly probable that to barbarous and inefficient modes of removing the excreta of men 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."

The above quotation has been used in this JOURNAL as a sort of text on a previous occasion. There is so much truth in it and it involves so much relating to prevailing disease that it can hardly be too often brought to public notice. A very large proportion of the diseases which affect humanity arise either from a retention in the body of used-up waste matters which ought to have been thrown off by the excretory organs, or from these same waste matters or the chemical or vital products of their decomposition finding their way again into the body, and chiefly along with the air or water consumed. There is no subject coming within the scope of sanitary science which is of greater practical importance than this one of the proper disposal of excremental matters, especially in towns or cities.

The object of this brief paper is to bring to the notice of municipal authorities of towns and cities a practical method by which all excrement may be safely disposed of.

In only a few of the cities and towns in Canada has the water-carriage system yet been introduced, and in these few it is but partial in its application, only a portion of the houses, as in Toronto, having connection with it. Furthermore, unless a city can obtain an abundant supply of water, is so situated on elevated ground as to command a good fall for a free outflow and to a large free running stream or a lake, or uses the sewage on a sewage farm, has a well planned and perfectly constructed system of sewers and perfectly executed plumbing work, it is better without the water-carriage system. But we will leave this part of the subject for further consideration on a future occasion.

In most of the cities and towns in Canada coal is now being used for fuel in nearly every house, and the method above referred to may be almost completely summed up and explained in the following few words: Mix all the household excreta and the coal ashes together and the whole in this state may be removed at intervals more or less frequent without any inconvenience whatever from disagreeable smell, and the mixture would constitute a valuable manure, especially for heavy clay soils. Special, elaborately constructed closets for the use of ashes, however desirable for convenience sake, are not at all essential. Boxes, tubs, barrels, any thing of this sort, would answer quite as good a purpose to say the least as the miserable filthy out-closets now commonly in use.

If every vestige of the old-fashioned privy—these filthy relics of a barbarous age for the collection of the vilest filth and the develop-

ment and propagation of the most fatal diseases, were completely removed at once or at an early day, and any temporary moveable receptacle provided for the ashes and all household excrement, this would not amount to so many cart loads daily even in a city like Toronto but that the neighboring farmers would most likely be glad to cart it away for the use of it as manure. If not, the carting of it away at the expense of the municipality would be less than the cost of separate removal in the usual way. Gradually as circumstances permitted the householders could provide themselves with conveniently arranged ash closets, or connect with the sewers.

What city, town, or even village, will set the example of carrying such a plan into practice? Parkdale adopted a similar one two or three years ago, and it is there contrary to law to use a privy vault.

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#### MISTAKES IN EDUCATION.

In the June number of this JOURNAL there was an item from an exchange which stated that the French court records showed that the increase of education increased the amount of crime—"that in departments in which instruction is most general, crime is greatly more prevalent." The *St. Croix Courier* (N. B.), July 12th, in commenting on this says, "France may be different from other countries in this respect, but if the statement is true, it cannot be chargeable to education, but to a perverted basis of public instruction or the immoral tendencies of the people." Statistics in the United States show that a like condition prevails there, so that France is not exceptional in this respect. The prevalency of crime is doubtless owing to immoral tendencies amongst the people, but the immoral tendencies are due to perverted instruction, public or private—at home or in the school, of children—the developing generations. We have no such statistics in Canada, to show the results of what we believe to be the over-education here, but it seems manifest that crime of one sort or another is increasing beyond the proportion of the increase of population. We are firmly of opinion that time will prove that not only are we making mistakes in the kind of education imparted in the public schools, but that there is being imparted to the masses of the children too much education, so-called—too much that is mental perhaps with too little that is physical—practical.

In a given population in any country only a certain number of

the people, or proportion of the population, can honestly earn a livelihood by mental labor alone; a certain amount of physical or manual labor must be performed in order to make and produce the necessaries of life. With too general or over mental education, especially if it be not the most judicious and practical kind, there will naturally grow up a distaste for physical labor, and all sorts of schemes and plans will develop for obtaining a livelihood without manual work. Hence immoral tendencies, questionable devices and crime; these being more readily developed by the unhealthy system of cramming, the want in too many instances of moral, and we might add of religious training, together with the prevailing ignorance of the ordinary laws of health, in connection with our present system of public school instruction.

No one probably would be opposed to as much mental training of, or as much general information being imparted to, all children as is compatible with healthy development of mind and body, and the cultivation of a taste for a useful occupation, of the essential sort. And herein is doubtless the great difficulty.

Since making some notes for a brief paper on this important subject, which it was intended, as stated, to publish in the July number, we have observed in the *Scientific American* of July 14, the following, which we cannot do better than quote: "We have frequently had occasion to refer to the growing dissatisfaction felt with our present system of school culture, and the efforts made to improve it. At the College of the City of New York, preparations have begun for the erection of a workshop, and in some of the public schools in Boston one of the school rooms has been converted into a carpenter shop where the boys spend a few hours each week in learning the use of tools.

"A large and well ventilated building has recently been erected in West 54th Street, New York, for the accommodation of a 'workingman's school.' This name does not, as many suppose, imply that it is a trade school, nor yet a school for men, but that its benefits are intended to accrue to the children of the workingmen, who may themselves become workingmen. It is in fact a post-graduate kindergarten, taking children at that susceptible age when their faculties have been aroused in the kindergarten, and, by substituting work for play, continuing the natural method of object teaching. In the kindergarten, however, the child learns by *observation*, in the school he learns by *creation*, by the production of

things. This creative method, as applied to education, is not intended, in that school at least, to make the child machine-like or subserve 'the bread and butter interests' of later life, but to be applied to the training of the intellect, to the development and refinement of the taste, to the formation of character. Such are the aims and purposes of the founders of the Workingman's School. \* \*

"Whether the system of education here introduced for the first time shall prove worthy of imitation in schools for the wealthy or well-to-do or not, there can be no doubt that this school is doing a good work among the poorer classes of New York."

On another occasion we may give details of the manner in which instruction in this school is carried on.

In the Philadelphia *Medical Times* of the same date are the following valuable remarks: "It seems to us very clear that in the modern system of perpetual examinations, and especially of competitive examinations, there lurks a very serious danger. All education should have for its object the training and development of the mind, rather than the acquisition of facts; whereas very often, if not usually, in competitive examinations it is the amount of facts crowded into the mind at the time of examination which is the basis of judgment. Over-ambition finds its victims especially in those children with sensitive, feeble, nervous systems, not only because such children cannot resist strain, but largely because such children morbidly desire to excel in their classes.

"The tendency to teach children many things imperfectly rather than a few things perfectly is often but too apparent in our schools. Another more serious error, which is closely connected with many studies and long hours, is teaching children to dawdle over the books. It is the exceptional man who will stand more than four or five hours a day of intense mental application; and yet the pulpy brain of the child it kept fuming over the books this length of time in school and two or three hours more out of school. Of course the attention does not remain fixed: the dawdling which results is nature's safeguard against ruin."

This question of education is a subject for most serious consideration, and, as we have intimated on a former occasion, is worthy of and indeed demands such at the hands of a most judiciously and impartially organized Commission of highly educated, experienced men, who with the past experience connected with the present system would be in a position to settle upon a course of study, the length of the daily school period, and other important points in a satisfactory and profitable manner.

## SEWERAGE AND DEATH-RATES.

E. F. Willoughby, M. B., Lond., gives in the *Sanitary Record* the following very suggestive and valuable statistics bearing upon the effect of sewerage, good and bad, on the death-rate.

Dr. Soyka, one of the most earnest advocates of efficient sewerage as a means of improving the health of towns, contributed to the *Zeit. fur Biol.*, a report, entitled 'Untersuchungen zur Kanalisation' (erste abhandlung), on the death-rates of the several parts of the city of Munich, which are drained on the new and old systems respectively, or not drained at all. He divides the streets into three groups, viz., those provided with new and water-tight sewers of hard stoneware, set in hydraulic cement, and with means of access and flushing; secondly, those with old pervious and inaccessible sewers; and, lastly, those, as yet the larger number, in which not only are there no sewers, but the 'stadtbäche,' or gutters, are laid so high that there is no drainage of the subsoil at all.

The first group permits of a further subdivision into streets which, placed on higher ground, are periodically flushed by a system of sluices, and those which, on the lower lands, are flushed, or, more correctly, washed by the surface-waters of the 'stadtbäche.'

Dr. Soyka enters into many engineering details, and discusses fully the geological and hydrological characters of each division, and then proceeds to show the influence of each system of sewerage on the general, zymotic and special mortality of the population. From these tables, which are given numerically and graphically, we select the most striking features.

The general death-rate from 1875 to 1880, in the districts provided with new sewers, was 27.6; in those with old sewers, 34.14; and, where there were none, 39.57. The zymotic death-rate in the three groups was 2.35, 2.75, and 3.22 respectively. The mortality of infants under one year, to 1,000 living, was 11.29, 15.19, and 20.18; and the general mortality, excluding such infants, was 15.48 and 17.10 in the newly-sewered districts on the higher and lower lands, 18.95 with the old sewers; and 19.39 with none. Taking this fourfold grouping, in respect of the mortality from particular diseases, we find the death-rates from diphtheria to have been 1.14, 1.25, 1.05, and 1.52, or, excluding the deaths in hospitals, 1.15, 1.05, 1.07, and 1.57, showing apparently the influence of an atmosphere polluted by surface-filth in the production of this disease, and agreeing with the experience of our English sanitarians, as to the prevalence of diphtheria in villages, and even detached rural dwellings where such conditions are found. Enteric fever, inclusive of hospital cases, gave .54, .83, .96, and .69, or, excluding these, .55, .81, .97, and .65.

## SIZE OF DRAINS AND SOIL PIPE.

The following on this subject from the *Metal Worker* we fully agree with : In Great Britain 6-inch soil pipes were formerly common to receive wastes from four or five water-closets. At present 5-inch and 4½-inch are the usual sizes, even for a single water-closet. Hellyer claims that the soil pipe should be no larger than the outlet of the water-closet, and sarcastically says it is not wanted for a coal chute or dust shaft, but to be well flushed at every using. For a private house, where care would be shown in using fixtures, he thought a 3½-inch lead soil pipe ample for a tier of three water-closets, and a 4½-inch pipe for twelve closets ; the smaller pipe kept cleaner than one of larger size. Whether Mr. Hellyer would favor an iron soil pipe of like size is not to be taken for granted, as he always assumes that lead is smoother and can be kept cleaner than cast iron.

Colonel Waring's vigorous advocacy of small drains has converted most persons to admit their advantage. His experiments at Saratoga showed that the drainage of a large hotel, containing 2,000 occupants, could be carried off in a 6-inch pipe. For an ordinary city dwelling a 4-inch drain is ample, even including the rainfall, while for a large house or a French flat a 6-inch pipe will suffice. The common objection to small drains is that they may be choked with articles thrown into them by careless servants—as scrubbing brushes, towels, broken glasses, crockery, spoons, forks, etc., all of which have been found in them ; but a 4-inch drain will carry off any article which can pass through a water-closet sink trap, and hence it is quite large enough to meet that objection, so long as it is laid with a proper pitch, no angles, and is well flushed. The growing use of modern water-closets which discharge several gallons of water each time they are used, is an additional aid to keeping house-drains clean and clear from obstructions. Small drains are more likely to be self-cleaning than large ones. A stream of sewerage that fills the former completely will only cover the bottom of the latter, and, having less velocity, will exert less force upon the sediment and coating of filth which forms within all waste pipes. Grease always fills up a large pipe sooner than a small one. We have a 5-inch drain taken from a very large house in Brooklyn, in which the water line shows plainly exactly along the centre of the pipe. A pipe two-thirds as large would have served just as well. Colonel Waring now advocates reducing soil pipes to 3 inches, but this change is yet to be demonstrated by experience.

## EFFECTS OF TOBACCO SMOKING IN CHILDREN.

Dr. G. Decaisne, in a paper read before the Paris Société de Médecine Publique (published in a recent number of *Revue d'Hygiène*), gives observations upon thirty-eight children, between nine and fifteen years of age, where decided effects were produced in twenty-seven.

Twenty-two had disturbances of the circulation, bruit de souffle in the carotids, palpitation of the heart, difficulty in digestion, indolent intelligence and a decided taste for strong drinks.

Thirteen had an intermittent pulse.

Eight showed a notable diminution of blood corpuscles.

Twelve had frequent attacks of nosebleed.

Ten were restless in their sleep with nightmares.

Two showed slight ulcerations of the buccal membrane, which disappeared promptly on their giving up smoking for a few days.

In one case pulmonary phthisis seemed to have resulted from a profound alteration of the blood due to the long continued use of tobacco.

In eleven children who gave up smoking entirely, with six these symptoms disappeared in less than six months ; three still suffered in a minor degree at the end of a year.

He concludes, as the result of his observations collected through twenty years, that the pernicious effects of smoking upon children are incontestable. That it produces intermittence of the pulse, alteration of the blood, and the principal symptoms of chloro-anæmia, pallor of the countenance, emaciation, bruit de souffle in the carotids, palpitation of the heart, diminution of the normal quantity of the blood corpuscles, and difficulties of digestion. That the mental faculties become sluggish, with a fondness for strong drinks. That the ordinary treatment for chloro-anæmia produces no effect while the habit continues, and, finally, that with those children who are without organic lesion, all these disorders disappear promptly and without leaving any traces behind, when the habit is discontinued.

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**CONTAGIOUSNESS OF CONSUMPTION.**

The following notes of a case in practice has been sent by Dr. Wilson, of Richmond Hill, to the *Canadian Practitioner*, for August, inst. It should be a warning to those employing nurses, as well as to others.

B. W., æt. four months ; family history good, and no trace of phthisis or syphilis discoverable in either family.

Has had no illness up to present, is plump, fat, and well nourished. The mother was forced to wean the child when about a month old, and was confined to her bed, so that she could not attend to it, by cerebral anæmia. The child was fed on cow's milk from a bottle, and thrived well for a time, having no digestive troubles.

It was attended by a nurse, who was well advanced in consumption, and had free expectoration.

The child slept with the nurse, who, by the way, was in the habit of keeping it close to her face during sleep, and consequently was exposed to her breath for hours together. Nothing unusual was noticed in the child's condition for the first three or four weeks after the nurse's arrival, when it began to lose flesh and cough slightly. This cough and wasting gradually increased, and finally I was called in to see what was the matter with the child, and on examination I found well marked and far advanced phthisis, with frequent cough and great emaciation.

The child died in its eight month, or three months after the first symptoms were noticed, and four from the first attendance of the nurse.

I may mention in connection with the above history that the same nurse, who has since died of consumption, attended five other children, and four out of the five died of some wasting disease, said to be similar to B. W., but as I did not see any of them I am unfortunately unable to state its nature.

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**THE CONTAGIUM OF YELLOW FEVER.**—A report has been received at the State Department, Washington, containing the results of observations and experiments made by Dr. Freize, a Brazilian physician, who believes he has discovered the cause of yellow fever in a microscopic parasite found in the blood of yellow fever patients. Experiments made by injecting this infected blood into the veins of rabbits and guinea pigs proved its virulence by producing death, the blood of the inoculated animal showing the same characteristics as that from the original yellow fever victim. The experiments seem to prove, also, that these parasitic germs of death survive in the soil where the subject of the fever is buried, and from thence may again contaminate living organisms.

## PREVENTION OF GERM DEVELOPMENT.

The following are the conclusions of M. Miquel (in *l'Annuaire de l'observatoire de montsouris*) on the minimum dose of the several antiseptics capable of preventing the development of germs and of adult bacteria in a litre (a little less than a quart) of bouillon. From the *Journal d'Hygiène*.

Oxygenated water . . .	0 gr.—05.	Arsenious acid . . . . .	6 gr.—00.
Bichloride Mercury . .	0 " 07.	Sulphate Strychnine .	7 " 00.
Iodine . . . . .	0 " 25.	Boric acid . . . . .	7 " 50.
Chloride of Gold . . .	0 " 25.	Arsenite of Soda . . . .	9 " 00.
Bichloride of Plat'm..	0 " 30.	Hydrate of Chloral . .	9 " 30.
Cyanhydric acid . . . .	0 " 40.	Salicylate of Soda . . .	10 " 00.
Bromine . . . . .	0 " 60.	Caustic Soda . . . . .	18 " 00.
Chloroform . . . . .	1 " 00.	Borate of Soda . . . . .	70 " 00.
Bichromate Potass . .	1 " 20.	Chlorhydrate Morph. .	75 " 00.
Ammoniacal gas . . . .	1 " 40.	Alcohol . . . . .	95 " 00.
Thymic acid . . . . .	2 " 00.	Iodide of Potassium .	150 " 00.
Phenic (carbolic) acid	3 " 20.	Marine salt . . . . .	165 " 00.
Permanganate Potass	3 " 50.	Glycerine . . . . .	225 " 00.
Acetate of Lead . . . .	3 " 60.	Sulphate of Ammon. .	250 " 00.
Alum . . . . .	4 " 50.	Hyposulphite Soda . .	275 " 00.
Bromo-Hyd. Quinine	5 " 50.		

**BATHING AND CRAMPS.**—The London *Lancet* notices the recent death of a "fine young trooper in the 3rd Dragoon Guards" by drowning from taking cramps on going into the water while overheated, and reads as follows:—When the body was recovered a considerable time afterward, it bore every evidence of the cause of the disaster. It was described as being "twisted"—that is, contorted; while the vessels of the head, especially in their gorged condition, pointed to congestion, in fact, to stagnation of the circulation! That this young soldier lost his life by bathing when in an overheated condition is quite clear. It would be well if soldiers and civilians would remember the lesson conveyed in the classical case of Alexander, quoted by Dr. Jones from Quintus Curtius, viz.: "It was in the middle of one of the hottest days of a burning summer that Alexander arrived on the banks of the Cydnus. The freshness and clearness of the water invited the king, covered with sweat and dust, to take a bath. He stripped himself of his clothes, and, his body all in a sweat, he descended into the river. Hardly had he entered when his limbs became suddenly stiff, the body pale, and vital heat seemed by degrees to abandon him. His officers received him almost expiring in their arms, and carried him senseless to his tent."

## INVESTIGATIONS RELATING TO DIPHTHERIA.

The *Therapeutic Gazette* editors (Detroit) have been making some valuable investigations in regard to diphtheria. The following are some of the deductions:—1. Diphtheria may be either local or constitutional in its origin. 2. It may continue as a purely local or as a purely constitutional disease, or the local disease may be followed by constitutional infection, or *vice versa*—the disease in the vast majority of instances manifesting itself in both the constitutional disturbance and the local affection. \* \* \* 4. Diphtheria is a contagious disease, but not liable to attack a healthy mucous membrane or to find an entrance through it into the circulation. 5. The contagium of diphtheria is not a micrococcus, nor it is visible under the most powerful microscope yet manufactured. 6. The contagium of diphtheria is of a gaseous nature (the result of decomposing fæcal and other organic matter), and can be neutralized only by a true disinfectant and not by an antiseptic.

The 1st, 2nd and 4th are we believe quite in accord with the results of previous investigations and study in relation to the disease. The 5th and 6th will require a great deal more evidence to cause them to be received as true, especially as to the contagium being of a "gaseous nature," and to be neutralized only by a "true disinfectant."

The editors are quite in error in claiming that they are the introducers, "this side of the Atlantic," of "this method of the collective investigation of disease." The editor of this JOURNAL last year made similar extensive investigations into the causes of consumption, and published a report relating thereto. We hope our esteemed confrères of the *Gazette* will correct.

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**MENTAL AND PHYSICAL TRAINING—RICHARDSON.**

The true danger of every form of mental exercise is the addition of worry. Laborious mental exercise is healthy unless it be made anxious by necessary or unnecessary difficulties. Regular mental labor is best carried on by introducing into it some variety. New work gives time for repair better than attempt at complete rest, since the active mind finds it impossible to evade its particular work unless its activity be diverted into some new channel. During the new work a fresh portion of brain comes into play and the over-wrought seat of mental faculty is secured repose and recovery. Excessive competition in mental labor is ruinous at all ages of life.

The idea that excessive physical exercise is a sound means of promoting health is erroneous. Man is not constructed to be a running or a leaping animal like a deer or a cat, and to raise the physical above the mental culture were to return to the shortness and misery of savage life. Physical training while it should be moderately encouraged should be refined and made secondary to mental training. Every rash and violent feat of competitive prowess should be discountenanced.

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#### MOTHERS AND THE UNBORN.

The following are deductions from Richardson's "Diseases of Modern Life." The first step towards the reduction of disease is, beginning at the beginning, to provide for the health of the unborn. The error, commonly entertained, that marriageable men and women have nothing to consider except wealth, station, or social relationships, demands correction. The offspring of marriage, the most precious of all fortunes, deserves surely as much forethought as is bestowed on the offspring of the lower animals. If the inter-marriage of disease were considered in the same light as the inter-marriage of poverty, the hereditary transmission of disease, the basis of so much misery in the world, would be at an end in three or at most four generations.

Greater care than is at present manifested ought to be taken with women who are about to become mothers. Wealthy women in this condition are often too much indulged in rest and are too richly fed. Poor women in this condition are commonly underfed and made to toil too severely. The poor, as we have seen, fare the best, but both, practically, are badly cared for. Nothing that is extraordinary is required for the woman during the condition named. She needs only to live by natural rule. She should retire to rest early; take nine hours' sleep; perform walking or similar exercise, to an extent short of actual fatigue, during the day; partake moderately of food, and of animal food not oftener than twice in the day; avoid all alcoholic drinks (?); take tea in limited quantities; forego all scenes that excite the passions; hear no violence of language; be clothed in warm, light, loose garments; and shun with scrupulous care, every exposure to infectious disease.

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FROM EGYPT the latest reports are that the cases of cholera are of a less virulent character, and the proportion of recoveries to attacks are becoming larger.

**DRAIN TESTING IN GLASGOW.**—At a recent meeting of the Glasgow Health Committee, the following report on drain testing for the year ending February 20, 1883, was read:—"I beg to report that, during the year ending February 20 last, the drainage systems of 236 properties were tested by the smoke injector, with the following results—viz., 229 of these were found more or less defective, permitting the escape of sewer air into the dwellings, and only seven were found thoroughly tight and efficient. The defects consisted of 46 drains untrapped, 95 unventilated, 6 with open ends, 79 open at their junction with soil-pipes, 50 open at their junction with water-closets, 12 had their piping partly broken, 146 had defective joinings along their course, and 6 were choked. Of the soil-pipes, 14 were found unventilated, 30 perforated by corrosion, two holed by rats, and 65 badly jointed. One water-closet, one jawbox, and six internal surface gratings were untrapped; 18 traps were found ineffective by malformation, three traps unlocked by suction, and two standing waste-pipes of water cistern joined to soil-pipe had no protecting seal. From the foregoing it may safely be concluded that the defects are chiefly due to imperfect workmanship in the original construction of the drains and their connections, teaching in the very clearest possible way the urgent necessity that exists, not only for special supervision over every newly-constructed system, but the prohibition of its use till thoroughly tested and certified safe and complete by a competent officer specially appointed for that purpose.

**HOW DISEASE IS PRODUCED.**—The following was reported at a recent meeting of the Sanitary Protection Association (London, Eng.), under the presidency of Professor Huxley. The total number of houses inspected was 362, and in the greater number of these serious errors in the sanitary arrangements were found and corrected. No less than 6 per cent. were found to have the drains choked up, and no communication whatever with the sewer, all the foul matter sent down the sink and soil-pipes simply soaking into the ground under the basement of the houses. In 32 per cent. the soil-pipes were found to be leaky, allowing sewer-gas, and in many cases liquid sewage, to escape into the house. In 37 per cent. the overflow pipes from the cisterns were led direct into the drains or soil-pipes, allowing sewer-gas to pass up them and contaminate the water in the cisterns, and in most cases to pass freely into the house. Were there a Sanitary Protective Association in Toronto, a similar state of matters would probably be found.

ARE PHTHISIS, BRONCHITIS AND PNEUMONIA EPIDEMIC DISEASES?—In a paper read before the Epidemiological Society of London (Eng.) in April last by Dr. Longstaff, on the above question, from a study of the Registrar General's Returns, the author's main conclusions were (*Med. Times and Gaz.*, June 16): That weather had very little influence on the phthisis death-rate. That while bronchitis and pneumonia were both greatly influenced by meteorological conditions, it was difficult to explain, by those conditions only, all the phenomena. That common catarrh was a communicable disease, and that it was probable that very many cases of bronchitis and pneumonia might be looked upon as complications of that or some similar disease of mild character when uncomplicated. That the different incidences of bronchitis and pneumonia on the two sexes pointed to some difference in the causation of the two diseases. That there would appear to be some common factor in the causation of phthisis and tubercular meningitis.

LONG LIFE.—If any one could furnish the world with a medicine which would insure a long life what a demand there would be for it. Some time ago the French Government sent a circular letter to all the districts of that country to collect information as to those conditions of life which seemed to favor longevity. The replies were very interesting, but on the whole rather monotonous; and the general result was that longevity is promoted by great sobriety, regular labor, especially in the open air, short of excessive fatigue, easy hours, a well-off condition, a philosophical mind in meeting troubles, not too much intellect, and a domestic life. The value of marriage was universally admitted, and long-lived parents were also found an important factor. All this agrees with common sense, says an exchange, unless the idea that the intellect is a hindrance to longevity be considered unreasonable. Some of the most intellectual men have lived to great age.

A DISBELIEVER IN PHYSIC—AN UNKIND "SELL."—A French lady recently died at the advanced age of ninety. Her will contained this provision:—"I leave to my physician, whose enlightened care and wise prescriptions have made me live so long, all that is contained in the old oak chest of my boudoir." The family were somewhat anxious. The fortunate physician arrived. The chest was opened, and found to contain solely all the drugs and potions still intact which the doctor had given his patient for years back.

AT THE LAST MEETING of the Michigan State Board of Health, the secretary stated that returns of the names of and addresses of about 1200 health officers had been received from the various parts of the State. There are not, probably, 100 health officers in Ontario if 50. At a previous meeting of the board, the secretary presented an account of sickness caused by eating salted pork. The sickness was attended by burning in the stomach and abdominal tenderness. Some of the meat was fed to four cats; vomiting, great thirst and tenderness of the muscles followed. Three of the cats died. A microscopical examination of some of the meat "disclosed nothing within the meat to have caused the illness, but on the surface of the lean portions there was found a *micrococcus*, enormously numerous, as well as some fungous developments of a mould-like kind sparsely present. The *micrococcus* was of a new variety, entirely distinct from that of hog cholera."

THE TORONTO TRUNK SEWER.—Have the people of this city forgotten all about the necessity for a trunk sewer? With the rapid increase in the population of the city the sewer is becoming still more necessary, if the beautiful bay is not to become a veritable filth pond. The money spent in its construction would be a most profitable investment. But the sewage ought not to be allowed to flow into the lake even, but should be pumped up on to higher ground and used on a sewage farm. We purpose at another time soon to refer to this question of the disposal of the sewage.

IMPORTANT MOVEMENT.—At a meeting of the Sanitary Insurance Association in London, Eng., June 11, Sir Joseph Fryer, F.R.S., in the chair, a sub-committee was appointed to consider whether they cannot recommend legislation compelling the builders of all new dwellings to obtain a certificate from some authority or qualified person as to their sanitary condition before it shall be lawful for such buildings to be inhabited.

THE TORONTO INDUSTRIAL EXHIBITION next month promises to be the most successful of all of them. The manager, Mr. Hill, is working night and day attending to the correspondence and the preparations in the various departments. Besides the Exhibition proper there will be numerous and various attractions; not the least of which will be the Beckwith family in a series of exhibitions in a large glass tank.

A MALIGNANT OUTBREAK OF MEASLES is reported as having appeared at St. Mary's Industrial School for Boys, near Baltimore, causing the death of ten of the four hundred and twenty inmates in the course of five days.

**SULPHUR FUMES AND BACTERIA.**—Herr Kircher, a pupil of Liebig, has been, during forty-four years, director of a factory in which a process of manufacture is employed involving the formation of sulphurous acid by the burning of sulphur. He maintains that none of his work-people have ever suffered from consumption, typhus, cholera, or any disorder which is produced by bacteria.

**DR. PAGGI**, in the London *Lancet*, tells of a case where the heart's action was restored, and the life of a patient saved, by the application of a large cloth dipped in boiling water and applied to the cardiac region, when the remedies usually resorted to in such cases had failed. The cloth was so hot that a large blister was raised by it.

**THE HABIT OF OPIUM SMOKING** is, according to the *Boston Med. Journal*, steadily on the increase in New York and other eastern cities and in the west. The amount of opium imported increased from 189,354 lbs. of the gum and 49,375 lbs. of the prepared drug in 1872, to 243,211 lbs. of gum and 77,196 of preparations in 1880.

**GRATITUDE.**—Doctor (to an acquaintance): "Mr. Jones, I am glad to see you have recovered." Mr. Jones: "Yes, you have saved my life; how can I thank you sufficiently?" Doctor: "I saved your life? Why, I didn't attend you." Mr. Jones: "Yes—and that is why I am so grateful."

**LEFT HANDED PEOPLE.**—*The Farmers' Companion and Prize Monthly*, Marlboro', Mass., has upon its staff a left handed brother and sister, and every left handed person should read their articles on left handedness. Only 50cts. per year. Remit stamps and try it. Left handed agents wanted.

**A SUBSTITUTE FOR RUBBER** has been invented in St. Petersburg, which is reported to be tough, elastic, waterproof and insulating. It is composed of a mixture wood and coal tar, linseed oil, ozokerite, spermaceti and sulphur, mixed and heated for a long time.

**IT HAS BEEN DEMONSTRATED**, says the *Lancet*, that, provided all the excreta from a cholera patient are instantly destroyed—not merely disinfected—the disease will not spread. The malady can no more develop *de novo* than a plant can grow without seed.

**JUVENILE SMOKING.**—In New Jersey (U. S.) the State Senate, with only two dissentients, have passed a Bill which forbids the sale of cigarettes, and of tobacco—even for the purpose of chewing—to all minors under the age of sixteen years.

**IT HAS BEEN SO CLEARLY DEMONSTRATED** that the use of tobacco seriously impairs the nerve centres, that it has been forbidden the students of the United States military and naval academies.

A CANADIAN SANITARY ASSOCIATION, we hope our readers will bear in mind, is to be organized on the last day of the meeting of the Canada Medical Association, September 5-7, in Kingston. We hope to meet a large number of our friends there. It will be a pleasant and cheap trip from the west by boat from Toronto and Hamilton, and a good opportunity for taking a holiday.

FROM EXPERIMENTS ON DIGESTION, Dr. Spenser (at Ohio State Pharm. Assoc'n.) has found that alcohol in certain proportions with hydrochloric acid is equal to commercial pepsin in dissolving albumen in form of white of egg, hard boiled. What will the intemperate-temperance man Dr. B. W. Richardson say to this?

MORPHINISMUS.—Dr. Landowski finds that in 160 cases of this there were 56 medical men, and 28 persons more or less in connexion with them, such as wives of medical men, midwives, nurses, etc. He is in favor of treating the affection by the gradual withdrawal of the morphia.

THE ONTARIO MUTUAL BENEFIT SOCIETY offers life insurance at much less cost than ordinary insurance companies. We believe it will prove a most useful institution. Some of the best men in this city are taking policies or certificates in it. Office 30 Adelaide-st. E.

THE PROVINCIAL BOARD OF HEALTH are holding their regular quarterly meeting as we go to press. Papers on the important subjects of adulteration of foods, hygiene in schools, contagious diseases, and cholera are engaging the attention of the board.

A MUNICIPAL COMMISSION of Hygiene and Statistics has been organized in Bayonne. Its constitution and duties are similar to those of the city of Paris. Very precise rules are laid down with regard to the medical inspection of schools.

A NEW FOOD ANTISEPTIC, in the shape of carbonic acid, has recently been submitted to trial in Germany, and the result has been so far satisfactory that further tests are to be made.

MENTAL TRAINING has an influence on muscle, and the finest athletes are those whose attention has not been given solely to physical training.

A NUMBER OF ARTICLES on hand we are forced to hold over for next month.

## LITERARY AND SCIENTIFIC.

INQUIRIES CONCERNING THE TRUTH OF REVELATION.—At the annual meeting of the Victoria (Philosophical) Institute, London, in June, Sir Henry Barkly, F.R.S., in the chair, the Honorary Secretary, Captain F. Petrie, F.R.S.L., read the report, by which it appeared that the Institute,—founded to investigate all questions of Philosophy and Science, and more especially any alleged to militate against the truth of Revelation,—had now risen to 1,020 members, of whom about one-third were Foreign, Colonial, and American, and new applications to join were constantly coming in. A careful analysis had been undertaken by eminent men, of the various theories of Evolution, and it was reported that, as yet, no scientific evidence had been met with giving countenance to the theory that man had been evolved from a lower order in animals; and Professor Virchow had declared that there was a complete absence of any fossil type of a lower stage in the development of man; and that any positive advance in the province of prehistoric anthropology has actually removed us further from proofs of such connection,—namely, with the rest of the Animal kingdom. In this, Professor Barrande, the great palæontologist, had concurred, declaring that in none of his investigations had he found any one fossil species develop into another. In fact, it would seem that no scientific man had yet discovered a link between man and the ape, between fish and frog, or between the vertebrate and the invertebrate animals.

ON “WOMAN’S EMPLOYMENT” there is a good article in *Frank Leslie’s Illustrated Newspaper* for August 4th. Among other things we find the following: “When girls realize the dignity of labor, they will not be prevented from engaging in any honorable service from a slavish fear of a loss of caste.” Again, “that the industrial employment of women is not regarded as socially degrading in other countries is evident from the fact that, of the forty girls attending the School for Training Girls to proficiency in the art of type-setting and its accessories at Berlin, all were of good position socially, being daughters of landed proprietors, clergymen, doctors, schoolmasters and Government officials.” But after all, by training girls in the arts of cookery, domestic economy, and general house-keeping they will best retain their attractiveness and influence over the great unfair sex, and best fill their natural position of wife and mother.

## PUBLIC HEALTH LEGISLATION IN MANITOBA.

Public health matters are receiving fair attention in Manitoba. We have received from the "Department of Agriculture, Statistics and Health" (that reads more like "business" than anything relating to health we have Eastward), Winnipeg, a synopsis of a new public health law for Manitoba. Following are some of the principal provisions :

The Lieutenant-Governor in Council may appoint a medical practitioner as Provincial Health Superintendent, and determine what salary shall be paid him. The Superintendent shall be subject to and act under instructions from the Department of Agriculture, Statistics and Health. He shall see to the observance of the provisions of the Act relating to the public health and the management of hospitals, and shall act as inspector of hospitals and other charitable institutions as provided by the Charity Aid Act. He shall take cognizance of the interests of health and life among the people ; shall especially study the vital statistics, and endeavor to make an intelligent and profitable use of the collected record of deaths and of sickness ; shall make sanitary investigations and enquiries respecting causes of disease, etc. \* \* \*

The Department may send the Superintendent to any part of the Province to investigate the causes of disease. The investigation may be taken upon oath. The Superintendent may administer the oath. \* \* \*

Each county council shall, at their first meeting after the passage of the Act, and at their first meeting in each year thereafter, appoint a health officer, who shall, wherever practicable, be a properly qualified medical practitioner, to carry out and enforce the provisions relating to the public health. Adjoining counties may unite in this. Should any county council neglect to appoint such an officer, it shall be lawful for the Lieutenant-Governor in Council to appoint one, and to determine the amount he shall receive for services, which shall be paid by the county.

Every health officer shall be subject to, and act under instructions given him by the Superintendent, and shall report to the Superintendent annually, and at such other times as may be required, regarding the prevalence of epidemics and the progress of sanitary work. Any health officer neglecting to perform any duties required of him, shall be liable to a fine of \$100.

The requirements of the other portions of the Act are similar to those of the Ontario Health Act, though some of the provisions are more stringent, as in regard to selling, hiring or letting infected clothing, vehicles, rooms or houses. Stringent regulations in regard to vaccination are included.

Previous to the formation of the Ontario Provincial board of health we strongly advised that instead of a board being organized, a medical health officer be appointed in connection with one of the departments of the Government, as being simpler and more in accordance with English precedent. We are glad Manitoba has taken this course. We advised however in connection therewith an "advisory" committee of physicians of standing, who should meet once or twice a year or oftener and consult with and assist the chief officer. Manitoba might find such an advantage.

IN HAMILTON AND LONDON there are regulations relating to the schools for preventing the spread of infectious diseases, but it appears there are none in Toronto. We have received a copy of the rules for preventing the introduction of infectious diseases into the public schools in London, which are very strict. We think it would be better however to place those who had been associated in any way with whooping-cough under restrictions like those bearing upon measles and scarlet fever. Whooping-cough is usually a more severe and troublesome disease than measles, and is perhaps as contagious.

SANITARY PROGRESS IN SPAIN.—The Spanish Government has lately submitted to the Senate and Cortes a new bill for the formation of a "Royal Council of Health." This bill is a very comprehensive one, and has, according to the Spanish medical journals, caused considerable dissatisfaction in professional circles, owing to its strong centralising tendency, and also to the great preponderance on the board of lay over medical members.

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#### THE PUBLIC HEALTH IN ONTARIO FOR JULY.

TORONTO.—There is no epidemic prevailing here. About the usual number of summer ailments amongst children are chiefly what require medical attendance it appears. Here as elsewhere the heavy rains have been favorable to public health, but should warm dry weather follow and be continuous doubtless much more sickness will prevail. The systematic inspection of the city by a number of policemen is being pushed on, and the health officer states that he is obtaining through them a good deal of very useful information, upon which of course he will be able to act, in his efforts to improve the sanitary condition of the city.

HAMILTON.—Dr. Ryal reports a case of cerebro-spinal-meningitis there\* Cholera infantum and diarrhoea the most prevailing diseases. Cases of bronchitis and acute rheumatism. No epidemic. General mortality not high.

LONDON.—Dr. Edwards also reports a case of cerebro-spinal-meningitis in London, and one of Canadian Cholera. Cholera infantum, frequently with convulsions, and diarrhoea very prevalent, so also was intermittent fever, and all on the increase. Cases of diphtheria, typhoid fever and whooping-cough common; no measles nor scarlet-fever reported. There were a good many cases of bronchitis and acute lung disease.

IN LONDON EAST, Dr. Cattermole informs us that up to the 8th of August "no extra amount of sickness had occurred" on account of the recent flood there. This is as we had anticipated, and so intimated to the doctor.

CHATHAM.—Dr. Bray reports that there was less sickness in July in that town and county than for fifteen years past, as he thinks, and doubtless correctly, owing to the low lands being covered with water from the excessive rains, with low temperature. The people should prepare themselves by public and individual hygienic measures to resist the effects of following dry warm weather, should such come. There were some cases of cholera infantum and diarrhoea, with increasing number and severity of cases. Diphtheria decreasing. Measles was still epidemic but had almost disappeared by the end of the month. Scarlet fever had appeared and increased. Some cases of typhoid fever and whooping-cough. Bronchitis, pneumonia, remittent fevers and acute rheumatism had decreased. Mortality generally low.

STRATFORD.—Dr. D. M., Fraser reports that locality generally healthy. Cholera infantum and diarrhoea increasing and inflammatory lung and malarial diseases decreasing, though still considerable bronchitis. General mortality low.

GUELPH.—Dr. Brock reports cases of cholera infantum, diarrhoea and dysentery there, as there are in every place seemingly. No diphtheria nor typhoid reported. The epidemic of measles reported last month seems to have greatly abated. Considerable scarlet fever and whooping-cough. General low mortality.

ST. CATHARINES.—Dr. Greenwood sends without details a short report that there the general health of the public was remarkably good during July. No epidemic, and the chief diseases requiring attention were intermittent fever, bronchitis and diarrhoea.

BARRIE.—Dr. McCarthy reports a good many cases of cholera infantum and diarrhoea, both increasing. Measles and whooping-cough which last month were reported epidemic had decreased. No diphtheria, scarlet fever nor typhoid, but seemingly a good many cases still of bronchial and pulmonary affections. General mortality low.

PETERBORO'.—Dr. R. W. Bell reports the public health as "fairly good" in that town—much better than in the earlier part of the year. No epidemics had prevailed for a long time. The ordinary number of cases of summer complaints below the average. General mortality consequently low.

PORT HOPE.—Dr. Hamilton reports a few mild cases of cholera infantum and diarrhoea, with some dysentery. Port Hope is well situated as regards natural drainage. No diphtheria, measles, scarlet fever nor typhoid. Whooping-cough had made its appearance and was epidemic. Acute rheumatism lingered longer than usual owing to the cooler weather. General health good otherwise, with low mortality.

BELLEVILLE.—Dr. H. James reports, as usual at the season, cases of cholera infantum and diarrhoea, with considerable dysentery. Some cases of scarlet fever and whooping-cough and of bronchitis and lung affections, with a good deal of remittent fever. Consumption was prevalent in the city and county. That section of country usually suffers much from this disease.

KINGSTON.—Dr. H. J. Saunders reports many cases of diarrhoea there, epidemic indeed, increasing, but with a low mortality. A few cases of measles, the last of an extensive epidemic of it which had prevailed. No diphtheria, typhoid, nor scarlet fever, but a continuance of bronchial and pulmonary affections, owing to continued wet cool weather and frequent changes. Mortality on the whole low, but from consumption above the average.

BROCKVILLE.—Dr. V. H. Moore reports a large number of cases of diarrhoea and a good deal of cholera infantum, increasing; some diphtheria and dysentery, but decreasing. No measles nor scarlet fever, but a few cases of typhoid fever, with increase. Whooping-cough epidemic. Some pulmonary cases, not severe, nor decreasing, about as in previous month. Slight increase in remittent fever and decrease in acute rheumatism. Mortality mostly low, but the "average" in cholera infantum, whooping-cough, pulmonary cases and remittent fever.

ST. JOHN, N. B.—Dr. Daniel, statistical officer, reports St. John as generally a healthy place in summer, this one not being exceptional; the usual amount of intestinal disease, especially amongst children, with increase during July. Some diphtheria, but decreasing, and some scarlet fever, typhoid and whooping-cough. Measles rather prevalent, severe and increasing, in many cases attacking adults, some fatally. Pulmonary diseases decreasing. General mortality about the average, excepting in measles "rather high."