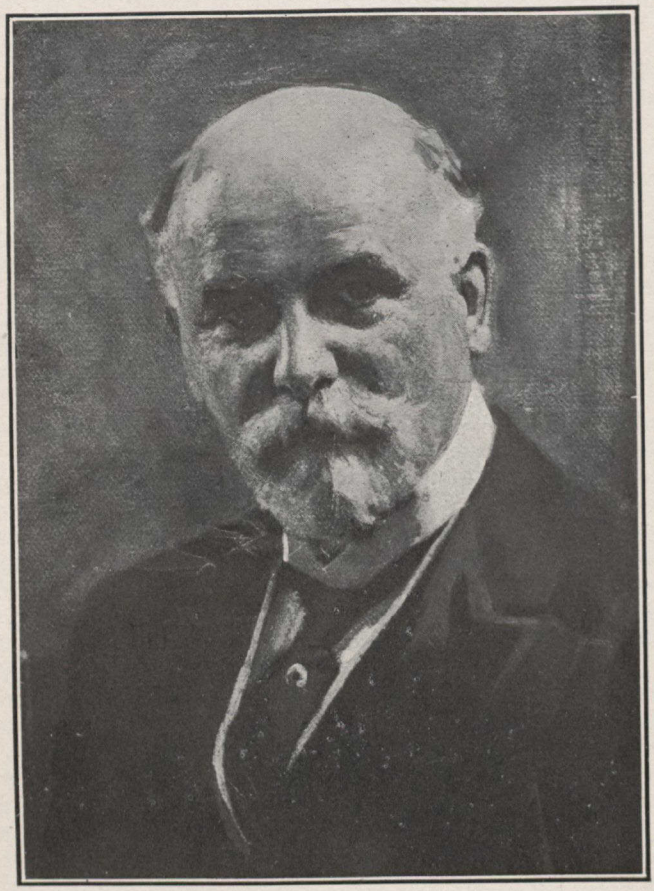
PAGES

MISSING

The public must be taught that the health of
the nation is its most valuable asset, and
that the maintenance of health is of
much more importance than
the treatment of disease.

—*Sir James Barr: The Medicine of the Future.*



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Special Articles

THE UNDEVELOPED FIELD IN THE LIFE INSURANCE BUSINESS

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On the 15th of October, 1910, the writer left Hartford on a trip, mainly through the South, for the purpose of studying the sanitary condition of Southern cities in the interest of the life business of the Travelers Insurance Company. As far as time would permit he visited and investigated conditions in the following cities:

Lynchburg	Montgomery
Roanoke	Birmingham
Knoxville	Atlanta
Chattanooga	Macon
Nashville	Jacksonville
Louisville	St. Augustine
Cincinnati	Savannah
Indianapolis	Charleston
Bloomington	Augusta
Springfield	Columbia
St. Louis	Charlotte
Memphis	Danville
Little Rock	Richmond
Vicksburg	Baltimore
New Orleans	New York
Mobile	Hartford

The principal points investigated were as follows:

FIRST.—The supply of drinking water.

SECOND.—The sewage system.

THIRD.—The disposal of garbage.

FOURTH.—The inspection of milk, meats and perishable provisions.

FIFTH.—The ordinances of the Board of Health for maintaining sanitary conditions.

SIXTH.—The laboratory equipment and work of the Department of Bacteriology.

SEVENTH.—The climatic conditions.

EIGHTH.—The location of the city and the natural character of the surrounding country.

NINTH.—The character of the city government—particularly the men who had anything to do with city sanitary work, with special reference to their intelligence, their efficiency and the probability of their seeing that the city ordinances are thoroughly enforced.

TENTH.—The character of the people, with special reference to whether or not they really appreciate the importance of maintaining proper health conditions in the city and whether or not there is a powerful public sentiment that can be brought to bear upon the city government in regard to such questions.

The method of procedure was first to interview the chief health officer and obtain from him as much information as possible bearing upon general sanitary conditions. After that as far as might be necessary the city engineer, the superintendent of water works, the bacteriologist and any others who might be able to give further and more definite information in regard to the subjects investigated were interviewed. The remaining time in each place was spent in making a personal observation of actual conditions. In seventeen cities the water plants were actually visited—although as a rule these plants are several miles outside of the city limits. The bacteriological laboratories were visited and their equipment and working methods studied, and in most cases where garbage was dumped on vacant lots the actual conditions were investigated in order to see to what extent the health of the community was endangered. In looking into the water system and the sewage system the worst sections of the city were selected and then some tumble-down, old dwelling picked out to see whether or not it had city water and whether or not there was connection with the sewer, and particularly whether or not on the same premises there was a well supplying surface water and a closet unconnected with the sewer, with the probability of drainage from the closet to the well. The writer wanted to see for himself how actual conditions in regard to these matters which have such an important bearing upon the health of the community coincided with the impressions conveyed by the one hundred or more officials that he had interviewed. As a rule, it was found that the officials were disposed to give the information asked for, and in the main to state the facts even if they were unfavorable—although naturally there was a disposition to give a favorable impression. However, there was frequently cause for surprise at the frankness of the officials in cases where conditions were very bad. Occasionally some valuable information was obtained from the head of one department letting the truth out rather boldly in regard to the situation in some other department, and occasionally the investigation was helped along to a considerable extent by the officials in one city asking if this or that particular situation had been discovered in the last city visited or suggesting that this or that point in the next city be looked into with special care.

Of course, two or three weeks might have been spent profitably in each city. The writer was gone only nine weeks and had only two or three days in each city. It was a physical impossibility in this short time to thoroughly study all the conditions bearing upon the sanitary situation in the cities visited, but the main object was to find out what the city authorities were doing toward taking advantage of the latest developments in modern sanitary science in order to properly protect the health of their citizens. Upon the whole, after a little experience, it was found that it did not take very long, with the aid of the officials and by personal investigation, to reach a fairly correct idea of the general situation in each place—its strong points and its weak points. To summarize the general conclusions in regard to the points which particularly attracted attention and which were particularly investigated:

First.—The evidence found practically everywhere (particularly through the Southern States) that there had been a most wonderful improvement in the general sanitary conditions during the past ten or twenty years. In fact, it is hardly an exaggeration to say that nine-tenths of the progress in the places visited has been made within twenty years. It should be borne in mind that scientific methods of disposing of city garbage, scientific methods of purifying drinking water, and scientific methods of dealing with infectious and contagious diseases by making use of the discoveries in bacteriology are, for all practical purposes, almost entirely developments of the last ten years.

Second.—The possibility of still further progress in the next ten years.

Third.—The evidence that the cities in the South in proportion to their means

as a rule are spending as much money in improvements affecting the general health of the city as in the North.

Fourth.—The great variation in conditions in cities in the same section of the country and in close proximity. As far as observations indicated it is impossible to select one particular section of the country and show that, from a sanitary standpoint, it is as a whole materially superior to another section in what is being done by the various municipalities and state authorities in the line of sanitary work. Of course, there are sections of the country where natural conditions bearing upon health are very favorable and other sections where such conditions are very unfavorable; but as far as efforts of city authorities to put the cities in the best possible sanitary condition is concerned, one can find some of the best and some of the worst instances in the South, in the North, in the East, and in the West. It was surprising to find on the South Atlantic coast a city which in the efficiency of its board of health and in its maintenance of generally healthy conditions by adoption of the very best modern methods, stands about at the top of all of the places visited—while in the same section of the country, not far from this city, was another place which, although greatly favored by nature, as far as what the city authorities had done stood near the bottom, and the most unfortunate fact was that the citizens had no conception of the real situation. It was surprising to find on the Mississippi River one city in most excellent sanitary condition, but a few hundred miles north another city whose inhabitants would resent any opinion that they are not among the most intelligent and progressive—and yet this latter place, on account of its absolutely inexcusable conditions, is down near the foot of the list.

Fifth.—The fact that the citizens and officials in general in each city, as a rule, were under the impression that, as compared with other cities, their general sanitary condition is favorable. This was apt to be the case, possibly a little more so, in a city where conditions were unusually good. There seemed to be very little exact knowledge among the officials and particularly among the citizens of any city in regard to its relative sanitary situation, and exact, reliable information on this point in the way of comparative statistics was difficult to obtain. It is generally possible to obtain full and exact information in regard to how much money each city has spent in its different departments and for what purpose, but to obtain information in regard to the results secured by these expenditures is a very different matter.

On account of this great variation in the sanitary condition of the cities and the general lack of information in each city in regard to its real situation as compared with the situation of other cities, if each city government were to appoint a competent committee to visit the city known to have the best sewage system, the best method of disposing of garbage, the best ordinances for inspection of milk, meats and perishable provisions, the best department of bacteriology and any other city noted for special thoroughness and efficiency in any particular line of sanitary work, the result would be the acquirement of an immense amount of valuable and accurate information in regard to how work of this kind ought to be done, and would enable the officials in each city to see wherein it is particularly efficient and wherein it is particularly inefficient, and would undoubtedly lead to many important improvements. There is nothing that will quicker rouse a city to proper action than being brought to a realization of the fact that a rival city is doing things so much better.

Coming now to a more detailed consideration of the principal points investigated, it was found that as a rule most of the cities visited had a fairly good supply of city water. In only a very few cases was there reason to think it was bad, and in many cases it was most excellent. In probably a dozen of the cities visited new water systems had been constructed within the last ten years, with an elaborate and upon the whole very satisfactory system of filtration—usually accompanied by sedimentation and purification by alum, lime or some other chemical method; and in nearly every one of these cases these cities ten years ago were taking impure water direct from some large, unprotected river and drinking it just as it came from the river. The decrease in the amount of sickness and number of deaths from typhoid

fever as the result of these recently constructed water systems has been very noticeable. The method of purifying water by chemical treatment is more common in the South than in the North. The usual method in the North is simply the protection of the source of supply. This method was adequate in most cases twenty years ago, but the rapid increase in our population and the great multiplication of manufacturing plants has made the securing of a pure water supply by simply protecting the source very difficult; and it is a difficulty which is rapidly increasing from year to year, so that it is only a question of time when other methods must be adopted, except where a city is fortunate enough to have an unlimited supply of artesian water. The important question in regard to the city water supply is not so much the character of the water furnished by the city water system, but the extent to which the inhabitants use the city water and the extent to which they make use of some other source of supply. The extent to which city water is used varies probably from 20 per cent. to close to 100 per cent., and although it is impossible to obtain exact figures, upon the whole probably 70 per cent. is a high estimate of the average percentage of inhabitants using city water in cities of fifty thousand inhabitants and over. The remaining 30 per cent. or more obtain their water supply elsewhere, and mainly from wells supplying surface water; nearly all of which wells were subject to contamination and many of which actually were contaminated. Of course, most of our cities are growing rapidly and to a considerable extent those who were not using city water lived on streets which had recently been laid out and the water system had not been extended to their streets; but that only applies to a portion of those not using city water. Practically every city has within its limits, on streets that are piped for city water, wells furnishing surface water that is used in place of water furnished by the city. There are many cities in this country having a good water system and fairly well piped for water and yet from 30 per cent. to 50 per cent. of its inhabitants use water from wells that are constantly in danger of contamination, and many of them actually supplying water that is not safe to drink.

Probably there is not a single city which was visited which had any systematic method in operation in any city in the country. To all inquiries the usual answer was that the water is examined in case any complaint is made—which practically meant that there was no examination unless those who are in the habit of drinking the water objected either to the taste or to the smell—although it is a well known fact that water may have a very disagreeable taste and a very disagreeable smell and yet be perfectly safe to drink; and, on the other hand, the taste and smell may be wholly unobjectionable and to the eye it may appear perfectly pure and yet the water be very dangerous to drink.

Coming to the question of sewage, the percentage of population living in houses connected with the sewer varied from 20 per cent. to 95 per cent.—with an average of probably less than 60 per cent.—although here also it was difficult to obtain exact figures. Of course, the water mains had to be extended where sewers were in actual operation. Consequently, the city water system is always more extensive than the sewer system. As in the case of the water system, portions of the city not sewered were largely the new portions where new streets were being opened, but at the same time in practically every city visited it was possible to find old sections of the city, sometimes extensive sections, which were not sewered—and in a great many cases it was possible to find streets that were properly sewered, properly piped for city water—but frequently in such cases a large number of the houses did not have sewer connections. In two cities (one of them one of the largest cities in the country) the board of health had no authority to compel residents to connect houses with the sewer on streets that were properly sewered and properly furnished with city water; but as a rule the cities had this authority, but the extent to which the authority was used varied greatly. In general, it can be said that it is possible to find many cities in the country that have spent millions of dollars for sewers and for extending the city water systems, and yet from a quarter to more than half of the inhabitants live in houses that are

not connected with the sewer, and in a great number of such cases the situation is a closet, with no sewer connection, and nearby a well furnishing surface water and constant danger of contamination; and it cannot be said that these are entirely in the new sections of a growing city where sewer and water mains have not been extended. A large number of these cases are on streets that have been sewered and have been furnished with water mains, and frequently in the oldest and most thickly populated parts of the city.

In regard to the disposal of garbage, conditions in most cities were unsatisfactory. The most sanitary way of disposing of garbage is probably to burn it. About half a dozen of the cities investigated had incineration plants, and, as a rule, these plants were working in a reasonably satisfactory manner—and if they were not it was generally because the work of collecting the garbage for burning was subject to political influences with unfavorable results. In the great majority of cases the garbage is dumped on vacant lots, frequently within the city limits, and sometimes not far from the heart of the city. In some cases, to a certain extent, it is disinfected; but there was not a single case where the work of disinfecting the garbage seemed to be thorough and not a single competent official was found who claimed that the thorough disinfection of garbage dumped on vacant lots is possible. Of course, sanitary methods of disposing of city garbage and waste matter in general are still in the experimental stage, and no method has yet been found which is in every way satisfactory. Nevertheless, it is difficult to find any modern method which is not vastly superior to the dumping of garbage on vacant lots within the city limits.

Ordinances for inspection of milk, meats and perishable provisions were quite general, and it is clear that they are being enforced with increasing effectiveness every year; but successful work of this kind depends mainly upon three things: freedom from political control, a competent, and particularly a courageous board of health and a strong public opinion in favor of thorough enforcement of the work. Compared with the situation ten years ago there is room for much congratulation—but it is equally true that there is still room for much improvement.

The science of bacteriology in connection with city sanitary work is comparatively new. Ten years ago there were probably not a dozen cities in the country which had such a department. Ten years hence there will hardly be a city of fifty thousand inhabitants without such a department. At present the condition in different cities shows great variation. One city visited, one of the most prosperous and progressive places in the country, has a department which is unworthy of the city. Such a department ought to be an example of cleanliness at least. This department was just the opposite. Another city of less than seventy-five thousand inhabitants had a thoroughly equipped, liberally supported department, with the most competent experts, and in every way a model. Even the bacteriological department in the great city of New York, which was the forerunner of such departments in this country, did not make as favorable an impression, taking everything into consideration. It will be a liberal education to our health officials throughout the country to inspect this modern department of bacteriology and make a report of what is being done to their home cities.

Coming now to the consideration of some special points, the following is quoted from the annual report for 1910 of the department of health of a city of less than one hundred thousand inhabitants and the capital of one of the leading states of the Union:

"There are 7,000 shallow wells in the city and the pollution of these wells is assured by 6,000 privy vaults.

"There are 9,000 homes in the city, 6,000 of which are not connected with city sewers or water mains for sanitary purposes. The sewer and water systems of this city have cost the taxpayers approximately $4,000,000. This means that the public expenditure of $4,000,000 for sanitary purposes is utilized by but one-third of the population and the benefits which should be derived by the community are lost.

"Since 1902 the typhoid fever mortality of the city has been high compared with that of other cities. In 1903 it was 46 per 100,000 of population, while the aver-

age of registration cities of the nation was but 24.6; in 1904 this city's typhoid rate was 36, while the average of registration cities was 24; in 1905 this city, 38.4, with average cities, 22; in 1906 this city, 35.6, average cities, 34.2; in 1907 this city, 81.7, average cities, 31.7; in 1908 this city, 35.1, average cities, 25.8; in 1909 this city, 32, (mortality) rate in this city jumped to 51 per 100,000 of population."

The board of health in the city referred to in the above quotation has no power to compel residents to connect their houses with the sewer on streets supplied with city sewers and city water. Recently, stirred up by the energetic action of their able superintendent of the board of health, the city council was able to pass an ordinance requiring all persons building or rebuilding in the future to make proper sewer and water connections for their property and to condemn all vaults now on the premises supplied with sewer and water. This, of course, will result in a great improvement, but the ordinance does not go half far enough, and unless the board of health is given much greater power it will be many years before the city is in proper sanitary condition.

In another large city, which upon the whole is in fairly good condition, the city authorities have no power to compel residents to connect their houses with the sewer and an ordinance giving them this power was introduced in the council, but was opposed by the real estate exchange on the ground of expense to property owners and was defeated. Here also is a great opportunity for an organization of public-spirited citizens to compel the passage of the proper ordinance and so wipe out the disgrace which now rests upon one of the leading cities of the country.

In a large city in the South one of the great public markets was visited and the conditions were simply revolting. Great quantities of meat, vegetables and more or less over-ripe fruit were displayed in an open market extending for two blocks, with no kind of protection for the perishable provisions. Never were such swarms of flies seen before. In one case a big piece of meat was so covered with flies that it was really difficult to make out what it was. Fortunately, a movement is on foot to have this market done away with. All public markets of the kind ought to be abolished. It is impossible to maintain sanitary conditions as long as such things exist. On the other hand, in the city of Montgomery, Alabama, there was evidence of quite satisfactory enforcement of the ordinances for screening meats and perishable provisions. Not only were screen-doors required at the entrance of the market, but screens over the individual displays of perishable food. Fruit-stands on the streets were furnished with cases with screen-doors, and during the summer months no fruit was allowed to be exposed for sale without proper protection. The fly is one of our most deadly enemies and the protection of meat and provisions from his fatal work is absolutely necessary if the public is to be protected from contagious and infectious diseases. This screening of provisions displayed in our markets is a comparatively recent precaution. It is of special importance through the South, where the heated term is much longer and the fly pest much more serious; but, although there are only a few cities in the country where at present these ordinances are thoroughly enforced, the work is rapidly extending and it only requires proper education of the public and proper expression of public opinion to bring about a thorough enforcement of ordinances in regard to this matter in practically every city in the Union within ten years.

One city visited, particularly favored by nature, on high ground, well drained, with a fine climate, specially attracted attention on account of the general ignorance on the part of the people of the real situation and the general incompetence of all the city officials having anything to do with the city's health. Conditions, as far as anything done by the city government is concerned, were bad. Probably not more than one-third of the people used the city water. Probably not more than one-quarter of the people lived in houses connected with the sewer. The general rule was a vault unconnected with the sewer and a well furnishing surface water on the same city lot. There was not an up-to-date, efficient officer who had anything to do with the care of the city's health; and, while the situation in regard to the water system and the sewer system has probably

been stated with approximate accuracy, yet the fact is that practically all the answers to questions were simply guesses, because no one knew the real facts.

Another city is in a very unsatisfactory situation, because for years it has been in the hands of a political boss. It was very difficult to obtain any real information in this place, because most of the department heads engaged in any work connected with the health of the city are simply creatures of politics and in general very ignorant and incompetent as far as sanitary science is concerned. There was a good man at the head of the Department of Bacteriology, but it was discouraging to see the humiliating character of his position. He knew what ought to be done, but he also knew that efficient work was impossible because everything was under the control of the political boss and efficient action and enforcement of health ordinances was very frequently made impossible by political interference on the part of some person who had a pull. He realized the situation and knew that any serious protest on his part would simply mean that he would lose his position. In general the stay made in each city was not long enough to grasp the political situation, but it is quite likely that what was discovered in this one instance is largely true in many of the cities visited—and to some extent in practically all.

One city was found to be in most excellent condition in practically every respect, as far as what could be done by city authorities in applying methods of modern sanitary science. Savannah, Georgia, is the city referred to. Quite a number of other places visited are more favored by nature by being situated on high ground, with excellent drainage, free from swamps and with favorable climatic conditions; but if Savannah is not particularly favored in these respects it certainly has taken full advantage of all the possibilities in sanitary science. The city has in its head of the board of health Dr. Brunner, an unusually capable man and a man whose energy and courage in enforcing the health regulations of the board is refreshing in contrast with the weak and halting actions of many health officials. At the head of the Department of Bacteriology is Dr. Bassett, an expert from Johns Hopkins, who secured the position in a competitive examination with many expert bacteriologists as rivals. The department is most thoroughly equipped with the latest apparatus, with a fine scientific library and all of the necessary supplies for efficient work. Although Savannah has only sixty-five thousand inhabitants its Department of Bacteriology is known as the best in the South, and it is doubtful if there are half a dozen better equipped and more efficient departments on the continent (including our largest cities. The city is very completely piped for water obtained from artesian wells, and the sewer system is nearly as extensive. The city was searched from one end to the other for a surface water well without success. In the worst negro section at the east end and at the west end some of the most wretched, tumble-down negro hovels were selected and examined and in every single case, after picking out the worst houses in the worst quarters, sewer connections and city water were found. Savannah was examined more thoroughly than any other city visited, but not a single well was found within the city limits nor a single house not connected with the sewer. After leaving the city it was learned that there is one small section which, on account of its presenting a difficult engineering problem, is not sewered; but even this part is furnished with city water and plans are under consideration for extending the sewer through this district.

The writer has thus outlined the results of his investigation of conditions in these cities and has brought the subject to the attention of the Association of Life Insurance Presidents for a special reason which will now be briefly explained. The success or failure of a life insurance company, assuming honest and intelligent management, depends upon three things—the expense rate, interest rate and mortality rate; and in a thoroughly established, well-conducted company these factors are of approximately equal importance. As a rule, companies have paid great attention to the expense rate and the interest rate in all its bearings upon the business, but in the matter of mortality rate in all the wonderful development of life insurance in this country the past sixty years the efforts to secure

a favorable mortality have been practically confined to the benefits resulting from a careful initial selection of risks, while the question of what can be done to lower the mortality rate and to keep down the claims by efforts to postpone or to prevent the death of the insured while the policy is in force has hardly been given serious consideration.

Here is a field of work which it is possible to make of really great importance. Life insurance executives have the reputation of being shrewd, practical, level-headed business men who know their own interests. Here is an opportunity for them to do a great work for humanity and at the same time directly benefit their own companies and policy-holders. Here is a wholly neglected field of activity having a direct bearing upon the financial success of the business which they are conducting. There is no question of the decided improvement in the mortality rate of the country during the past fifty years as the result of progress in sanitary science and its practical application, and, while this improvement has been greatest at the younger ages, it has been very considerable at the insurable ages under forty, and about three-fourths of the insured take out policies under forty. There is no doubt that policy-holders have gained millions of dollars as the result of this improvement. There is no doubt that the possibilities of improvement in the future are fully equal to the improvement which has taken place in the past. It would be a great mistake, however, to attribute all of this gain from favorable mortality to the benefit resulting from initial selection of risks by the medical examiners. A very large part of this gain is due to a lower mortality resulting from improved sanitary conditions, for which improvement life insurance companies and their officials have very little right to take credit. Mortality statistics for the general population, mortality statistics on certain classes of uninsured lives where the question of medical selection does not enter, show a very decided improvement in recent years for ages under forty.

In order to appreciate this phase of the subject, and especially its important bearing upon life insurance, it will be well to consider for a moment the immense gains resulting from a comparatively slight improvement in the mortality rate. The regular life insurance companies in the United States, not including the industrial business, are paying about $150,000,000 a year for death claims. This is about $12.00 per thousand dollars of insurance in force. If the rate of loss were reduced from $12.00 to $11.00 per thousand of insurance the companies would gain in reduced claims about $12,500,000 every year. To secure a favorable mortality these companies are paying about $6,000,000 a year for medical examinations and inspection reports before the risk is accepted—and practically nothing for this purpose after the policy is issued. If they were to expend half as much in a combined general effort to lower the mortality rate probably the results in dollars and cents would be fully as great as results obtained from the money already expended on initial medical examinations. The average policy is for about $2,500, and the average premium about $100. If a company postpones the death of one of its policy-holders for one year it means an advantage to the life prolonged which can scarcely be measured in dollars and cents. To other policy-holders who in the last analysis pay the death claims it means that they receive one more premium ($100) and have another year's use of the amount of the claim ($100)—making a total of $200 additional receipts as the result of postponing the insured's death for one year. If this could be brought about by the expenditure of $5.00 or $10.00 or $25.00 it does not require any unusual acuteness to see that the investment is a good one for policy-holders.

These considerations, together with the results of the investigation made of sanitary conditions throughout the country, lead to the conclusion that what is wanted is an organization in each city throughout the whole country of a number of intelligent, substantial and influential men with practical common sense, interested in all work to improve the sanitary condition of all of our cities and having enough technical knowledge of modern sanitary science to know the relative importance of things, what ought to be done and how to do it. It is possible to form such an organization in every city in the country (a sort of a

league of municipal sanitary clubs) and if they could only have the backing and general direction of some really powerful and influential body there would be no doubt of the results. In every city of fifty thousand inhabitants in this country it is possible to find among the managers, the leading agents, the medical examiners and the legal and financial representatives of the insurance companies fifteen to twenty men of standing, of influence and of a high average standard of intelligence. From these men, together with two or three of the leading health officials and a few other men of prominence interested in such questions, could be formed an organization, which, if directed and given to understand that they would be thoroughly supported by the organized life insurance companies of the country, could exert an influence in bringing about better sanitary conditions—which would mean the saving of millions of dollars to the life insurance policy-holders of the country.

With such an organization in a city of fifty thousand inhabitants, working intelligently and earnestly, knowing that they have the powerful support of the great life insurance interests of the whole country, it would not be long before every city in the country would have proper authority to compel residents living on streets having sewers and city water to connect their houses with the sewers, and the power would be used. It would not be long before there would be a very great decrease in the number of instances where there is a vault unconnected with the sewer and a well giving surface water on the same premises, and drainage from the former to the latter. The unsanitary public markets, with their swarms of flies, would be rapidly done away with and in time completely abolished. The ordinances for screening of meats and perishable provisions would be more thoroughly enforced. The unsanitary dumping grounds for city garbage within the city limits would be done away with and incineration or some other sanitary method of disposing of city waste would come into general use. Each city of over fifty thousand inhabitants would have a well-equipped department of bacteriology, with an expert in charge, and the practical results would soon be seen in a great decrease in the death rate from infectious and contagious diseases. It would mean a blessing to humanity and millions of dollars saved in the cost of insurance.

There is just one really great difficulty, and that is in getting the life insurance officials to appreciate the importance and value of the work and in getting them to work together—earnestly, unitedly and harmoniously—sinking their own individual company interests in an effort to work for the common good. The proposition is not theoretical—it is eminently practical. Unfortunately, it is difficult to get most people really interested in such a proposition. The trouble is that the fearful results of unsanitary conditions are with us all the time and have been with us for years. We become accustomed to them and consequently it is hard for us to wake up to the situation and the possibilities. A few months ago the whole country was horrified by a fire in the working rooms of the Triangle Shirtwaist Company. One hundred and fifty employees, shut out from all means of escape, mostly young girls, suffered the agony of being burned to death. Twenty-four hours afterward the whole country was aware of what had happened and everyone was stirred with pity for the unfortunate and condemnation of those who were responsible for such an awful catastrophe; and yet only one hundred and fifty lives were lost, while every year in the city of New York alone over fifteen thousand people die from infectious and contagious diseases—diseases every one of which is classed under the head "preventable," diseases the ravages of which we positively know by the adoption of proper methods can be to a very great extent permanently checked. A reduction of only one per cent. in the number of these deaths would save more lives than were killed in that awful conflagration.

It is to be hoped that the Association of Life Insurance Presidents will take the lead in definite and energetic action along the lines indicated in this paper. There can be little objection from the standpoint of expense because it would be difficult to develop any way of doing effective work, which would mean so little expense as for the association to establish, direct and help a league of city sanitary clubs.

TYPHOID FEVER

CHARACTER OF THE RECENT EPIDEMIC AT OTTAWA, JANUARY 1st TO MARCH 18th, 1911.

BY MAJOR LORNE DRUM, M.D., D.P.H.

PERMANENT ARMY MEDICAL CORPS; OFFICER IN CHARGE CENTRAL MILITARY LABORATORY OF HYGIENE, HEADQUARTERS, OTTAWA, CANADA.

Typhoid fever has been almost a constant factor in the monthly mortality returns of the city of Ottawa for several years past, but at no period up to the end of 1910 was there any marked increase in the number of deaths reported. During the past ten years, 1901-1910, 200 deaths have been reported, and of these 38 died in 1907 and six in 1903, the years of greatest and least mortality from the disease. The average was 20 deaths a year. In 1910 the mortality was 24. Up to March 18th, 1911, the date at which the investigation closed, in a period of 11 weeks there were 52 deaths for 1911. The incidence of this disease during the past ten years cannot be ascertained owing to the obvious incompleteness of the official returns. For instance, in the year 1909, 58 cases only were reported, while 23 deaths were recorded. In 1910, 80 cases were reported, with 24 deaths. Obviously, this mortality is incredibly high for the number of cases, and one is justified in concluding that during these years and the preceding ones, many cases of typhoid fever have occurred in the city unreported, and that the totals of 58 cases for 1909 and of 80 for 1910 are considerably below the real numbers.

Taking these figures as they are, however, we find that in 1910, the monthly incidence was as follows:—January 5, February 9, March 14, April 1, May 1, June 1, July 1, August 13, September 7, October 5, November 18, December 5, total 80.

During the investigation a few more cases (five) were found to have occurred in December, making a total for this month of 10, distributed as follows: One on the 1st, one on the 3rd, two on the 15th, one on the 16th, one on the 22nd, two on the 23rd, one on the 24th, and one on the 28th. The incidence of typhoid in this month, therefore, showed nothing unusual compared with previous months. On January 1st, however, the incidence of typhoid increased abnormally, and remained so for 11 weeks (the record was shown on an accompanying diagram). As may be seen, in the first week (Sunday, January 1st, to Saturday, January 7th,) there were 31 cases, the second week 70 cases, third week 136 cases, fourth week 111 cases, fifth week 119 cases, sixth week 118 cases, seventh week 114 cases, eighth week 94 cases, ninth week 79 cases, tenth week 25 cases, and finally, in the eleventh week (March 11th to March 18th) four cases. In all there were 1,196 cases, of which 901, or about 75 per cent., were investigated. The remainder could not be located for investigation, owing to removal, wrong addresses and other causes.

Of the 901 cases investigated, 52 died before March 18th, the date on which the investigation closed, making a death-rate of 5.7 per cent. As, however, several deaths have been reported since the death-rate is probably higher. According to sex the cases investigated were fairly evenly divided, 422 being males and 479 females. The ages ranged from three to 75 years, but the age periods most susceptible to typhoid infection—*viz.*, 15 to 30 years, furnished 47 per cent. of the cases. 33.4 per cent of the cases were children under 15 years of age. (The classification for each age was shown on an accompanying diagram.) No class nor occupation was exempt. Rich and poor alike suffered. Spot maps were made for each week of the epidemic, and showed that the disease from the first was distributed generally throughout the city. Every case had used the city water supply in some form, either for drinking or domestic purposes. No

Read at the Symposium on Typhoid Fever and Water Supplies at the Congress of the Canadian Medical Association, held in Montreal, June 7th, 8th and 9th, 1911.

other common factor was found. The milk supply was carefully investigated, but nothing was discovered pointing to infection along these lines. Other food supplies were likewise excluded. Again, the fact that several of the cases occurring in the first two weeks were in houses without water-closets, and in some cases without even sinks, proved that the source of the epidemic was not to be looked for in sewer emanations. Lastly, the winter season excluded the possibility of infection by flies or from unsanitary conditions surrounding premises.

Thus, by a process of exclusion, the probable source of the infection was brought down to the water supply, and a rigid inquiry was instituted to discover if any abnormal conditions were at work during the three weeks preceding the outbreak which might have caused an unusual amount of pollution to enter it. That the water was liable to occasional pollution was a known fact, as reports on samples sent to the Provincial Public Health Laboratory at Toronto had at various times shown the presence of intestinal organisms. It may be noted that the mouth of the intake pipe of the water supply is placed in the main current of the Ottawa River towards the north bank, well above the city sewer outfalls. From there the water main runs along the bed of the river in a winding course through Nepean Bay to No. 1 pier, where it enters the channel of the aqueduct. Along the bed of this artificial water-course it runs for a distance of about 1,000 yards to the pump-house. Now, the city of Hull, situated across the river from Ottawa, takes its water supply from the same main current of the river, yet Hull was remarkably free from typhoid this year. Also, tests made of the water at the intake showed it free from sewage pollution, while similar tests clearly showed the presence of intestinal organisms in the tap water. Therefore, the source of the pollution entering the water was to be looked for after the water had entered the intake. At No. 1 pier an emergency valve had been placed in the main by which water could be drawn into the pipe from the surrounding Nepean Bay water whenever the occurrence of fires made the ordinary supply of water unequal to the demand. This valve had been opened at several times for various periods during the three weeks preceding the outbreak. Now, the water in Nepean Bay is polluted and unfit for drinking purposes. Within a distance of one mile along the shore of this bay, above No. 1 pier, several sources of pollution exist. First of all there is a large railway yard, with workshops, cattle pens, and but recently disused privies. The surface drainage from these premises empties into the bay chiefly through a small stream, which is practically an open sewer. Further up along the bank are several premises, including a mill and a large stable, all without sewer connection, while within a distance of a mile is the mouth of Cave Creek. This creek runs through Hintonburg and Mechanicsville (the former a portion and the latter a suburb of the city), and receives not only the surface washings from a large number of premises, including streets and stables, but also from privies, of which there are 106 close by, and in several instances directly over the stream. Further up the river bank are numerous cottages culminating with the large summer settlement at Britannia, but it is not necessary to go any further. Nor is it necessary to say that tests of the water in Nepean Bay confirmed the evidence of the senses. Polluted water, therefore, was being admitted to the water supply every time the emergency valve was opened. But other factors had to be looked for, as the emergency valve had been opened on previous occasions. The usual factors were found, firstly, in the very low condition of the water in the river, thus not only requiring the more frequent opening of the valve to supplement the diminished pressure at the intake, but also concentrating the pollution; and, secondly, in the diversion of this polluted water directly towards the current which passes pier No. 1 by the freezing of the shallow places in the bay down to the bottom. In addition to the emergency valve, there is the strong probability of the entrance of polluted water through leaky joints in the main in its winding course along the bed of the bay.

In this paper it is not necessary to take up the other factors which were investigated, and which may have added to the pollution of the water supply. The above facts are sufficient to show that the water

supply was polluted by the sewage contained in the Nepean Bay water, and it will be admitted that such pollution was sufficient to cause typhoid infection. It is not considered necessary to demonstrate the specific occurrences of excreta from typhoid cases in dealing with water supplies polluted by the sewage of many people. Of course, inquiries were made as to the incidence of typhoid in those portions of Hintonburg and Mechanicsville bordering on Cave Creek, and the history of a few cases obtained, but the well-known and accepted facts concerning the presence of typhoid "carriers" renders this portion of the investigation superfluous to the main issue.

Having now found out that the cause of the epidemic was in all probability due to the water supply, and that this supply was infected, the next step in the chain of evidence was to see whether the remedies applied to the water supply had any visible effect on the course of the epidemic. The effect, I think you will agree, was conclusive. On January 13th the emergency valve was opened for the last time, but still evidences of pollution were found in the tap water, very likely coming in through leaky joints in the main along the bottom of the bay. On February 1st a plant was installed at No. 1 pier for the disinfection of the water by the hypochlorite treatment. At first .5 parts per million of available chlorine were used, but this quantity was increased to .75 parts on February 15th, as it was found that *bac. coli* were still in the tap water. This quantity was increased on the 19th to 1 part per million, and again on the 23rd to 1.5 parts. Up to that time *bac. coli* were still found in the water, but none since up to the final closing of the investigation. Therefore, from February 23rd we may consider the water supply as no longer a causative agent in the epidemic. Now, what happened? In that week, the week ending February 24th (and eighth week of the epidemic), 94 cases occurred; in the next week (the ninth week) 99 cases occurred, and in the next week (the tenth week) 25 cases occurred; and finally, in the last (or eleventh week), 4 cases occurred. In other words, all the cases occurring since the elimination of the water supply as a source of infection may be assumed to have received their infection before that event, and that since then no further infection occurred. Once the source of infection by means of the water supply was removed, the epidemic ceased. We may, therefore, justly conclude that the epidemic was due solely to the infected water supply. Of course, there were some cases due to contact and secondary infection through food, but the original and continuing factor was the water supply.

The general characters of the epidemic, its sudden outbreak, its general distribution to all parts of the city and to all classes and conditions of the population, agree with those of other water-borne epidemics. Its occurrence in winter is in conformity with similar outbreaks in cities of Canada and of the Northern States of the Union, which have been traced to polluted water supplies. The mortality was low, and, as is usual in typhoid epidemics, many cases were of a very light nature. The probable occurrence of a larger number of cases from secondary infection through flies, etc., continuing long after the water had been rectified, was obviated by the season.

THE MEDICINE OF THE FUTURE

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There can be no doubt that the great advances of medical science have been of enormous advantage to individuals, and have enabled innumerable persons to survive who would otherwise have succumbed to the stress of circumstances, but how far

Substance of the address in medicine delivered at the Annual Meeting of the Canadian Medical Association, June, 1911.

this has been an advantage to the evolution of the human race as a whole is a disputable point. Karl Pearson says:

The very existence of human society depends upon a strong gregarious instinct, having been evolved among men. Our highest human product, sympathy with our fellow men, is as much a product of evolution as the gregarious instinct of a herd of deer, or the combined action of a pack of wolves. Only it is more completely developed, and with increasing knowledge we have lost more and more touch with its instinctive gratification. The sympathy is there, ready to run riot in a thousand ways, which sober reflection may not show to be for the ultimate advantage of the herd. It is easy to give a shilling to a beggar, to subscribe a pound to a charity, or to found stipends for the blind or the deaf and dumb. Our strong instinct of sympathy with suffering has been gratified, but shall we really have contributed to the total enjoyment of the race? May be, and may be not—the pedigrees of general medical and physical degeneracy which I place before you may help you to a judgment. Of one thing, however, I feel sure, that no judgment will lead to lasting social gain which is reached by appeal to the emotions, which is based on inadequate knowledge of facts, or which collects data with the view of supporting any preconceived opinion.

The Scriptures say that it is more blessed to give than to receive, and I think I can claim, on behalf of our profession that, whether we have always been right or not, we have been ever actuated by a spirit of altruism. The process of vicarious charity, at the expense of the medical profession, has gradually grown so that in the present day at least a fourth of the population of England receives free medical advice. Why should all this charity be necessary? Why should such a large proportion of the population be pauperized? It would seem to me that it is because we are producing an inferior breed, because we are not raising up a healthy, independent race. The struggle for existence is not merely an individual question, but it is becoming more and more a national question, and the nation which produces the finest race is sure to win in the long run. As Professor Arthur Thomson says, what children usually die of is their parents, and what a nation dies of is lack of men.

In future medical men must not be content with treating the diseases of the community, they must point out the lines along which the nation is to be improved by encouraging the multiplication of the fit, and controlling the increase of the unfit. The public must be taught that the health of the nation is its most valuable asset, and that the maintenance of health is of much more importance than the treatment of disease. This departure in placing physiological processes before pathology involves a higher form of medical education than that prevalent in our medical schools of today—an education in which only men of the highest intelligence should take part.

"Prevention is better than cure" is one of those half-truths which readily command public acceptance as axioms which cannot be gainsaid; but it is not Nature's method, and medical men are incessantly talking about following the laws of Nature. The prevention of disease is very important to the individual, but when it enables undesirables to go on generation after generation propagating their species it can be of no advantage to the race. In an address on preventive medicine which I gave four years ago I stated that if the public were only alive to their own interests they would pay medical men liberally for directing them in the paths of truth and in the ways of health rather than for treating their diseases. If the money which is spent in the treatment of disease were devoted to the preservation of health, our huge hospitals would not be half filled, purveyors of synthetic remedies and artificial foods might find a suitable place in a home for the destitute, the necessity for surgeons and specialists would largely disappear and physicians would be fully occupied in advising their *clientèle* on the preservation of health and in looking after the aged. I am afraid we are still a long way off those halcyon days when our hospital buildings will be pointed out as relics of a decadent age; but still we should at least aim at transmitting high ideals to our successors. We can best attain those ideals by improving the stock; no environment will ever produce a genius.

Hitherto medical men have been devot-

ing all their energies to the environment, adapting the environment to the individual, not the individual to the environment, thus not assisting the race to take care of itself. Attention, however, to the environment is absolutely essential in the prevention of disease. Although disease is Nature's method of killing off the unfit, it often severely damages those who survive, and is thus a slow and crude method of improving the race. Man has now risen superior to natural selection, and insists on living when all natural forces are against him. Medical science has succeeded in suspending the natural selective death-rate, and sentimentally renders the existence and rapid multiplication of the undesirables an easy matter. In the old countries the undesirables are increasing at a much more rapid rate than the mentally and physically fit. Those countries which have to a large extent suspended a selective death-rate, but are not wise enough to establish a selective birth-rate are certain to decay, and go the way of all the ancient nations who disappeared and made way for more vigorous races. You have got here a young country, a virgin soil, and you should see that it is peopled by a vigorous and intellectual race. You should shut out all degenerate foreigners as rigidly as you would exclude a mad dog. Do not follow our example, and make your shores a dumping ground for the rubbish of Europe. I believe you have already got a fair share of degenerates, but your population is still small, and there should be no difficulty in eliminating the unfit in the course of a generation or two.

When I was first in Canada, thirteen years ago, I read some literature about the rapid reproduction of the French-Canadians, and the marked contrast in the size of their families to those in France. It was then calculated that, at the same rate of fertility, in about a century they would not only populate the whole of Canada, but would overrun the whole of North America. The Yellow Peril was not in it with them. However, I do not yet notice much change. A large number of you have not yet been pushed westward. Nature has her compensations, and this is evidently proving a saving grace to a less prolific breed. A high birth-rate is accompanied by a large infantile death-rate, and the natural increment in the population is not unduly excessive. Natural selection is still in force; the weaklings are being killed off, and no doubt a strong and vigorous race is left behind.

The crude birth-rate for 1,000 persons living in Ireland, the Province of Ontario, England and Wales, and Scotland in 1909 was respectively 23.5, 24.9, 25.6, and 26.4. On the other hand, if we take the fertility of 1,000 wives between the ages of 15 and 45, we find that the Irish wives head the list, the numbers being: Ireland, 289.4; Scotland, 271.8; England and Wales, 235.5; and France, 157.5. I have not been able to get such statistics from Canada.*

Now when we come to the corrected death-rates at all ages for 1,000 living in 1909, we find the rate in Scotland: males, 18.56; females, 16.73; England and Wales: males, 18.37; females, 16.04; Ireland: males, 16.25; females, 16.90. In Canada in 1901, for both sexes, 15.10. In Ireland, Norway, Sweden, and Australia the infantile mortality is very low. In Ireland the death-rate for children under 10 years of age is very much lower than in England and Scotland, but it is rather higher among individuals from 10 to 35 years, and then there is a decided fall till the age of 75. Above that age the death-rate in Ireland rises rapidly, and it might look as if Ireland was a dangerous place for old people to live in, but it is simply due to the proportionately greater number of old people in Ireland. There is no evidence to show that the high mortality is due to the old age pensions.

The higher death-rate in Ireland from 10 to 35 years is almost entirely due to tuberculosis, and the lower death-rate at all other ages, except extreme old age, points indubitably to the fact that tuberculosis is one of Nature's methods of getting rid of the unfit. The wave of enthusiasm over the conquest of consumption is so overwhelming in the present day that it requires a very bold man to say a word in favour of the tubercle bacillus. Dr. D. W. Hunter, of the Royal Albert Asylum for Idiots, in criticizing a recent work on the conquest of consumption, said *inter alia*:

Many an imbecile owes his existence to

* For my Canadian statistics I am very much indebted to Dr. Peter H. Bryce, of Ottawa.

the fact that his parents failed to die of tuberculosis. . . . Again, as regards insanity, the authors themselves estimate that, roughly, one in every eight consumptives is likewise insane. This tendency to consumption among the insane they explain by the lowered resistance of the soil during the attack of insanity. This may be so, but it is certainly not the whole story. While, during the last fifty or sixty years, the death-rate from tuberculosis has steadily diminished, we are, on the other hand, faced with a very ugly rise in our insane rate. Since the insane show such a marked tendency to tuberculosis, it is not improbable that the diminishing death-rate from tuberculosis has played a considerable part in the increase of insanity;

And again:

Let us take the case of the idiot. The death-rate among idiots is about ten times that of the normal population at the same age. Further, of deaths of idiots, about 80 per cent. are due to tuberculosis. Now an idiot has not even the resisting power necessary to die of phthisis. He dies of acute tuberculosis, death taking place in from three to six weeks from the onset of the illness. Surely here there is some inherited lowering of the soil. There are some 150,000 (estimated) of these defectives in England and Wales, and for every defective there are from six to a dozen of his relatives only a shade better than himself. Practically the same holds for insanity, yet we are asked to believe that a man cannot inherit a soil which will remain during his lifetime permanently below the average in resisting power.

Further:

Until we have some restriction in the marriage of undesirables the elimination of the tubercle bacillus is not worth aiming at. It forms a rough but on the whole a very serviceable check on the survival and propagation of the unfit. This world is not a hothouse, and a race which owed its survival to the fact that the tubercle bacillus had ceased to exist would, on the whole, be a race hardly worth surviving. Personally, I am of opinion, and I think such opinion will be shared by most medical men who have been behind the scenes and have not allowed their sentiments to blind them, that if to-morrow the tubercle bacillus were non-existent, it would be nothing short of a national calamity. We are not yet ready for its disappearance.

These are wise and weighty words, but it would be too much to expect that they would command public acceptance, because there is nothing in the present day which people hate so much as the truth when it conflicts with popular sentiment.

Dr. Osler, in a recent lecture in Dublin on the fight against tuberculosis, said: "And, lastly, for our great consolation, we know that the disease is not hereditary, and for this let us be thankful." We know nothing of the kind, although we are constantly having it dinned into our ears by medical men who ought to know better. We know that the tubercle bacillus, which is a necessary element in the production of tuberculosis, is not transmitted in the germ plasma, but the long, narrow, flat chest, delicate lungs and feeble resisting power to the tubercle bacillus and to many other germs are undoubtedly inherited, just as much so as the shape of your nose or the colour of your hair. Medical men who are shutting their eyes to the truth and encouraging matrimony and the propagation of the species by mental and physical weaklings are incurring a fearful racial responsibility, and their action should be condemned in no uncertain language.

I am in favour of the abolition of tuberculosis, because I advocate artificial to assist natural selection. Moreover, tuberculosis is a poor method of a selective death-rate compared with typhus fever, which we have practically abolished. The latter disease cleared off the weaklings without doing any permanent injury to the survivors, but tuberculosis seriously damages the survivors, is a very slow and expensive disease to combat, and many an individual succumbs who would be a worthy citizen in a better environment. By all means improve the environment, improve your sanitary conditions, which will be beneficial in preventing tuberculosis and many other diseases. As far as possible destroy the tubercle bacillus, both human and bovine, and see that the milk supply is free from such organisms. Above all, both for the prevention of insanity and consumption, discourage and prevent the propagation of the species by the mental and physical

weaklings. Raise up a race which will not be catching tuberculosis or anything else.

The medical officers of health are doing an enormous amount of good work in attacking the sources of supply of the tubercle bacilli, in preventing their dissemination, in looking after the milk supply, and in improving the sanitary conditions under which we live; but your blatant propagandist must see the disease before he begins to stamp it out with tuberculin dispensaries and sanatoriums. Dr. Barendt has reckoned that in the Middle Ages there were over a hundred leper houses in England when the population was less than four millions; there were also a few such houses in Scotland and Ireland. Leprosy was stamped out not so much by the leper houses as by improvements in the habits of the people, and by a holy abhorrence of the disease, so that the lepers took little or no part in adding to the population. It was laid down as a rule that the attendants or nurses at the leper houses should be discreet women of mature age.

During the last fifty years there has been a steady decline in the incidence of tuberculosis in England and Scotland, while in Ireland it has remained about stationary. On the other hand, during the same period the insane population of England and Wales has increased 250 per cent., while the whole population has only increased 81.6 per cent., and in Ireland, with a falling population, the increase has been about 100 per cent. The ratio of the insane to the general population is in England and Wales 1 in 278, in Ireland 1 in 158, and in Scotland 1 in 266. This is not all, as there is an even greater number of mental defectives in the three countries.

If you abolish the tubercle bacillus in Ireland then it will certainly become a question of "God save Ireland." Are the insane and defective-minded to be allowed to go on multiplying at the present rate? I do not know how matters stand in Canada, but I would advise you, while showing all possible kindness to the insane and mentally defective, not to allow them to indulge in the pastime of procreation, and give them clearly to understand that with them their breed must come to an end. Insanity and mental deficiency are largely questions of inheritance, and, unfortunately, owing to cross-breeding into impure stocks, there is a latent strain of insanity and other nervous affections in a great many families, so no matter how careful you are in your selection, it will take some generations before you eliminate this latent strain from the impure dominants, but the sooner you begin such a selective birth-rate and the elimination of the undesirables the sooner you will attain a more or less perfect race. With the insane, the imbecile, the idiot, the mentally defective, the criminal, the ordinary wastrel, the loafer, the professional pauper, the tramp, the footpad, the drunkard, and other mental and physical degenerates, prevention is certainly better than cure, but you will never succeed either in prevention or cure by maudlin sentimentality.

In England and Wales there has been a great reduction in the infantile mortality during the last ten years, due to the falling birth-rate, more favourable climatic conditions, and greater care of the infants, but there has been practically no reduction in the deaths from developmental and wasting diseases, which cause 61 per cent. of the total deaths during the first three months of life. It is, perhaps, best that this should be so, as the reduction in the birth-rate has been entirely among the better stocks, and if these 61 per cent. of defectives at birth survived, the only advantage that could possibly accrue would be in finding more work for the medical profession and more scope for the charitably disposed. Prevention in these cases implies breeding from better stocks.

Of recent years there has been a considerable increase in the death-rate from pneumonia, and this, no doubt, is partly due, as pointed out by the Registrar-General of England, to a more correct certification of deaths. Many of those formerly labelled bronchitis, especially among children, being now correctly designated pneumonia. But, whatever the cause of the apparent increase, there can be no doubt that the death-rate from this disease is somewhat fearful. In 1909 in England and Wales it caused more deaths than any other form of disease, with the single exception of all forms of tuberculosis. The deaths from it considerably exceeded those from phthisis; the numbers being per 1,000 deaths, pneumonia 89, phthisis 74.6; and the rate per 100,000 living, pneumonia 129,

phthisis 108. Yet we have a great outcry about the conquest of consumption, but not a word about the conquest of pneumonia. It would seem as if the ordinary individual was incapable of getting more than one idea into his head at the same time.

Pneumonia is an infective process, due to infective organisms, the pneumococcus in the vast majority of cases, though many other organisms play an important rôle in individual cases. The pneumococcus is very widely spread, even more so than the tubercle bacillus, and I feel confident a bacteriologist would find it in the mouth of almost every one of us. Therefore, it is as a rule a harmless saprophyte, but in a dirty mouth it may assume a virulent character, and when the resisting power of the individual is depressed from any cause, such as undue exposure, especially during sleep when the control of the nervous system is largely in abeyance, alcohol, nervous prostration, the pneumococcus readily finds its way into the lungs or blood and sets up pneumonia, or general pneumococcal infection. Pneumonia is a common disease at the extremes of life, and in the aged it is often a terminal disease—the old die as easily from pneumonia as from anything else. Like typhus fever it is a good racial disease, it kills the weaklings, and, as a rule, causes no permanent injury to the survivors. The mortality is greater among males than females, and therefore in the old countries it increases the disparity between the sexes. Unfortunately, it cuts off a large number of both sexes in the prime of life. The disease is short, and therefore inexpensive, so that no one makes much out of it except the undertakers, who grow fat on the misery of others. The case mortality is high, but yet no serious attempt has been made to curtail its incidence. The good lives cut short are soon forgotten. "The evil that men do lives after them; the good is oft interred with their bones." This disease is more prevalent in cities than in the country, and among those who lead unhealthy indoor lives rather than among those who work in the open.

Alcohol is a strong predisposing factor, a factor which not only increases the incidence of the disease, but also immeasurably lowers the resisting power of the individual, and so increases the mortality-rate. On the other hand, an excessive amount of lime salts in the blood greatly increases the resisting power of the individual, and so both lessens the incidence and the mortality. Any septic condition of the mouth increases the virulence of the organisms, and so a foul-mouthed individual is usually a greater danger to himself than to others. By way of prevention, the mouth should always be kept perfectly clean, and as aseptic as possible. The nasal passages and throat should be kept clean with some simple oily preparation, such as pure liquid paraffin, as they are frequently the paths of infection, not only for pneumonia, rheumatic fever, influenza, and diphtheria, but also for cerebro-spinal fever and poliomyelitis.

Sir Almroth Wright has introduced vaccines for the prevention and cure of many infectious diseases, and among the most valuable are the pneumococcal and influenzal vaccines, which, when judiciously used, are most valuable remedies in the prevention and treatment of these diseases. In apoplexy and hemiplegia the patient frequently succumbs to an attack of pneumonia, and this can be obviated by a proper vaccine. Operations on the mouth are frequently followed by a fatal septic pneumonia, and in such cases it is not sufficient to use antiseptic mouth washes, but previous to operation the pathogenic organisms in the mouth should be isolated, and a corresponding vaccine prepared. Antistreptococcal serum administered before operation is also a valuable adjunct.

Another common cause of the high mortality from pneumonia arises from lack of proper early treatment—often owing to the fact that some medical men take two or three days to diagnose the disease, and then call it congestion of the lungs, and treat it cavalierly as a matter of no great importance for fear of frightening the patient, until the unfortunate individual is too ill to be frightened by anything. In my opinion, if pneumonia were early recognized and properly treated the mortality would be greatly lessened.

In Ireland in 1909 the death-rate from pneumonia was lower than in England, being 60 per 1,000 deaths, and 99 in every 100,000 of the population.

In Scotland they move very slowly, even in the way of recording their deaths, as

even now I have only been able to obtain the records of the eight principal towns for 1909. The death-rate from pneumonia was much higher than in England and Ireland, and this makes me wonder how much the national beverage had to do with the issue. The death-rate per 100,000 inhabitants was 177, varying from 217 in Glasgow to 92 in Perth; the rate per 1,000 deaths was 107, while that from phthisis was 77. In the Province of Ontario in 1907 the death-rate from this disease per 100,000 population was 138, and per 1,000 deaths, 91.

Bronchitis holds the second place as a cause of death in England and Wales, the numbers in 1909 per million persons living being 1,142, against 1,290 for pneumonia and 1,081 for phthisis. There has been a considerable diminution in the apparent incidence of the disease, partly owing to proper transference to the pneumonia list. Bronchitis is still very prevalent and fatal at the extremes of life, consequently the young and the old should be well protected against atmospheric changes. Some persons are much more susceptible to bronchial catarrh than others; this susceptibility is much lessened by a fair amount of lime salts in the blood, and increased by the salts of sodium and potassium, but in cases of true asthma the very reverse appertains. Alcohol and tobacco are injurious to the throat and bronchial mucous membrane; and the chronic cough thus induced is a frequent source of emphysema. A suitable vaccine is often highly beneficial in acute and chronic bronchitis, but there is no vaccine to counteract the effects of alcohol and tobacco. All destructive processes of the lung tissue cause emphysema. Senile emphysema is an atrophic process due to want of exercise of the lungs, associated with ossified costal cartilages; this can often be obviated by decalcifying agents and breathing exercises.

Pleurisy, again, is largely an infective but not a specific disease, as it may be associated with tubercle bacili, rheumatism, pneumococcus, pyogenic organisms, typhoid and colon bacilli, etc. In its prevention and treatment we must avoid undue exposure and all depressing influences, and consider the infective organisms.

Since 1870 there has been a marked fall in the death-rate from smallpox, typhus, and enteric fever. Every person can be protected against smallpox at a very small cost; sanitarians have practically abolished typhus fever, and the incidence of enteric fever is and has been steadily diminishing, but we have still got to deal with some of its associated causes. The ordinary household scavenger, the domestic fly, is still a troublesome pest, and the human carrier usually causes a good deal of mischief before discovery, and when discovered is difficult to control. The milk supply is still a frequent source of local epidemics, but the water supply is generally above reproach except in rural districts. A few epidemics have been traced to ice-cream vendors. The erroneous dread of sewer gas as a direct cause of the disease is now a matter of ancient history, except in the law courts, where it still does duty.

In the army Sir Almroth Wright has been fairly successful in lessening both the incidence and mortality of this disease by his vaccine, but in all campaigns thorough sterilization of the water is the most important method of prevention. Other matters must not be neglected, such as the disposal of the excreta and the protection of the food from infection by flies.

In diseases which largely affect children, such as measles, whooping-cough, diphtheria, and diarrhœa, the improvement has not been so marked, except in diarrhoea, in which, during the last few years, the incidence has fallen owing to favourable climatic influences. In scarlet fever, where isolation is pretty universally adopted there has been a great fall both in the incidence and mortality. Although there has been quite a revolution in the treatment of diphtheria and consequently in the case-fatality, I am afraid sanitarians have not done their share in lessening the incidence of the disease. It will be very difficult to prevent the spread of infectious diseases among children so long as we have overcrowding, defective ventilation, dust, and want of cleanliness in the homes, schools, and public conveyances. However, a great deal can be done for local conditions by looking after the children's teeth, by seeing that their teeth and jaws get plenty of exercise in chewing food, by keeping their mouths and nasal passages

as aseptic as possible, and by removing any obstructions, such as adenoids and large tonsils.

During the last forty years in England and Wales the number of deaths due to venereal diseases has fallen from 92.6 to 48 in the 1,000,000 population. So far as these statistics are reliable, they seem to me to point to a great improvement in the treatment, as there is no reason to believe that there has been any diminution in the incidence. These diseases, from their deteriorating effects on the race, merit the attention of a statesman. A determined effort should be made to stamp them out, notwithstanding the pharisaical hypocrisy of the unctuous and righteous, who compound for sins they are inclined to by damning those they have no mind to. The suffering caused to innocent wives and children by those diseases call aloud for their elimination. With a combined international effort they might be stamped out.

What can be done by well-directed legislative measures in stamping out disease is well exemplified by the muzzling order of Mr. Walter Long (to whom the country has never shown sufficient gratitude), as there has not been a case of hydrophobia in Great Britain or Ireland for the last fifteen years.

In England and Wales in 1909 there were 914,472 children born alive, and there were 1,429 mothers who died from septic diseases associated with parturition; there were also 3,171 women who died from diseases caused by or associated with pregnancy and child-bearing, but who had not produced viable children. The net result is that 1 woman died for every 199 children born alive. A large number of these women should never have been pregnant, and many died from preventable diseases which were not prevented. There is plenty of scope here for prevention, not only in advising women not to undertake risks which will prove their death-blow, but also by saving valuable mothers from septic infection. This can be easily accomplished by a little trouble before parturition in attending to the health of the mother, and if any pathogenic organisms are found in the *via naturalis* an appropriate vaccine should be administered previous to parturition. I know an ophthalmic surgeon who will not do a cataract operation until the conjunctival sac has been prepared and a bacteriologist pronounces it free from microbes. Why do gynaecologists not undertake somewhat similar precautions in the case of the parturient woman? The vaunted aseptic gynaecology of which we hear so much is not sufficient; there may be a breakdown in the technique, and, moreover, the germs may be there before the arrival of the asepsis.

The practical disappearance of erysipelas from hospital wards must largely account for the lessened death-rate from this disease. We must give the surgeons due credit for this diminution; in fact, I would like to give them the whole credit, as, so far as preventive medicine is concerned, very little can be placed to their credit. About the only diseases which they attempt to prevent are those which spoil their operations—erysipelas, pyaemia, and septicaemia. The surgeons largely live on the failures of the physicians and general practitioners, and I hope they will not take any umbrage at what I say here and in other parts of this address. They can, if they choose, put down my remarks to envy, jealousy, and all uncharitableness, but I shall not acknowledge any malice. I intensely admire their work and envy their fees, which are, like the falls of Niagara, magnificent.

In regard to rheumatic fever, there has been during the last forty years a marked fall in the death-rate, which appears to me to be more due to improved methods of treatment than to any lessened incidence of the disease. Although rheumatic fever is not very fatal, yet when we take into account that it is the chief cause of heart disease in the young, it must be looked upon as a terrible disease. Every child with rheumatic hereditary tendency should be well protected against wet and cold. Every affection of the nose and throat, and, in fact, the whole digestive tract, should receive immediate medical attention, as it is through these pathways that the rheumatic poison or organism is introduced. Immediately on the slightest appearance of this disease the milk and carbohydrates, which are apt to undergo acid fermentation, should be cut off, and red meat, which supplies ammonia to neutralize the sarcolactic acid in the

muscles, should be freely given. For flushing out the system there is nothing better than hot water, but the water should not contain much lime. In order to save the valves of the heart, the citrates of sodium and potassium should be freely administered. As specific treatment the salicylates still hold their sway, the vaccine treatment being still in its infancy. Parents who transmit a hereditary tendency to rheumatism to their offspring have a serious responsibility which they cannot honestly transfer to Providence, and therefore they should themselves exercise a provident care over their children. There is no necessity for coddling, but the children should be adapted, or rendered adaptive, to the environment; cold sponging every morning, sufficient to induce healthy reaction, has a good protective influence. Fresh air, exercise, sufficient clothing, moderate diet, especially in carbohydrates, and general attention to the digestive tract are all necessary.

Diseases of the blood vessels, heart, and kidneys are on the increase, no doubt largely due to greater wear and tear, more worry and anxiety in life. From these three diseases, including cerebral hemorrhage, the death-rate per million living in 1909 was: In England and Wales, 2,708.4; in Ireland, 3,170; and in the eight principal towns in Scotland, 3,234; in Ontario, in 1907, 2,172. If these deaths occurred among the wastrels, it would perhaps not matter much, but this mortality to a large extent occurs among the most hard-working and most energetic men and women in the prime of life, from 35 to 65 years of age. One often hears patients say that they have never been ill a day in their lives, when an examination of the heart, kidneys, and blood vessels shows disease of fifteen to twenty years' standing, and the tenure of life reduced to a few years at most, and yet many of these conditions were preventable. Of course, many a man may prefer to lead a very active and short, but to him enjoyable, life rather than drag it out to an inordinate length. It is only with healthy blood vessels that any one can hope to retain his mental and bodily vigour, and expect to attain to a green old age. I know that there is another view of life, and that many men do not consider ald age desirable. When man has ceased to be a productive agent, intellectually or physically, they look upon him as a mere cumberer of the ground—an obstacle in the path of progress which should be removed.

Diseases of the heart, in the vast majority of cases, arise from causes acting on the periphery, and by preserving healthy blood vessels—an end very easily attained if people were content to be intelligently directed—one can prolong a healthy and vigorous existence for many years. I have delivered several addresses on arteriosclerosis and allied subjects dealing with the prolongation of life, but I cannot enter into these matters here, as they would require several hours for their exposition. However, I may say that the lime salts play a very important rôle in these diseases, and some excellent work on calcium metabolism and diseases of the blood vessels has been done in Montreal by Oskar Klotz, Professor Adami, and others.

With many authorities it is not the popular method to anticipate disease; they prefer to get hold of a case of heart block, cardiac arrhythmia, or angina pectoris, and then they can make something out of their cases in more senses than one. But I want to educate the public into the habit of taking an interest in their own health. We have here got a large field for preventive medicine, but it is very difficult for a practitioner to prevent disease when he is not consulted. To my mind it is very deplorable to find many of the ablest men of the day cut off in the prime of life and vigour of manhood from disorders of the circulation, which are much more easily prevented than some of the so-called preventable diseases. The distinguished man who coined the expression, "If preventable, why not prevented?" himself died of preventable disease.

In England and Wales the mortality from all forms of malignant disease has steadily risen since 1860 to 1909—in the male population from 210 to 826, and in the female population from 480 to 1,071 in the million living. In Ireland the earlier statistics were not very reliable, but in 1909 the death-rate to the million living was only, among males 750, and among females 850. In the eight principal towns of Scotland the rate for both sexes was

1,073, and therefore higher than either England or Ireland. In Ontario in 1907 the rate was 626. In England, where tuberculosis is steadily declining, cancer is just as rapidly increasing, and in Ireland both diseases are rather stationary, but the cancer death-rate is 9 per cent. lower among males and 11 per cent. among females than in England and Wales. So the higher tuberculosis death-rate in Ireland has its compensations. There have been in recent years great improvements in the surgical treatment of malignant diseases, and we are getting a little nearer the solution of the problem of their nature and prevention, but not quite so near as some would have us believe. Even now a great deal can be done towards their prevention. If all sources of constant irritation, internally and externally, were removed, the occurrence of these diseases would be frequently obviated. Metchnikoff says: "Stagnation is a familiar cause of disease, and is the probable cause of the frequency of cancer of the stomach." Its selective sites in the large bowel are those where there is stagnation and irritation. In cancer there is increased akalinity of the blood, with a diminution in the amount of free lime; the same condition may appertain in the tissues, but not, as a rule, in the same degree, as the lime taken up by the blood from the intestinal mucosa may be partly discharged into the tissues in the process of elimination. Recently Professor Benjamin Moore and his coadjutors have shown that the deficiency of free HCl in the stomach occurs no matter where the cancer is situated.

Myositis ossificans traumatica is a comparatively rare affection, and I should scarcely have considered it worthy of attention here only for two papers in a recent issue of the *Lancet* by two eminent London surgeons. These gentlemen have a good many conjectures as to the nature and causes of this affection, and, largely on the strength of skiagrams, these calcareous masses are spoken of as "bony," and microscopically said to be of the nature of cancellous tissue. They have not a single word about the amount of lime salts in the blood; and surely in the present day there is no justification for ignorance on this subject. When there is an excess of lime in the blood there is more mystery about its deposition in an injured muscle than there is in a damaged artery. As in the artery, so in the muscle, the lime is deposited in the form of a calcium soap, and afterwards the fatty acid is replaced by carbonic and phosphoric acids; we then get a hard calcareaus plate. These masses often disappear spontaneously when the calcium content of the blood falls. The proper preventive and curative treatment is to see that there is no excessive amount of lime in the blood by regulating the diet, and the use of decalcifying agents. Massage and exercise of the injured part prevent the deposit, and hasten the elimination of lime from that region. It is less difficult to hasten the absorption of lime deposited in a muscle than to get rid of that in rigid costal cartilages, yet the latter feat can be accomplished with a little patience and trouble.

The failures of physicians and practitioners in the prevention and treatment of diseases of the digestive tract have provided a rich harvest for the surgeons, who, buoyed up with their successes, would now like to appropriate the whole region to themselves. I would advise them to make hay while the sun shines, for fear that the millennium should arrive sooner than they expect. Already the dawn of a new era is breaking forth, and under prevention there will not be much necessity for surgical interference.

I need not say anything about septic diseases of the mouth, which are well recognized by our profession, but unfortunately the public do not often recognize their danger, otherwise we should not see so many cases of pernicious anaemia.

A comparatively simple affection which occasionally occurs during the first few weeks of extrauterine life has been dubbed with the high-sounding title of congenital hypertrophic stenosis of the pylorus. There have been a great many learned disquisitions as to its nature and treatment by physicians and surgeons attached to children's hospitals, and now they are busily engaged trying to settle the question as to whether the treatment should be medical or surgical. This would be very amusing were it not for the fearful mortality which accompanies the efforts of both. The explanation is too simple to have attracted the attention of those gen-

tlemen, and the explanation is simply that it is not congenital, but is due to an excessive amount of calcium in the stomach walls, and especially in that portion of the walls—the pylorus—which contains relatively the most muscular fibres.

If it were more generally recognized that even a minute trace of a soluble calcium salt produces a marked physiological effect on involuntary muscular fibre, not only would pyloric spasm, but a good many enterospasms, be more readily explained. No doubt a growing infant requires a good deal of lime, but even it can have too much of a good thing, and when a series of overdoses are concentrated in a particular organ the result is not what could be desired. The amount of lime in human milk varies considerably, and is apt to be greatest in the early period of lactation; moreover, the mother may be unnecessarily fortifying this secretion by herself drinking large quantities of milk and taking other articles of diet containing lime. In an unpublished thesis G. Claude Scott has shown that cow's milk contains five to six times as much lime as human, but in cow's milk, of the total lime, 72 per cent. is combined with the protein and 28 per cent. free, while in human milk only 44 per cent. is combined and 56 per cent. free. Moreover, the combined calcium in human milk is much less stable than in cow's milk. In such cases, when the infant is being fed on cow's milk, the milk should be stopped for a time, or at least it should be well diluted, citrated, and boiled some time before using. It is even better to add to the diluted milk a small amount of the citrate and about double the quantity of the bicarbonate of sodium, a mixture which not only splits off some of the fixed lime, but renders the free lime more insoluble. The value of the mixture is further enhanced by the addition of a minute quantity of an active potassium salt, such as the chloride, which hastens the relaxation of unstriped muscular fibre. The milk should always be boiled. When the infant is being fed at the breast we must get rid of the excess of lime by decalcifying the mother. This can be readily accomplished by cutting off for a necessary time all articles of diet containing lime, and by giving her a liberal allowance of such drugs as citrate and phosphate of sodium, lemon squash, etc. A teaspoonful of olive oil to the infant will have a more soothing effect on its stomach than a surgical operation. An opiate is often necessary to relax the spasm of the pylorus. Perhaps these cases would be much more common than they are only for the fact that infants vomit very readily without much apparent cause.

Gastric ulcer frequently occurs in young women after the establishment of the menstrual function; they become anaemic, suffer from constipation, and there is not only a deficiency of iron, but also of lime in their blood. By the way of prevention, the calcium and magnesium salts are highly beneficial.

You do not often find a surgeon foolish enough to contract the fashionable disease, appendicitis. I believe in the United States you are not considered respectable if you have not had it. Personally, I have never qualified for that mark of respectability, and I do not intend to do so. I am of opinion that if people were not so fond of keeping a cesspool in their interior the *Bacillus coli* and other organisms would not become virulent, and appendicitis would be a comparatively rare disease. A lady of a religious turn of mind once told me that she quite agreed with me on this point, "as man is a veritable sink of iniquity." A *Bacillus coli* vaccine is often useful in treatment.

I know a physician who considers himself a great authority on mucous colitis, and who freely prescribes milk; he might as well prescribe sandpaper. In these cases the insoluble lime soaps, especially those of stearin and palmitin, are very irritating to the large bowel. In such cases the blood often becomes deficient in lime because it is being rapidly excreted by the bowel. However, all insoluble lime preparations must be strictly avoided, also saturated fats, such as beef and mutton fats. Unsaturated fats, such as olive oil, cod-liver oil, butter, cream, and bacon gravy, can be freely used. Whatever lime is given must be administered in a very soluble form, such as the iodide or the glycerophosphate. In obstinate cases an examination of the flora of the intestine, and the administration of a suitable vaccine will prove useful. This disease is fairly amenable to judicious treatment,

even without the assistance of the surgeon, and it is one which can be prevented. Some years ago there appeared in the *Lancet* a paper entitled "The Cause of Colitis, with Special Reference to its Surgical Treatment." This is the surgical and business way of looking at the subject. A less astute individual might have studied causation with a view to its removal and the prevention of disease. However, in the present day the public only pay for treatment, and have no right to any choice.

It should be worthy of the attention of surgeons and general practitioners to try and find out the cause of enlargement of the prostate gland, which not infrequently renders the lives of old men miserable. The surgeon may say, Remove it; but I would say, Find out and remove the cause, so that the necessity for the removal of the gland may disappear. This affection is not much in my line of work, but recently it has appeared to me to be at least associated with an excessive amount of lime in the blood and tissues. This is probably not the sole cause; there is likely some local irritation or some interference with functional involution; but I feel fairly confident that an excessive amount of calcium is an associated condition—a condition which has sufficient determining effect in stimulating hyperplasia to merit its removal. I have noticed the occurrence of this affection in men who have led exemplary lives, who have not considered wine the milk for old age, but who have preferred that from the cow. In these men I have found an over-supply of lime with deficient calcium metabolism, rigid costal cartilages, and calcareous deposits in the arteries.

The presence of lime is necessary in most glands of the body for the proper exercise of their respective functions, but when such glands as the female breast and the prostate in the male should cease to functionate and take on a process of involution it is not unreasonable to suppose that an excessive, and then unnecessary, amount of lime, especially when the blood is very alkaline, may play some part in the adenomatous growth or inflammatory hyperplasia which then occasionally takes place. Chronic mastitis, perhaps, most frequently occurs in single women, the function of whose breasts has only been potential, but it is not the lime which is excreted either in milk or in the prostatic fluid that can work any mischief; in fact, the excretion of lime into the tissue of a diseased gland may serve as a cure. Moreover, the exercise of the function of the prostate is often protracted and its involution delayed. I have seen a large prostate and lively spermatozoa in a man over 80. If these suppositions be found correct, then the lines of prevention become more obvious.

Before concluding, I should like to say a few words on the last phase of life, old age. In 1909 the number of persons dying from old age per million persons living was in England and Wales 948, in the eight chief towns of Scotland 411, and in Ireland 2,029. In the latter country there were 192 males and 231 females who died at the age of 95 years and upwards. This does not speak badly for Irish longevity notwithstanding tuberculosis. In the whole of Canada in 1901 the rate was 1,115, and in Ontario in 1907 it was 1,180. This is better than Great Britain, but not much more than half the rate in Ireland.

I am not going to tell you how to prevent old age, most people are fairly successful on that score. I only propose to do a little soliloquizing—I do not know that I have ever met anyone who really considered himself old. I once knew a physician of about 80 who was called in to see a professional brother about 20 years younger. At the consultation the old physician said about his younger colleague and patient, "After all, you know, he is getting an old man." Age is a very relative term, like heat and cold, and its importance somewhat depends on how the popular breeze is blowing. We do not exactly know in the present day what to do with our old people. We have not put Metchnikoff's idea as to their employment into practice, neither have we established Professor Osler's lethal chamber. There are some people who live too long for their reputation's sake. As I said on a previous occasion, a man cut off in his prime may be handed down to posterity as an intellectual giant, whereas if he had existed till his cerebral arteries became sclerosed, and he had become slow of thought and speech, or tended towards drivelling dementia, much of his former

glory would have waned, and the memory of him would pass quickly into oblivion.

I am not now so much concerned with the prolongation of life as with the preservation of health—a sound mind in a sound body, the former can barely exist without the latter. We are not concerned with any useless attainment of longevity, but with the prolongation and efficiency of life. We are concerned with the efficiency and manhood of the nation. When a life ceases to be efficient it can retire into obscurity, or be withdrawn from circulation, and receive an old age pension. Paul Bert said about the aged: "They deserve congratulations, care, and consideration, but the prolongation of their lives does not demand any special solicitude from society." Paul Bert died comparatively young, perhaps if he had lived longer he would have modified his opinion. Since then we have humanely, and I think wisely, become more solicitous for the well-being of everyone.

"Ill fares the land, to hastening ills a prey,
Where wealth accumulates and men decay."

Whatsoever thine hand findeth to do, do it with thy might; for there is no work, nor device, nor knowledge, nor wisdom, in the grave, whither thou goest.

Editorial

The Final Report of the Royal Commission on Tuberculosis.

The British Royal Commission on Tuberculosis has now issued its final report. Ten years ago, in August, 1901, this Commission was called together at the initiative of Mr. Walter Long, the then President of the Local Government Board, and as a result of Dr. Robert Koch's pronouncement, at the International Congress on Tuberculosis of the preceding year, against the transmissibility of Bovine Tuberculosis to human beings.

Three problems were placed before the Commission for solution: First—Is Tuberculosis in man and animals one and the same disease? Second—Could man contract Tuberculosis from animals and vice versa? And, third—Under what conditions, if at all, the transmission of the disease from animals to man takes place; and what are the circumstances, favorable or unfavorable, of such transmission? And the Commission's findings are that in many cases human Tuberculosis is identical with the Bovine disease, and that Tuberculosis may be communicated to man by infected cow's milk and by tubercular meat.

In order to arrive at these conclusions farms and laboratories were equipped at Stansted, in Essex, and placed under the control of resident investigators, working, of course, under the direct supervision of the Commissioners, although a few independent investigations were taken into consideration.

During the past ten years the Commission issued four reports, including the present report. In the first report published by the Commission three years after its inception, summing up the results of preliminary investigations, it was shown that the germ found in certain cases of Tuberculosis produced in cattle a disease which could not be distinguished from the Bovine type. Three years later the second interim report was published, which went to confirm the view that Bovine Tuberculosis was dangerous and the possible source of infection in man. This is the report that the late Professor Koch took exception to at the Washington Congress on Tuberculosis in 1908. The third interim report published two years ago dealt with certain conditions of Tuberculous cows which rendered milk infectious to human beings, and the final report now under notice contains the results of the entire inquiry into Tuberculosis and definitely states that this disease can be transmitted from animals to man. The whole of Dr. Koch's theory is thus upset, and after much disputation we are back at the standpoint of 20 years ago.

It is interesting to note the striking differences in the results pointed out by the Commissioners among calves of about the same age and weight which were experimented upon. Bacilli derived in some cases from bovine sources and in some cases from human sources were injected into different calves and yet, while some calves succumbed and died of general progressive tuberculosis, others apparently remained in good health and showed on examination only a very retrogressive infection. The Commissioners therefore recognized the fact of inherent conditions in the susceptibilities of different individuals and were led to the conclusion that in the case of the calves described, while the pathogenic bacilli injected were the same, the powers of resistance of the calves were different. This important point demonstrates that external conditions are not everything and that a great deal in the preservation of health depends upon the inate power of resistance of the individual.

Without hesitation, the Commissioners report: "First, that man must be added to the list of those notably suspectible to tubercle bacilli; second, that mammals and man can be reciprocally infected with the disease; third, that the disease may be communicated from different mammals to man from infected cows' milk, it having been clearly shown that a large portion of the tuberculosis of childhood is due to infection from this source and from tuberculer meat."

In regard to preventive measures the Commission suggests that "in the interests of infants and children and members of the population whom we have proved to be specially endangered, and for the reasonable safeguarding of the public health generally we would urge that existing regulations and supervision of milk production and meat preparation be not relaxed; that, on the contrary, the Government should cause to be enforced, throughout the kingdom, food regulations planned to afford better security against the infection of human beings from the medium of articles of diet derived from tuberculous animals. More particularly," say the Commissioners, "we would urge action in this sense in order to avert or minimize the present danger arising from the consumption of infected milk."

The Commissioners are convinced that measures for securing the prevention of living tubercle bacilli in milk would greatly reduce the number of cases of tuberculosis of the abdomen and glands of the neck in children, and "that such measures include the exclusion from the food supply of the milk of the recognisable tuberculous cow, irrespective of the site of the disease."

The final report of the Royal Commission on Tuberculosis is dated June, 1911, and is signed by all five Commissioners, namely, Sir William Henry Power, F.R.S., Dr. G. Simms Woodhead (Chairman in succession to the late Sir Michael Foster), Dr. Sydney Martin, F.R.S., Sir John McFadyean, and the late Sir R. W. Boyce, F.R.S., although the last named has died before its ultimate publication.

Inter Alia.

The dispensary plan should be kept well in the public view in the crusade against consumption. The disposition is now to combat disease more by preventive than by curative measures, though both these must to a certain extent be interoperative and the essential preventive measures in combating consumption is undoubtedly the dispensary system.

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One idea in regard to interoperation is to map out the country or selected areas of it as the battlefield is mapped out for the purpose of medical aid. There are the seekers for the wounded, the field hospitals, the base hospitals, and finally the permanent hospitals.

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In applying the military idea to the organization against consumption, those who are attached to the dispensaries represent those sections of the army medical corps who work on the battlefield. It is explained that in addition to treating individual patients suffering from consumption as out patients, the members of the staffs of the different dispensaries follow the consumptive to his home. The dispensary doctors and nurses attend these homes to investigate the conditions under which the patients live. They endeavor to correct these conditions should they be found to facilitate the propogation of the germs of tuberculosis. Thus the dispensary officials will, in course of time, be aided in their work by the heads of households. In the dispensary system with which ought to be allied the more drastic enforcing of the housing laws and the laws of sanitation generally, there would be an informal system of notification.

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One of the objects of the dispensary system is to assist in the creation of healthy homes both by advice and precept and to protect as far as possible the healthy from disease, the line of advance behind the dispensary system being the officers who regulate the more suitable patients to the sanatoria and farm colonies, just as the wounded soldier is sent back from the field hospital to the base hospital and finally to the permanent hospital should the case prove incurable.

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The dispensary system has been tried in various countries, and it has been found to answer expectations more readily than the resort to purely curative treatment provided at the sanatoria which do not strike at the roots of the evil, but endeavor to arrest it after more or less definite manifestation.

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The interest of life insurance companies in the sanitary condition of cities is apparently increasing. And there is abundant reason why it should, for the better the health conditions the longer the lives of the policy-holders are likely to be

and the greater the number of premiums paid. At a recent meeting of the presidents of the life insurance companies, this matter was seriously discussed and by one of the speakers a suggestion of a most practical sort was made. It was that in every city of 50,000 population or more branches or sub-organizations of the Public Health Associations composed of influential men be effected for the purpose of promoting the sanitary welfare of the places. He expressed the belief that, if in every such city the managers, agents, medical examiners and legal representatives of the various companies, health officials, and a few other men interested in such matters were brought together in a permanent organization for this purpose, millions of dollars would be saved to the life insurance policyholders of the country.

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Such a body could, of course, have no official standing, but it could do a great work in advocating projects for the protection and preservation of the health of cities. As long as the propaganda was sane nobody could have any objection to it, for the return for the money spent would make for the good of all. Perhaps it would even be possible to vary the rates, giving to the cities with the best sanitary precautions a lower rate than to others. If that could be done every policy-holder, present or prospective, would be added to the health-promoting committee.

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While the oiling of roads is good from a motorist's point of view, it is doubly good from a sanitary point of view. It is not healthy to live even in the open country and have the front yard clouded with dust the greater part of the day, and it is not healthy to have the rooms of a house located close to the road filled with dust every time a vehicle goes by. Oiling the roads is sanitary and it is economical —it is economical to the resident along the road, and also to the party in the car, and best of all, it is more healthy to both parties.

Library and Laboratory

The Reduction of Domestic Mosquitoes.

This is an excellently written hand book, containing the history of, and instructions for, the destruction of the domestic mosquito. The writer, Dr. Edward Halford Ross, of the Liverpool School of Tropical Medicine, applied the rules contained in this book during his regime as health officer of the Port Said and Suez Canal districts; the book being written at the suggestion of Professor Donald Ross.

Dr. Ross points out that towns of the Suez Canal were cleared effectively of all kinds of mosquitoes and that the results gained at Port Said show the fallacy of limiting the mosquito reduction campaign only to malaria-conveying anophelines.

Dr. Ross describes the different species of mosquito and then deals with the domestic mosquito in a very interesting way.

He tells how in 1878 Vankroft and Cobbold suggested that the human blood worm *Filaria bancrofti* might be carried by mosquitoes, and how Manson in China came to the same conclusion; Donald Ross in 1897 also showing that the human malaria parasite of Laveran is similarly transmitted by certain mosquitoes of the dapple wing type. These conclusions were confirmed by Koch, Daniels, Bignami, Bastianelli, Stevens, Christophers, and many others, and serious attention was consequently drawn to the mosquito as a dangerous pest.

The discovery of the transmission of malaria by mosquitoes was rapidly followed by the discovery of the transmission of yellow fever in a similar manner.

The first suggestion as to the best way to extirpate mosquito-born diseases was made in a letter to the Government of India in 1899. The suggestion was published in the Indian Medical Gazette, and a few months later Professor Ross made similar proposals for Sierra Leon. As a result, a limited campaign against anophelines was begun at Hong Kong in 1900, followed in 1901 by the reduction of mosquitoes in Staten Island, near New York, and the same year the first extensive campaign was started in Havana against all kinds of mosquitoes. This latter campaign was most successful and yellow fever was completely abolished.

"The existence of domestic mosquitoes," writes Dr. Ross, "in a town or village should be regarded as a sign of insanitation, and their numbers as a measure of that insanitation." The reduction of the domestic species of mosquito presents no difficulties. Given the necessary means, it requires only organization and perseverance, and Dr. Ross shows that mosquito prevention in towns has certain definite results if properly carried out; namely, first, it prevents certain diseases; second, it is a popular measure; third, it necessitates a regular weekly examination of houses, yards, latrines, ash pits, water closets, cess pools, and all unsanitary places by the sanitary authority—if the public believes that this examination is being carried on in order to prevent mosquitoes there will be no opposition—; fourth, it interests the inhabitants and encourages them to report sickness and the return of mosquitoes to the local authority.

The cost of such a campaign is not great; an average municipal rate of 6d. per head of population per year in each town generally covers the cost of up-keep of a mosquito campaign and the sanitary inspection that follows therefrom; and this cost will gradually diminish as it did at Port Said under the management of Dr. Ross.

Dr. Ross deals with his subject in twelve chapters, taking up in order: The Importance of Domestic Mosquitoes; The Life and Habits of Domestic Mosquitoes; The Fever Census; Estimating the Cost of Mosquito Reduction; Ways and Means; Preliminaries; The Starting of the Mosquito Campaign; Progress; Mosquito Reduction; Reporting Progress; Finance; Results. His 114 pages are interspersed with 111 well-chosen illustrations, and the book is certainly one which should be read by everyone interested in public health

work.—*The Reduction of Domestic Mosquitoes, Instructions of the use of Municipalities, Town Councils, Health Officers, Sanitary Inspectors and Residents in Warm Climates. By Edward Halford Ross, M.R.C.S., England; L.R.C.P., London; Liverpool School of Tropical Medicine; late health officer, Port Said and Suez Canal district; author of "The Prevention of Fever on the Suez Canal. 114 pages; 111 illustrations. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut St., 1911. $1.75 net.*

A Practical Guide to the Preparation of Town Planning Schemes.

In this very useful book it is pointed out that the general objects of town planning schemes are to secure proper sanitary conditions, amenity and convenience in connection with the laying out and use of land for building purposes and of any neighboring lands. The work is based upon the British Housing, Town Planning, etc., Act of 1909, written by a lawyer and an architect; and thus is produced a book peculiarly appropriate—the point of view of the two professions being so entirely different and still so essential to the preparation of town planning schemes that each author contributes much that the other could hardly be expected to have known.

Raymond Unwin writes the foreword and therein aptly points out that, while "Town Planning" has a prosaic sound, the words stand for a movement which has perhaps a more direct bearing on the life and happiness of great masses of people than any other single movement of our time. To put it shortly, "Town Planning" represents the attempt of the community to control town development, with a view to providing health, convenience and beauty. In the majority of instances towns have hitherto grown in such a haphazard manner that the banks of their canals and margins of their railway sidings are crowded with rows of cottages, while the materials of their industry for want of immediate access to these very canals and sidings have to be carted long distances at great expense and often with resulting congestion of traffic. Town planning, therefore, means the reservation for industrial uses of the areas most valuable for the purpose by reason of having immediate access to rail, road or water conveniences; the arranging for the most convenient communication by road or railway between these industrial regions, and the most healthy and attractive areas; and it must provide the most convenient mode of access possible between both these areas and the great centres of exchange of wholesale and retail business. All of which would enormously add to the efficiency of the population, facilitating their industrial activities and rendering their dwellings more healthful and attractive.

The book is accompanied by a model set of colored plans and useful appendices, included in which is a recital of the contents of the British Housing, Town Planning, Etc., Act of 1909.—*A Practical Guide in the Preparation of Town Planning Schemes. With appendices containing the text of the Act; Procedure Regulations; Extracts from the Hampstead Garden Suburb Act, 1906; Extracts from the Liverpool Corporation Streets and Buildings Act, 1909, etc.; also specimen forms of notices and advertisements, and a model set of coloured plans prepared in accordance with the regulations. By E. G. Bentley, L.L.B., and S. Pointon Taylor, A.R.I.B.A. (members of the National Housing Council), with the foreword by Raymond Unwin. 159 pages. London: George Philip and Co., Ltd., 32 Fleet St., E.C., 1911. 5s. net.*

Reference and Guide Book, The Trent Canal.

We have read with pleasure this excellent book, which is accompanied by maps covering the district between Hastings, on the Trent River, and the town of Orillia, on Lake Couchouching. The author, Mr. E. S. Clarry, of Peterborough, is to be congratulated upon the result of his work.

This district, known as the Kawartha district, has not been so long open to the health seeker and tourist for summer resort purposes as many of the other parts of Canada. But Mr. Clarry has pointed out that the present increasing popularity, of the various lakes and rivers included in the Trent Valley Canal, as a tourist and summer resort has lately added greatly to the number of private yachts, and with

the increased number of which has come an increased demand for charts of the navigable channel and other information regarding the channel generally. This he supplies.

The book is well illustrated and divided into sections, namely: Made the First Trip; The First Survey; Started by Imperial Government; A Toronto View in 1887; The Present State of the Canal; The Ontario Rice Lake Division; As to the Future; As to Power Development; As a Tourist Resort; The Hydraulic Lift Locks; The Reservoir Waters; 188,465 Acres of Water; The Charts Explained; Height of Locks; The Cost of Construction; Some Distances; Orillia; The Town of Barrie; Fenelon Falls, Ontario; The Electric City—Peterborough; Trenton; Electric Motor Power for Eastern and Central Ontario.—*Reference and Guide Book, The Trent Canal, by E. S. Clarry. Peterborough Examiner, Publishers, Peterborough, Ontario. 1911 Edition.*

The McGill Diploma of Public Health.

We have received the McGill University Annual Calendar, Faculty of Medicine and Department of Dentistry for the 80th session, 1911-1912, and herewith reproduce from pages 97, 98, and 99 the description of the special courses in Hygiene, etc., leading to the Diploma of Public Health.

In the session 1899-1900 the Faculty instituted a post-graduate course in Public Health and Sanitary Service, and since that time other courses as described below have been instituted.

Special instruction is given in this department, leading to the Diploma of Public Health; also for engineers, architects and those wishing to include this subject in their final examination for the degree of Doctor of Philosophy (Ph.D.).

(1) Diploma Course in Public Health.

A candidate undertaking this course must have possessed a degree in medicine or other qualification for practice, for at least twelve months before he is competent to receive the diploma. The courses prescribed are as follows:—

1. A course of lectures in public health (to be omitted in the case of candidates who have attended such a course before graduation).

2. A three months' course in bacteriology, special attention being directed to the pathogenic organisms and parasites—such course to be omitted on presentation of proof that it has previously been taken.

3. A six months' course of practical study of outdoor work under a medical officer of health (to be omitted in the case of Medical health officers holding appointments prior to the establishment of this diploma course).

4. Three months' attendance and clinical instruction at a hospital for infectious diseases (unless such course has already been taken prior to graduation).

5. Three months' instruction in sanitary chemistry and physics, with practical work in a chemical laboratory.

The examination for the diploma shall cover the following subjects: the drawing up of clinical outlines for annual and other reports of officers of health; a report upon the sanitary condition of some actual locality; the chemical analysis of liquids and gases and of specimens of food; demonstration of the consideration and use of meteorological, hygienic and sanitary apparatus; microspical examination of specimens submitted; description of specimens of human and other diseased tissues; practical examination in the employment of the usual bacteriological examination methods; the inspection of carcasses of animals to be used for food.

The above examination shall be written, oral and practical, and shall extend over a period of four or five days.

The following is a list of subjects included in the curriculum of study:—

(a) Sanitary Chemistry:—Examination of air, gases, water, the action of water on metals, milk, food and beverages; detection of poisons in articles of dress and of decoration; the chemistry of sewage.

(b) Sanitary Physics:—Principles of statics, pneumatics, hydraulics, light and photometry, heat and thermometry, the principles of hygrometry (only in their application to hygiene).

(c) Sanitary Legislation:—Statutes and by-laws relatin to public health; the powers of public sanitary authorities.

(d) Bacteriology and Parasitology:—Modes of propogation of disease and transmission of disease between man and man, and man and animals; bacteriological

analysis in relation to public health matters; natural history of microbes and animal parasites.

(e) Vital Statistics—Calculation and tabulation of returns of births, marriages, deaths, and diseases.

(f) Meteorology and Climatology, including the geographical and topographical distribution of disease.

(g) Preventive Medicine and Practical Sanitation.

The fee for the diploma shall be $50.00.

Progress in Child Hygiene.

The *101st bulletin of the Department of Child Hygiene of the Russell Sage foundation*, issued recently, consists of the first comprehensive report of what American school systems are doing for the health of children. The report covers conditions in 1,038 cities, or nearly 90 per cent. of the important American municipalities. It traces the development of medical inspection of schools from its inception in Boston sixteen years ago and gives details as to the army of school physicians, nurses and dentists now employed to safeguard the health of American school children.

An examination of the report reveals the immense progress that has been made in the last decade. Ten years ago the number of American cities having systems of medical inspection was eleven; at the present time it is 443. The first school physicians were employed in Boston in 1894. Now there is an army of nearly 1,500 of them. The first school nurses were employed by New York nine years ago. Now they number between 400 and 500 and are employed by eighty cities. Sixty-nine cities are regularly employing dentists to care for the teeth of their children.

Marked differences are found between different states with respect to progress made in proviiding for medical inspection. Massachusetts and New Jersey stand easily at the head of the list, with universal compulsory school medical inspection, while in Vermont, Mississippi, Montana and Idaho the municipalities have not even begun work.

The greatest progress has been made in the north far west, the North Atlantic and western states easily outranking those in the South Atlantic, south central and north central groups.

A large portion of the report is given over to the hygiene of the school-room and data are given for the 1,038 cities, telling about the use of such modern innovations as individual drinking cups, sanitary fountains, vacuum cleaners and adjustable desks. The number of cities supplying individual drinking cups is nearly 300, while those having schools equipped with sanitary fountains number almost 800. The figures show that the deadly feather duster is being rapidly banished. More than 60 per cent. of the cities use moist cloths for dusting purposes and nearly 800 use dust-absorbing compounds for sweeping. Eighty-nine cities are cleaning their school-rooms by means of vacuum cleaners.

Contrasted with these evidences of progress are figures showing that fifty-one cities report that their school-room floors are never washed, and seven that the washing of school-room windows is entirely neglected.

In almost 1,000 cities instruction is given in the effects of alcohol and tobacco; 649 have special courses devoted to the prevention and cure of tuberculosis, and 592 give lessons in first aid to the injured.

The tables of the report are so arranged as to give all of the different sorts of information by state divisions, by individual states, and finally for each separate city of the entire 1,038.

A Cholera-Carrier — Diseases of Childhood.

Some time ago, writes J. L. De Wolfe, M.D., West Paspebiac, Quebec, in *The Medical Council*, the curious case of "Typhoid Jane," reported in the press, came to my notice. This woman was a carrier and perennial producer of typhoid germs, and therefore, a grave menace to the public, if left at large. Lately, from a Montreal newspaper, I gathered the information that there was a human cholera-carrier at Grosse Isle, the Government Quarantine Station of the River St. Lawrence. Forthwith, I wrote to the medical superintendent of the station for confirmation or denial of the newspaper report. His answer, when received, confirmed the press account.

It will be remembered that last year there was an epidemic outbreak of cholera in Russia. In November last a Russian

named Gottlieb Ziebe was taken off one of the boats running to Montreal and placed in quarantine at Grosse Isle as a cholera suspect. The reason for the suspicion has not been given me. Probably his arrival from an infected district, or the peculiar condition of his stools, aroused suspicion. The medical superintendent, writing on March 23rd last, states that "the patient is physically in good health, having no symptoms whatever, but carries, however, germs of cholera." He further adds that "repeated bacteriological examinations have given positive results as to the presence of the cholera germ."

Four months and more have passed, under rigid supervision, since the danger-carrying condition of this Russian was discovered. It would appear that it is permanent, and that the man is doomed to perpetual isolation, far from kin and country. This case is interesting, but it is none the less full of menace and food for serious thought. Germ-carriers are probably few and far between, still it is possible that they are not so rare as one would imagine. A germ-carrier might exist in our midst for years and not infect others, if the opportunity and conditions for infection did not present themselves. Cases of "walking typhoid" show peculiar features, and are, in a way, related to those of the germ-carrier.

Who can say, positively, that the headache and malaria of "walking typhoid" may not cease and the disease develop no further? Who can say that the germs becoming immune in their own human habitation, may not remain, and become a source of danger to the habitations of others unimmune to attack? It is not possible; in fact, is it not in evidence, that, after recovery from a germ-caused disease, the patient may carry for an indefinite time potent germs for outside evil-doing, although these same germs are powerless for further ill-effect to the patient himself? Have we never faced mysterious outbreaks of infectious maladies whose origin was obscure or unaccountable?

Related to the foregoing words is the subject of the ever-occurring infectious and contagious diseases of childhood. Year after year our children suffer from measles, scarlatina, mumps, whooping-cough, diphtheria (the last not strictly a child's disease, still its most frequent victim). Why? Where is the starting point? In town and country, by lake-side, sea and river, through hill and dale, year by year our children develop one or more of these diseases. Why? Neither climate nor changes of climate can cause scarlatina, measles, etc. A country village, with its sparse population breathing pure air, escapes not the swinging cycle of children's diseases any more than the town, with its crowded alleys. Death gathers its helpless little victims each year from every town and village. We give our dear ones to the Destroyer and hypocritically and falsely acclaim—"God's will be done!" It's the Devil's will that has been done, through our passive co-operation, through our unintelligent criminal inactivity.

In all communities of people there should be an efficient sanitary officer, vested with absolute authority for the control and prevention of disease. It (the authority) should be a one-man power. He should be free from interference by municipal lay governance. His work should be judged and inspected, when necessary, by a chief county sanitary inspector, whose sole work should be to supervise the labors of his sub-officers. These community sanitary officers should devote their whole time to the control and prevention of disease, and not engage in the ordinary practice of their profession.

If the conditions briefly sketched above were inaugurated the infectious diseases of childhood, with their annual tale of sickness and ever-recurring toll of death, would become a thing of the past.

Open Mail

To the Editor of The Public Health Journal, State Medicine and Sanitary Review:

Should Doctors Dispense?

Sir:—Should doctors dispense? Have they not enough to do, in examining patients, finding out what is the matter with them, telling them what to do, and writing a prescription, without the additional work of measuring out drugs, putting them into a bottle, filling up with water, writing the label, and sticking it on? The answer, surely, is "Yes."

Dispensing is not, strictly speaking, doctor's work at all. It is work which should be done by a druggist, who has been specially trained for it. In Scotland dispensing is almost invariably done by druggists; and this is also the custom in certain favoured towns in England. Unfortunately, however, in most parts of this country and the United States people have got into the way of expecting a bottle of medicine from the man who looks at their tongues and feels their pulses; and they would feel that they had not received their money's worth if he gave them no more than some advice and a written prescription. This is a pity, for it has brought about certain evils. It has caused people to regard the bottle of medicine as the most important thing they get from the doctor; and it has caused the druggists to go in for prescribing on their own account. Both these things are bad for the patient.

As a rule the last thing a patient needs is medicine. Very often he is living in unhealthy conditions, or eating and drinking in the wrong way, or doing work for which he is not fitted. What he needs is advice as regards his method of living—not drugs. If he is really ill—and most people who consult a doctor are out of sorts rather than really ill—he usually needs rest in bed, freedom from anxiety, proper food, and plenty of fresh air. Only when these things have been provided does the question of medicine come in. Yet, under present conditions, what the patient gets, more often than not, is very scrappy advice, and a bottle of medicine, with, perhaps, a box of pills thrown in. In most cases he takes the medicine, in which he has faith, and ignores the advice, which he regards as of no value.

The bottle of medicine, *supplied by the doctor,* probably is responsible for more inefficient doctor-work than anything else at all; and there is more inefficient doctor-work than most of us imagine. If only people could be got to see it, a thorough examination, an accurate diagnosis, and sound advice are things worth paying for, without any bottle of medicine; and if they would pay the doctor for these things, and get the medicine from the druggist, they would be much better served.

Doctors often may be heard to complain of the "prescribing druggist." They say that druggists should not be allowed to do work which properly belongs to the doctors. They forget that the doctors are doing work which properly belongs to the druggists. What the druggists say is, "As long as you doctors dispense, we shall prescribe"; and they do, to an enormous extent.

Now, while it must be obvious to everyone who thinks about it for a minute that the prescribing druggist is something of a danger to the community, it must not be forgotten that there is a great deal of justice in what the druggist says. He has passed difficult examinations, and he has spent a good deal of money in qualifying himself for his business. It is hard that he should find his legitimate work taken from him by the doctors. He may make money by selling soap, and tooth-brushes, and patent medicines, and so on; but it was not for this that he worked hard and faced the examiners. He studied the properties of drugs, and the mysteries of their compounding, in order that he might be fitted to dispense doctors' prescriptions with knowledge, and so with safety. Finding this work taken from him, it is not surprising that he retaliates by listening to the tales of woe brought

by his customers, shaking his head knowingly, and treating their symptoms.

There are some druggists who do an enormous business in counter prescribing. The average person who is out of sorts does not wait to consider that a druggist has had no medical training; that he knows little or nothing of the true significance of certain symptoms; that the underlying causes of disease are a sealed book to him. The patient sees the druggist's array of bottles—usually a much more imposing array of bottles than is to be found in a doctor's dispensary; he is aware that the druggist understands the properties of drugs, and that he is skilled in mixing them in an attractive manner. The patient is convinced that he needs a bottle of medicine, and he goes to the druggist and asks for it. The druggist is seldom chary of supplying it, either from the habit-producing "patent" or the so-called "now-secret remedies" supplied by certain wholesale manufacturers, or from his own make up.

Now, while the average druggist knows very little of the science of medicine, he knows that certain drugs, in requisite doses, will relieve certain symptoms. The patient cannot sleep; then he shall have a sedative mixture. He has pains in his head; then he shall have a box of pellets or powders. He has pains in his joints; then he shall have a liniment. He has a skin eruption; then he shall have a pot of ointment. He has a sore throat; then he shall have a gargle. In the majority of cases no harm is done; but there are instances where this sort of unskilled treatment is disastrous.

The patient's sleeplessness may be an early symptom of grave disease of the brain; and so may the headache. The joint pains may be anything, from mild rheumatism to malignant bone disease. Whatever it is, skilled treatment is called for. Mild rheumatism, if neglected, may lead to permanent heart weakness and premature death. The skin eruption may be a symptom of serious infectious disease, for which a pot of ointment is worse than useless. The sore throat may mean diphtheria, for which something a great deal more powerful than a mere gargle is needed.

The danger of the prescribing druggist is no fancy picture. It is a very real danger, as every doctor who has been in practice for any length of time can testify. It is he who sees the patients, after the druggist's amature treatment has failed, and some of his stories are rather horrifying.

It will be seen that the question "Should doctors dispense?" is a far-reaching one. With it is bound up a great deal that is not apparent at first sight. First and foremost it opens up another question, "Should druggists prescribe?"

It should be plain to everybody that the reply to both questions is "No." If the law were to forbid doctors to dispense, except in emergencies, and druggists to prescribe, a great step forward would have been taken. The doctors would be freed for work which is essentially theirs; while dispensing would be done far better than it is at present—for druggists dispense a great deal better than doctors; and people would be saved from amateur, and therefore dangerous, doctoring.

A. G. PRACTITIONER.

The Dairy Farmer's Side.

Sir:—It has occurred to me that the dairy farmer deserves to have his side of the case considered in all this discussion as to pure milk and dairy regulation. In an effort to secure justice, a fair return for his labor, and immunity from unwarranted criticism, the farmer needs organization and this organization should be provided for him by a Dairymen's League. The purpose of such league would be to oppose and prevent monopoly in the production or sale of milk, and to encourage competition therein, and to protect its members and the consumers of milk against monopoly, or any unlawful combination of any kind, whereby the producers or consumers of milk are injuriously affected, to promote legislation, to assist authorized boards of health in passing ordinances which will be beneficial to the farmer and stockholders, who are producers of milk for metropolitan districts, and other markets, and to act as their agents in marketing their products.

There is not a man to-day who can take a herd of cattle, twenty-five in number, of the best milk producers, and purchase them at an average rate of $65 per head, and milk them two years, and in

any way get his money out of them again. Taking the cost of their feed, together with his labor, he has nothing left for his work. This has been thoroughly figured out by men using a pencil and their brains, and they find that a farmer cannot produce milk for anything less than four cents per quart, and they should have one-half of the retail price, which is, in metropolitan markets at present, eight cents per quart and upward.

It is not any wonder that so many of the creamery companies are getting immensely wealthy, and that their stock is paying twenty to thirty per cent., besides paying their high-salaried officers, who are living upon the fat of the land, which all comes in the end out of the poor farmer, who toils from 4 o'clock in the morning until 9 o'clock at night, and lies down at night tired and weary, only to awake in the early morning and know that others have reaped the benefit of his hard labor. All these years past he has been toiling practically for naught.

It isn't any wonder so many farmers are leaving the farm every year, and especially in the past ten years. Statistics show us that many of the farmres of today are seeking small farms, with as few acres as possible, merely to make a living and get along on, as it has always been impossible for them to make anything on large dairy farms, on account of the low price of milk. Now when the farmers are once thoroughly organized, and will then be able to demand their rights, it will then be that the large dairy farms will be greatly sought after, and the farmer will then receive some profit and benefit from his labor. Again, a Dairymen's League would be meant to educate the people living in the great cities in the truth that the farmers produce pure milk from their herds of well-kept cattle.

At the farms the milk is not full of deadly microbes, as has been stated by boards of health, who have failed to examine the milk at the homes of the farmers, where they would always find it in a purely sanitary condition. The farmers deliver this same pure milk to the different shipping stations in forty-quart cans, at which places one to two quarts of cream are skimmed from each can. The cream is shipped to the different cities and readily sold for forty cents per quart. The rest of the milk in the can is left to be doctored up and also shipped to the different cities and sold for pure milk to the dealer, who allows it to remain in his back yard and alley, where goats, ducks and chickens are all harbored together. He then retails a quart or so to some private family, where the mother of the infant for whom this milk is purchased is too lazy or does not know enough to keep the nursing bottle in a sanitary condition, and it causes the infant to become sick. The family physician is called, who diagnoses the case as microbes in the milk, causing the sickness of the child, and the farmers are blamed as producers of milk containing microbes, which, they claim, is the cause of the death of so many infants in our cities. It is an outrage and an insult to the farming class to be accused of any such a thing, when they are the producers of pure milk. We are down on any sterilized, pasteurized or monkeyized milk, as we favor pure milk from the farmers' herds. Some of our recognized authorities have very broadly stated that the farmers are producers of pure milk.

I have recently made a canvass among many farmers in this country, where they were raising babies on the bottle in their own homes, on the milk from their own herds, many taking the milk warm from the cow, and in every case I found healthy, hearty, robust children, and none of the children reared in any of these families have been made ill by the milk. A Dairymen's League, when thoroughly organized, would better the condition of the milk shipped to the cities, which should increase the sale of milk at least one-third. Stop and look at the many organizations of labor unions throughout the country. Were it not for their organizing, what would be their condition?

We do not believe in strikes, if they can be averted, but we do believe in union, for in union there is strength. Look at the Brotherhood of Locomotive Engineers, the Railroad Trainmen, the Miners' Union, the Bricklayers' Union, and the many others, how they have bettered their condition by organizing themselves.

Then stop, if you please, and look at the farmer, how he has toiled these many years, and still the mortgage remains upon

the farm. His children have left the home and gone into stores, factories and workshops for employment, because there was not money enough made upon the farm to produce for them a comfortable living. Organization provides the remedy for these conditions. When the price paid the farmer for milk has become more than double what it is at the present time, then the cow will become the mortgage-lifter, the food supplier, the clothing equipper, the house and barn decorator, and, in fact, the general improver upon the farm, and will make the home environments so pleasant that the children will desire to remain upon the farm, and the city people will be seeking homes in the country.

W. C. McM.

Meetings and Reports

DOMESTIC

Dominion Council on Public Health.

The recommendation of the health branch of the commission on conservation for the establishment of a national laboratory and the creation of a Dominion council on public health has been approved. The chief object in establishing the laboratory is to secure cheaper and purer supplies of vaccines, anti-toxines, etc. The duty of a Dominion council will be to advise both Dominion and Provincial Governments as to matters affecting public health.

Progress of Fort William's Campaign Against Infant Mortality.

The report of Dr. Robert E. Wodehouse, medical health officer of Fort William, recently submitted to the City Council, is as follows:

Chairmen and Members of the
Board of Health:—

Gentlemen,—I beg to report progress in the campaign against the mortality of infants in our city. The principal factor that is working to improve conditions this year is the health visiting nurse's work whom your honorable board saw fit to provide for in this year's estimates. The effect of her work and the good spirit in which the mothers receive her visits and advice have greatly exceeded our anticipations. The second feature contributing to our success this year is the publicity granted by the press to all helpful matter for publication.

The nurse has visited the home of everybody born in Fort William during the past 12 months. She has given me a complete report of each place visited as to sanitary condition and methods inside the house, plumbing and drainage, sanitary condition outside the house and in the yards, lane and street adjoining. This part of Mrs. Williamson's report has been the cause of the trough ditches in the coal docks being flushed with hose once a week and other earth ditches made to drain themselves, also the cleaning up under the sanitary inspector's direction of (25) twenty-five different addresses.

The reports also tell me how many babies have been born to mother, how many have died, how they were fed and how the present baby is being fed and if artificial feeding, of what nature and whether by a doctor's order or not. The reports to date cover (411) four hundred and eleven babies.

Three hundred and forty babies are breast fed. These need no further attention from us.

Forty-four babies have been breast fed a few months, but are now mixed fed. In 17 of these the change was made without doctor's advice.

Twenty-seven babies have been artificially fed since birth, six of these babies being so fed without a doctor's order. The last two classes will be revisited as often as possible by your nurse. In the last group the cow's milk is kept on ice in two cases.

Some interesting information has been obtained. Three children of one mother have died of diarrhœa before reaching the first year of age, all artificially fed.

One child, breast fed two months, afterwards fed bread and milk, is very sick with diarrhoea.

Mrs. Williamson has anywhere from 7 to 12 babies under her care daily whom she visits and carries out the doctor's orders, and she has not had one single baby under her care for diarrhoea which was being breast fed.

So far this year we have lost 12 babies; this time last year we had lost 33 babies. July mortality was 25 p.c., or one-fourth of July, 1910.

Dr. Laberge on Rat Suppression.

Dr. Louis Laberge, health officer, of Montreal, has recommended that a man be employed as a protection to both private property and health against rats.

The manager of the Molson warehouses, of 998-1028 Notre Dame Street east, wrote to the controllers on July 13 saying they understood their previous communication of last February had been taken into consideration, but as nothing had been since heard of the matter, and as loss and annoyance from rats still continued despite private efforts to abate the nuisance, the firm wanted to know whether the city intended to do anything or to remain simply passive in the matter. The letter concluded with the remark:

"We have proof, as evidenced by holes bored outside our building on Notre Dame Street and on the river front, that a fresh supply is coming in constantly from the sewers and wharf."

It is for the latter reason, as one firm cannot cope with the whole rat problem, the supply being constant from the outside, that the controllers have been appealed to. The latter find, however, that it is a pretty large undertaking to begin to fight rats all along the harbor front, and up to the present nothing has been done, except by private houses in their own interests.

Dr. Laberge, in his communication to the board, states that he has already addressed them at length on the question of damage caused by rats, and that he had submitted three names of persons who claimed to be able to exterminate rats on a large scale by scientific methods.

"There is no doubt," says Dr. Laberge, "of the necessity to find means to suppress as much as possible this brood of vermin. It is also a matter of public health, and I do not hesitate to suggest that the services of a competent expert be retained to take charge of this work for a limited period of time for the purpose of testing the efficiency of the plan submitted."

Manitoba Medical Association.

At the annual convention of the Manitoba Medical Association, Dr. F. S. Keele, the president, in his opening address referred to the position of Manitoba University. He commented particularly on the fact that such departments as civil, electrical, mechanical and mining engineering were of necessity expensive ones to run. This was practically impossible for the university as at present constituted. These departments, in his opinion, should not be separated from the university and run as separate institutions. The only rational solution of the problem was the construction of a provincial institution free from all denominational fetters and intercollegiate squabblings. Such an university would stand for the development of all the resources of the province and would be financed by the people through the provincial government.

Owing to the very inclement weather there was not the large attendance which was expected, only twenty-six doctors being present. Dr. S. F. Keele, of Portage la Prairie, opened the convention by calling upon Mayor J. J. Garland to give an address of welcome from the city. An instructive address on the Ninette Sanatorium was given by Dr. D. A. Stewart, and Dr. Gordon Bell gave an address on vaccine. Both addresses were freely discussed.

In his address on the Ninette Sanatorium, Dr. Stewart spoke in part as follows:

"On admission patients are classed as 'Incipient,' 'Moderately advanced,' and 'Far advanced,' and on discharge as 'Apparently cured,' 'Disease arrested,' 'Improved,' or 'Unimproved.'

"As a matter of fact, of the 139 patients received up to the end of March, 52 per cent. were classed as 'Far advanced,' and only 15 per cent. as 'Incipient.' A number of these 'Far advanced' cases have done well under treatment. Still the fact remains that they are 'Far advanced' cases, the cure of which must be at best a sort of patched-up affair, or merely a truce with the disease, not a victory over it.

"Of patients admitted as 'Incipient,' even counting those who did not remain anything like long enough under treatment, nearly 85 per cent. were discharged as 'Apparently cured' or as having 'Disease arrested.' Of those admitted as 'Far advanced,' though many of them have done remarkably well, none have been discharged as 'Apparently cured,' and less

than 9 per cent. as having 'Disease arrested'—one-tenth as many as in the 'Incipient' class. All the deaths during or after treatment have been among those classed on admission as 'Far advanced.' . . .

"Allowance must be made for the undoubted fact that in Manitoba at the present time the general public is so ill-informed that tuberculosis is allowed to run on to a far advanced stage in some cases before the doctor is consulted. But, making allowance, the histories of our cases show distinctly that the diagnosis is not made anything like soon enough.

"It is found, as it is found at the beginning of sanatorium work everywhere, that many patients come in with rather ridiculous ideas as to the length of time it will take to effect a cure. Some are persuaded to remain, but some leave after a short stay, thinking that because they look better and feel better they must necessarily be almost perfectly well again. Many who might have gone on to "Apparently cured" or "Arrest of disease" could not be classed beyond simply "Improved," on account of their short stay. An analysis of the results show a very much greater improvement in patients who remain 5 or 6 months than in those who remain 3 months or less.

"Even yet we hear of patients being sent west and south, with the hazy idea that some mysterious property of the atmosphere will cure them in spite of themselves. For the average case the climate of Manitoba is possibly as good as any on the continent, especially a Manitoba winter. The tendency is now to send them north rather than south, especially in winter."

Among those present at the convention were:—Doctors Ingersol, of Hamilton; Emil Reis, of Chicago; J. Halpenny, Gordon Bell, H. P. Galloway, H. H. Chown, A. G. Montgomery, George Stephens, C. E. Fortin, S. J. Elkins, Neil J. McLean, and J. R. Jones, of Winnipeg; R. B. Culbertson, W. J. Harrington, Dauphin; James Montgomery, Deloraine; W. A. Bigelow, Brandon; D. G. Ross, Selkirk; W. Mason, Napinka; D. A. Stewart, Ninette; R. O. Rice, Minitonas; F. S. Keele, W. H. Rennie, H. J. Hassard, W. E. Metcalfe, E. J. Lundy, A. E. Walker, and A. P. McKinnon, Portal.

Chicago's Exhibit at Toronto.

Dr. C. St. Clair Drake, of the Bureau of Vital Statistics of the Chicago Health Department, will have charge of a Chicago exhibit at the Canadian National Exposition in Toronto August 25 to September 11. Many cities of the United States have been asked to take exhibits to the exposition, as a large section will be devoted to the attention of public health. Dr. Drake will lecture during the fair. Breathing dolls, showing the effect of badly ventilated rooms on humans, and the baby death-rate model will also be shown.

Port Arthur Bread.

The Board of Health at Port Arthur has ordered that the delivery of bread shall be made with each loaf in separate wrapper.

Milk in Winnipeg.

Exhaustive reports from sub-committees of the City Council, appointed to consider the best methods for the bettering of the milk supply of Winnipeg and to formulate some line of action for the elimination of tuberculosis in dairy herds in the vicinity of that city have been adopted.

The report of the committee associated with Health Officer Dr. Douglas says:

"It is now generally recognized that bovine tuberculosis is transmissible to human beings through using the milk of cattle affected with the disease. Milk is the staple article of diet for children up to one year of age, and all children and adults use milk or its products in one form or another daily throughout their lives.

"It is an unfortunate fact that large numbers of tubercular cattle are at the present time supplying milk to Winnipeg and numerous other cities and towns. The situation has been faced by other cities, states, and provinces. The British Columbia Provincial Board of Health regulations governing the sale of milk, section 25, states that cow keepers and dairymen must have a certificate from a veterinary surgeon that cows from which milk is obtained for sale are free from tuberculosis; such certificate to hold good for six months from date of issue provided that disease is not in evidence in the meantime.

The states of Minnesota, Wisconsin and Virginia compel all cattle to be tested. The cities of Vancouver, Washington, Minnea-

polis, Kansas City, and St. Paul compel all cattle supplying milk to be tested. New York and Chicago say that milk must be from tested cattle or pasteurized, and after a certain date all milk for pasteurization must be from tested cattle.

"As time goes on the problem becomes harder to face owing to the increased demand for milk, and the increasing supply. We feel that it will be for the benefit of all parties concerned, the public, the farmers, the dairymen, stock raisers and creameries that steps should be taken at once to stamp out this disease, and we make the following recommendations:

"1. That no new dairy licenses be granted to dairymen unless they consent to have their cows tested when required by the provincial or municipal health departments, and that the construction of their stables and plant comply with the requirements of those departments.

"2. That dairymen at present in business be given until June 1, 1913, to get their herds free from diseased cows, and their stables altered to suit modern requirements, after which date they will have to comply with health regulations and shall now have their milk pasteurized.

"3. That farmers supplying milk and cream to creameries be given until June 1, 1915, to get their herds free from tubercular cattle, and until 1913 to get their stables into sanitary condition; until that date all milk must be pasteurized in compliance with Dominion regulations.

"4. That all cows reacting to the test shall have a "T" punched in the right ear as required by the veterinary director general's department, and all healthy cows shall have a numbered or dated tag placed in right ear.

"That after the herd has been tested, if diseased cattle are found, the stables shall be cleaned and disinfected. All cows added to herd shall be tested previously, unless owner has a certificate from a qualified veterinary surgeon stating that cows have been tested within six months and found free from disease.

"The health department shall grant certificates to dairymen as soon as their herds have been tested and all diseased cattle removed.

"5. That farmers shipping to creameries shall first be required to furnish the health department with test charts of all their cattle, said tests to be made by a qualified veterinary surgeon, and their barns must be up to standard of regulations after June 1, 1913.

"6. That By-law 5537 will require to be amended to suit modern conditions. The milk standards therein contained do not agree with Dominion and provincial regulations. The building sections are not up-to-date, and regulations governing pasteurizing plants and the sale of buttermilk and patent milks and products made from milk and cream will require to be inserted.

"7. The matter of milk transportation will have to be regulated, the present methods being very unsatisfactory. Some districts have only train service two or three times a week; milk cans are allowed to stand in the sun on the country station platforms in summer; the railway cars have no ice supply—all of which entails great loss to producers.

"The most common cause of tuberculosis among cattle is by ingestion, their food becoming contaminated with the fœces of diseased cattle. Dr. E. C. Schroeder, of Washington, as reported in *The Public Health Journal* for June, 1911, places on record as a low estimate 37,000,000 tubercle bacilli in the manure of a tubercular cow for one day.

"Cows in this country are stabled for six months or more during the year, and the importance of sanitary construction of cow barns will be readily realized. Good light and ventilation are essential requirements; and if not full concrete floors, at least concrete gutters, to carry off liquid manure, should be provided. Wooden floors absorb liquid, and cows in such stables are sure to become affected if even only one tuberculosis cow has been introduced into the herd.

"Many farmers make unnecessary expenditure on their barns. Sanitary barns are not the most expensive, and we feel sure the farmers will welcome education along these lines.

"The licensed dairymen have improved their premises 75 per cent., taking advantage of the lectures given by the dairy inspectors during the past year, and to summarize what is required to get a pure, safe milk supply we would instance the following:—

"First—Put the barns in sanitary condition.

"Second—Test all cows and remove diseased cattle.

"Third—Improve the methods of transportation, keeping the milk thoroughly cold.

"Fourth—Proper feeding of cows.

"Fifth—Cleanliness in the handling of milk, and prompt cooling of same.

"This problem will have to be faced, and as time goes on it becomes harder. We would therefore recommend that steps be taken along the lines suggested in order to eradicate this preventable disease.

"The following is a list of milk prices in cities where testing is enforced:—

"Minneapolis, 6 to 7 cents per quart.

"St. Paul, 6 to 7 cents per quart.

"Milwaukee, 6 to 7 cents per quart.

"Rochester, 8 cents per quart.

"Montreal, 8 to 9 cents per quart.

"Vancouver, 10 cents per quart.

"The present price of milk in Winnipeg is 8 to 10 cents per quart."

Some weeks ago the solicitor for the dairymen of the Winnipeg district wrote a letter to the committee outlining the terms on which the dairymen would be willing to co-operate with the city in a campaign for the elimination of tuberculosis from dairy herds. The report answers the points raised in the order made as follows:

"1—That all cows be tested by a certificated veterinary surgeon. Your sub-committee thoroughly concurs in this.

"2—That such test be made at the city's expense. Your sub-committee concurs in this.

"3—That all cows passing such test be tagged in the left ear with date when tested. Your sub-committee concurs in this.

"4—That the city take over all condemned cattle. Your sub-committee does not advise that this request be acceded to. The city has no facilities for handling cows that it may be necessary to take over, and we are not clear as to what ultimate disposition could be made of said cows.

"5—That the city make compensation for all condemned cattle at actual market value. In this connection we desire to point out that this would appear to us to be rather a matter for the federal or provincial authorities, or both, to deal with. The city has no appropriation for such purposes. It is a difficult matter to state how large an amount would be required, or how far afield we would have to go to compensate owners. It is certain, however, that a very large sum would be required the first year. The question as to whether the city should bear all costs for animals condemned appears to us a debatable one—in all places of which we have any record where compensation is allowed such compensation covers only part of the total value of the animal, usually a third; moreover, we know of no city where a system of compensation even on the basis of partial value is in vogue. This is invariably a provincial or state matter.

"6—That the city establish a central depot or market from which dairymen may obtain fresh certified cows. This appears to us to be impracticable almost to the stage of impossibility.

"7—That a qualified veterinary surgeon be maintained at the city's expense, whose services should be at the disposal of the dairymen. If this refers to tuberculin testing only it is answered under clause one; if it refers to all veterinary practice arising at the dairies, we are of the opinion that the city is not called upon to provide for treatment of this kind.

"The question of a city pasteurizing plant raised in the solicitor's communication is a very large one, and one that we consider would have to be very carefully gone into before such a project was embarked upon. The initial expense would be very large, and the matter of interference with the vested rights of pasteurizing plants already in the business merits attention. We are not certain that at the present time the city has power to enter into such an undertaking, and we do not know of any community where this is done. In our opinion the only justification for the city seriously considering this proposal would be, if it could be absolutely shown that improper combinations were at work to keep the price of milk at abnormally high figures, and that, by the city taking the field, such price could be materially reduced and kept at a proper basis."

The Chatham Crusade.

The Chatham City Council has decided to conduct a war against three evils in that city: the house fly, the improper keeping of chickens and the improper disposal of natural gas fumes.

By-laws are now being prepared which will require all fly-breeding refuse to be covered with wire screens, to regulate the keeping of chickens within the corporation so that they will not be a nuisance to neighbors, and also to require all smoke stacks from factories and other places where natural gas is used in large quantities to be of sufficient height that the burned fumes and the unused gas will not be inhaled by pedestrians and residents in the neighborhood of such factory.

The School of Commerce.

McGill University is keeping pace with the demand for education of a practical character and has just established a School of Commerce, the programme of which is designed to combine an essentially practical education with that amount of general culture which every business man should have. The course of two years leads to a university diploma. Evening extension classes will also be arranged, and a diploma is also possible for students.

Drs. Hodgetts and Drum in Europe.

Dr. Charles A. Hodgetts, Medical Advised to the Commission of Conservation, and Major Lorne Drum, M.D., D.P.H., Militia Headquarters, Ottawa, General Secretary of the Canadian Public Health Association, sailed for Europe on the 5th of last month by the R.M.S. Megantic to attend the annual conference of the Royal Institute of Public Health at Dublin and the World's Hygiene Exposition at Dresden. Major Drum was one of those elected members of the Royal Sanitary Institute at the recent meeting of that body.

Ottawa Sewage Disposal.

The plan proposed to the Ottawa Civic Commission, on pure water and sewage disposal, for the disposal of sewage in that city is to deposit all of it at a point below Kettle Island, well out in the centre of the river and far distant from any of the present sewers or the intake pipe. It will be presented in the report of the commission, at the same time as it reports on the pure water problem.

The intention is to connect up the west-end drainage system with the new scheme, and instead of depositing the affluent from the system into the Ottawa near the intake pipe as is now the plan, to carry it through the city partly by the existing sewers and partly by new ones to be constructed, to connect up all sewers emptying into the Ottawa and Rideau Rivers within the city's limits, and join all into one main which will be carried out under the river to below Kettle Island and there emptied.

The estimated cost of the project will be over half a million dollars, but the commission unanimously feels that Ottawa will never be out of danger of epidemics such as occurred this spring until the question of sewage disposal is well and finally settled.

The sewage would be forced through the lengthy system by means of pumps and the entire sewage of the city deposited so far away from the source of the water supply that no possible danger of any further contamination could exist from this source.

The plans of the west-end drainage system, at present under construction, will be considerably altered if the proposal is adopted. The outlet for this system is at a point above the C. P. R. bridge above the Chaudiere. Septic tanks and bacteria beds are to be built before the outlet, and the intention is to carry the affluent through steel pipes down along the side of the intake pipe to a point near the Chaudiere Falls, where it would be discharged. If the report of the Sewage Disposal Commission is adopted this latter part of the system will not be built, but the whole will be connected up with the main sewer to be built.

In a word the proposal is that no sewage be deposited in the Ottawa River from the city at any point within the city's limits. The main idea is to carry it as far away as possible before discharging it from the mains.

INTERNATIONAL

American Climatological Association.

The twenty-eighth annual meeting of the American Climatological Association was held at the Windsor Hotel, Montreal, June 13th and 14th. The meeting was well attended. At the closing session Dr. A. D. Blackader, of Montreal, was elected president for the ensuing year in recognition of the active interest he has taken in its work. Dr. Blackader is the first Canadian to hold this office.

The Far Eastern Association of Tropical Medicine.

The Far Eastern Association of Tropical Medicine announces that the second biennial congress will be held at Hong Kong, China, January 20th to 27th, 1912, under the presidency of Dr. J. Mitford Atkinson, Hong Kong. The general classification of the work of the congress is included in the following groups of subjects: —1. Protozoology, helmintholgy. 2, Cholera, plague, leprosy, tuberculosis. 3. Tropical fevers, malaria, beri-beri, dysentery. 4. Surgery, obstetrics, infantile diseases. 5. Climate, hygiene, sanitation. It is requested by Dr. Francis Clark, secretary-treasurer general, Hong Kong, that abstracts in English of papers be forwarded to him as soon as convenient. Papers may be read in English, French, or German.

International Congress of Dermatology and Syphilology.

A change has been announced in the date set for the seventh International Congress of Dermatology and Syphilology, to be held at Rome. To suit the convenience of many members, the date of meeting has been put forward a week. It will consequently be held from September 18th to 23rd, 1911, instead of from the 25th to the 29th.

International Congress and Infant Mortality.

The third international congress for the study of questions relating to infantile mortality and the protection of infant life will be held at Berlin this month, from the 11th to 15th, under the patronage of Her Majesty the German Empress. In addition to scientific discussions, the programme will include an inspection of the measures taken in Berlin for the reduction of infantile mortality, as well as a visit to the International Hygiene Exhibition in Dresden, where a special department is being devoted to infant hygiene.

International Congress of Criminal Anthropology.

The seventh International Congress of Criminal Anthropology will be held at Cologne in October, 1911. The official languages of the congress are German, French, English, and Italian, but it is requested that, if possible, only German or French should be used in the discussions. Among the subjects proposed for discussion are the influence of tendency and environment on crime; the morphology and psychology of the primitive races of man; the present state of criminal psychology; morphological abnormalities, especially of the skull, in relation to the legal view of responsibility; the treatment of so-called diminished responsibility; the prison system; accommodation for dangerous lunatics. A number of papers will also be read. In connection with the congress there will be an exhibition of objects relating to criminal psychology, such as models and plans of institutes, safety appliances, apparatus for the examination of patients, literary and other works of patients, weapons and instruments for breaking loose. All information as to the congress will be supplied by Professor Aschaffenburg, 130, Stadwaldgürtel, Cologne, Lindenthal. Communications as to the exhibition should be addressed to Staff Surgeon Dr. Partenheimer, Psychiatrische Klinik, Cologne. Those who intend to take part in the congress are requested to send their names to Dr. Brüggelmann, Psychiatrische, Klinik, Cologne.

International Congress on Tuberculosis.

The International Congress on Tuberculosis which was to have been held in Rome

in September next has been postponed till April, 1912.

The Eighth International Homoeopathic Congress.

The eight International Homœopathic Congress in London, England, began on July 18th last, with the delivery of the inaugural address of the president, Dr. George Burford. There was a large gathering of medical men and women.

The Congress, said the president, was the most widely represented one ever summoned under the ægis of homœopathy. Why did they as medical men meet as a detached body in separate assembly? Their isolated position was one of the anomalies of medical statesmanship in the past. A hundred years ago an original thinker in medicine, exercising the liberty of thought which was his professional birthright, carried the inspiring spirit of the Renaissance into medicine, and, by arduous and protracted experiment, evolved many new facts and a new law. This was a definite, and, as they considered, successful attempt to convey the methods of science into medicine. Had this discovery been made a hundred years later it would have linked up in a perfectly natural way with contemporary science and been hailed as *lux in tenebris* by original workers in medicine in search of a unifying principle. Appearing when it did, however, it was treated by controversial methods savouring of the Middle Ages. Hahenmann, a University graduate of the highest promise, master of eight languages, a brilliant physician, a first-class chemist, was subjected to much persecution and many indignities as the result of the publication of his *magnum opus,* and in three years was driven from his place of abode and practice. The whole account read like a description of a heresy hunt in the Middle Ages, and was totally at variance with the traditions and instincts of a liberal profession. Certainly the isolation of homœopathists was not of their own seeking. It was one of the many tragedies of science which history had to record. The results had been deplorable. While possessing sufficient vitality to take root and spread all over the earth, homœopathy had been cribbed and confined in its later development, and in many places squeezed out of existence.

But as an outside influence, homœopathy had ousted the wholesale bleeding, blistering, mercurialization, and so forth of the Georgio-Victorian era from the practice of medicine. But even now every week witnessed the launch of some new "Dreadnought" in the shape of a much-vaunted remedy. Early enthusiasts obtained successes in all sorts and conditions of cases; later workers failed to repeat them, thus justifying the cynical advice of an astute physician who said that a new remedy should be given while it still cured. Inductive logic swept away the claims of the inventors of these new cures. He did not propose to dwell on the direct scientific proof of the law of similars developed and organized as homœopathy. This was verified thousands of times daily. Vaccine therapy, serum therapy, X-ray therapy, and radio-active therapy were all unconscious illustrations of the intellectual groping of their sponsors after a therapeutic guide, and that guide, one and indivisible, was the law of similars. With regard to the future, they looked forward to a development of homœopathy of which as yet they could only conceive the outline.

After referring to the origin of these Homœopathic Congresses in 1876, the president proceeded to recommend the formation of an Inter-Congressional Board, with a view to securing continuity of cooperation among the homœpaths of the world. He invited that Congress to become an epoch-making gathering by instructing its officials to draft a scheme embodynig his suggestion.

The American Veterinary Medical Association.

The American Veterinary Medical Association opened its convention in Toronto on the 22nd of August last. There were about 1,000 delegates present. Prof. Hobday represented Great Britain, and Prof. Gruener was the official representative of the Russian Government.

Dr. George H. Clover, Fort Collins, Colorado, in the course of his presidential address, touched on a number of interesting subjects, including the treatment of rabies and tuberculosis.

"Our work," he said, "must go forward by three parallel and seemingly equally important lines: first, combating

disease wherever found, and by every known agency; second, fortifying the body by its natural defences and other agencies; third, waging a relentless warfare against pathogenic micro-organisms. The vastly overestimated value of drugs in the treatment of disease was a relic of mediæval superstition, and belief in magic. The reaction which threatened to carry it to the other extreme has been gradually giving away in the light of modern science to an increased confidence based on a more enlightened and conservative therapeutics.

"In surgery we have made great progress, but we are now and must continue to be content with second place in major surgery. We cannot reasonably deny this fact, when we stop to consider that practically all major operations on the human are performed in well-appointed hospital, while in our subjects, their removal to even such hospitals as we have, is scarcely practicable; their lack of intelligence causes disastrous interference, their bodies are covered with hair, and the incentive for our services is largely pecuniary."

The president touched on the rabies question.

"Reports from many sections of the county," he said, "show an alarming increase of rabies. In England rabies was stamped out, largely by compulsory muzzling of dogs. In this country, a doubt fostered by some misguided medical confreres, as to the reality and importance of the disease, combined with a maudlin sentiment for the dog, has made the enactment of muzzling ordinances in most cases impossible. The success of the pasteur treatment can no doubt be reasonably questioned. An anti-rabic vaccine for the preventive treatment of rabies in both the human and lower animals is on the market."

Dr. Glover also discussed hog cholera, which he called the great scourge, and also the Southern cattle tick.

The prevalence of tuberculosis was emphasized. According to the United States statistics of 1908, out of 400,008 cattle tested, 3,700, or 9.25 per cent., gave reactions. Of these 24,984 were slaughtered and 93.39 per cent. were found tuberculous.

"Statistics like these," said Dr. Glover, "are invaluable and give us a more definite understanding of the magnitude of the problem confronting us. The subcutaneous tubercular test is one of the great discoveries of modern times. Its reliability is no longer questioned, save in rare instances of the rankest prejudice.

"We know the cause of tuberculosis; we know how to detect it in animals; we have an ample knowledge of its extent, its stupendous economic significance and the terrible tax it levies on human life. We are still hesitating and confused—waiting for some genius who can evolve a plan of campaign which will afford some hope of final success. Until we are ready to pave the way by recommending a feasible and systematic plan of campaign we cannot justly claim the indifference of the people as sufficient cause for inaction. Until the public are aroused from their lethargy and come to a greater appreciation of its importance, we cannot expect that the selfish opposition will be removed."

UNITED STATES

United States Courts Uphold Public Health Laws.

The decision of the Supreme Court in upholding the validity of the St. Paul ordinance regulating the display of fruit and foodstuff outside of buildings, is one that will receive the approval of all who are interested in promoting and protecting the public health. This decision emphasizes again the fact that the police power of cities and villages for the regulation of all matters pertaining to public health is very broad and that the exercise of such powers will be upheld by the courts. The decision referred to is the second rendered very recently by the High Court on matters of health protection. The other was that sustaining the ordinance requiring the street railway company to sprinkle between their tracks.

Neither are unreasonable and both are necessary regulations for the protection of the public health.

In the past health authorities have been altogether too lenient in the enforcement of existing laws and local legislative bodies altogether too reluctant to pass necessary legislation in this direction, but these decisions should convince both that the crusade that is being waged for the greater safeguarding of the public health is not based on sentiment alone and that the courts will uphold all reasonable legislation along that line. United States city authorities are taking cognizance of these facts and acting accordingly.

Race Betterment League Formed in Chicago.

The Race Betterment League is the name of a new organization formed in Chicago. The league desires to know where girls are employed under conditions; where women and children are overworked; what stores do not provide seats for clerks, and where toilet arrangements are inadequate for clerks or patrons; where children are abused, neglected, starved or insufficiently clothed, and where the aged, the weak, the convalescent are located and uncared for, or any unfortunate girl or woman is homeless and needs a mother's care.

The United States National Oral Hygiene Association.

The National Oral Hygiene Association, having for its purpose the promotion of a plan to have dental clinics in public schools has been organized in Cleveland, Ohio, by dentists. Horace Fletcher, the food specialist, was chosen president.

An American Medical Association Paper on the Thyroid Gland.

That the mysterious and freakish thyroid gland, in combination with the effects of various diets, may exert a direct influence on the size of families, was one of the interesting inferences drawn from a scientific narrative of experiments conducted with mice, which was read at a recent meeting of the American Medical Association by Dr. Reid Hunt, of Washington, D. C.

Dr. Hunt said he fed two groups of four mice for four months, and found that fecundity or sterility depended upon the activity, or idleness of the thyroid gland.

One group was fed upon oatmeal and liver. This stimulated the activity of the gland, and at the end of the four months there were no little mice. On the other hand, the second group, which had crackers, milk, and eggs, increased to 101 in the same period.

Cornmeal and milk reduced the birth-rate for a third group of four mice fed upon this diet, had sixty-nine young in four months, compared to the ninety-seven record of the second group. Whether like experiments would produce similar results among all animals, including humans, Dr. Hunt did not say.

Chicago and Oiled School-Room Floors.

Oiled school-room floors to prevent bacteria being circulated in dust and wooden spoons for milk testing are two suggestions for sanitary improvement made by the Chicago Board of Health.

It is claimed by the board that in Birmingham, Ala., Dr. G. E. Oates experimented with oiled floors in school-rooms and found the condition materially improved. It was found necessary to oil the floors only three or four times a year and the expense was small. Then, too, the experiment proved that the oil saved the wood and saved labor by keeping the floors clean. The oiled floor question is said to be a big one in regard to public health.

Oklahoma School Health Clubs.

A new method of fighting the spread of tuberculosis has been conceived and put into operation by Dr. J. W. Echols, prison physician at the Oklahoma State penitentiary. The new attack is directed against the spread of the disease among children and is intended to be aided by school teachers. Supplies to start the fight locally are to be sent to any teacher upon request, provided a stamp for reply is enclosed.

The plan consists of the formation of "School Health Clubs" to which each child is given a copy of a set of rules to be pasted in his school books, and also is given a treatise on tuberculosis and its prevention to be carried home to the parents.

Among the "dont's" contained in the slip for the child are the following:

"I must not put money in my mouth," "I must not bite off my schoolmate's apple," "I must not drink from my schoolmate's cup," "I must not use my schoolmate's pencil," "I must not put anything near my mouth which has been in or about any person's mouth."

New York and the Registration of Births and Deaths.

The State of New York has taken a very important step forward in the matter of the registration of births and deaths through the setting forth of an opinion by Attorney-General Carmody that the license to practise medicine may be revoked if a physician fails promptly to report these items. The opinion was one given in response to the request of the State Board of Health, and is one that should be of greatest importance in the securing of reliable statistics. It seems strange that in the United States, whose citizens are boastful of the progress of the country, and do not fail to vaunt its superiority over European empires, republics and monarchies, there should be such utter neglect of the foundation stones of a knowledge of vital statistics. And yet it has been said by an authority that in that country, as well as in Canada, there is not a single state-wide system of registration. Those who have attempted, as has *The Public Health Journal*, to make comparisons of different items of vital statistics are aware that for less than a score of cities on the continent are there reliable data of the details of mortality; and as for registration of births, there were a year or two ago not more than half-a-dozen of the largest cities that could furnish them at all. In view of this unbelievable demoralization of vital statistics such a position as that established in New York is of great consequence, and the position of the State Board is most strongly to be commended. "The commissioner of health," writes Dr. Eugene H. Porter, himself, the commissioner, "regards the decision of the attorney-general as a very important document. The responsibilities resting upon local Boards of Health are clearly outlined and it is the intention of the department to see that their duties are carried out. The commissioner will take active steps to that end where the local Boards of Health fail to do so." The wider question of notification of disease is a thorn in the flesh of many lands. English physicians are demurring to some extent, and writing to the journals: "What right has the municipality to demand the confidential information in the possession of the family physician?" But there are only a few who disagree, the consensus of opinion being that infectious disease is to be fought at the bedside of the patient. It becomes the duty of the family physician to aid in the fight by giving to the authorities that information which will enable them to begin their work at the earliest moment. And as for registration of births, upon the faithfulness with which this is carried out depends the sight of hundreds of new-born babies. Truly registration is of enormous importance.

THE EMPIRE AND THE WORLD ABROAD

Royal Institute of Public Health Congress at Dublin.

On the 15th August last the Royal Institute of Public Health held its annual congress in Dublin for the third time. The first congress was held in that city in the year 1892, and since that time the institute has held its meetings in many cities of the Empire. The scene of the congress was within the walls of Trinity College, the University Board having placed the halls at the disposal of the organizers of the congress. The congress was under the presidency of the Countess of Aberdeen.

Health of English Towns.

In seventy-seven of the largest English towns 7,092 births and ,775 deaths were registered during the week ending Saturday, June 10th. The annual rate of mor-

tality in these towns, based upon the revised estimates of population according to the recent census, which had been 13.2, 13.3, and 13.0 per 1,000 in the three preceding weeks, declined to 12.2 per 1,000 in the week under notice. The death-rate in London did not exceed 11.6 per 1,000, against 11.8, 12.2, and 12.1 in the three previous weeks. Among the seventy-six other large towns the death-rates ranged from 2.8 in Handsworth (Staffs), 4.3 in Burton-on-Trent, 5.2 in Brighton, 6.1 in East Ham, and 6.7 in Walthamstow to 17.1 in Bootle, 17.2 in Bristol and in St. Helens, 17.8 in Huddersfield, 18.4 in Stoke-on-Trent, and 18.8 in Middlesbrough. Measles caused a death-rate of 1.7 in Sunderland, 1.9 in Great Yarmouth and in South Shields, 2.1 in Reading, and 2.2 in Smethwick; whooping-cough of 1.2 in Newcastle-on-Tyne, 1.5 in Smethwaick and in Burnley, and 2.0 in Middlesbrough; diphtheria of 1.3 in Gateshead; and diarrhoea and enteritis (of children under two years of age) of 1.5 in Rhondda, 1.7 in Rotherham, 1.8 in Wigan, and 1.9 in Devonport. The mortality from enteric fever and scarlet fever showed no marked excess in any of the large towns, and no fatal case of smallpox was registered during the week. Of the 3,775 deaths in the seventy-seven towns, the causes of 24 were not certified either by a registered medical practitioner or by a coroner after inquest, and included 4 in Birmingham, 4 in Liverpool, and 4 in Gateshead. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,082, 1,097, and 1,140 at the end of the three preceding weeks, was 1,141 at the end of the week under notice; 152 new cases were admitted during the week, against 157, 158, and 185 during the three preceding weeks. There were 5 cases of smallpox under treatment on Saturday, June 10th, against 11, 7, and 6 at the end of the three preceding weeks, and no new case was admitted during the week.

Health of Scottish Towns.

During the week ending Saturday, June 10th, 922 births and 489 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, calculated upon the revised estimates of the recent census, which had been 17.7 and 16.9 per 1,000 in the two preceding weeks, declined to 14.9 in the week under notice, but was 2.7 per 1,000 above the mean rate during the same period in the large English towns. Among the several Scottish towns the death-rates ranged from 10.9 in Aberdeen and 11.4 in Dundee to 16.0 in Perth and 16.1 in Glasgow. The mortality from the principal epidemic diseases averaged 1.7 per 1,000, and was highest in Glasgow and Greenock. The 242 deaths from all causes registered in Glasgow included 9 from measles, 21 from whooping-cough, 3 from diphtheria, and 2 (of children under 2 years of age) from diarrhoea. Five deaths from whooping-cough were recorded in Edinburgh, 3 in Aberdeen, and 2 in Greenock.

Health of Irish Towns.

During the week ending Saturday, June 10th, 583 births and 354 deaths were registered in the twenty-two principal urban districts of Ireland, as against 690 births and 382 deaths in the preceding period. The annual death-rate in these districts, which had been 16.1, 16.5, and 17.1 per 1,000 in the preceding weeks, fell to 16.1 per 1,000 in the week under notice, this figure being 3.9 per 1,000 higher than the mean average death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 18.3 and 15.5 respectively, those in other districts ranging from 4.4 in Newry and 5.1 in Clonmel to 22.9 in Newtownards and 23.0 in Londonderry, while Cork stood at 15.0, Limerick at 8.1, and Waterford at 13.13. The zymotic death-rate in the twenty-two districts averaged 1.0 per 1,000, as against 1.3 per 1,000 in the preceding week.
