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The Canadian Therapeutist and Sanitary Engineer

INCORPORATING THE CANADIAN JOURNAL OF PUBLIC HEALTH

Vol. 1 — 59 John Street, TORONTO, CANADA — No. 6

"If Preventable, why not prevented?"—*Edward VII.*

Yearly Subscription, Canada, $2.00; Elsewhere, $2.25.
Single Copies, 20 cents.

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CONTENTS FOR JUNE, 1910.

THE CANADIAN THERAPEUTIST AND SANITARY ENGINEER (Incorporating, The Canadian Journal of Public Health) is published on THE FIRST OF EACH MONTH; it is devoted to the discussion of treatment and the dissemination of practical hygiene; and deals with all matters of social and individual well-being.

TERMS: Yearly subscription—CANADA, $2.00; ELSEWHERE, $2.25. Single Copies, 20 cents.

POSTAGE is prepaid by the Journal for Subscribers at above rates.

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"The Ancients tell us what is best, but we must learn from the moderns what is fittest."

AS POOR RICHARD SAID.

DOCTOR CHARLES SHEARD

Who has resigned the Directorship of Toronto's Health Department much to the regret of his fellow citizens.

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Special Articles

HISTORY OF PUBLIC HEALTH IN CANADA

By P. H. BRYCE, M. A., M. D.
Chief Inspector of Immigration, Ottawa, Canada

I find that one of the first references to public health in Canada was contained in a communication on the subject of cholera, published by the Executive Government in Quebec in October, 1831, on its receipt from the Colonial Office in England. A conference of physicians was thereupon called in Quebec to discuss the matter with the result that the government sent Dr. Tessier to New York to study the measures being adopted there to prevent the introduction of the disease. The first sanitary commission in Canada that I have knowledge of was appointed at Quebec in February, 1832, to deal especially with cholera, its members being Dr. Morin, Dr. Parent and Dr. Perrault; while some months later, a Board of Health was organized there, which adopted certain quarantine and general health regulations.

A squad of soldiers was stationed at Grosse Isle in the autumn of 1831, having with them a five-pounder to bring ships to anchor, and on April 28th, 1832, the first cases of cholera arrived on the ship "Constantia" from Limerick, carrying 170 emigrants, of whom 29 had died on the voyage. On June 10th cholera appeared in Montreal and on June 14th at Prescott. I find a letter dated the same day from Kingston sent to Sir John Colborne, Lieut.-Governor of Upper Canada, enclosing a copy of the proceedings of a meeting of citizens dealing with the matter of the disease called Asiatic Sporadic Cholera, which had appeared at Quebec and Montreal, in which inquiry was made of His Excellency, whether he had any fund at his disposal, with which to aid the committee in its charitable intentions. The letter was signed by Robert B. Cartwright, solicitor. A similar letter was sent on the 16th from Prescott to which I find a reply dated the 19th of June to the effect that the Lieut.-

Governor would arrange with the bank to place five hundred pounds at the disposal of Mr. A. Jones and Mr. Patton to be employed in a way beneficial to the community. On the 20th of June a circular was sent out by the government to the chairman of the quarter sessions of the several districts, re. cholera, in which His Excellency requests "that you will convene the magistrates of the district and with their aid form a Board of Health," which board is directed to assume the authority of enforcing such arrangements as a due regard to the preservation of health may require. His Excellency places at the disposal of the magistrates in each district the sum of five hundred pounds and each board is expected to keep in touch by correspondence, with the central authority."

Such in essence was the starting point and plan of organization of the first Canadian Board of Health.

This plan, which has been continued in the several provinces of Canada up to to-day, indicates a notably more advanced public health system than existed in England even as late as 1849. It was given legal form in 1833 by an act "To establish Boards of Health to guard against the introduction of malignant, contagious and infectious disease in this province and for the formation of local boards." The act of 1833 was enlarged in 1835, and continued unchanged until 1849, when, owing to the presence of cholera in England in 1848, an act in amendment was passed for "The establishment of a Central Board of Health in Canada." This amendment was necessary in order that the Act should apply to the United Canadas and it provided for the Central Board being created by Order-in-Council.

The first regulations of this Central Board of Health were issued from its office in Montreal, and dated January 14th, 1849. As the epidemic of cholera ended the same season the Central Board then ceased to exist, but was again appointed by an order dated at Quebec, in July, 1854, for six calendar months.

The regulations to be enforced by local boards under this act, set out in detail, are still to be found as amongst the most effective clauses of the present Public Health Act and, with similar clauses from the English Public Health Act of 1875, form the basis of most of our public health legislation as it now exists. For instance, the act gave general directions to families and individuals regarding (1) cleaning premises; (2) keeping cellars clean and dry; (3) ventilating houses by removing chimney boards and stoppers; (4) keeping doors open day and night; (5) daily airing of bedding; (6) the taking of tepid baths two or three times weekly; (7) the wearing of flannel vests next to the skin; (8) moderation in eating and drinking; (9) attendance on the sick to be limited to necessary persons, both to benefit the patient and lessen danger to the public; (10) boiling, baking and burning of clothes, and the use of chloride of lime; (11) special attention to unsound meat, cess pools, stagnant water, pig pens, slaughter houses and butcher shops. (12) Intra-mural burials were forbidden and burials were to be private and within 24 hours; (13) while ship captains were to report deaths on board to local boards, and local boards were to report weekly to the Central Board.

The last appearance of a Central Board of Health was in the year 1866, the year preceding Confederation. The Commission was given owing to cholera in New York, and no further commission so far as I know was ever issued under the act of 1849. Local boards of health and municipal health committees here and there were continued under local by-laws up to the time of the appointment of the Ontario Board of Health in 1882; but

the second annual report of that Board states that (a) local boards existed in only 37 counties; (b) no local boards existed in twelve; (c) total local boards was 37; (d) two boards had inspectors, one paid; (e) total medical men on boards three, and total medical officers four.

In this summary I have given all the main facts requisite for an understanding of the public health situation as it stood in Canada even into the last quarter of the nineteenth century. No apology requires to be made for the state of things then existing, since even after the remarkable agitation for social reform, which accompanied the Reform Bill in 1832 in England, it was only in 1838 that the Registrar General's Department was created there. While not until the cholera year, 1848, was a General Board of Health appointed, and then only for five years, nor was there a General Public Health Act passed in England until 1858. There was no General Education Act in Upper Canada until 1841, and no fully matured Municipal Act until 1849. Chairs in medicine appeared in 1841 in King's College, only to shortly disappear again to be followed by private medical schools until 1887. Then when, in the various Provinces of Canada—isolated geographically and hitherto separated by divergent interests—the germ of a larger national life began to grow and take on organic form, it is not to be wondered at that the innumerable political and legislative questions following therefrom, and involved in Canadian Confederation, should have occupied the whole field of discussion and legislation to the exclusion of social and public health problems. I have searched with some care the Confederation debates and have failed to find any reference whatever to any public health matter, while in the Act of British North America itself reference is made to health matters only in section 91, sub-sections 6 and 11, which give the Federal Parliament jurisdiction in matters of the census, quarantine, statistics and marine hospitals, and in section 92, where the establishment, maintenance and management of hospitals, asylums, charities and eleemosynary institutions, were relegated to the provinces; only providing for the control of such institutions as existed at the time.

Were we, however, simply to confine our review to the position in which public health was found in Canada at the beginning of the last quarter of last century we might perhaps ascribe it principally to the relatively undeveloped conditions of the country as a whole and to its poverty as compared with neighboring states or the older countries of Europe; but this would in no way explain adequately the real situation. It was not indeed until 1874 that a small association now embracing four nations and known as the American Public Health Association, was formed in New York by a few public-spirited medical men and laymen, to promote the public health idea. It was not until 1878, after the three devastating years of yellow fever in the Gulf States that a National Board of Health was formed in the United States; which indeed existed, the yellow fever having disappeared, for only four years, owing in part to politics, but really to the lack of any well developed underlying scientific basis for its operations.

Humanity was as yet ignorant of that experimental science which was to mark the period which a recent German philosopher has denominated the "Enlightenment," just as a former period is known as the "Renaissance," and which dates from the moment in 1876 when the Immortal Pasteur having determined the true nature of the contagion of anthrax enunciated the principle "omne vivum ex ovo" and supported by Tyndall dismissed as unscientific all theories of the spon-

taneous generation of living organisms. But Robert Boyle, the great English physicist, had said two centuries before, "that he who could probe to the bottom the nature of ferments and fermentation would probably be more capable than anyone of explaining certain morbid phenomena."

To realize how great Pasteur's triumph finally was one has only to read the literature of the period from 1870 to 1880 to understand what it meant to overcome by the experimental method the opponents of his theory of the vital ferments—Pouchet, Trecul and others in France, Liebig, the great organic chemist in Germany and Bastien and his followers in England; and to understand how, in spite of his previous splendid services to his country in studying the phylloxera vine disease and the pebrine disease in silk worms, his election to the Academy of Medicine in Paris in 1873 was by a majority of only one vote. Up to this time everything outside the clinic was pronounced useless and was viewed with indifference and even hostility. Claude Bernard felt this, in the remark of a contemporary, "Physiology can be of no practical use in medicine."

Davaine had already discovered the rod-shaped bodies in the blood of animals affected with anthrax, had called them bacteria, and had said, "they have a place in the classification of living beings"; but it was only in 1874 that Pasteur received from Lister in Edinburgh a pamphlet on researches on lactic acid fermentation, and a letter, containing the request that he read it; at the same time complimenting Pasteur on his brilliant work, which Lister said, "demonstrated to me the truth of the germ theory of putrefaction."

Almost at the same time Tyndall wrote to Pasteur, "For the first time in the history of science we have the right to cherish a sure and certain hope that as regards epidemic disease, medicine will soon be delivered from quackery and placed on a real scientific basis. When that day arrives humanity, in my opinion, will know how to recognize that it is to you that will be due the largest share of her gratitude."

I recall the fact, that it was in 1882, that three wholly remarkable events took place. The first was when Pasteur won his crowning glory by accepting the challenge of the Melun Agricultural Society and vaccinated on the 5th of May 25 sheep with attenuated anthrax virus, again on the 17th, with a stronger virus and then on the 31st inoculated these with a virus of normal virulence at the same time with 25 non-vaccinated sheep. On June 8th all the latter were dead and all the first save one were well. This gained for Pasteur at once the Grand Cross of the Legion of Honour and he became at the International Medical Congress, held in London in August, the unchallenged hero of the hour. The second event, equally remarkable, was the announcement in April by Professor Robert Koch, of his discovery of the germ of tuberculosis, as epigrammatically expressed by Professor Landouzy, "Il l'isole, le montre, le cultive et l'inoculate en pleine certitude. Soudain, comme par enchantement le ciel de la Phtisiologie s'eclaire." And the third event in 1882, was the passing of an Act, by the Government of Ontario, establishing the Provincial Board of Health.

It will be apparent that so far as Canada is concerned the fact that Ontario's Board of Health was born in 1882, the very year which marked the real birth of Bacteriology, was a favorable augury for the development of whatever work that Board was able to accomplish in the future within the lines of science laid down for it. How its work has extended is seen in the fact that the Ontario Public

Health Act of 1884 is practically the Public Health Act of seven other provinces, and that the work done under it has produced results among an increasing population which so far as may be judged by a decreasing death rate are comparable with those of any other country during the same period; the returns of the Registrar-General's Department, for the years including and following 1882, illustrating this.

It has been already mentioned incidentally that the several Health Acts, which from time to time have been passed in the different Provinces, have utilized largely the Ontario Statutes and as might be expected administrative work therein has proceeded largely along the Ontario lines, and has been productive in proportion to its evolution of the same beneficial results. It will, of course, be understood that differences exist, dependent upon the extent to which local municipal government has been evolved. Thus in the Maritime Provinces, which for many years hardly retained their population of thirty years ago, public health work of a local sort can scarcely be said to exist, except in the cities and towns—unless during times of epidemics, when the Provincial Health Office is supposed to see that the County Health Committees perform their duties. As the Provincial Medical Officers are receiving in the Maritime Provinces but a nominal salary and are engaged in private practice, it will be understood that public health work is there developing slowly. In British Columbia there is a very well organized and equipped Provincial Health Board, with its permanent officers, and, except in several cities and towns, health work is enforced by the Provincial officer. The Prairie Provinces so recently organized all have Provincial Health organizations, each with its bacteriologist and machinery to deal with the wide areas which are being rapidly populated, and in Quebec, with its numerous small parishes, the system of Municipal Health Officers exists as in Ontario.

For years one or more medical inspectors of the Quebec Board of Health have been continuously engaged in visiting those parts of the Province where their services were most demanded and have so educated the people, and to-day the Quebec Board carries on quite extensive bacteriological and chemical work, while a sanitary engineer is employed in prosecuting the study of water supplies and sewerage works.

Such in outline is the story of public health work as it developed in the several Provinces of Canada, and, while not all we look for to-day, it may be said without hesitation, that compared with a similar number of neighboring states of the American Union, the health work of Canada is at least as far advanced, and of as high a scientific character. And owing to the genius of our institutions the Provincial Health organizations have had permanent officers, who have had therefore the opportunity of developing whatever their abilities and energy, under the legislative, administrative and financial conditions, have made possible in the several provinces.

AN ADJUNCT TO MUNICIPAL HYGIENE

By PATRICK GIBSON

Speaking in Montreal recently, Lord Grey referred to the lack of opportunities existing for technical education in that city. His Excellency appears to fully grasp the great importance of every Canadian citizen being brought up to some specific calling in life, if this young and growing country is to take a leading place among the great commercial and industrial nations of the world.

In Canada, we have several universities, which are asserted to be equal in every respect to any in Europe, annually turning out numbers of men who are a credit to us in their various walks of life, and many of whom are at present occupying prominent positions, not only on this continent, but in other parts of the world. So great is the admiration of our universities in Great Britain that young men upon leaving the big public schools such as Harrow, Rugby, Marlborough, etc., are frequently sent to McGill or Toronto to take their degree, in preference to going to Oxford or Cambridge. This fact in itself speaks volumes.

Lord Grey, in the speech in question, did not refer to the facilities for studying law, medicine, engineering and courses leading to the other professions so much as to the opportunities at present offered to Canadians for acquiring a thorough knowledge of the manual occupations, or "professions" as they may quite correctly be termed. The skilled workman in this country can for at least eleven months in the year earn sufficient money to maintain himself, wife and family in comfort, and also lay by enough to carry them along during the twelfth month, should he then be idle due to slackness of work. Of the unemployed men one sees lounging about the wharves, saloons, poolrooms, and public places, how many know a trade thoroughly? The majority have a smattering of one thing or another, and if a skilled man should be found it generally comes out that he has lost his situation through drunkenness or some other fault of his own. No, Canada is the Paradise of the efficient artisan and, to continue the metaphor, the Hades of the unskilled laborer.

About the age of sixteen the young middle class Canadian usually puts in a year or so at one of the business colleges, with a view to subsequently entering a mercantile or other office, at an initial salary of anything between $350 and $600 per annum, this being the only opening offering if he cannot stand the expense of a university course. It is perhaps needless to point out that by entering a mercantile or other office he may, by special merit, rise to an important position, but this will be only after many years of hard work, and indeed the number of these good positions is infinitesimal in proportion to the number of subordinary clerks striving to attain them. In any case the business college graduate in question will have meagre pay for a long, long time, whereas, if, instead of entering the business college, he was, at the age of sixteen, put to a trade, in about four years he would be earning the pay he could not expect to draw in an office until he had attained at least thirty years. A clerk's life at best is scarcely satisfactory to a man of energy and ability. On the other hand, an intelligent, skilled workman is excellently paid, has good hours and a splendid chance to make a competence for his declining years. It is not an exaggeration to say that at least seven-tenths of the skilled

workmen in this country are not Canadian born, but hail from England, Scotland, Germany, the United States, etc., which surely proves that technical education is more easily obtainable in those countries than in Canada.

It is not sufficient in the present century for a citizen to be well educated—his training must be specialized, he must be a capable, healthy man. There are plenty of unspecialized men in Canada, who have been through Oxford or Cambridge, now earning $10 a week, and indeed, who are thankful for that amount of income. The aristocracy of England is fully alive to the situation and it is quite common, in British factories, to see the scion of some noble house learning a trade at the hands of a master craftsman—and paying heavily for it, too. As a matter of fact, British firms charge anything between $250 and $1,000 premium for teaching their particular trade to young men, although the evening schools in the large cities of the United Kingdom offer practical technical instruction at a cost of not more than $25 a year.

So thorough are the Germans in their technical training that after a man's course is completed he goes what is called "Auf die wanderschaft," meaning that he travels (on foot) from town to town taking employment for a few weeks in each place, the object being that he may obtain an all-round experience and also adaptability. No employer denies work to a man touring in this manner, it being a recognized custom and one that aims at the greater proficiency of the artisan class.

A large amount of the poverty and consequent ill health in our Canadian cities is due not to depression in trade, not to the tyranny of capital over labor, not even to drink and vice in general, but is assuredly on account of the poor earning power and resulting deficiency in vitality of the working class caused by their total lack of technical training and specialization. The working class must not be blamed for this condition of affairs, it being very difficult at present for a man in Canada, without spending a good deal of money, to obtain technical instruction of a practical nature, although the theoretical side can be had at an extremely moderate price. The eastern provinces have large numbers of unskilled men employed in offices, shops, factories, etc. The supply is usually much in excess of the demand. On the other hand, the highly trained mechanic is a scarcity in this country and he can demand a high rate of wages. He is, at the same time, largely independent of his master. This is not the case with the unskilled man, who knows so well from experience that if he lost his job he might have to tramp the streets in search of another for weeks, or even months.

In view of the foregoing, it might be wise for the Government in each province to vote a sum of money for the erection and thorough equipment of a technical school in each important city, with a view to giving inexpensive technical instruction. If the governments would not bear the whole cost, then a fund might be secured to help in the maintenance of these institutions, and it is practically certain that nearly all our leading citizens would respond liberally to an appeal in behalf of such an adjunct to municipal hygiene.

DISPOSAL OF HOUSEHOLD WASTE

By CHARLES SHEARD, M. D.

The dividends and the great profits derived from many of the large modern industries are mainly from so-called bye-products, which in former times went either down the sewer or to the scrap heap; and even in the mining of precious metals, scientific study and advancement has rendered possible the utilizing of enormous mounds of debris, which formerly were considered not only waste material, but an incumbrance which cost money, time, and labor to remove. When the intelligent mind contemplates in a broad, general way the total waste of a large city, and begins to specialize upon the individual kinds and character of such waste, many avenues are opened up through which economy can be practised while sanitary conditions are served. The average housewife is inclined to regard useless material as rubbish. It collects dirt; it occupies space; it litters up the premises, is an eye-sore, and the prevailing idea is to throw it out and have it removed.

This daily household yield embraces quantities of such material, some of which is distinctly valuable and readily marketable, some of which is not so. The value of refuse is principally and largely in knowing what further use can be made of it and where it can be used. Given the market for the product, it is a very simple matter to determine what profit can be derived from it. House waste is generally divided into three main clauses —ashes, kitchen garbage, properly so called, and refuse, the latter being a broad and complex term including everything else, and it is worth while spending a little time to analyse this complex body. House waste embraces paper, rags, bottles, metals of various kinds, etc., not including trade waste, where certain lines of material are thrown aside in large quantities, such as hair, excelsior, packing materials, leather cuttings, cloth cuttings, and articles of similar character.

To confine our attention for a moment to household waste, probably the most easily handled and the most valuable, is paper. This can be marketed easily at $5 a ton, and the larger the quantity the easier, as a rule, it is handled, subject to certain seasonal influences and market conditions. Quite recently, in connection with the garbage disposal of the City of Toronto, there has been organized a small staff to gather and pick over, bale and press all the waste paper collected. This yields sufficient to maintain a staff of four men, and give something over to the treasury of the city besides, and yet the municipality is not in the most favorable position for conducting such economy. It has only the cast away of the waste paper business. Many large stores and factories regularly dispose of their paper to those who make a practice of carefully collecting it and baling it for the paper mills.

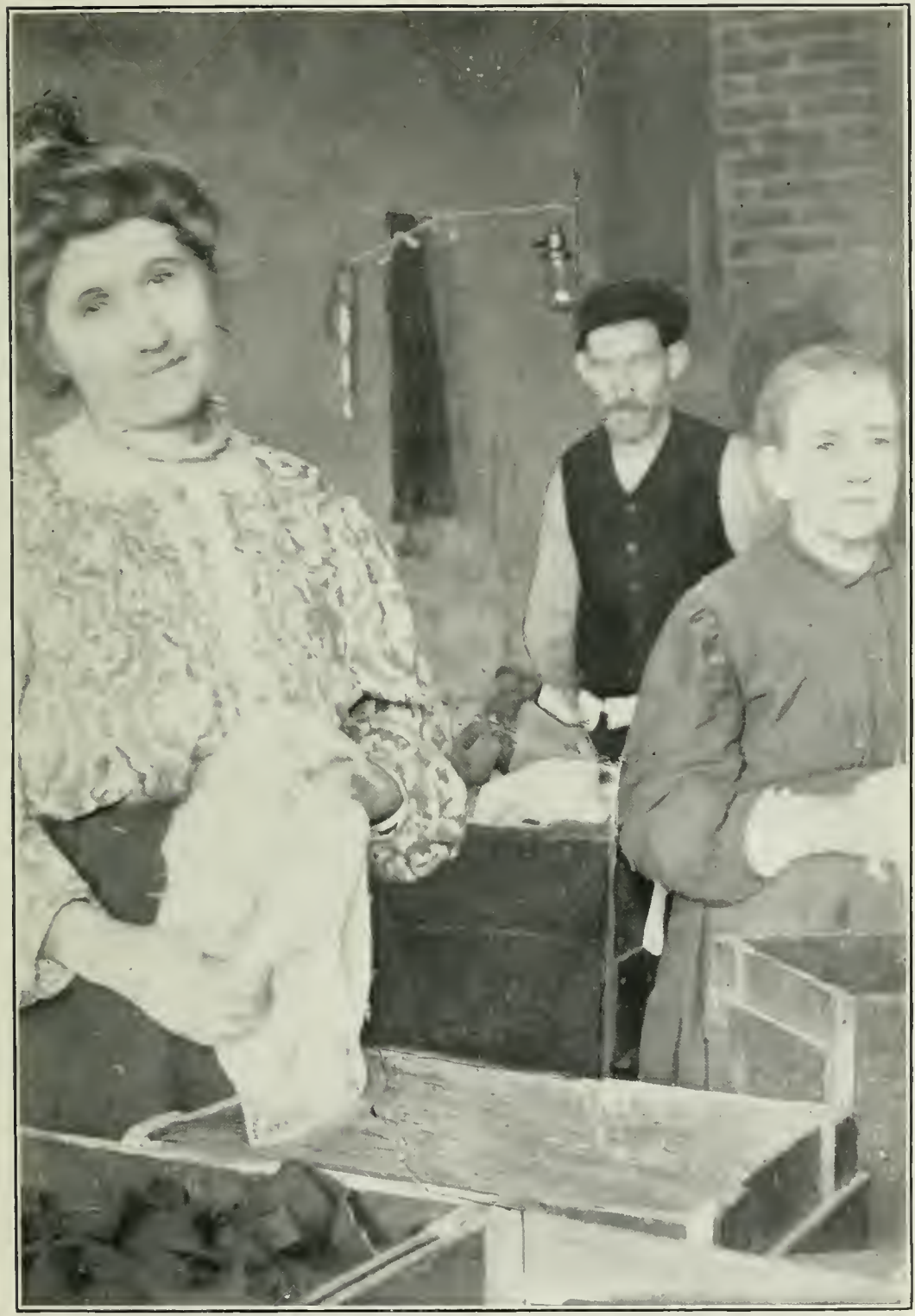
When the glass refuse of a home is considered, its value to the bottle man is great. He buys collections of old bottles, truck often thrown into the garbage barrel, or piled in the cellars, embracing every variety of the motley bottle, and the druggist's bottle to the perfume bottle with the glass stopper, or from the flat flask to the wine bottle, with its dark and impenetrable color; the smoky glass bottle; the clear glass whisky bottle; the common cheap beer bottle, and sundry little and big medicine bottles, which have stood upon the top shelf of the cupboard for months, or may be for years,

"The bottle man is an industrious, thrifty student of bottles, gifted often with the patience and thrift claimed by the Hebrew as 'the badge of all their tribe'."

until the cleaning out day comes. There are the bottles emptied of patent medicine, the bottles for disinfectants, bottles for chemicals, bottles for hair restoratives, bottles for benzine, bottles for ammonia, bottles for house cleansers, bottles for washing compounds, bottles for tooth wash, bottles for special preparations for special purposes, all make up the odd collection, and are dumped into a basket to be given away, or next thing to it. The bottle man, however, gathers his harvest slowly and repeatedly from house to house, and in his push cart takes them away to some central yard, where they are dumped upon a heap and carefully sorted. This bottle man is an industrious, thrifty student of bottles, gifted often with the patience and thrift claimed by the Hebrew as "the badge of all their tribe." He places in large crates "assorted bottles." He selects from each day's gatherings a number of beer bottles of a certain kind and puts them all together; the clear whiskey bottles made for a certain distiller's product, and puts them together, saving day by day until a carload or a large consignment is secured. He then communicates with the distiller or manufacturer of the fluid for which these bottles were used. He sells them where they are most valuable and in demand. The same process is followed in dealing with the druggists' bottles. If variously sorted they often bring a high price, whilst glass flasks provided with stoppers are always valuable.

Next comes the rag industry. Old garments such as can be dried and pressed by the second-clothes dealer are sorted out and made useful or presentable with a little repairing. Such hang in the second-hand clothes shops to be sold at four or five hundred per cent. profit. Garments that are useless, and when so considered by the rag man, are certainly very bad, are taken to pieces. If they should contain a portion of silk lining this is taken out and sorted with silk remnants; the padding is kept; the cotton is separated from the cloth. Thus, collections are made of the various kinds of rags. Woolen goods are sold to woolen mills; satinet made into roofing papèr; cotten is sent to the paper mills and converted principally into writing paper. The industry in rags is enormous. Most of the rags from the City of Toronto are exported, and a rag man generally has to sell his wares through a middleman; the middleman doing the sorting, pressing, baling and exporting. Within a half-mile of the City Hall a dozen such rag sorting establishments can be visited. The sorting is usually done in a large loft, sometimes in a sorting room of a building constructed purposely for the work. This sorting is done for the most part by old men and women, sometimes by whole families, sometimes, although rarely, by boys and girls. The latter, however, can generally earn better money in other walks of life, and have not the necessary patience for such work. It is a melancholy travesty upon the influence of time to see a number of old grey-haired women side by side with long grey bearded men, cutting to pieces the residue of by-gone grandeur or extravagant fashion, and sorting it preparatory to pressure, so that it can be baled and shipped away again to constitute its atom in the fashionable whirl of the world's change, to re-appear possibly in the manufacture of some newer texture or garment. Thus, even in clothing, like in other processes of nature, the atoms of the disintegrated are incorporated in the rejuvenated beauty of the new.

Metal appears to be economically handled with rags. It goes by the complex term of "junk." The most useless metal is tin waste. All other metals appear not only to be marketable, but of considerable value; iron and copper possibly the most suitable. Large collec-

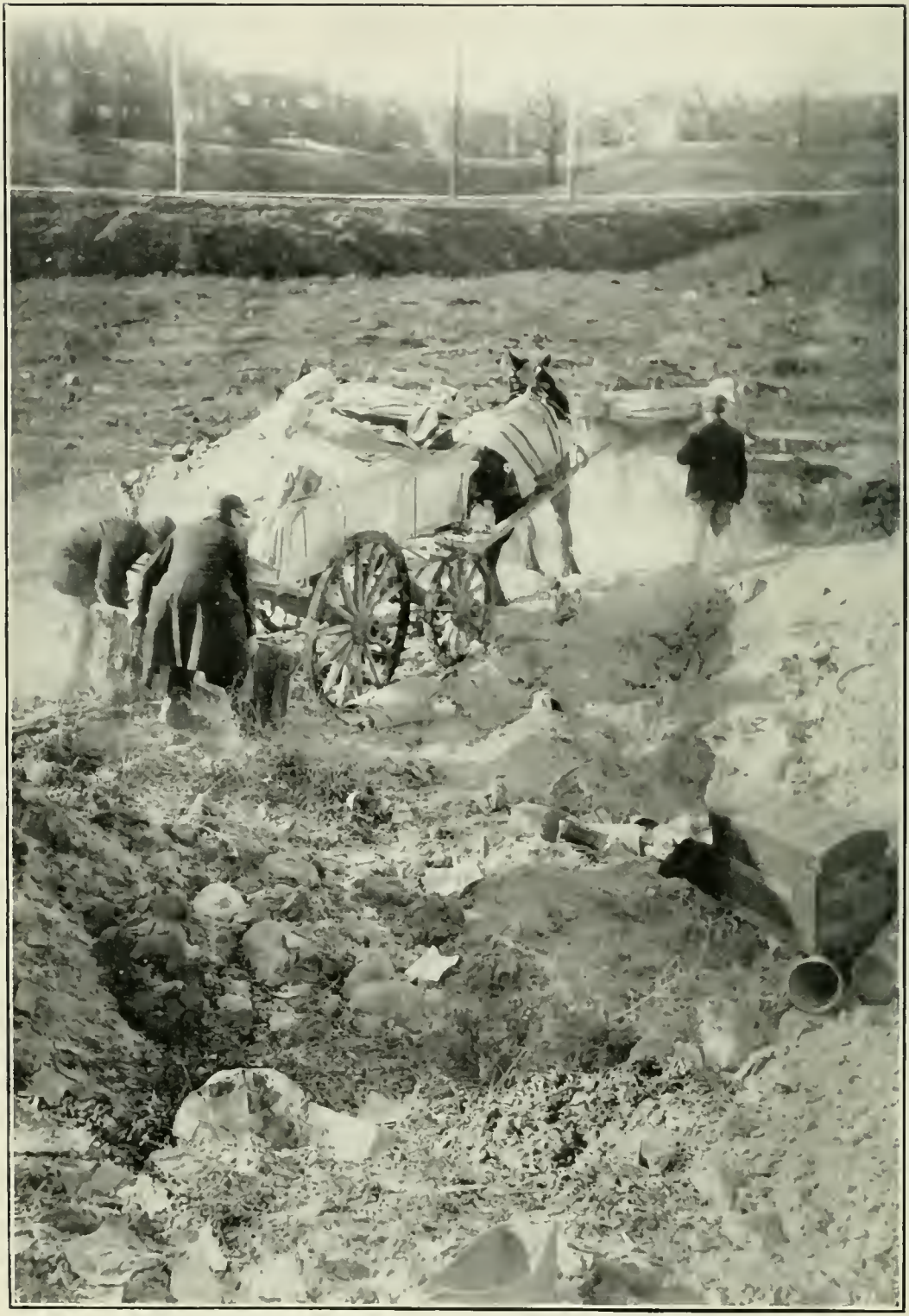


"It is a melancholy travesty upon the influence of time, to see a number of old grey-haired women side by side with long grey-bearded men, cutting to pieces the residue of by-gone grandeur."

tions of such metallic refuse are made from the waste material of reconstructed buildings. Copper is sent to the copper foundry; brass to the brass foundry; lead, including many of the linings of tea packages is sent often to plumbers supplies; zinc is remelted and made into sheet zinc; pewter is sent to the tin factories; tin is sometimes converted into Babbitt and solder; wrought iron is used in rolling mills; cast-iron is remelted in the iron foundry; fittings, such as nuts, screw heads, bolts, nipples, attachments, and gas fixtures, are each sorted and sold at various times to the best possible advantage. The smallest particle of brass is separated and utilized. Portions of rubber are collected; old rubber tires, rubber linings, are sold to the various rubber factories, the secret value of the business depending largely upon the knowledge which those who handle such material possess, as to where a market is to be found for such collections.

The next item is to properly dispose of kitchen garbage, which is not only waste material from vegetable and animal matter discarded in the preparation of food, but is also fermentable, apt to decompose, particularly in the summer time, and speedily becomes offensive. It is a difficult problem, for communities rather than for individuals, to determine how much material can most economically be disposed of, and many suggestions have been made and schemes put forward in various parts of the world to treat such refuse satisfactorily. In the City of Toronto, upwards of 200 tons of this kind of refuse is produced daily. Probably the most satisfactory means of disposing of this is by burning it. It is, however, wet, and not easily combustible, and before it can be properly cremated it must be subjected to a process of drying. Neither is the incineration of such material free from objection. Odors are apt to arise, either in consequence of the drying process, or because of the collections being offensive by the time they reach the incinerator. In some cases fuel is necessary in limited amount, to be added to secure rapid cremation, which adds to the cost of treatment. Speaking generally, this refuse is at the present time a decidedly worthless waste. The distance it is required to haul material before it is finally disposed of is an important item in the handling of it. Many devices patented in various countries in operation in various cities of the world exist. At Westmount, near Montreal, there exists a very complete plant of the kind, although operating upon a small quantity of such refuse. The material is here consumed by fire and the heat thus produced utilized in the production of electrical energy for lighting the town, and whilst such a mode of usefulness may be available for a small municipality the uncertainty of supply and character has rendered its application in general so far unavailable for large districts. These incinerators are generally provided with a very tall stack to deliver the fumes generated at the plant high above surrounding buildings, so as to reduce offensiveness. The body of the incinerator is built in compartments, embodying a series of arches of fire brick and fireproof clay bars, upon the surface of which the mass of refuse may be sufficiently dried to permit of its being consumed in a hot fire, while the surface of the huge oven is reached by means of a ramp on either side, up which the carts of refuse pass and dump their loads, which are thrust into the drying oven through circular apertures in the crown. This furnace requires to be operated day and night, thus a double staff of men are required, and whilst the fuel consumed is comparatively small, the labor and the haulage constitute a very important item of cost in considering the working out of such a plan.

Roughly speaking, it costs upwards of $1 a cart-load to dispose of this material. Considerable thought and scientific work has been devoted to solving this problem upon a cheaper basis, and many of the cities of the United States are at the present considering the possibility of extracting from this complex refuse mass whatever there is of value contained in it, and companies have been formed to reclaim it, so far with questionable success. In Cleveland, Ohio, they have been able to carry on such work apparently at a profit; the process having for its object the extraction of grease from these collections and the reduction of the remains into fertilizer, which is sold to farmers. The material is carried in huge cars, which contain about 80,000 pounds each, and delivered to the works, some miles from the city. This material is then thrown into large tanks and cooked with steam forced into the tanks at 80 pounds pressure. It is cooked for about seven hours, when it is transferred to a centrifugal drier, supplied with fans. After it is dried for ten or twelve hours it is subjected to a 4 per cent. of naptha, for the purpose of extracting the grease. Ordinary garbage will contain about 4 per cent. of grease. The grease is extracted in this way by distillation, the naptha reused, while the residue is further dried, bagged, and sold in agricultural districts as fertilizer. The adoption of a similar process generally is not possible at the present time for several reasons, the principal of which is that in order to secure a satisfactory and profitable market for the fertilizer, the surrounding agricultural districts must be suitable and desire it, which is not likely to be the case where a heavy rich soil with abundance of ordinary stable manure is available. Moreover, the operation of such a plant is attended with considerable smell and offensiveness, and unless a suitable district is at hand, near to the municipality, and facilities for shipment by rail available, it practically precludes this method of dealing with the question. In the future, however, it is quite possible that some modification of this process, less complex may be introduced, so that its employment will become more general. It is a matter of very great scientific interest that the extraction of fat from waste residue is attended with profit, and in the not far distant future the same process, or some modification of it, may utilize even the sewage of a city, for when we contemplate what a valuable element is fat, and consider the enormous amount of fatty matter which passes into a large sewer in the form of soap grease, soapy water and kitchen washings, and that the same is quickly deposited in various settling tanks, or so-called septic tanks, without any added cost, it would appear as if the "sludge" of sewage would some day become available for regeneration at a profit. A method sometimes adopted is to mix this decomposing and fermentable refuse with ashes, etc., and dump it in low-lying marshy districts. Indeed, this has been the general method of disposal throughout the American continent, and is the one perhaps most generally used at the present time. It is contended by many who have studied the question that it is really the most profitable method of disposal. Here again, however, the question of location modifies very much the value of the process. If, for example, you made observations from the car window as you leave New York City by the Jersey Central for the South, of the immense tracts of reclaimed land in the State of New Jersey, and in close proximity to New York, so valuable as factory sites, and observe the enormous volume of various kinds of refuse from factories, smelters, rolling mills, and other industries, teamed into the marshes and lowlands, you will easily



" Nearly every city has had its area more or less completed in outline by such work."

be convinced that here at least such a method of disposal is probably the simplest and the most profitable. In the City of Toronto a similar method has been adopted to a considerable extent, and will be in part continued for some time to come. In the eastern section of the city, for example, some four hundred acres of land have been rendered available for factories and railway lines, most of which has been either leased or sold by the city for such purposes, and it becomes an asset of no mean value when the economics of the problem are considered. As municipalities grow, railways demand land for yards and tracks, which are difficult to secure and are of great value. These are most generally made by what is technically known as "filling." Nearly every city has had its area more or less completed in outline by such work. The question is sometimes discussed as to the sanitary or unsanitary influence of such deposits. While it is true that material of this kind, when mixed with ashes or redceed slag, will be very slow in the process of decomposition, and probably remain little changed for some years, yet as the surface becomes covered with loam and the vegetable fibre developed in connection with the green sward, there is little danger of any offensive gases doing damage by penetrating this protective covering, while sanitarians are now-a-days less concerned about such reclaimed land being used even for dwelling houses than they formerly were.

There are very few settled communities but have marked instances where ravines, creeks, and ponds have been levelled up, and the continuity of its streets and roads maintained by similar work. Ash is the scientific chemist's idea of residue. Apparently it is the last remnant of indestructible matter, yet such is far from unprofitable. For filling purposes it is most valuable, and much more suitable for filling inequalities in select districts than other refuse. Also for repairing unimproved roadways, and securing a cheap and solid bottom for a road where a permanent roadway would not be possible, the ashes, and particularly the coarser parts of them, in the form of clinkers and cinders, are well worth preserving for future use.

SOME PRINCIPLES OF SEWAGE DISPOSAL

By T. AIRD MURRAY, M. Can. Soc. C. E.
Consulting Engineer of the Saskatchewan Bureau of Public Health

The term "Sewage Disposal" has, by custom, come to mean some method of purifying sewage or disposing of it in such a way that it will prove of no nuisance either from an aesthetic or a sanitary point of view.

The term "Sewage" has, by custom, come to be connected generally with towns which are provided with a water supply, and practically represents the water supply after it has been used and mixed with all the waste material which it is possible to carry away in pipes or sewers.

Sewage, composed principally of water, contains smaller proportions of both organic and mineral solids, both in suspension and in solution, as well as organic and inorganic compounds. It also contains large numbers of bacteria. An ordinary thimbleful of sewage may contain over one million bacteria.

The aesthetic nuisance produced by sewage is due to the organic solids and compounds, which are said to be unstable in their chemical composition, that is, ready to undergo immediate change. The process of change which they undergo is called putrefaction. The process of putrefaction is accompanied by the generation of gases and foul odors.

When sewage empties into streams or lakes, the organic matter at once commences to absorb from the water the available oxygen. This is the reason why fish die in streams which carry a large proportion of sewage. Fish do not thus die because they are poisoned or because of any disease, but simply by suffocation as they require oxygen just as land animals do.

If you put fish in a bottle and cork it, the fish die as soon as they exhaust the oxygen which is in the water. So fish die in a stream when the sewage exhausts the oxygen at a rate greater than the water can absorb it from the atmosphere.

When sewage empties into a large body of water and is thoroughly diluted it produces no aesthetic nuisance, because there is sufficient oxygen to bring about all the changes necessary to the organic matter to render it inorganic and so no longer be subject to putrefaction. This is termed disposal of sewage by dilution, and as long as the water which receives the sewage is not used for domestic purposes, the system is quite satisfactory from the aesthetic point of view.

The sanitary nuisance produced by sewage is due to certain types of the bacteria which it contains. These types are called pathogenic, because, if they come in contact with the human system they produce disease. They may produce cholera, typhoid, dysentery and diarrhoea or so-called "water-borne" diseases.

If there were no pathogenic bacteria in sewage, then sewage, no matter how foul it appeared or where and in what it was situated, could not at any time cause any disease. The sanitary significance of sewage, or the danger to health connected therewith, consists solely in the bacteria, and the chemical changes which take place have no health or sanitary significance apart from any other chemical changes which may produce obnoxious smells such as happen every day in the chemical laboratory, or which may have the effect of depleting the surrounding environment of oxygen.

If sewage containing pathogenic bacteria, finds its way into streams or lakes,

into wells or reservoirs, providing water for domestic purposes, then the exact diseases which the germs represent are at once produced in the people using the infected water.

If there were no cholera germs in the sewage, then no cholera would make itself apparent. So with typhoid. Typhoid is the most common of all the "water-borne" diseases, because typhoid is very difficult to control. The typhoid infection, or bacteria, is given off with the excreta and directly finds its way into the sewage.

There may at some particular period be not one single case of typhoid, say, in Toronto, but some one comes from some other city or town who is a typhoid carrier (as he is now called) and infects the sewage of Toronto, which may in turn infect the water supply if the sewage comes into contact with it, and so we may suddenly have a great number of cases or an epidemic as it is called.

We therefore see that there are two important principles connected with sewage disposal; the one relating to the removal of conditions which at once make themselves apparent to the senses, and the other relating to something which does not make itself apparent to the senses, but which from the sanitary point of view is the most important.

It is possible to purify sewage from the aesthetic point of view, so that it looks just like clear, sparkling spring water and yet it may contain multitudes of typhoid bacteria.

Generally, one should never drink dirty looking water, but dirty water may at times be perfectly wholesome, and the clear water absolutely dangerous.

A complete system of sewage disposal to satisfy both aesthetic and sanitary requirements would probably consist of the following processes:

(a) Removal of suspended solids.

(b) Oxidation of organic compounds, or removal of tendency to putrefaction.

(c) Disinfection or removal of the bacteria.

REMOVAL OF SUSPENDED SOLIDS.

This is generally accomplished by collecting the sewage in large tanks when it remains for a period in a state of almost quiescence. During this period most of the solids which are heavier than water will settle to the base of the tank, while the solids which are lighter than water will float on the surface. The solids are retained until they accumulate to an extent to interfere with the working of the tank, when they are removed, dried, buried in the ground, or otherwise disposed of. If the sewage is reduced to total quiescence about from 70 to 80 per cent. of the suspended solids are retained, and the percentage retained becomes less in proportion to the velocity of flow at which the sewage is allowed to pass through the tank.

Such tanks are called sedimentation tanks, and generally accompany all methods of sewage disposal whether the process is to be complete or only partial.

OXIDATION of ORGANIC COMPOUNDS OR REMOVAL OF TENDENCY TO PUTREFACTION.

This may be accomplished by dilution as we have before explained. Chicago disposes of the whole of its city's sewage by dilution in the canal. Dilution unless in sea boards is, however, seldom practised, as large bodies of water not used for domestic purposes are seldom available in inland localities. Land of an open or variable character, such as sand or sand and soil mixed, is very suitable for oxidizing sewage, when an acre can be oxidized for about each 1,000 persons. This system is termed land filtration, and if properly managed by not over dosing the land and giving it alternate rests and providing good underdrainage is generally successful.

The most modern method of oxidizing sewage and which is, generally speaking, supplanting land filters, is by providing artificial filters of rough broken stone or other hard material. When such filters are properly constructed and the sewage uniformly distributed over their surface and allowed to percolate gradually through the filter, as much as 2,000,000 gallons of sewage per acre can be efficiently treated. This method is apparently most suited to Canadian conditions, as the small space occupied allows of frost protection in severe weather.

The effluent which flows from such filters, although robbed of a large proportion (about 80 per cent.) of the original bacteria in the raw sewage is not fit for domestic purposes and not fit to mix with a domestic supply. For instance, if the sewage contained originally 1,000,000 bacteria per c.c. (this is not a large figure) an 80 per cent. removal would still leave 200,000 per c.c. in the oxidized effluent.

DISINFECTION OR THE REMOVAL OF BACTERIA.

This can be done by either passing the oxidized effluent through fine sand filters such as are used for purifying water supplies, or by direct disinfection by using or mixing with the effluent a germicide. Many germicides have been used and experimented with. The most successful one up to date being calcium hypochlorite (or chloride of lime). Calcium hypochlorite has a most wonderful effect in destroying germ life even when used in infinitesimal quantities, such as two parts in 1,000,000 for oxidized sewage effluent, and only three parts in 1,000,000 for ordinary water supplies.

Used in such small quantities it has no further apparent effect than the germicidal action required of it, and adds practically nothing to the water or effluent, which is undesirable. The germicidal effect is the result of the liberation of nascent oxidation from the hypochlorite when mixed with water.

The adoption of the above processes either in whole or in part as local conditions may require, will accomplish everything that is required by Canada to guard against its rivers, lakes and water supply resources, becoming sewage contaminated, unsightly from an aesthetic point of view and impossible from a water supply point of view as is the case with many of the older country conditions.

It is interesting to note that Canada, generally, has awakened to the great importance of this subject and we find signs on every hand of practical measures being adopted to ensure the conservation of pure water.

The appointment of Dr. Hodgett's, late of the Ontario Provincial Board of Health, to a Dominion position to administrate and advise on this and other health questions has given great satisfaction to all those in Canada who have progressive sanitation at heart.

The appointment lately of a Government Bureau of Public Health for the Province of Saskatchewan with Dr. Seymour as Chief Commissioner of Health, will also be accompanied with great and practical results. Dr. Seymour has already done wonderful work in the Far West. He has obtained from the Government a Public Health Act which makes it compulsory to purify all sewage effluents before they are discharged into streams. The cities of Regina and Moose Jaw have already formulated schemes for the complete purification and disinfection of their sewage effluents, and other cities and towns in the province are about to follow suit.

It is pleasant to think that Canada is not behind the times in makers of health, but is willing to take full advantage of all the experience and knowledge gained by older countries.

WHAT WE CAN DO FOR POSTERITY

The First of a Series of Articles to Appear from Time to Time

By HELEN MacMURCHY, M.D.

The Canadian home and its children are the greatest asset of Canada. Now let us do all we can to found, to foster, and to prosper it. The Canadian home is a good home and there are good men and women, big and little, in it. But are there enough of Canadian homes?

There are three ancient anecdotes which appear in every general election. First, the English agricultural voter who complained when he and his fellow-citizens were regaling themselves on claret that "they did not get no forrader."

The second is of the great unknown who remarks,

"It may have been right to dissemble your love,
But why did you kick me down stairs?"

And third, the politician who is understood to have shut his heart to the claims of the coming generation in the following succinct fashion: "Posterity—why should I do anything for posterity? What has posterity ever done for me "

After all, these three anecdotes appeal to three principles in human nature. We do want to get "forrader" and get things over with, or at least make some progress. We do like to see people govern their actions by their real feelings. We do feel the need of some sound, sane, hard, common-sense reason for what we do. And—applying these principles to the case in hand—few of us there are who do not wish to do something real, even if small, for the progress of the race. Fewer of us still would be averse to an opportunity of acting out what we think. Fewest of all would wish to sit down at the banquet of life — spread for us so largely by the exertions of our parents and grand-parents and forebears, who reserved seats for us and held us in them until we were able to fill these seats in some fashion—and rise from the table without paying the reckoning. For before we go from the feast, leaving the empty chair and the silent corner, one of the great duties of life which we should have performed is to provide some one to fill our vacant seat.

"First catch your hare," said the cautious author of a French cookery-book. Before we can do anything for posterity we must have a posterity to do it for.

There are many hindrances to this in modern life. Marriage is delayed. Tennyson's curse against those who, sinning, sin against the strength of youth is unhappily not much less often called forth in our time than in his. And there is the crime against the unborn. Of the last-mentioned, it may well be said that the greatest temptations to it spring from a selfish, unnatural, pleasure-loving, foolish mind and heart and life. There is the husband who never thinks of the other person's point of view, till the poor wife flies for some help and consideration to the dispensary or the doctor, or alas to the abortionist. One thinks with grief and shame of these things. And yet they happen in Canada, and we know it.

Then there is the unfit mother, unfit most of all in heart. Come from nothing, she has set vanity in her heart; and Cobalt stocks or the automobile, or clothes or bridge or some other folly, robs her of the joys of motherhood, and the true riches of Cornelia's jewels.

It is to be hoped that an awakened public opinion, both professional and

lay, will render it more and more difficult for the professional abortionist, that disgrace to humanity, that black shame to a noble profession, to exist among us. It is not he alone, but also those who shelter him, connive at his escape, or refuse to prevent his wickedness when they could and should do so, who are to be blamed. Time was when parents felt they should make an effort against early and improvident marriage. Few parents need to do that to-day! And few take any charge of such matters. Is this any improvement? No experienced family physician will be anxious to hasten marriage unduly, but the present urbanization of our population has made a serious difference in regard to social interests. The youth and maiden of from sixteen to twenty-six are too often found in the unlovely surroundings of a place not at all fitted for them, where they see no one they care about and no one takes the trouble to think whether they have any friends or not.

Meantime, what about posterity. Man and woman alike find the shell of a solitary life harden upon them. They forget how sweet and true and lovable and loving human nature is. They never find out how beautiful it is to live for and belong to some one who as surely lives for and belongs to you. And so the angels of the children's souls must wander sorrowfully back to Paradise because the children cannot come into the world, on account of the hardness of the world's heart.

The Angel of Life and the Angel of Death meet together at the poor man's door, and there is none but the physician who can open the door to the one and bar the entrance to the other. Alas, sometimes our visit to the home is made only to witness the tragedy of the Too Late, or the tragedy of the sin that Tennyson speaks of bringing sickness and invalidism and sterility in its train.

There are signs that in the not distant future humanity will take one more step forward and that the civilized nations will demand from their physicians answers to certain questions closely connected with certain sins. For this advance we must prepare ourselves, in the interests of posterity. We have done our best to serve our generation. But a new generation comes. New and better thoughts visit the minds of men, and visiting, find a welcome. The order along the whole line is "Advance," and we should be in the van. Especially should we devote ourselves to the public and private service of the Home. The man and woman who make a home have rendered to their own generation and to posterity the greatest service of all.

OUTLINE OF THE SUFFRAGE MOVEMENT

In Its Relation to Women and Race Improvement

By MIRIAM WILLIAMS BROWN

The woman's movement began with the first dream of freedom that the first woman had, and it will end only when the world is a true democracy. We smile in a superior sort of way when we read of the organized effort of the Turkish women to discard the veil for street wear. Some people who have grown wise see the pathos in the fact that such an effort is necessary. These Turkish women want to be free to be themselves; but in their native land, they are not permitted to exercise the functions of full grown women in civilized countries. It is within the memory of many of us that a great struggle had to be endured to open college doors to women. Opponents of the woman's movement raised all sorts of objections. They claimed that women were not capable of comprehending a college course; the work would be disorganized if women were permitted to attend lectures; women would become coarse if they associated so intimately with men. (This last argument is rather hard on men; is it not?) But at last women were admitted to colleges, and none of the dire results that had been prophesied followed. What a pity it is that every girl who has the advantage of a college education to-day does not know the history of the struggle of those brave pioneers of the cause who had to fight hard to gain this privilege for women. How many Canadian women who earn salaries or enjoy property left them by relatives, realize that thirty years ago industrial opportunities for women were regarded with as much disfavor as the timid and conservative of to-day regard votes for women? Only at a sacrifice of social position could women enter the realm of gainful occupations. In those days—and these facts are still true of the State of Louisiana and some other countries—woman had no legal control of the child she had borne. The husband could sell the community property without the wife's consent or knowledge, while the wife could not dispose of her own separate property brought into the marriage estate through inheritance or otherwise, without the husband's authorization. The wages the wife earned belonged to the husband. Every Canadian woman would rise in rebellion if the right to her own property were denied her to-day; yet, only a few short years ago, some one had to face and wrestle with the then unpopular question of women owning property. The time was when many women were scarcely better than toys or slaves. Then some women broke through the lines of conventionality far enough to desire to express their individuality; then some were brave enough to not only think, but act. Gradually have all the avenues along which men only have hitherto gone, been opened to women, and by degrees the obstacles to the exercise of woman's full powers are being removed. To-day, Canadian women may enter almost any profession or carry on nearly any business that they choose.

By what right does one class of people say: "We shall govern, we shall own property; we shall have the advantages of learning, and you shall do none of these things, or only as many of them as we feel inclined to permit you to do"? I fancy there were many good, conservative folk who were shocked when the

barons compelled King John to sign Magna Charta. The same sort of persons to-day have much to say against the women who protest against paying taxes and having nothing to say as to how much money shall be disposed of, and against being asked to observe laws which they may not frame. Our politicians are fond of telling us that when women want the vote they will get it. Had these politicians been present at the third convention of the International Woman's Suffrage Alliance held in Amsterdam, June 15th to 20th, 1908, and seen the earnest, enthusiastic women gathered from the twenty-one countries represented in the Alliance, they would know that the day is at hand when no intelligent man can truthfully say: "Women do not want to vote." Twenty-one countries! Think what that means! Bodies of earnest women in twenty-one countries working for the franchise for women. That means that we are going to have it. That congress of women, with delegates from Norway, Africa, Russia, America, Bohemia, Australia, and from all parts of the civilized world, proclaims the assertion, "women do not want to vote" to be untrue. Politicians must look for another excuse. When we reflect that attending this convention in Holland meant a sacrifice of time, money and convenience to many of the delegates, we are still more firmly convinced that thoughtful women do want a voice in making the laws that govern them, the laws that protect their homes and their children.

Just five years ago the International Suffrage Alliance was formed and during the interim has grown from a federation of eight to a union of twenty-one countries. Much has been done during recent years in all parts of the world to advance the cause of woman's suffrage. The second convention of the Alliance was held in Copenhagen three years ago. Since that time Denmark has given women municipal suffrage on equal terms with men, and Holland advanced along similar lines as the result of the third convention held there a year ago. For some time workers for the cause of woman's suffrage have rejoiced over the fact that New Zealand, Australia, and four of the States of American Union (Colorado, Wyoming, Idaho and Utah) had granted full suffrage to women. Opponents said that these gains were not important. These countries had no history and their future was not assured. However, time will pass and countries will get themselves histories and no better page can be written in any history than that of equality and justice between men and women. Then "Norway, a country with a long and honorable history, with a stable and independent government, granted the franchise to women." Finland followed the example of Norway and at the succeeding general election nineteen women were elected members of the Finnish parliament. To-day there are twenty-five women members of the parliament of Finland. England has made a substantial gain. After nineteen years' struggle a statute was enacted making women eligible for town and county councillors and aldermen. At the following election, six women were chosen as municipal councillors, all six being elected by handsome majorities. Conservative, scholarly, old Oxford was among the first cities in England to elect a woman as member of the municipal council. Recently a woman wes elected as mayor of a town in the north of England. Even Germany has gained a point. Its law regulating political organizations has been revised and women are now free to join political associations, to organize women's suffrage societies and to conduct suffrage campaigns. Already appeals to grant woman's suffrage have

been made to four German legislative bodies.

Delegates from seven countries came to the Holland convention vested with larger political rights than they possessed at the time of the Copenhagen convention two years before. These were Norway, Finland, Denmark, Sweden, Iceland, England and Germany. Even in Spain and the Phillipine Islands bills have been introduced into the legislatures by friends of the movement. The struggle for woman's suffrage is world wide. A report from the Japanese minister at Washington states that the women of his country bid fair in this respect to outdo the European women. One conversant with affairs in Japan says that he would not be surprised to see the women of that country receive the franchise within the next five years. The Turkish Women's Suffrage Society sent greetings to the delegates at Amsterdam. Austria and Russia do not allow political organizations for women; but notwithstanding this restriction both countries have their suffragists and both of them, as well as Hungary and Bohemia had representatives at the Amsterdam meeting. During the past year fifty-one parliaments received petitions to grant women suffrage.

The following facts are significant and augur well for the success of the woman's suffrage movement in countries where it has been tried: Australia and Norway each had a delegate at the recent convention who was appointed by the Prime Minister of her country and her expenses were paid by the government. Denmark has a fund to be used for the study of social problems, and out of this fund part of the expenses of two Danish delegates was paid. Utah, Wyoming and Colorado had delegates appointed by the governors of those states.

"Do women want to vote?" "Would women vote if they had the franchise?" are questions that we often hear. The questioners no doubt have in mind how many men fail to avail themselves of the privilege. Not long ago the returns showed that 40,000 men in the city of Boston had failed to exercise their right to vote. We cannot reasonably expect irresponsible, disfranchised women to take an active part in elections; but it is interesting to note what the women in the countries that have the franchise do. Women form 42 per cent. of the population of Colorado and they cast 48 per cent. of the votes. The following extract from "The Socialist Woman" is illustrative of the work done by women in politics:

"The telegraphic sensation of election night was the vote given Ben. B. Lindsay for judge of the Juvenile Court in Denver, Colorado.

"The 'kid judge' was elected in spite of the fact that both old parties refused to nominate him, and he ran alone with only the prohibition endorsement. He received more votes than all ten opponents put together.

"Three years ago Judge Lindsay was almost as much disliked by the politicians, but was nominated by every party except the Socialists. The women insisted on that nomination and got it. Last year the 'bosses' thought they could defy public sentiment and dropped Lindsay from their ticket, with the resulting landslide of scratched ballots. * * * I am proud of this proof that when women know what they want they go after it and get it."

The successive passage of woman's suffrage bills by six Australian states one after the other is another proof of the success of the movement.

Hon. N. J. Moore, Premier of Queensland, writes: "The women take a quiet but very active interest in the polling. The percentage of the male and female voters in this state at present is 60 and 40 respectively."

Bishop J. E. Mercer, of Tasmania,

says: "I have long taken a keen and practical interest in woman suffrage and am glad to give my experience of its workings here in Australia. The terrible revolutions prophesied by alarmists are conspicuous by their absence. But it is possible to trace various subtle modifications in public feeling which I regard as wholly beneficial. The position of woman has undoubtedly been improved since the new political force has had to be seriously reckoned with. Women themselves are gainers by having to face the responsibility of full citizenship." Among the advantages the Bishop enumerates is a greater emphasis "on the moral functions of the state." In conclusion, he says: "Australia is thus reaping the reward of having responded to the unanswerable appeal of justice."

All through the history of the ages it has been the minority that pushed forward; the majority later avail themselves of the privileges obtained by the courage and foresight of the minority. On June 15th, 1215, King John signed Magna Charta. June 15th, 1908, the International Woman's Suffrage Alliance met in Amsterdam. Slowly but surely have the ideals of liberty expressed in the Great Charter told on the human race and to-day the members of the woman's suffrage societies stand pledged to work for this final step, the recognition of woman as man's equal and co-worker. Under conditions which will permit her to have a full share in all the great interests of human life, social, political and moral, she will have a better chance of becoming "A perfect Woman, nobly planned.

To warn, to comfort, and command," than she has had under the old system which excluded her from the broader interests. Then, and only then, will men and women be able to walk the world to-gether "yoked in all exercise of noble end." This is the ideal towards which the Canadian Suffrage Association with its federated local branches is working. We hear less of what is being done in Canada for the cause than of what is being done in England and elsewhere. Owing to the fact that most of the Canadian women who are interested are professional or business women and they have little time to spare from their other duties, less is being done here in the way of propaganda. But he who reads the signs of the times knows that the next few years will see great changes. Local suffrage association branches are springing up everywhere. The work in Canada has been carried on in a quiet, dignified manner, especially in its educational phases. There has been none of the sensationalism that they have in England. Whether the members of the "Woman's Freedom League" are justified in their militant tactics or not, it is certain that the Canadian Association has not done enough to justify it in adopting drastic measures.

It should be clearly understood that there are several suffrage organizations in England, all working for the franchise for women, the differences of the organizations being that of methods only. The oldest society is that of which Mrs. Fawcett is president, "The National Union of Woman's Suffrage Societies." Its members believe that the cause is not to be won by violence; they do not break laws nor disregard police regulations. They are known as suffragists. The body known as suffragettes are those of whom the newspapers tell such thrilling tales. One of their members in explaining their attitude, said: "Time and time again we have been promised a majority in the House of Commons, and each time the members of parliament have broken faith with us. We see that it is useless to try to win by fair means. We know that men had to resort to violence to gain the franchise and we are forced to do likewise. We intend to make things so un-

comfortable for the House that it will be obliged to listen to reason. People laugh at us now, but in years to come it will be those who did not join us who will be laughed at."

In England, conditions are very different from those in Canada or the United States. Women have for many years taken part in politics, have done all the hard work such as organizing, canvassing from house to house, conducting committee rooms, getting working men together and teaching them how to vote. English politicians ask and expect this service of their women. One of the speakers at the convention said: "For twenty-five years I have worked hard at the drudgery part of politics for the Liberal party, but I shall never again lift my hand in the interests of the Liberal, or any other party until the men who ask me to work recognize that if I am capable of instructing the voters, I am competent to cast a vote."

In England all suffrage societies, even the National Union, known there as the conservative faction, are making themselves felt in the elections. They open women's suffrage committee rooms and conduct a campaign for or against the parliamentary candidate, according to his attitude on the woman's suffrage question. Here, in Canada, and the United States, where we "are so conservative that we are not even ashamed of it," such proceedings would no doubt be regarded as a shocking innovation. Still the events of the last two years are not without their hopeful prophecies and the words of an Italian delegate at the Amsterdam convention are applicable to us. "We have, like other countries, strong feminists, conscientious workers, courageous suffragists—suffragists who fear no ridicule, who proclaim their faith openly, who descend into the arena to struggle against the laws and to obtain that weapon by which the people have been enabled to raise themselves and by which women also will be able to improve the condition of their lives."

Editorial

Swat the Fly.

Drive forth the fly from the haunts of man and swat him so he return not. He is an enemy of the human race.

An enemy, inadvertently maybe, is the common household fly, Musca Domestica. But inadvertency is no excuse for the breeding of pestilence. And the house fly carries death on his wings. He alighteth on the dung heap and the swill barrel, on the sputa of tuberculosis and excreta of the fevered. He visiteth the lazaretto and beareth away a billion wolves of the microscopic world to feast upon the vitals of his friends. Be not his friend.

In the sultry hours of summer the bald man fretteth at persistence of the fly: for the fly loveth a shining mark. But the fly also loveth the innocent babe and in his path and his lust o'er her dimpled person leaves the poison of disease. He generates on our meat and dallies with our drink and the deadly toxin of miasmatic microbes is sole payment for his fare.

Screen therefore your doors, your windows and your food against this pilot of pollution. Swat Musca Domestica and sweep him from the confines of our home.

* * *

Charles Sheard and His Successor.

Fellow citizens of Doctor Charles Sheard, of Toronto, Ontario, have learned with regret of his irrevocable decision to retire from the directorship of that city's Health Department. Dr. Sheard is enshrined in the hearts of his many friends as a model of decision of character, high principles and broad sympathy, as a man among men, companionable and respected in his opinions by all, including the few whose civic line of thought runs counter to his own.

The present number of the Canadian Therapeutist and Sanitary Engineer is honored by a photogravure of Dr. Sheard and an article from his pen. He is seen sitting at his hard-worked desk in the Toronto City Health Office; the office which has known Dr. Sheard for so many years and the office in which the people of Toronto hope to find him a frequent visitor, at least, in the capacity of consultant for many years to come.

It is felt that time, compatible with Dr. Sheard's personal arrangements, should be taken in the choosing of his successor.

The importance of a modern city health department is such that the best available man for director should be chosen, and the official salary, within reason, should certainly be a secondary consideration.

There are many qualified men in the city of Toronto whose duties well and quietly performed constitute the best herald of their fame; men of mature experience to whom the properly recompensed unpolitico-bickered directorship of Toronto's Health Department would be neither a stepping-stone nor a goal but a loving service.

An efficient modern health officer is both a scientist and a philosopher. His field of activity is as wide as human frailty and his knowledge generally as ripe. He is the sociological element from which the afferent and efferent nerves of a community spring.

The efficient health officer deals in sanitary matters with the individual and the community in their inter-relations.

He is the recipient of the pain-jolts and therapeutic knowledge of society and the guider of its local action.

Let, then, the city of Toronto find the man who will follow in the office of Dr. Charles Sheard efficiently; and in the finding let the City of Toronto continue efficiency by making its unrestriction the first aim.

* * *

The Medical Council.

Midsummer sees the meetings throughout Canada of a number of medical councils. It is to be hoped that the narrowness and the commercial spirit, so prominent in past proceedings of some of these bodies, will be lessened this year. The sight is far from edifying of practising physicians of reputed high ideals, graduates mostly of equally efficient national universities, meeting, in the different provincial subdivisions of this country annually or more frequently, at the expense of an easy-going professional electorate, apparently for the purpose of levying questionable taxes, collecting personal expenses and strengthening against one another the by-law fences of local lobby-purchased medical preserves.

The motives may well be questioned of such provincially encounciled members of the noble and naturally unconfined profession of medicine who not only impede the arrival of interprovincial reciprocity in medical registration but who unprotestingly inherit a departure from the economical, broadminded and dignified position of pure inspection and academic standard regulation and yield their yeas to its continuance and to the continuance, by test duplication, of petty distrust in the examining probity of our great state-endowed and co-standardized universities.

* * *

Conserving a National Resource.

The Canadian Commission on Conservation has buckled down to work with the knowledge that public health is the fundamental national resource. The Commission has been wisely allotted the services of the recent secretary of the Ontario Board of Health, Dr. Charles A. Hodgetts, in the capacity of medical advisor to its committee appointed to look after Canadian hygienic conditions. And an idea is spreading that there may now be something doing in the line of scientific investigation, general health education and regulation under Dominion Government control.

It will be well if the Dominion Government spares no reasonable expense in equipping this Public Health Committee with everything needful to its investigation of diseases and remedies. It may then be found that the productive capacity and wealth of Canada can be very largely increased as the result of better popular control of the various controllable causes of disease.

Ill-health is undoubtedly the outcome of public ignorance existing or remote. So that education of the people in the causes of disease would naturally precede any effective campaign against it. It is not enough to say that sunshine, fresh air, wholesome food and pure water are requisite to health. Man is apparently lazy and will make no effort to acquire opulence in the good things of nature if the opposite action is immediately easier and accompanied by present freedom from personal pain. It seems only by plainly and scientifically pointing out the nature of disease, when it occurs or demonstrating its nature by clear and studied illustration, while carefully explaining the relationship between proved cause and effect, that the ordinary individual's personal experience or awakened sympathy can be made an incentive to effort towards better surroundings.

It will also be well if full co-operation, between Dominion and local

authorities, takes place in protecting the fundamental national resource. A Federal Committee may rightly abide in Canada as an interprovincial medium of search and communication on matters of public health; while local authorities should find absorbing work in advancing local popular education, in co-operation with such central board, and in creating agencies for the enforcement of sanitary rules.

* * *

If Preventable, Why Not Prevented?

The following quotation is the closing paragraph of a speech delivered by our late Edward VII. before a London meeting of the International Congress of Hygiene and Demography, and remains of general application, and particularly at the present time in Canada; and a record of his interest in the conserving of public welfare:

"Where could one find a family which has not, in some of its members, suffered from typhoid fever or diphtheria, or others of those illnesses which are especially called 'preventable diseases'? Where is there a family in which it might not be asked, 'If preventable, why not prevented?' I would add that the questions before the Congress, and in which all should take personal interest, do not relate only to the prevention of death or of serious diseases, but to the maintenance of the conditions in which the greatest working power may be sustained. In this I include both mental and bodily power; for the highest possible posperity must be when men and women of all classes, rich and poor alike, can safely do such good, and useful work as they are fit for, and for which they are responsible to those among whom they live. To this end it is essential that they should enjoy the best possible health and vigor, and to obtain these it is necessary that everything possible should be done for the promotion and maintenance of the national health. Such, then, is to be your work—let me say our work; for though I cannot further contribute to the proceedings of the Congress, I shall watch them with much interest, and shall always strive to promote whatever may be here plainly shown to be useful for the public health."

* * *

The Passing of Koch.

One of the brightest minds, in the person of Robert Koch, has traveled from our ken. On Thursday, the twenty-sixth day of May at Baden-Baden, where he had gone for relief, Professor Robert Koch, of the University of Berlin, admittedly the world's most famous bacteriologist, breathed his last.

Robert Koch was born at Clousthel, Hanover, in 1843. He was then in his sixty-seventh year when he died. He became famous in 1870 upon his isolation of the bacillus of anthrax. Some years later he proposed an effective method of innoculation against that disease; and took his place in the bacteriological field as the foremost scientist of his time. He demonstrated in 1882 the tubercle bacillus which bears his name. His tuberculin, prepared in 1891, became of value as a diagnostic agent. And in following years he led the war on cholera, malaria and the African sleeping sickness.

In the later part of his life Robert Koch was at variance with many other investigators over the question of tuberculosis in the lower animals and man. He held the disease dissimilar in the lower animals.

All our knowledge, however, of innoculation against disease, originated with Koch; and it was undoubtedly his work which made bacteriology a settled science. His literary productions in this direction include: "On Cholera Bacteria,"

1886; "Investigation of Pathogenic Organism," 1886; "On Bacteriological Investigation," 1891.

Robert Koch with his wife visited America within recent years and to those who met him here he appeared, as he was, the most scholarly, the most thoughtful and kindly of men.

Inter Alia

The strict enforcement of sanitary conditions in bakeshops was one of the main topics of discussion at the recent annual meeting of the General Executive Board of the Bakery and Confectionery Workers' International Union. Dr. Evans, of the Chicago Board of Health, made an able and interesting address, during which he condemned cellar bakeshops as insanitary, breeding disease germs and affecting bread and, besides, being detrimental to the health of the bakers.

* * *

Nothing is better established than the fact that the public drinking cup in parks, schools and railway trains is unhygienic, a conveyor of disease germs sometimes of the most serious type. This is so well established, so clearly understood, that one feels apologetic even to mention the fact. But save for improvements here and there in parks and schools we are still a long way from the abolition of this dangerous nuisance.

City parks and schools should be much further in advance in this matter than the railroads, principally for the reason that they have abundant water supplies with which to operate "bubbling cups," while the water supply on the railroad train cannot be so wastefully used.

But even there the solution is cheap and easy. Paper cups may be sold for a song to those passengers who have not yet fallen into the practice of carrying their own cup. Canadian railways might well adopt the present Rock Island Railway system where paraffine cups are supplied from penny-in-the-slot machines, and after once being used are cast aside.

* * *

Hygiene and sanitation have come to play a leading part in pretty much every variety of human activity. Cities, towns, armies, navies, great industrial plants and engineering enterprises are all dependent for success upon adequate attention to the prevention of disease. In looking over the recent report of Dr. W. A. R. Michell, now of Toronto, the surgeon of the late Shackleton Antarctic expedition, one is impressed by the great changes which diet and hygiene have made in the work of polar exploration. A few decades ago all such expeditions brought back harrowing tales of the suffering caused by scurvy and other diseases. Mental depression, evidently due in part at least to physical causes, was also a serious feature of life during the long Arctic night.

The following extract from the story of Dr. Michell is in striking contrast to the pictures painted by the survivors of some of the earlier expeditions: "We had not a trace of scurvy, no coughs nor colds, no anaemia, zymotic diseases, no rheumatism. Some members of the party suffered slightly from dyspepsia during the winter, but this might be ascribed to large appetites and little exercise. We felt none of that depression of spirits

of which grewsome pictures are painted by some polar explorers."

Perhaps polar expeditions will come now to be recommended by family physicians for the health of their patients.

* * *

Toronto and other centres in Canada have been considering plans which look to improvement along "city beautiful" lines, some of which include the elimination of excessive noise. It is well to aspire to the "city beautiful" and to efficient and healthy cities, but none of these ideals can be attained as long as there continues the noisy city. In the matter of health alone measures for securing a cleaner city and methods for combating diseases may be so thoroughly enforced as to raise the standard of health greatly, but so long as noise is overlooked and unabated many of the dwellers of the city become sufferers.

It is stated on good authority that "diseases of the nervous system are naturally increasing with the increasing population." But it is in the big centres of activity, that increase in population is proceeding fastest. The increase in nervous diseases is in a measure related to the conditions of city life. Quietness is an essential restorative of depleted nerves and nerve force is vitally important to health and efficiency. If it is necessary to have quietness in school rooms so that the pupils may study to greater advantage; if quietness must be had in the public libraries so that people may read and think under the most favorable conditions, is it not fully as desirable to have noiseless streets, especially in the chief business thoroughfares, so that men may attend to their business without harassing, screeching interruptions pouring in through windows and doors?

* * *

The health of a community is always paramount and protection from such diseases as are spread through sputum is the first duty of authorities. To this end anti-spitting ordinances should be vigorously put into effect. These ordinances exist in many Canadian communities and, where so, police departments should take hold without urging from boards of health.

* * *

In the current number of the Health Department Bulletin of Chicago an effort is made to explain away certain old-fogy maxims and to substitute a few modern epigrams. If you must have epigrams, says the Department, try these:

Underfeeding is bad: overfeeding is worse.

Open windows close the door to consumption.

Good health is the best form of life insurance.

Your mode of living determines your length of life.

Eat and drink moderately to-day in order that you may do so to-morrow.

Your lungs can't be washed out, but they can be aired.

You wouldn't insult your stomach with dirty water; then why insult your lungs with dirty air?

One fly swatted in May is equal to a million swats in July.

Man bartered caves for tenements and got consumption to boot.

Mother's milk for mother's babies: cow's milk for calves.

It would be captious to remark on the fact that these "healthgrams," while excellent enough, are not likely to be taken home and tried upon the piano. They are a little too complex to pass into general currency. Perhaps they are too deadly right to be attractive. Still, we can think of one place where they will sink in. If they were printed on large posters—in various languages—and hung on the walls of dispensaries where those who saw them were in a mood to reflect

upon the mysteries of health, we fancy that these epigrams might begin to percolate into the popular consciousness.

* * *

Impure milk is not cheap at any price. There is little use in enforcing sanitary regulations as to the handling of the milk supply from the time of production, through collection and the earlier phases of distribution, if in the final and widely scattered distributing centers, more difficult of supervision than the central depots, the supply is allowed to be kept in open receptacles, to be dipped out and handled with no protection against disease germs. If the milk supply requires protection, that protection should be maintained until it reaches the consumer.

All milk should be retailed from a pasteurization plant in sealed bottles preferably non-refillable, and it is an important matter to wash these bottles before they are opened. It is safe to say that this is seldom done. But notice the bottle as it is brought into the kitchen, the milkman grasping it with his hand over the top. These hands, perhaps more often than not, have harnessed his horse, have been grasping the reins all the morning, have opened and shut doors, run along stair railings, have perhaps wiped mouth or nose, and yet the thoughtless housekeeper or cook, regarding the white cap as full security from the outer world, pours out the milk over a very dirty bottle brim.

Milk bottles should be put under the hot water spigot for a moment and wiped dry with a clean cloth before opening. Most housewives agree that refillable milk bottles should be carefully rinsed before they are returned, perhaps more from a feeling for cleanliness than for absolute necessity, as the milk bottles in all well-managed dairies are thoroughly scrubbed and washed before refilling.

In washing milk utensils it is first necessary to remove with warm water all traces of the milk before scalding water is used. Because of the cream adhering to the sides soap is used also, but the greatest care must be taken to remove by repeated rinsing every trace of soap. A telltale flavor of soap in the morning cream has more than once revealed careless habits in the kitchen. The utensils must then be dipped into absolutely boiling water for a moment.

* * *

A report of the Ontario Board of Health declares the ozonization plant for the purification of water in the town of Lindsay, Ontario, a failure. The plant has been in operation some time and from the standpoints of economy and utility received the commendation of the majority of those who first viewed it. Ozone seems undoubtedly to be a sterilizer of water but the Board now finds that, on account of the comparative insolubility of ozone, mechanically forcing ozone into contact with the water is a heavy item of expense; that in fact, it costs more to do this than to make the ozone and that the aspirators of the Lindsay plant fail to draw into the water any but traces of ozone.

* * *

Lieut.-Governor Gibson of Ontario opened a meeting of representatives of the combined associations of trained nurses held at Toronto in the Nurses' Home at the Sick Children's Hospital on May 25th, with a short address on the great need of nurses in connection with the army.

By unanimous resolution it was decided to organize a Canadian branch of the Army Nursing Reserve and the following were appointed a provisional committee to adopt a working scheme, with the object of giving practical effect to this resolution: Miss Mackenzie, Supt. of Canadian Order; Mrs. Cotton,

Miss Snively, Miss Brent, Miss Crosby, and the President of the Quebec Superintendents of Training Schools for Nurses.

Lieut.-Governor Gibson closed the meeting by complimenting the nurses on their unanimity of opinion, and believed that this was really the initiation of a great movement.

* * *

With commendable paternalism the United States Post Office Department at Washington has issued an order to all its numerous clerks that hereafter postage stamps shall be sold with the gummed side up. For a long time the United States Government has endeavored to teach its millions of customers that it is dangerous to "lick" postage stamps, but so universal is this time-saving custom that all its appeals went unheeded. Consequently, there was only one thing to be done, and that government has done it. It has removed the possibility of the gummed sides of the stamps gathering up germs as they are scraped along the counters of the clerks' windows. Here is a laudable effort to save hurrying people from possible fatal effects of their own carelessness.

* * *

In the May issue of "The Crusader," the monthly publication of the Wisconsin Anti-Tuberculosis Association, a campaign is started to abolish the filthy type of wiping cloth in public places. The association succeeded in putting the public drinking cup out of business, the ruling of the State Board of Health, effective Sept. 1, being the outgrowth of the society's agitation. The dirty public roller towel is "another grave menace to health and a constant affront to our sensibilities," the publication declares. "The roller towel flourishes in the places where it should not be allowed at all—in public lavatories or hotels, restaurants and similar places frequented by a large number.

"One of the maxims of the anti-tuberculosis crusader is: "Wash your hands before eating." If a towel looks as if it had been used by a multitude, don't use it. It is more than likely that one consumptive at least has wiped his hands and perhaps his mouth on that towel. You can better afford to take a chance that your hands are cleaner, so far as infection is concerned, before than after using a dirty public towel."

The Crusader says that reform laws are of little use and are seldom enforced until their reasonableness is thoroughly understood, or before they receive the endorsement of the people in whose behalf they have been enacted. As in the case of the common or public drinking cup, the aim of the association now is to show the public the dangers of the public roller towel and create a popular demand for its abolition. This compaign has already received much encouragement and it is expected that the roller towel will soon be forced to follow the drinking cup out of Wisconsin.

Library and Laboratory

The J. F. Hartz Co., Ltd., Toronto, Canada, are about to issue a number of new Medical Books of importance to the medical profession, among them being:

"A Hand Book of Practical Treatment," by Drs. Musser and Kelly, complete in three royal octavo volumes. Volume I. containing General Principles, Physical Methods, Constitutional Diseases, Intoxications, Animal Parasites. Volume II., Diseases of the Circulatory System, Infectious Diseases. Volume III., Respiratory System, Digestive System, Peritoneum, Nervous System, Vasomotor and Trophic Diseases.

"A Text Book of Diagnosis," by James M. Anders, M.D., LL.D., Ph.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia and L. Napoleon Boston, M.D., Adjunct Professor of Medicine, Medico-Chirurgical College, Philadelphia.

"Medical Electricity and X-Rays," by Sinclair Tousey, M.D., Surgeon-in-Chief to St. Bartholomew's Clinic, New York.

"Dislocations and Joint Fractures," by Frederic Jay Cotton, M.D., Associate Professor of Clinical Surgery, Tufts Medical School, Boston.

For list of new books just issued by the above mentioned firm, we refer you to advertising page II of this journal.

* * *

"The First Annual Report of the Canadian Conservation Commission": The Canadian Conservation Commission, Ottawa, has issued its first annual report. It is a splendid piece of work in regard to its arrangement and printing. It contains the many valuable speeches which were delivered before the Commission at its first meeting in January, including that of Hon. Clifford Sifton. The volume ought to be of great service to Canadians interested in our natural resources.

* * *

The New England Medical Monthly, for 29 years edited and published in Danbury, Conn., has been purchased by the Annals Publishing Company of Boston, and will be combined with Annals of Medical Practice. The New England Medical Monthly, being the name retained for the combined journals, thus becomes the representative medical monthly of New England.

* * *

"Plain Talks to Parents." Dr. Neff of Philadelphia, in his "Health Bulletin" plain talk to parents, says:

"When a young man or woman falls, the parents bemoan their lot, but fail to realize that the fault, in most cases, lies with themselves. Without proper instruction from parents, all knowledge concerning certain communicable diseases and sexual hygiene, must be picked up on the streets, learned through bitter experience, or not learned at all.

"It is the sacred duty of the parents to impart knowledge of personal and sexual hygiene to their children, surely at or before the age of puberty; it is difficult to determine the time of life at which children become influenced by the temptations which surround them. It is best to commence this instruction at an early age, and teach a little at a time. No father can be in frank relation to his son, or a mother hold the confidence of her daughter, if children have been left to pick up in the streets, in the newspapers and at the theatres, all their knowledge

of the laws to which they owe their lives. Ignorance in these matters, of the young people of our city, results in much unhappiness, many divorce suits and much disease and death, which could be avoided by following these suggestions."

* * *

"*Antimeningococcus Serum.*" Dopter (Ann. de l'Inst. Pasteur, February 25th, 1910), acting on the advice of M. Roux, commenced at the end of 1907 to vaccinate horses against the meningococcus. At the end of 1908 and in the course of 1909 the serum obtained was used in the epidemic which had arisen in France. Dopter considers that the number of cases treated is sufficiently large to enable one to form an opinion as to the efficacy of the serum. He is of opinion that it is of high curative value in the treatment of cerebro-spinal meningitis and of the extra-meningeal manifestations of the meningococcus. But its action is nil in other forms of meningitis (tuberculous, pneumococcic, streptococcic, etc.)

* * *

"*Treatment of Chorea in Children.*" Allan (Amer. Journ. Med. Sci., February, 1910) insists upon the value in chorea of complete rest in bed in assisting to allay muscular irritability and mental instability. The length of time varies in each case, few requiring to be kept in bed longer than six weeks, while a few days may suffice in the very mildest cases, followed by rest on a couch for several hours a day, and avoidance of all violent exercise or excitement. Since there is the possibility of serious cardiac involvement even in the mildest cases, rest in bed at the commencement is important on this ground alone. Isolation with a nurse may be necessary, especially where there are neurotic relatives. In acute cases a fluid diet of milk, egg flip, beef tea, etc., should be given, chronic cases requiring an ordinary diet with an extra quantity of milk, and regular action of the bowels is important. The application of a hot pack is often beneficial in inducing sleep, and during convalescence and in mild cases cold sprays are invaluable if followed by a healthy reaction. Skilled massage night and morning is useful after the subsidence of acute symptoms, especially when there is any muscular wasting or tendency to paralysis. Of drugs, arsenic and acetyl-salicylic acid appear to give the best results, the practice of giving enormous doses of salicylate of sodium being deprecated as too risky a procedure. Arsenic may be given in gradually increasing doses, commencing with 3 to 5 minims of the liquor arsenicalis three times a day, increasing the dose by 2 minims every second day until 20 minims are being taken in each dose, when the dosage is gradually decreased in the same ratio down to 5 minims thrice daily, which is continued for some weeks. The author regards acetyl-salicylic acid as the drug *par excellence* for the treatment of chorea, and he has used it in all his cases during the last four years without failing to effect a cure. The drug is best given in suspension in a mixture, and for children at puberty 90 to 120 grains may be given daily after meals, thereby avoiding any tendency to gastric symptoms. The dose should be gradually decreased on the cessation of movements, and continued in small doses for several weeks. During convalescence iron, combined with arsenic or cod-liver oil, is necessary to overcome the anaemia, and after recovery the child's life must be regulated to prevent relapses, prompt measures being adopted on the slightest threatening of a recurrence.

* * *

"*Exercises in Education and Medicine,*" *by R. T. McKenzie, B. A., M. D.* Philadelphia and London: W. B. Saun-

ders and Co. 1909. The question of physical exercises in connection with public schools is one the great importance of which has already been recognized. Dr. R. T. McKenzie's book will prove of great value to those who are concerned in any way with the organization of courses of physical exercises for school children, and also to those who are in search of information with regard to the application of neuro-muscular training as a treatment for disease, or the results of disease. In both fields there has been and still is too much left to the non-medical exponent of particular systems.

* * *

Royal Edward Institution; Monograph on Opening.—As readers will remember, there was opened last year in Montreal an institution for the study, prevention, and cure of tuberculosis, presented to the city by Colonel Burland and his sisters in memory of their parents. His late Majesty gave permission for it to be named the "Royal Edward Institution," and by pressing an electric button at Buckingham Palace opened it by cable on October 21st. An interesting memento of this event has been issued in the shape of a reproduction of the account of the proceedings prepared for His late Majesty. It is illustrated by beautiful photographs, the text being in gothic characters. The royal copy was printed on heavy vellum and richly illuminated.

Open Mail

To the Editor of the Canadian Therapeutist and Sanitary Engineer.

A Cremation Society.

Dear Sir:

Allow me to propose through the medium of the Canadian Therapeutist and Sanitary Engineer the formation of a cremation society in this country along the lines of the Cremation Society of England. The English society was founded 36 years ago and is now officered by such men as Sir Charles Cameron, Bart., M.D., L.L.D.; His Grace the Duke of Bedford, K.G.; the Rt. Hon. the Earl of Mayo, K.P., P.C., D.L.; the Hon. Percy Wyndham, J.P., D.L., and Sir John Tweedy, F.R.C.S.

All cremations in England are now carried out under an Act of Parliament passed in 1902, and regulations made by the Home Secretary under the Act. It is there found that only when a cremation is to be performed is there any satisfactory investigation of the cause of death, or even of the fact of death having taken place, as the ordinary certification of death is very imperfect in character, whereas before cremation the investigation is of a searching nature, and so thorough that it is impossible for foul play to escape notice, or for anything to be substituted for a corpse. This system of investigation ought, no doubt, to be extended to every case of death; but under the present English law it is only cremation which ensures these advantages. It would also remove all possibility of anyone being buried alive, as no cremation can take place till a medical certificate has been signed by the doctor, in which he states that, "having attended the deceased before death, and having seen and identified the body after death, I give the following answers," etc.; and among the questions to be answered is: "How soon after death did you see the body, and what examination of it did you make?"

Cremation as practised under the guidance of the Cremation Society of England in no way interferes with the feeling of sanctity which attaches to the remains of the dead. The urn there used is in any case a more beautiful thing than a coffin, and is capable of great variety in artistic treatment. This urn containing ashes is buried in a quiet country churchyard, or, as the ashes are entirely harmless, the original custom of interring the dead in monuments inside a church is practised. Or, again, for those who prefer them, columbaria are provided, as in the old Roman times, for the reception of urns, which can either be seen enclosed behind a metal grille or be hermetically sealed up in the niche. The small space occupied by an urn is also an important consideration in England, where the large living population requires the room that would otherwise be occupied by the dead.

Moreover, with cremation, friends are spared the discomfort and very considerable dangers, especially in inclement weather, of attending a graveside, thus obviating one of the most distressing features of burial. No part of the actual process of cremation is visible to those in the chapel adjoining the crematorium, and chapels and crematoria as existing form some of the most beautiful pieces of church architecture in England.

Cremation would be undoubtedly beneficial in many instances if more generally adopted in Canada.

Cremation simply hastens nature's pro-

cess and effects in a little over an hour that which it takes years to do if the body is buried. The process of cremation prevents all possibility of pollution of water or contamination of air; whereas burial is always noxious and sometimes dangerous.

Cremation, if generally adopted, would then avoid the necessity of adding to large and costly cemeteries, and would be easily arranged for. It would be less expensive than the ordinary form of burial where a private grave is used.

Cremation greatly facilitates arrangements for transit and subsequent disposal in cases where interment is desired in a family vault elsewhere, and when it is necessary to transmit the remains abroad effects considerable saving in the railway or shipping rates.

And cremation interferes with no religious ceremony nor rite, but admits of the same ceremonial as if ordinary burial were resorted to.

J. A. K.

Toronto, May 28th, 1910.

* * *

Unsanitary Campers.

Dear Sir:

There is considerable feeling among people living in the suburbs of Winnipeg about the unsanitary conditions which prevail amongst campers. This is particularly so in the district along the Red River opposite Elm Park and at the end of the street car line. The association representing the property owners of South Fort Rouge has passed the following resolution:

"That we, the members of the South Fort Rouge Property Owners' Association in regular session assembled desire to enter a most vigorous and emphatic protest at the practice of people camping on lots either in the Riverview, Rosedale or other districts in South Fort Rouge without first having provided themselves with the necessary sanitary conveniences as provided by the health by-laws of the city and that the secretary be instructed to convey this resolution to the chief health officer of the city with a request that the by-laws in this respect be enforced."

I have been asked to forward a copy to your journal. Might I ask you to give it some prominence? It is manifestly unfair that this state of affairs should be permitted while the city health authorities are using every effort to compel those living in houses to comply with the health by-laws in this respect.

Yours truly,

L. H. MITCHELL, Sec.

Winnipeg, May 9th, 1910.

* * *

Sanitation in Winnipeg.

Sir,—The period has again arrived when some of the city aldermen are renewing the discussion on sewer ventilation. How often per annum do they raise this question, discuss it and allow the matter to drop without the slightest effort to carry out any practical improvement? With your permission, this is a question that I shall take up in a following communication, and in the meantime I desire to direct public attention to the gross negligence of the provincial health authority and to the dangerous condition of the old portion of the court house, where the court of King's bench is held.

Last year when the Sanitary Association made an inspection of the banks of the Assiniboine River, they found a drain on the river banks south of the Government House, discharging its crude sewerage, at a considerable distance from the water, and at that time I was informed that this drain conveyed the sewerage from parliament buildings, the court house and the prison. If that information is correct, I think that the dirty and dangerous drain is ventilated through the court room, in the old part of the

building, in which King's bench and other cases are tried, as a more poisonous atmosphere I never experienced, and my deliberate opinion is that the poisons arise from the defective drainage and bad ventilation. Their lordships, officers of the court, the learned council and the public, whose business demands attendance in that room would have as healthy surroundings and as pure air in a modern, well ventilated trunk sewer as in the court room, when the windows and doors are closed.

Why is it that the provincial authorities will not open the ground, cut out the drains and apply a high pressure smoke test to the drainage system, in sections to locate the defects?

A high pressure smoke test, applied in sections, such as the city engineer's department can apply in sections, will show where faults are in the drainage system. The ventilation of the court room in question can be greatly improved, at less expense by introducing ventilating radiators for the inlet of fresh, warmed air drawn direct from the outside and provision should be made for the efficient extraction of air from the court rooms.

WILLIAM BRUCE.

Winnipeg, May 16, 1910.

Meetings and Reports

The Canadian Medical Association.

The forty-third annual meeting of the Canadian Medical Association will be held on Wednesday, Thursday, Friday and Saturday, the 1st, 2nd, 3rd and 4th of this month, at Toronto, Ontario, in the Convocation Hall of the University of Toronto.

The Executive Committee met on the evening of Tuesday, May 31st, and the members of the Association resident in the city of Toronto entertained the profession at a smoking concert in St. George's Hall, the same evening.

It is expected that representative members of the profession from every part of Canada will be present during the four regular meeting days when a most instructive and enjoyable time is anticipated.

The meetings of sections on Medicine, Surgery, Obstetrics and Gynaeology, Pathology and Ear, Eye, Nose and Throat will occupy morning sessions of each day, while the general session will commence on Wednesday afternoon at two-fifteen o'clock; the afternoon and evening programme continuing as follows:

Wednesday Afternoon.

1. Chair will be taken by the retiring president, R. J. Blanchard, Winnipeg.
2. Invocation—R. A. Falconer, LL.D., etc., President University of Toronto.
3. Induction of President-elect—Dr. Adam H. Wright, Toronto.
4. Address of welcome—His Honor, the Lieut.-Governor of Ontario.
5. Address of welcome—His Worship, the Mayor of Toronto.
6. Address of President—Adam H. Wright, Toronto, Ont.
7. General business.
8. Report of Milk Commission—Chas. J. C. O. Hastings, Toronto, Ont. The Municipality and Its Milk Supply—H. A. Evans, Commissioner of Health, Chicago, Ill. A Pure Milk Supply—Charles E. North, New York, N.Y. Discussion—Opened by A. McGill, Ottawa, Ont., Dominion Analyst; J. G. Rutherford, Veterinary Director General, Ottawa, Ont.; Hon. H. E. Young, Provincial Secretary, Victoria, B.C.

Wednesday Evening.

1. Address in Medicine—W. P. Heringham, London, England.
2. Discussion on Dominion Registration—Opened by T. G. Roddick, Montreal, Que.
3. Annual Executive Session of the Ontario Medical Association—The President, H. R. Casgrain, Windsor, in the chair.

Thursday Afternoon.

The members of the Association and their ladies will go to Niagara Falls as the guests of the Toronto members.

Boat leaves the Turbinia dock to the west of Yonge Street at one o'clock punctually.

Friday Afternoon.

1. Address in surgery—The Surgery of the Joints—John B. Murphy, Chicago.
2. Symposium on Exophthalmic Goitre—The Medical Aspect, Alex. McPhedran, Toronto, Ont.; The Surgical Aspect, F. H. Shepherd, Montreal, Que.; The Pathological Aspect, S. P. Beebe, New York, N. Y.
3. Annual meeting Canadian Medical Protective Association—The President, Dr. R. W. Powell, of Ottawa, in the chair.

Friday Evening.

1. Address in Gynaecology—The Old

and New Gynaecology, Henry C. Coe, New York, N.Y.

2. Medical Education—A comparison of the conditions of twenty-five years ago with those of the present. A suggestion for the organization within the Association of a permament committee on medical education—J. C. Connell, Kingston, Ont.

3. Medical Inspection of Immigrants —J. D. Page, Quebec, Que.

SATURDAY MORNING.

General business.

The members of the Association, with their ladies, will go to Guelph as the guests of the profession of that city, and of the president and staff of the Agricultural College.

A special train over the Canadian Pacific Railroad will leave the Union Station at eleven-thirty o'clock sharp.

The report of the Milk Commission to be presented by Dr. Charles J. C. O. Hastings of Toronto and the discussion on Dominion Registration to be opened by Dr. T. G. Roddick of Montreal should be of particularly general interest.

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The Canadian Association for the Prevention of Tuberculosis.

The tenth annual meeting of the Canadian Association for the Prevention of Tuberculosis will be held in Montreal, Que., on the 7th of this month. A large attendance is expected, and subjects of much public interest will be discussed.

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The British Society of Tropical Medicine and Hygiene.

The annual general meeting of the British Society of Tropical Medicine and Hygiene will be held at Liverpool, England, on Saturday, the 25th of this month, by kind invitation of the Liverpool School of Tropical Medicine. In addition to the usual proceedings of the annual meeting there will be demonstrations in the laboratories and a dinner, at which it is expected that the chairman of the Liverpool School, Mr. W. H. Lever, will preside.

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New Brunswick Provincial Board of Health.

The Provincial Board of Health met in St. John on May 13th last. This was the first meeting since the reorganization of the Board and the appointment of two additional members. Dr. E. O. Steeves, of Moncton, is chairman, and Dr. E. E. Fisher, of Fredericton, is secretary and there are now seven other members. Dr. Fisher reports that diphtheria is unusually prevalent this year and as usual a certain amount of smallpox exists in the province. The number of persons afflicted with la grippe is also unusually large, but this disease does not come under the jurisdiction of the board.

* * *

The British Medical Association.

The 78th annual general meeting of the British Medical Association will be held this year on July 26th, 27th, 28th and 29th at London, England, in the University of London and adjacent collegiate buildings at South Kensington.

The Colonial Reception Committee, of which Edmund Owen is chairman and Donald Armour, honorary secretary, is particularly desirous of bringing this meeting to the notice of all medical practitioners residing in the Dominions beyond the seas, as affording them an unusual opportunity of visiting London both for the scientific purposes of the meeting and also for social intercourse with their fellow practitioners throughout the Empire.

The Colonial Reception Committee, in conjunction with the Colonial Committee of the Central Council, desires to extend a very cordial invitation personal-

ly to all medical practitioners in the colonies, and assures them of a hearty welcome to the annual meeting and to the capital of the Empire.

Great efforts are being made by these two committees to arrange such entertainments as it is hoped will meet with the approval of their colonial brethren and so add to the success of the meeting of 1910.

The scientific business of the meeting will be conducted in twenty-one sections, the programme of the sections on Medical Sociology and State Medicine being particularly interesting.

The address on Medicine will be delivered by John Mitchell Bruce.

* * *

Congress of School Hygiene.

Preliminary announcements of the third International Congress of School Hygiene, to be held in Paris, August 2-7, have been issued, testifying to the amount of thought and discussion that is being given to-day to the health of the school children. The congress will be of the usual pattern, general meetings and organization of sections, of which there are not less than a dozen, together with entertainments and social occasions. How broad the scope of the congress will be may be judged by the enumeration of the specialties of the sections. These are briefly, schoolhouses themselves and their furnishings, hygiene of boarding schools, medical inspection of schools, physical training, prevention of contagious diseases, and out-of-door schools and vacation colonies. The seventh section will take up the teaching staff and its relations to the homes and to the school physicians, then there will be the consideration of the teaching of hygiene to instructors, parents and children, and the outlining in the larger way of courses for such instruction. Abnormal children have a section to themselves and one will be devoted to the hygiene of eye, ear and mouth. There will be a general report on the unification of physical examination in the schools in which the discussion will be opened by Drs. Mery and Dufestel of Paris and Dr. James Kerr, medical education officer of the London schools. In each of the sections subjects have been chosen for the nucleus to similar papers and these will consider a wide variety of subjects connected with the school. They will include the need of baths or shower baths in schools, health records of boarding schools, inspection of rural schools, the need of playgrounds, parasitic diseases among school children, means of protecting the homes against contagious school diseases, and the superintendence of infected children while out of school. Others of the larger subjects are: The teaching of domestic economy in schools, types of schools for abnormal children and the relation of teacher and physician to such scholars. There will be considered also the lighting of schools, the near-sighted, how to measure the hearing power of scholars, prevention of deafness, relations of teeth to general health and the need of half-yearly dental inspections of school children.

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American Medical Association.

The 1910 meeting of the American Medical Association will be held in St. Louis on the seventh to tenth, inclusive, of this month. Special provision has been made by the railway companies and hotels, the usual large attendance being expected, and the traveling rates and through sleeping-car rates have been reduced.

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The American Gastro-enterological Association.

This year the American Gastro-enterological Association meets in St.

Louis on the sixth of the present month, just preceding the meeting of the American Medical Association.

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The British General Medical Council.

At the meeting of the British General Medical Council on May 26th last, President MacAlister, referring to the forthcoming conference in Canada regarding the possibility of federal action, with respect to medical registration, said: "Should the conference lead to the establishment of a Canadian medical register, the question of reciprocity between Britain and Canada would be greatly simplified." He expressed the hope that this would be speedily attained. The council then resolved that anyone who holds the license of the Medical Council of Prince Edward Island shall be entitled to be registered on the Colonial list of the medical register. The Medical Council of Prince Edward Island thus follows Nova Scotia in securing a wider field of action within the Empire for its licentiates.

The profession of medicine in Great Britain and Ireland is represented as a whole by the General Medical Council which holds sessions at its headquarters in London.

The ideal of the British General Medical Council seems different from that of several Canadian provincial councils, since its work is held to be that of supervising teaching and practice generally, and standardizing, rather than duplicating, university examinations.

Postscript

Mercury Vapor Light as a Sterlizer.

It is stated that the mercury vapor light enclosed in a container made of fused quartz will solve the problem of sterlization of water for general consumption.

For a great many years engineers have been seeking some medium that would serve as a perfect germicide for water that would not destroy its taste nor render it flat and dead and take from it the constituents that make it wholesome, and at the same time keep the sterilizing cost within reason.

The mercury vapor light is rich in violet and ultra violet rays, which possess germicidal properties. In several hospitals the treatment of such germ diseases as lupus has been successful in some cases with violet rays shed by lamps invented by Finsen and others. It was believed that rays that were capable of killing the germs in such growths might also be used for the destruction of other germs, and experiments conducted in France and Germany have anticipated the conclusion that water and even milk may be sterilized by their use.

A lamp for mercury vapor light was invented by Cooper-Hewitt, but in this lamp the violet rays were not apparent because they do not penetrate glass. The Cooper-Hewitt lamp consists of an air-tight glass tube in which there is a puddle of mercury. A continuous electric current through the tube generates a mercury vapor which produces a light of great intensity, but minus the violet rays which are needed to make it germicidal.

It remained for German experimenters to solve the problem of using the mercury vapor light for the production of violet and ultra violet rays, using the same principle which Cooper-Hewitt had first made practical. By fusing quartz, Heraeus of Hanau, and Schott of Jena, made containers for the mercury vapor which were rich in violet rays, and the thing was done.

But it was discovered that the Heraeus and Schott lamps were fatal to the eyes of operators using them. The violet rays produced not only conjunctivitus, but the blinding of the retina as well.

Common glass, being impervious to the violet rays, was found to be the only safeguard for those using the mercury lights enclosed in quartz containers, and the operators were told to wear spectacles of clear glass. When it was first reported that operators of the mercury vapor lights were being made blind by it, it was thought also to apply to the Cooper-Hewitt light. An investigation, showed that the Cooper-Hewitt light, coming from a glass container, shed none of the violet rays but was beneficient to the eyes.

The Schott works at Jena has at last produced a glass called Uviol, that has the capacity to transmit the violet rays. This is better than quartz, which was found to be too brittle and breakable. But after many experiments with glass of various sorts it was found that glass, except the Uviol, melted under the intense heat of the arc used and recourse was again had to quartz in spite of its cost.

For purposes of sterlizing water the Heraeus quartz lamp has been declared the best. It has been found that when the hood of the lamp is made of fused

quartz instead of glass the greater portion of the ultra violet rays penetrate through the hood and do the work required in medical and chemical work. The Uviol lamp lets through the short waves of the ultra violet rays to a length of 253 m m.

If, therefore, an operator does not protect his eyes with plain glass the ultra violet rays, for which the lamps have been specially constructed, will have as strong effect in an undesired way as they will in a desired way in the sterlization of water and in surgical and photographic work.

From experiments which have been conducted in Paris on the germicidal properties of the ultra violet rays in water it is believed that the day is not far distant when it will be possible to provide cities with perfectly pure water without the aid of filters or chemicals.

It is believed from the experiments that have been made that the sterlization of water on a large scale is possible. All that seems needed is the preparation of overflows at the reservoirs which will pass the water in thin sheets over large banks of lights or over one enormous light which will release ultra violet rays in sufficient quantity to sterlize the water quickly.

It may be possible to make small sterilizing plants with the Heraeus or the Uviol mercury vapor lamps for the household, wherever electricity is used for illuminating purposes. These plants would not be very expensive, and might be used for sterilizing not only water, but milk and other fluids.

Experimenting with milk sterilization by means of the mercury vapor lamps, the difficulty of its opacity was overcome by running it in a very thin sheet over a glass runway.

Present methods of sterilizing milk with heat are known to rob the fluid of some of its valuable constituents, while the killing of the germs by means of the ultra violet rays produced by the mercury lamp is said not to alter its chemical or palatable qualities.

This possibility will, it is thought, do much to lessen infant mortality due to the excess of germ life to be found in milk produced even with the best of known methods of conducting dairies.

If milk were a transparent fluid the enormous growth of bacteria present in it would be visible to the naked eye. This would render it unsightly and repellent. Its opacity is all that renders it drinkable now.

The immense productiveness of bacteria in milk is not generally known, or there would be a greater effort on the part of the public for sterilized milk, and the demand would be insistent if it were known that it could be sterilized without losing its useful qualities, for instance, with the use of ultra violet rays as a germicide.

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A Sanitary Drinking Cup.

Dr. C. W. Thornton, surgeon for the Rock Island and Denver railroads at Dalhart, Texas, recently brought to the attention of a meeting of the State Medical Association in Dallas, a new sanitary drinking cup. The model consists of a slender framework which supports a receptacle holding an antiseptic fluid, this being the central idea of the inventor. The fluid constantly flows down upon the rims of two inverted drinking glasses, thus keeping them sterilized after each drink of water.

* * *

Sanitation Demanded by Education.

"Education is the dynamite of our civilization," writes Dr. Eugene H. Porter, Health Commissioner of New York State, in his last report of his department, "and advance in sanitation is an index of this progress. The development and applica-

tion of sanitary law is the result of an increasing altruistic knowledge." Behind every movement for civic improvement, back of every effort for social or economic betterment, may always be found the moral impulse that stirs to action. Sanitation, with all its wealth of scientific achievement would never have made such rapid progress without the aid of an aroused public sentiment. When many men thinking independently come to the same conclusion, action is likely to follow, and when men so thinking demand facts and carefully weigh the evidence, there is likely to be action along right lines. The work of betterment of the public health means not only stamping out epidemics, the disposal of sewage or investigation of water supplies, important and necessary as these are, but also that wider field that embraces all that makes toward the prevention of all misery and disease. In this there comes into view that great and increasing company of societies whose purpose is the changing of the old order of things, working always for clean cities, clean homes, clean air, and as the result of all these factors, clean morals. The societies that look after proper playgrounds, sufficient parks, pure food, clean streets, efficient factory supervision, protection of child labor, care of working women, pure water, prevention and cure of tuberculosis and many other things, are all playing a most important part in the great struggle of the new against the old—of knowledge against ignorance. These societies, efficient cogs in a most complicated machine, are almost always composed of laymen and not trained sanitarians. This is most significant for it shows how rapidly education in sanitation is progressing. "But if we are to have this real sanitation," concludes Dr. Porter, "we sanitarians must widen the vision of the people. It is true that the great problems must be solved by experts, but the application of them lies largely with the people. It is not the question what will the laws do for us, but what will our schools do for us, and in the last analysis the health officer must work through the schools. Thus his responsibilities are not only changed, but increased and still constantly changing.

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Abolish Brooms.

Dr. F. Robert Zeit of Chicago would abolish brooms. In speaking recently before the Chicago Medical Society, on "The Role of Dust and Smoke Inhalation in Transmission of Infections Diseases," Dr. Zeit said in part:

"Throw away the brooms and dusters. Don't stir up the dust. Don't have carpets, but rugs; and clean house with soap and water. If you have soft wood floors, paint them. Get as much sunshine in your home as possible. Sunshine kills

disease germs. This is shown by the fact that absence of sunshine for several days is always followed by a rise in the number of cases of infectious diseases."

* * *

An Efficient Disinfectant.

Dr. F. Schavoir, Health Officer at Stamford, Conn., writes as follows: "I have opened correspondence with a firm for the furnishing of disinfectants in large quantities, and after thoroughly investigating the efficacy claimed for their preparation, I feel safe in recommending same. The chief advantage I have found in the Rapid Cleaning Cartridge Disinfectant is the rapidity with which it permeates all material with which it comes in contact." Mr. Otto S. E. Veit, of 28 Wellington Street West, Toronto, Ont., is the Canadian agent for the Rapid Cleaning Cartridge.

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De Pree's Formaldehyde Fumigator.

This fumigator has been designed to meet the universal demand by health departments, the medical profession and householders, for a reliable disinfector, easy to use, and at a popular price. This fumigator is not a doubtful makeshift, but a standard article of the efficiency required for thorough disinfection after contagion.

De Pree's Formaldehyde used in this fumigator is a concentrated product in solid form which liquefies upon the application of heat when formaldehyde gas in large quantities is rapidly liberated. This liberation of gas continues until the product is completely volatilized without leaving any residue. This formaldehyde has been subjected to the severest bacteriological tests by some of the best bacteriologists and chemists in the country. At the Hygienic Laboratory of the University of Michigan it was found that slightly over ½ oz. (16 grams) was sufficient to thoroughly disinfect 1,000

cubic feet of space. This high efficiency allows of it being put up in compact form ready for instant use, as it appears in this fumigator. We have adopted as a standard 1 oz. of this product to each 1,000 cubic feet of space and recommend that no less than this quantity be used. While this quantity is above requirements by actual test, the surplus allows for the escape of gas from the ordinary room and still assures thorough disinfection.

The small size No. ½ contains ½ oz. of De Pree's Formaldehyde and is sufficient for 500 cubic feet of space, or small rooms, closets, etc.

The large size No. 1 contains 1 oz. of De Pree's Formaldehyde and is sufficient for 1,000 cubic feet of space or all ordinary size living rooms.

De Pree's Fumigator may be had at all drug stores. Henry A. Rowland, corner Parliament and Gerrard Streets, Toronto, is the exclusive distributor for Canada.