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# CANADA HEALTH JOURNAL

A Monthly Review and Record of  
SANITARY PROGRESS

—EDITED BY—  
EDWARD FLAYTER, M.D.

Public Health and National Strength and Wealth.

For Contents see next page.

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VOL. XII.

MARCH, 1890.

No. 3.

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# CANADA HEALTH JOURNAL.

A Monthly Record of Sanitary Progress.

VOL. XII.

MARCH, 1890.

No. 3.

## THE DISCUSSION IN PARLIAMENT ON THE PROPOSED DOMINION HEALTH DEPARTMENT.

DR. ROOME moved March 10th, 1890 :

That in the opinion of this House, the time has come when the Federal Government should establish a Health Department with a responsible head, presided over by a Minister or Deputy Minister, for the purpose of preventing the spread of disease, collecting mortality statistics, and educating the people, as far as possible, in all health and sanitary matters.

He said : In rising to move this resolution, I do so believing that the time has come when this important subject should receive the earnest attention of this House, as well as of the people of Canada. I shall endeavor to express my thoughts on this matter, and the arguments which I have to bring forward, in such a manner that, though I may not be able to properly place them before the House myself, they may, at all events, induce discussion, and I hope that other hon. members may be able to make them more impressive than I can. Looking at the history of Canada since the confederation of the Provinces, observing the vast progress which she has made, the large and various industries which have been built up, the rapid growth of her cities and towns—in fact, looking at the great and increased prosperity of the whole Dominion, and asking ourselves what has brought that about, I have only, I think, to refer to the speech made last Session by the young and talented Finance Minister, in order to prove that not only this Parliament, but previous Parliaments, have brought about this prosperity by spending millions of dollars in building up our great railway system, which extends from ocean to ocean, and which, with her branch lines, gives us now one of the best railway systems in the world. Parliament has also spent millions of dollars in enlarging our canals, so as to join together our great inland lakes and to make a complete chain of communication, so that our producers and our consumers are brought close together, and we are able to compete with the other nations of the world. While, therefore, the different Parliaments have been spending money on railways and canals, on the erection of

public buildings, on the encouragement of immigration, at the same time hardly any thought has been given, scarcely a word has been spoken by any of our Legislators as to how we might protect the lives of our people and rescue many from untimely graves by preventing the spread of these epidemics which occasionally appear amongst us. We in Canada to-day feel proud of our country, believing that we have the nucleus formed of a great nation. And while we boast of our most excellent form of Government, whereby our laws are strictly enforced, protecting our lives from the hands of the assassin and murderer, our property from the thief and robber, we have done nothing comparatively speaking in the way of protecting our lives from those zymotic diseases which are constantly amongst us.

As we are now a prosperous people, having devoted so many years in opening up our country, I think it would not be amiss if we were to expend some of our time as well as money, in devising means to lessen the spread of disease whereby thousands are cut of in the prime of life and often our best and most useful citizens, to say nothing of the sickness and suffering our children have to endure from diseases ingenerated into their system in childhood, which weakens and often cripples them through life, which if the cause was removed : by health teachings and sanitary regulations they would grow up to be strong men and women. It is not the numerical population which constitutes the strength of a nation, but it is the physical and mental development as well, as we might say :

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

Now, Sir looking at this subject from a practical point of view, it would be the first duty of every statesman to legislate for the health of the people. Let us consider for a moment what could be accomplished by such legislation. England to-day stands foremost amongst the nations of the earth in having given her attention to health legislation, and during the past

half century she has passed a great number of Health Acts. Amongst those, I may mention the Public Health Act in 1842, the Public Health Act of 1848, the Sanitary Act of 1866, the Public Health Act of 1872, and the most important Act of all was one amending the Public Health Act in 1875. By such legislation there has been a marked and marvellous decrease in the death rate of England since the first Act was passed. Previous to the passing of the first Health Act of 1842, she had a system of collecting mortuary statistics from the year 1837, and it was by the collection of these statistics that her physicians and sanitarians were able to impress upon the legislators the necessity of some legislation towards the health of the people. According to the Registrar General's Report of 1841 the death rate of England and Wales was 26 per 1,000. Now, in order to show what has been accomplished in England during the past fifty years by such legislation, I shall divide it off into decades of ten years, which will make a fair and just comparison. If I took one year and compared it with another I might be accused of selecting a year in which there was a great amount of sickness and comparing it with another in which there was not much sickness; but in dividing the period into decades of ten years, there can be no unjust comparison. These figures I have copied from the Registrar General's Report from England.

During the years from 1841 to 1851, the average death rate for these ten years was 25.4 per thousand inhabitants and owing to the legislation of 1848 the death rate from 1851 to 1861 dropped to 22.4 per 1,000, a difference of 3 per 1,000, and for the next decade of 10 years there was but little change, 22.2 per thousand from 1871 to 1881, the average death rate was 21.4 per 1,000, still showing a great diminution in the death rate, which must be attributed to the passing of those acts of 1872 and 1875. At the time of the passing of the amendment to the Health Act of 1875, the death rate for the year previous was 22.0 per 1,000, the average from 1876 to 1880 was 19.3, from 1880 to 1886, it was 19.2, and for the year 1887, 18.7; 1888, 17.8; 1889, 17.2, showing that since the passing of the Act of 1875 there has been a steady decrease in the death rate every year, and I have no doubt but that this death rate will continue to decrease until not more than 13 or 14 per 1,000 will die yearly. Estimating the population of England and Wales at twenty-eight and a half millions, this diminution in death rate implies, that is the same death rate had continued for the past eight years as what it had for the year

from 1871 to 1881 there would have been recorded upwards of 500,000 deaths at the end of last year who are living to day. Having shown what has been accomplished by health legislation in England, let me draw your attention to what may be accomplished in the Dominion of Canada by similar legislation. For the past number of years we have had a system of collecting various statistics through the Department of Agriculture. When the system was established in 1882 it only applied to cities having a population of 25,000, and over; since that, it has been extended, until now the statistics are collected from twenty-eight centres. In order to make my calculation, I am going to take the mortuary statistics for the Province of Ontario, from the Registrar General's Report of that Province, which I believe are more correct than those of the Dominion; besides there are two cities in Ontario from which the Dominion Government does not collect or give a report of the statistics, viz.: St. Catharines and Stratford which I have included in the 28 centres. I believe the system adopted by the Province of Ontario is preferable to the system adopted by the Dominion Government, as the Provincial system leaves it in the hands of medical men to report as to the cause of death. I will read from the Provincial Act in regard to that point:

"Every duly qualified medical practitioner, who was last in a attendance during the last illness of any person, shall within ten days after having notice or knowledge of the death of such person, transmit to the Division Registrar of the Division in which the death took place, a certificate under his signature of the cause of death, according to form of schedule I."

When that is carried out they have a pretty correct system of collecting statistics. I am sorry to say our Medical men do not carry it out as strictly as they should, as upon the correctness of our mortuary statistics, depends their usefulness for making comparisons. The system adopted by the Dominion Government collects statistics from the cemeteries, or those in attendance on those cemeteries. Now if we take any city in the Dominion that is growing rapidly it is to be remembered that people are constantly coming in from the surrounding districts to seek employment, and those who die there have friends or relatives in the country who carry the body back to be buried in the rural districts, so that the cemeteries in the cities do not give a correct number of all those who die there. We find the population of those twenty-eight centres from which statistics are collected by the Dominion Government and Local to be 840,000. The death rate in those centres for the past year has been an average of 22.2 per 1,000. As there is

no report from the rural sections and small towns, we will have to estimate the death rate of the whole Dominion at, say, 20·5 per 1,000 and we will estimate the population of the Dominion at the present time at 5,500,000. In England, the difference between the rural sections and cities, is 1·7, and for Canada I am giving the whole difference as 2 per 1,000 although I believe medical men will agree with me, that in our small towns and villages zymotic diseases are more fatal than in cities, such as small-pox diphtheria, scarlet, and typhoid fever, so that in all probability the death rate is as great, if not greater; but I am going to give the difference as 2 per 1,000. So that, if we estimate the population of the Dominion at 5,500,000, it implies that during last year, if death rate had been reduced as low as it was in England and Wales, namely 17·2, there were about 15,000 or 20,000 deaths recorded in Canada which might have been saved. If we could legislate to save 15,000 lives a year what a great boon it would be to our country. Let us imagine we heard of 15,000 emigrants coming to our shores at one time, we would think that our country was becoming rapidly populated; or if we heard of 15,000 of our people migrating to the neighbouring Republic, what a cry would go up from the floor of this house as to the great exodus. It would be pointed out to us in glowing terms that our country was going rapidly to ruin; committee would be asked for to investigate the cause, and many would be the panaceas offered to allay it but when 15,000 are carried silently to the grave not a word is spoken, or a voice raised by any member of this house as to how to prevent it. It is allowed to go on from year to year. Perhaps, some may think that I have not made a just comparison, by taking the twenty-eight cities in Canada and calculating the death rate for the whole Dominion by that. Now, if there should be objection to the mode by which I have made my calculation, I will take the twenty-eight cities in Canada and compare them with twenty-eight of the largest cities in England. The population of twenty-eight cities in England was 9,400,000. There were 179,865 deaths recorded last year, or an average death rate of 19·2 per 1,000. The death rate in the same cities from 1871 to 1881, previous to the legislation of the Health Act, was 24 per 1,000. In those twenty-eight cities during the last nine years the average death rate has been 21 per 1,000.

This implies that at the end of last year 200,000 more people were living than would have been in existence if the death rate had continued for the past 9 years as

it was in the 10 years previous, from 1871 to 1881. In twenty-eight cities in Canada with a population of 840,000 the death rate was 22·2 per 1,000. If the death rate had been reduced to that of the twenty-eight English cities, 19·2, no less than 2,520 lives would have been saved, or for the ten years, 25,200, which might have been saved by proper legislation. Perhaps I might make a still stronger comparison as to what might be done by health teaching and sanitary legislation, by comparing old London and Montreal. Old London, with a population of 4½ millions, had a death rate of 18·5 per 1,000 for the past nine years. I desire to say here, that there is no reason why our cities in Canada should not be as healthy as old London is to-day. Montreal has a beautiful situation, with its front washed by a magnificent river and with high lands in the rear; in fact with all natural advantages for a metropolitan city; yet Montreal, with a population of 200,000, had a death rate for the past five years of 34·8 per 1,000, or nearly two to one as compared with overcrowded London. There is no reason why the death rate should not be reduced as low, if not lower than London by proper sanitary legislation. The difference 16·3 per 1,000 means that there would have been living in Montreal 3,600 persons at the end of last year, whose deaths would have been recorded, or 21,000 during the past six years; if continued for the next ten years, the number would have increased to 40,000, who might have been saved and continue their lives as respectable citizens. Toronto, with her beautiful structures of fine architectural design, broad streets and a frontage on Lake Ontario, is the pride of the people of Ontario. The average death rate of that city for the last six years was 21·5 per 1,000, or three per 1,000 more than London. There is no reason to doubt that by proper legislation the death rate could be reduced three or four per 1,000; but if the death rate had been as low as that of London no less than 510 deaths might have been prevented, or in ten years more than 5,100. In Quebec the death rate for the past six years averaged 30·7 per 1,000. I will make one more comparison then I will close, and that is a comparison of the death rate of the city chosen for the capital of the Dominion; chosen, no doubt, for high elevation and picturesque surroundings. The different Governments have spent money lavishly in erecting buildings here, becoming to a great nation, but the people of the city have been direlict of their duty in putting in force sanitary arrangements; so that, instead of this being one of the most healthy, it is the most unhealthy city in Ontario, and one of the most unhealthy cities in Canada.

The average death rate for the past six years was 28·5 and for the past seven years 33·7 per 1,000, 12·2 per 1,000 more than Toronto, 15·2 more than old London. I repeat that it is the most unhealthy city in the Dominion, excepting Hull, which has an average death rate for the past three years of 37·7, Hull being not only one of the most unhealthy cities in Canada, but one of the most unhealthy cities in the world. The reason I take the records for the past three years is that the health statistics do not go further back. I may say that; three years ago, the death rate was 41 per 1,000. So from the cities of Quebec, Montreal, Toronto and Hamilton we have in this Parliament a large number of representatives, including men of mark and ability, and I hope I have aroused the feeling in their breasts in favor of sanitary legislation. I have now drawn attention to this important subject, from comparisons made between Canada and our mother land, as to what may be done by proper legislation. I have no doubt there will be exceptions taken, perhaps not with the statements and comparisons I have made, but with the propositions I am about to make to carry out such legislation towards educating people on health matters. The first objection taken, no doubt, will be the great expense necessarily incurred in putting sanitary legislation into force, and this will be the more apparent at the present time when we are all talking economy, although we are not on all occasions practising it. But, if I can show that the money spent will be returned to the people tenfold, the objection will be waived. I now draw attention to the financial aspect of the case. I have shown pretty clearly that there were 20,000 deaths in Canada which could have been prevented; take three-fourths of this number, and say 15,000 deaths recorded, and let us consider what financial loss to the country these deaths represent. First, let us consider the expense on the people from attendance, doctor's bills, &c. It has been estimated by our best aid and relief societies that there are twenty cases of severe sickness for every case of death. That means 15,000 deaths, 300,000 cases of sickness. What must have been the suffering endured during those 300,000 cases of sickness, to say nothing of the poverty and crime which must necessarily have followed. It has been estimated by the best statisticians that every case of sickness costs \$10. Accordingly, 300,000 cases of sickness, costing \$40 each, would represent \$12,000,000. Let us go a little further, taking our information from our aid and relief societies. It is computed that each sickness lasts twenty days; the total sickness would,

therefore, represent 6,000,000 days. Taking the time lost by the sick, and those waiting on them, at \$2 per day, there is a loss of \$12,000,000 more, or a total loss of \$24,000,000 to the people of Canada. There is not only this direct loss, but an indirect loss also, for during the time of sickness, nothing is added to the wealth of our country. There is also to be added another indirect loss from those who have died. It is estimated that 60 per cent. die between birth and the age 15 and over 50, leaving 40 per cent. to die between the ages of 15 and 50. 15,000 deaths implies that 6,000 die between the age of 15 and 50. It is always considered by all countries that an adult person is worth \$1,000, showing an indirect loss to the country of \$6,000,000 more, making a total on the people of Canada direct or indirect to \$30,000,000 a year, or \$150,000,000 for the past five years. Some may say that \$1,000 is too much to place on a man's life but, the bible says would not a man give all he hath got for his life. A second objection, perhaps, which will be raised, is that all health teaching should be left in the hands of physicians. I will admit that it is partly the duty of the physician to assist in carrying out wise legislation on health matters, but his chief duty is to stand between his patient and the grave; and I am proud to say that there is no class of men more willing and ready to take their lives in their hands in going to the bedsides of their patients, and facing the most malignant and fatal diseases, than gentlemen of the medical profession. But, Sir, they are also ready and willing to assist in any efforts that may be made for the prevention, as well as for the cure of disease. There are some who believe that death and sickness will come, it matters not what we do, but that is a mistaken idea. This world is run by fixed laws, and when we violate these laws, we suffer the consequences. The object of the legislation such as I now suggest, is to educate our people how to observe these laws, and so to escape the consequences of their non-observance. A third objection which doubtless, will be raised, and which will admit of a good deal of discussion, is "That all health matters and sanitary regulations should be left in the hands of the Provincial or Local Governments." I do not wish it to be understood that I am opposed to each province having a board of health or some forms of health legislation; far from it. I would be pleased to know that each had such a board and that their laws were strictly enforced. I am satisfied that the board of health in the Province of Ontario is doing a great deal of good, and would do very much more if the people

were educated on health matters and the cause of disease. Disease knows no provincial or municipal lines. Therefore, health teaching must necessarily fall upon the Federal Government. I believe it is just as essential to have a Federal head or Department of Health as it is to have a Department of Agriculture, or a Department of Inland Revenue, or a Postmaster General. Each Province now has a Minister of Agriculture or a similar office; still they do not interfere with our Federal Minister of Agriculture. Each has its particular functions to perform. The Department of Health could be carried on similar to the Department of Agriculture. The hon. Minister of Agriculture has had established, since he has occupied his office, a Central or Experimental Farm, with several branch farms in the different Provinces. The object of these farms is to make investigations, so as to instruct the farmers as to the best and most improved system of farming; also the most reliable seeds to sow, so as to produce to the farmers the greatest rewards for their labors; also to indicate the best animals to raise and the best fruits to grow, that farming may be made as profitable as possible. And, Sir, while doing this, is it not just as desirable that there should be a department where useful knowledge could be gathered, useful experiments made, and the knowledge so gained disseminated amongst the people, as to the best mode of preventing disease. During last Session, Prof. Saunders, of the Experimental Farm, informed the Committee on Agriculture that he had imported a variety of wheat from Russia, which he had been experimenting on, and that he believed it was equal in quality to any which we had, and would ripen ten or twelve days earlier, so that it would escape the early frosts of the great wheat-growing districts of the West and North-West. If such proves to be the case it will be worth millions upon millions of dollars to Canada, and the experimental farm should be heralded as one of the grandest undertakings the Government has achieved since Confederation. Now, Sir, if we had a similar place were experiments could be made as to the cause and origin of disease, and especially to that dreaded disease tuberculosis, which is on the rapid increase in our country (more having died from it in Canada last year than from any other one disease.) It is now becoming an important question, and engaging the attention of the physicians and scientists of the world, whether it is communicable from the domestic animals to man. I believe, to-day, the medical men are about equally divided upon the matter. Now, Sir, by

having a place for experimenting ourselves, and collecting the observations of others, it could soon be studied out, whether this disease was so communicable or not, and if it is found to be so without a doubt, it would be the duty of this Parliament to take steps to eradicate the the disease from our domestic animals. By so doing they would confer a greater boon on the people of Canada, than the introduction of any kind of grain or fruit into this country. Almost every civilized country in the world, except Canada has some central organization to look after the public health. In England they have their central local government board, presided over by a president, who in both of the Hon. Mr. Gladstone's Governments had a seat in the Cabinet. Prussia, Russia and Austria have their Imperial boards of health. France has a central or federal board, and since it was organized the death rate has diminished in as great, if not greater ratio than in England. In our neighboring Republic they have established at Washington a National board of health, and almost every State has its State board of health. Florida was an exception, and I have no doubt all of you will remember the dreadful scourge of yellow fever they had there two years ago. The Governor of the State was compelled to call the Legislature together in special session to consider measures for the protection of public health: and that time they established a State board of health. It will, for long years to come, be a matter of regret to the people of Florida that, from inexcusable stupidity and lethargy, her Legislature did not listen to the warnings of danger, given previous to the year 1888, by her physicians and sanitarians. Had Florida been ready to have availed herself of this, with the assistance of the Federal Government, millions of dollars and thousands of lives might have been saved to the State. Let us take warning from Florida, and not let our young and prosperous Dominion be caught in a similar position if an epidemic should approach our shores. Let us be prepared to meet it at every point. Now, Mr. Speaker, let me draw your attention to what would necessarily come under this department, viz: All health matters, such as collecting mortuary, natal and nuptial statistics, reports on prevailing diseases, quarantine, adulteration of food and diseases of domestic animals. In connection with this department there would be required an efficiently equipped laboratory for the investigation as to the cause and origin of the disease, and the knowledge gained from those sources communicated to the people monthly, quarterly and yearly. Now, Sir, I think if you will consider



the matter carefully, you will agree with me that these subjects would more properly come within the province of a Federal Government than of the Provincial. I must give credit to the Dominion Government for the systematic manner in which they have already carried on the work of collecting mortuary statistics, and sending out monthly bulletins of those; and I am pleased to know that the statistician of the Government, who is making preparation for the taking of the census of 1891 is now preparing books to be sent out to medical men, in which they will be asked to keep a correct record of the deaths of people whom they attend, the causes of death, the cases of sickness and the length of time those cases have lasted. If this intention is carried out successfully, we shall have some very valuable statistics relating to the causes of sickness and death among our people. Now, in establishing the health department I propose, the subject of the adulteration of food, which is now under the control of the Department of Inland Revenue, and the subject of quarantine, which is now in the hands of the Department of Agriculture, might be taken from those Departments and put under the control of the new Department. Then there should be established in connection with it an efficient laboratory for the investigation of the causes and origin of diseases. Such a laboratory would collect cases from one end of the Dominion to the other, and yet could be carried on at very little more cost than a laboratory for one Province would cost. Now, I have detained the House longer than I intended. I thought, when I rose to my feet, that I would suggest a plan as to how such health legislation should be carried out; but, on giving the matter a second thought, which you know is always best, I have concluded not to. I will be satisfied if I have awakened a feeling on this important subject in the minds of a majority of those present. I have no doubt that the Ministry of the day will devise a plan which will be acceptable to the House and the people of Canada: for I have unbounded faith in our grand old chieftain, who stood foremost amongst our statesmen in bringing about Confederation, and who has so successfully steered the ship of state for so many years. If he takes the matter in hand, I have no doubt but that he will bring forward a scheme by which a federal system of health and sanitary regulations may be established, thereby saving the lives of thousands of our people yearly. Such an achievement would redound to his credit in years to come as great, if not greater, than some of the most important undertakings he has

started and lived to see accomplished. I, therefore, move this resolution, seconded by Gen. LAURIE.

Gen. LAURIE. Mr. Speaker: It may be considered somewhat surprising that I, as a non-professional man, should move in this matter, but it will be in the recollection of some hon. members of this House that, last year and the year before, I acted as chairman of a Committee working under the Select Committee on Agriculture and Immigration, to enquire into the communicability of disease from cattle to man and from man to cattle. That Committee, with a view of obtaining as much information as possible, sent out 1,480 sets of questions to medical gentlemen practising in this Dominion, from which we received 215 replies. Analysing those replies, we ascertained that those medical men believed:

"That from 10 to 50 per cent. of cases of disease and premature death might be prevented by judicious sanitary measures; that consumption is contagious and infectious, and isolation would assist in prevention, but that the chief preventable causes of disease are contagion, impure air and water, unhealthy diet, decaying animal and vegetable matter, bad drainage, general want of cleanliness, and sudden changes of temperature, and the ordinary measures are suggested as palliatives. . . . . A few express the opinion that tuberculosis may be transmitted to the human system, as well as diphtheria, by the medium of impure milk and meat; but few have met with actual cases in their own experience of diseases being so communicated. They consider tuberculosis in domestic animals is produced by improper feeding and unhealthy surrounding."

The Committee, in making their report, appended this recommendation:

"We are led further to the belief that our enquiries into the subject entrusted to us would have been much facilitated, and productive of a much greater amount of information, if a system of observing and recording vital statistics were established in the Dominion, and thus preventative and precautionary measures against contagion in any form would be better appreciated and more satisfactorily carried out."

Now, Sir, I do not intend to detain the House by reading statistics or extracts from blue books at any length. I simply wish, in as few words as possible, to give my views on this subject. It may be, as the hon. member has stated, that the duty of looking after the health of the people belongs more to the Provincial Legislatures than to this Parliament. But the duty of bringing immigration into the country, in order to increase our population, has been largely devolved upon this Parliament, and if it is worth our while to bring people here, surely it is worth our while to keep them alive when we have

got them; and, therefore, to that extent, I think this duty is fairly and justly imposed on the Federal Parliament. Without statistics it is impossible for us to obtain information as to what our people die from, and as to what steps should be taken to keep them alive. Last year I went across the Atlantic, in the hope of being able to attend the medical congress held in Paris at the end of July last, at which, among other subjects, that of the communicability of disease from cattle to man was to be considered; but, unfortunately, I was detained by some foolish Customs officers in London, and was unable to get there in time. I obtained, however, a report of the proceedings. One of the matters brought before the congress was the report of the French Government Commission of 1888, which ascertained from medical statistics that one-third of all the deaths in France resulted from that fatal disease, tuberculosis. They came to the conclusion almost unanimously that tuberculosis came under the head of preventable diseases, and was most largely communicated by animals to man in some form of food, as in meat and milk, as well as otherwise by bacilli, and was also communicated from man to man. Therefore, as the hon. gentleman has shown how many deaths have been already prevented by the study of hygiene and the precautionary system established in France, it might be shown that if that disease had been more fully studied, a large proportion of those 15,000 people might have been preserved from it, and would probably have been living for years afterwards. The question to which I am confining my attention more particularly, because the mover did not attend to that question so much, the communicability of disease from animal to man, is a matter which it is necessary further to investigate. It is necessary that we should obtain this information from statistics. The belief of medical men now is, that disease can be communicated from an animal to a man, but we want to have the facts, and those facts can be obtained only by a record ranging over a number of years. It is certain that there is not so much tuberculosis in this Dominion as exists in other parts of the world, but there is too much of it. We found last year, that cattle suffering from tuberculosis had been imported into this country, and the animals had to be slaughtered. While I was in England, I called on the Secretary of the Royal Agriculture Society, who asked me to see Sir Jacob Wilson, the president of the society. I did not see him personally, but he writes me:

“The subject (that is, of tuberculosis) is daily

growing in importance in this country, and representations are, I believe about to be made to the Agricultural Department of this Government, from various towns, urging the necessity for legislation thereon. Whether Her Majesty's Government consider the question sufficiently ripe for legislation, I know not, but it appears to me that, sooner or later, the question must come under their serious consideration.”

That was signed by Sir Jacob Wilson. I called to see Professor Brown, and I found he was much impressed with the same idea, and, after two or three interviews with him, he drafted a series of proposals to the President of the Board of Agriculture, the Hon. Henry Chaplin, pointing out that these diseases which were known to be dangerous as being communicable from animals to men should be placed on the schedule, and that those animals which were suffering from them should be slaughtered. I could not see Mr. Chaplin, but I saw his secretary. I saw Sir James Caird, and Professor Brown several times. Mr. Chaplin, writing to me, says;

“He is conscious of the great importance of the question, and it is one which will have to receive the careful attention of the Board of Agriculture, when some other matters which are pressing for settlement have been disposed of. Mr. Chaplin is exceedingly obliged for your kind offer of a copy of the report of the sub-committee of the Canadian House of Commons on tuberculosis, which he will most gratefully accept.”

I introduce these points now to show that this matter is growing in importance in England, but there is a very serious difficulty in dealing with it in England, which both the Board of Agriculture and the Local Government Board have to face. It is that the Board of Agriculture can only deal with diseases which are communicable between cattle, and the Local Government Board can only deal with diseases in men which are communicable to other men. Consequently, while I desire to see action taken to stamp out these fatal diseases, I should be very sorry that the power should be placed in the hands of any other Department than the Department of Agriculture. I think it is vital that the Department of Agriculture should be charged with the collection of statistics in reference to this, and that, having collected statistics, that Department should act upon them, and should have executive authority to stamp out diseases either in animal or in man, which might pass from one to the other or might affect the health of either. I therefore think it is desirable, that the Federal Government should have this power under the control of the Department of Agriculture, and should deal with it rather than that it should be left, as has

been suggested, to be dealt with by the Provincial Governments alone. I am glad to hear, that there is some chance of the establishment of experimental stations to test the communicability of diseases in this domain. We have spent a great deal of money on the Experimental Farm, and we have spent it wisely and judiciously, but I say that the necessity now is to expend some money on experimental stations in order to endeavor to ascertain the causes and to endeavor to avert the diseases which have afflicted us. I have great pleasure in seconding the resolution.

Dr. PLATT said: The mover of the resolution has brought to the attention of the House, a matter which surpasses in importance many of the subjects which we have had to discuss during this and previous Sessions. I am glad to see that one layman, as he calls himself, has taken an interest in this subject, and expressed his views upon it. I cannot say that I will support the motion as it stands now, but I very heartily indorse the object of the mover. For many years this subject has been discussed in the Parliament of Canada, and, unfortunately, we have failed to see that increasing interest taken in it which its importance demands. Great advancement has been made of late years in sanitary science, and in the knowledge of preventive medicine; and we may hope that, in the near future, we shall see beneficial results arising, and steps being taken on the part of the Government in the direction indicated in this motion. The objection which is most likely to be taken, and which has heretofore proved fatal to similar motions, has been the difficulty of dividing the responsibility and work between the Provincial and the Federal Legislatures. I confess that there is some difficulty on that point but so far as mortuary and vital statistics, the foundation of all sanitary work are concerned, there can be no doubt that the Dominion Government have it in their power, it is, in fact, their duty to provide the means for the collection of such statistics. Indeed that has been recognised by this Parliament, and a Department of Statistics has been organised, and for several years a considerable sum of money has been expended for the collection of what is termed mortuary statistics. I have already intimated, during this present Session, that, in my opinion, we have either done too little or we have been doing too much; we should either move forward from where we are now standing, or we should cease to expend \$10,000 a year for providing mortuary statistics. It is acknowledged on all hands that the basis of all sanitary work throughout the country must

of necessity be statistics, and statistics which are incomplete, or imperfect, or incorrect, are of very little utility. I am sorry to say that the opinion prevails, and not without reason, that the mortuary statistics furnished by the Department of Agriculture are not reliable, and cannot be of very much service to any sanitary board. We continue to collect them from a certain definite number of points, but they give us a very inadequate idea of the ravages of diseases throughout the country generally, or of the number of deaths which occur from certain diseases in various localities. Now, I will take the trouble to compare the death rate, and the number of deaths, as announced in the last return of mortuary statistics furnished by the registrar of the Province of Ontario, with those which have been furnished by the Dominion Government, to show the difference between the results arrived at by those two authorities in respect to the same cities. In the city of Toronto, we find, according to the report of the Department of Agriculture, that in 1888 there were 2,498 deaths; whereas, according to the registrar of the Province of Ontario, there were 2,839 deaths. The rate per 1,000, according to the Dominion Government, is only 14.97, and, according to the Ontario authority, it is 20.3. You see that a great discrepancy exists with regard to the city of Toronto. Then, take the city of Hamilton. The Dominion Government reported 823 deaths, and the Ontario Government, 720; rate per 1,000, according to the former, 18.57, and according to the latter 16. For the city of Ottawa the Dominion statistics returned 923 deaths; the Ontario statistics 958, not a great discrepancy. The death rate was 23.9, according to the latter, and 22.51, according to the former. As we go on through the list we find in the smaller towns, where statistics are given by the two separate boards, and where both authorities collect their returns from officials of cemeteries, there is very little discrepancy indeed; but in the larger cities where both boards strive to arrive at correct calculation, we find a great discrepancy. This throws distrust upon all the statistics, and shows the necessity of organising a new and better system whereby we may arrive at conclusions that will assist sanitarians much more than the present system aids them. I think there is also a feeling that much more should be done in the way of providing instruction for the people, and assisting in lessening the deaths from various diseases. As I have already stated, they have found in England and elsewhere, that without statistics of a reliable char-

acter, this cannot be done. I will read from the annual report of the Registrar General for England, for 1887, in which he says :

“The Registration Act of England came into force in July, 1837, and was opposed by the clergy and the uneducated masses, and supported by the medical and legal profession, particularly by the former. The Royal College of Physicians and Surgeons issued a circular pledging themselves, and asking all their members to do the same, to give in every instance that might fall under their care, an authentic name of the fatal disease. The immediate benefit of medical knowledge to be derived from this action on their part, was a more accurate knowledge, not only of the comparative prevalence of various mortal diseases as regards the whole of England and Wales, but also of the localities in which they respectively prevail, and the age, sex and condition of life, which each principally effect ; but a far greater benefit than any foreseen by these medical authorities has, in reality, been obtained from it, namely, an addition of more than two years to the average span of life of the inhabitants of England and Wales. That such an addition has, however, been made, and that it has been the result of the Registration Act that came into force in 1837, is beyond all doubt. For it is the registration of deaths and of their causes that has made sanitation possible.”

I am glad the mover of this resolution has relieved me from the necessity of going over the statistics with regard to the death rates of England and Canada ; I am prepared, however, having gone over the same without his knowledge or consent, to verify the figures he has given to this House. Some very interesting things might be stated with regard to the benefits which might accrue from the establishment of a better health board for this Dominion. Previous speakers have stated that we, in Canada, are somewhat behind other countries. That is evidenced by our comparatively high death rate—not so high as some other countries, but the fact that the death rate in Canada exceeds the death rate of populous England, with her great cities, shows that there is something lacking in our sanitary system. The mover of this resolution has correctly stated that in the twenty-eight cities and towns from which we have reports, the average death rate last year was 21 per 1,000, while in England it was only 17·4. Upon the same method of calculation we find that if we take the previous year and compare it with the last year reported upon, if the death rate of Canada was reduced to that of England, we would save annually 20,000 lives. To show that very much can be done towards saving life in this country, we have only to look at the large number of deaths that

are caused by what we term zymotic diseases—all preventable—which principally affect children. The death rate of children in this Dominion is something amazing. The birth rate is not very much behind that of other countries of a similar population. There are over 150,000 children born in Canada every year and over 400 every day in the year. Taking the whole of the twenty-eight cities reported upon last year, we find there were 18,355 deaths reported, of which 9,645 were under the age of five years, proving conclusively that the diseases which attack children are in almost every instance zymotic or preventable diseases were the causes of death; a strong argument, indeed, for the establishment of a sanitary hygienic bureau of some kind. The general impression, of course, is that there are few diseases which it would pay the people to look after very carefully. For years the whole community has been terribly frightened of small-pox, while other diseases, which have every year carried off thousands and tens of thousands, have been considered as of small importance. Taking the public records, it appears that not a single death from small-pox was reported last year, while there were from scarlet fever 51; measles, 140; typhoid, 381; diphtheria, 1,182; or 1,758 deaths from these four preventable diseases in a population in these twenty-eight cities of 700,000. If the deaths were in proportion throughout the rest of Canada, there were 14,000 deaths during the year from those four preventable diseases. A very interesting document came into my hands some time ago prepared by an English authority, entitled “Loss of Wealth by Loss of Health,” and if hon. members were to examine the pamphlet carefully they would come to the same conclusion as that reached by the distinguished author of the pamphlet, that we would not be losing but saving money if we expended a much larger sum for sanitary purposes in this country. Taking England, the writer shows that the average of sickness among working men is two and a-half weeks per year. Taking England and Wales, he places the number of working class families at 4,259,000, the bread-winners of which earn daily wages amounting to £8,819; the loss from sickness, according to this computation, reaches £13,307,000 per annum, or £1,000,000 per day of sickness for these people. Manchester offers a very striking example of what may be done towards protecting the people against disease and saving vast sums on this account. That city has a working population of 92,500, which earn weekly wages of £115,700; therefore the loss to the

working families amounts to £20,000 per day, for each day of sickness *plus* the loss to the employers and so forth. The cost of the Health Department of Manchester for last year was £87,000 for hospitals, disinfection, drainage, sewerage, and so forth. The saving of life effected is estimated by the best statisticians at 2,301 lives, one thousand of these being between twenty and seventy years of age. The total saving was £300,000 obtained at an expenditure of £87,000.

As I have already intimated, I believe it to be the duty of the Government to establish on a firm basis a Department for the collection of such statistics as sanitarians wish to use; mortuary statistics of themselves are not sufficient, we want vital statistics, we want reports of births and marriages, of epidemics and of the ravages of preventable diseases throughout the country, and then we will have a foundation upon which the Provincial authorities may act if we do not act ourselves. I have no doubt whatever that this Government has full authority to institute measures to educate the people on this subject. There is nothing to prevent the Dominion Government spending a large sum in the distribution of weekly or monthly bulletins and reports relating to epidemic diseases throughout the country, and the distribution of literature teaching the people the various methods by which these diseases may be prevented, and also to provide for the establishment of a hygienic institute and bacteriological laboratory for the investigation and prevention of these diseases: and in that way they can do a very large amount of work which is now attempted to be done by the Provincial authorities, and thus perform at one centre what otherwise will have to be done by each province. So far as coercion and the enforcement of different measures are concerned, I grant this rests with the municipalities, acting under the Provincial Legislature. That portion of the work can safely be left to them, but that is no reason why this Parliament and this Government, acting in concert with the Local Legislatures, cannot very largely increase the efficiency of the regulations now existing in this country. It had been said, that this question is always lightly considered by Parliament. I am sorry to say that, in the past, this has been the case; but I trust the time has gone by when the Parliament of Canada will treat lightly such an important question as that now under discussion. In every Province, and in this Dominion, we find the legislatures almost unanimously adopting measures to prevent death from contagious disease in animals when an outbreak occurs, and

this House should not be more negligent in undertaking similar measures when the human family is concerned; and we are well aware that if an epidemic among cattle occurs in any district, an officer is at once despatched to ascertain the cause, and to take such steps as are necessary to prevent the spread of the disease. Even simple isolation, if required by statute and enforced by the municipalities, would in almost every instance, cut short the ravages of many of the fatal epidemics which have carried off thousands and tens of thousands in this country. I am heartily in accord with the object aimed at by the mover of this resolution, and I hope that the Government, although they may not see fit to accept the motion as it is worded, will take the subject into consideration, and that in future Sessions we shall see an increasing interest taken in this very important subject.

DR. SPROULE said: The only excuse I have to offer to the House for occupying its time in discussing this question, is the importance of it. An able writer once said that health is the *summum bonum*, and that, when lost, no consideration is too high for its restoration. In all well ordered and civilized countries where the Government of the state is discharging its duty to the people, one of those important duties is to guard the public health. Governments are said to be entrusted with the protection of the life and property of the people. It is not simply that life is to be protected from the hands of the assassin, but it is likewise to be protected from those lurking diseases which prevail in different parts of the country, and which carry off their victims by thousands. I recognize that it is as much the duty of the state to protect life from these diseases as it is from the dagger of the assassin. England considered this question over fifty years ago, and owing to its importance, entered upon legislation to remedy the evils and prevent these diseases. From that time to the present over fifty Acts of Parliament have been passed in the direction of establishing health bureaus or hygienic bureaus for the purpose of ameliorating the condition of the people or preventing the spread of disease. England has been legislating on this question for a great many years, and the result has been that she has reduced her rate of mortality something like 23 per cent. France has dealt with the same subject in her great hygienic institutions, and the result has been a reduced mortality of over 17 per cent. Germany has dealt with the subject in a very elaborate and comprehensive way, and the satisfactory result has been obtained of reducing her mortality 22 per

cent. In Switzerland a similar result has followed. Returning to the continent of America, we find that the Republic to the south of us has been establishing State boards of health in connection with her Federal Hygienic Institute, and in the State of Michigan the mortality has been reduced 17 per cent.; in Massachusetts, 23 per cent., and in the different other States the reduction has been in proportion to the care and attention given to this important subject. The experience of all other countries, therefore, proves to us that the adoption of a broad sanitary system has been beneficial, and is it not time that we, in Canada, should consider the matter? It is true that we have Provincial Boards of Health doing an admirable work; but in conjunction with them, I think we should have a National Health Institution, which would direct hygienic investigations. This Government assumes part of that sanitary work, to-day, in the collection of its statistics, but we believe that this work should be extended, and that we should not only collect such statistics as have been, so far, obtained by the Minister of Agriculture, but that we should have reports from the various Provincial Boards of Health, and embody these reports in our own—not only reports of mortuary statistics, but reports in connection with those zymotic diseases which are so destructive, not only in towns and cities, but in rural localities as well. The Federal Government now goes a little farther than this statistical work, and we have a Department for the purpose of analysing adulterated food. That is really done for the purpose of preventing disease. Therefore, at present, this Government are attending to two branches of this important work, although not to such an extent as we believe they ought to. If, under the Federal system, we are entitled to attend to other branches of the subject, why should we not go a little farther and attend to those which are equally, if not more, injurious to health, than the adulteration of food? It appears to me that it would not be interfering with the rights of the Provinces to do so. I think that some understanding might be arrived at between the Provinces and the Dominion so that they could co-operate with each other in doing this work much more efficiently than it is done to-day. Our sanitary legislation is yet in its infancy; but, notwithstanding that, I believe that great good has been already accomplished. We believe that at least a quarter of the deaths which take place in the country might be prevented if we attended to this matter on a larger scale, and sought the co-operation of the medical men of the country. If we

can prevent one death out of every four which takes place now, it means, as my hon. friend said, a saving of 20,000 lives to the state every year. If we could, how much better would it be for the state than the importation of 20,000 immigrants? Those now living in our country, acquainted with its ways and manners and customs, are schooled in all which enables them to add prosperity to the state, and to make life a success in the Dominion of Canada. I, therefore, say that the saving of these lives would be of much more value than the importation of the same number of individuals from any country. In addition to that we would prevent a great amount of human suffering, and save to the state the large number of days' labor which is lost every year, by reason of the sickness which results from preventable diseases. There is no doubt that every serious case of sickness tends to make life shorter to the patient, and even after the recovery the system is not usually so strong as before to resist the ravages of disease. How important, then, is it not? that the state should establish some institution which would co-operate with the local boards of health in combatting these serious diseases which are so prevalent to-day. It is a fact which every medical man in this House will admit, that diphtheria, one of the most prevalent and destructive diseases we have in the Dominion of Canada, might be reduced fifty per cent. if only proper precautions were taken to prevent its spread, and to stamp it out in any locality where it may become prevalent. We have a competent board of health, we have not one case of diphtheria, where we had three or four some ten years ago. That change has been brought about very largely by the perfecting of these local boards of health and by compelling the local municipalities, as soon as any epidemic disease shows itself in a locality, to report it to the local board of health. We have no statistics or reports showing where diseases are most prevalent, so that something might be done to stamp out any disease as soon as it makes its appearance. That might be done with regard to small-pox, scarlet fever, diphtheria, whooping cough and other epidemic diseases which sweep over the country with such destructive effects. I think the Federal Government should take some action in this matter. I think they have power, under the British North America Act to do so; and if they have not the requisite power, I think it is high time that steps should be taken to have the constitution so amended as to give them power to co-operate with the Provincial Governments

for the purpose of elaborating some hygienic organization to take charge of this work and effectually carry it out. I think that such a system would effect most important results to the state, that it would save more money than any one has any idea of, more suffering than perhaps one-fourth of the medical men in this country could save, more lives every year than we are bringing in by immigration, and more wealth than would pay a very large share of our national debt.

Sir JOHN A. MACDONALD then said : Mr. Speaker, the importance of this subject cannot well be over-estimated ; and if there were any doubts as to that, the able and impressive speech of my hon. friend who moved this resolution, supported, as he has been, by the remarks made by other hon. gentlemen, would convince us that it is a subject which should not be overlooked. It has not been overlooked, however, by the Dominion Parliament ; and as far as the Government have been able to act under the powers given to them by the British North America Act, substantial steps have been taken for the purpose of ascertaining the best methods of preventing the spread of disease. The resolution asks that the Federal Government should establish a health department with a responsible head. Well, we have a health department in the Department of Agriculture, and it would not advance the purpose of the resolution at all to establish a separate department, giving another member of Parliament the title of Minister of Health. The Minister of Agriculture, in the first place, is given charge of the census and statistics, and also of quarantine ; and the remarks of the hon. member for Shelburne (General Laurie) show the importance of having these subjects under one head. He has pointed out that in England there are two departments, one looking after the diseases of men, and the other looking after the diseases of animals ; but, as it is now ascertained beyond a doubt that diseases are communicable from man to animals, and from animals to man, it is of great importance that the whole subject of health should be under one head. One of the difficulties to be encountered in this matter arises from the divided authority of the Federal Parliament and that of the different Provinces. I think, if I remember aright, that before 1872 there were certain statutory powers given to the Federal Government on this subject ; but it was found, from the nature of the

division of powers, that the officers who could be best utilised for the purpose of collecting mortuary statistics, and who could really aid most effectually in the stopping of the spread of diseases, were officers of the Provincial Governments—so much so, that Parliament repealed the clauses giving those special powers to the Federal Government. The same reason which induced Parliament then to throw the responsibility principally upon the Provincial authorities exists at this moment. . . . The Federal Government have spread throughout the country only a few Custom house officers, excisemen, and such officers, and if the responsibility of attending to this subject were thrown upon the Federal Government only, it would be absolutely necessary to appoint a staff of special health officers at an enormous expense, who would not be able to do the work so well as the Provincial Governments with their extensive machinery.

It has occurred to me, after listening to the very able speeches of the hon. gentlemen who have spoken, that the best plan would be—and I would suggest it to my hon. friend before asking him to withdraw his resolution, after having fully impressed Parliament with the subject—to have a convention, to which the Federal Government would ask the various Provincial Governments to send representatives, for the purpose of endeavoring to frame some united plan for exercising the various powers conferred upon them by the Constitution in such a manner that they could unite in one system and carry it out as efficiently and inexpensively as possible. It has occurred to me only since I have heard this discussion, that the general feeling of the House is that that suggestion could well be carried out, and we might combine the Provincial and the Federal Governments in the adoption of some united system. I again say that I think we owe a debt of gratitude to my hon. friend (Mr. Roome) for bringing up this subject, and I think every member, no matter on which side of the House he may be, will agree with me that it has been well and impressively placed before the House, and in such a manner that we cannot ignore it. I now ask my hon. friend to be satisfied with the progress the subject has made in the House, and to agree that his motion should be withdrawn.

Mr. LAURIER then made a few remarks.

The motion, then, with the leave of the House, was withdrawn.

DUST ! WHAT IS IT—WHERE MOST ABUNDANT—ITS EFFECTS AND  
HOW TO GET RID OF IT ?

WHAT are the myriads of particles we see dancing in the sun-beam that penetrates a darkened room, and which we necessarily draw into our lungs at every breath? They are bits of almost everything, living or dead, that is found on the surface of the earth, thrown off by the functions of life or rubbed or worn off by friction;—bits of mineral, and of the vegetable and animal kingdoms, including man himself. Besides these, dust often contains living forms, animal and vegetable—animalculæ and bacteria. From the human body—from ourselves and our neighbours—and from the domestic animals are continually given off particles of cuticle and of epithelium from the surface of the air passages, sometimes bearing infections, with bits of hair from the body and from the clothing.

An important communication was made to the Royal Society of Edinburgh at its fifth ordinary meeting, on February 3rd last, by Mr. John Aitken, F.R.S., (from the British Medical Journal February 8th) on the number of dust particles in the atmosphere, with remarks on the relation between the amount of dust and meteorological phenomena. With his special apparatus, the air had been tested at various places on the Continent last summer. He found that at Hyères the number of particles per cubic centimètre varied from 3,000 up to 24,000; at Cannes the number varied from 1,500 particles, when the wind was blowing from the mountains, to 140,000 when the wind was blowing from the town; at Hyères the sea air contained 1,800 particles, and at Mentone 5,000. Observations on the Righi were striking, the number of particles falling, in places, as low as 240, and varying from that up to 2,300, and doubtless on this fact depended the peculiar brilliancy and transparency of the atmosphere in this locality. Observations made in Scotland and elsewhere indicated how extraordinary was the pollution in the air due to human agency. In regions clear of human habitations, the number of particles fell as low as 200, while in and around villages the

particles amounted to thousands, and in town to hundreds of thousands. His lowest observation was 200 particles per cubic centimètre. It was still a problem whether that was the lowest limit attainable, and how much of that was of cosmic origin and how much was due to natural pollution. The presence of clouds at great elevations proved that dust existed in the upper atmosphere, but there must always be a considerable quantity of cosmic dust present from the the millions of meteors which fell daily. He had reason to believe that dust condensed moisture before the air was saturated, and this led to a loss of transparency, because the dust particles, by condensing the moisture in the air, increased in size. There was no doubt that haze was often largely due to dust. The condition of the air during fog had been tested, and in all cases a large quantity of dust was found. The explanation of fogs probably was that calms increased the quantity of dust in the air; the dust increased the radiating power of the air, which soon got chilled to the condensing point, when fog was formed. Fogs were more frequent in towns on account of the greater amount of dust in the air.

The effect of inhaling dust of different kinds in the air, as Parkes says, "is a far more potent cause of respiratory diseases than is usually admitted." It is well known that diseases of the lungs cause vastly more deaths than diseases of any other organ. Doubtless the breathing of dust has much to do with this. It causes irritation of the delicate lining of the lungs which gradually increases until disease becomes established; and it may be that it gives rise not unfrequently to that condition by which the bacillus of tubercular consumption is enabled to take root and develop in the lungs.

The importance therefore of making provision for the destruction, so far as possible, of all dust from manufactories, of well paved, cleanly kept streets and lanes, of grassy yards and of living rooms free from dust is obvious. The efforts of health boards might be profitably directed more



than heretofore to these indicated needs. It may from the above be readily seen that well paved and clean streets in a city are not only essential to the comfort but to the health of the people.

Private effort too, we may here note, is very desirable for the purpose of lessening the accumulation of dust in our dwellings. The common practice of sweeping carpets and dusting furniture with dry broom and duster is of little use, removing but little dust, and often is harmful. Carpets should be much smaller than the rooms and so arranged that they can be readily and much more frequently taken up and shaken out of doors than is commonly done. Slightly damp, not wet, dusters should be used to take up the dust, instead of simply wiping it off the furniture with a dry duster onto the carpet again; the damp duster, when all the dust it will retain has

been taken up, to be well shaken out of doors. In this way, with frequent flushing of the rooms by opening windows and doors when the wind is blowing, and the outer atmosphere is fairly free from dust, dwelling rooms might be kept much freer from dust.

Personal cleanliness, by means of frequent bathing, and washing of the clothing, will of course decrease the quantity of dust given off from the human body. And herein lies one great advantage of abundance of free public baths and laundries. The advantage too of breathing only through the nostrils, keeping the lips closed, is apparent, these passages being so constructed as to constitute good strainers of the air which is drawn in through them. John Catlins' little book—"Shut your mouth," had a mission.

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#### THE CHOLERA—POSSIBILITY OF IT IN CANADA—ITS PREVENTION.

THE probabilities appear to be that the Cholera will again find its way into Europe this summer. The London *Lancet* says, there seems to be little doubt of the advance of cholera in Asia Minor, and therefore of the increasing probability of its invading Europe; and Dr. Jules Rochard, in an article in the *Temps* on the water supply of Paris, sounds the note of alarm, urging upon parliament to pass, as quickly as possible, the bill under discussion for bringing into Paris the Vigne and Verneuil spring water. He says, at the present moment there is an enemy to be kept at bay, the Cholera. It is true, sanitation has made such progress in Europe of late years that the danger of the spread of the disease has been greatly lessened. But should it become prevalent in Western Europe, it would probably cross the Atlantic. Quarantines are not so effectual against Cholera as against many other diseases. It would therefore be well for the people of Canada, although there is no occasion whatever for alarm, to be prepared for a visit from it. If well prepared for it here, we need have no fear of its doing much harm. No disease

perhaps is more truly a "preventable disease" than Cholera. The British Medical Journal, of February 8th, in a timely editorial on "Precautions against the advent of Cholera," says: "Sir Robert Rawlinson has well earned the title to be listened to on public health questions by long and good service as a sanitary engineer, and by the strain of good sound sense which almost invariably underlies even the most loosely thought of his numerous public utterances. . . . Medical investigations have proved that cholera is essentially a filth disease; that it is mainly conveyed by impure water supply and contaminated food; that it makes its places of selection in crowded populations, where scavenging is defective, where personal cleanliness is neglected, and where drainage and sewerage are inadequate, and scavenging and surface cleaning unequal to the necessities of healthy life. Sir Robert very wisely says in homely words, which will have a good effect if they are taken to heart. Popular readers, that the secret of the prevention of all filth diseases such as cholera lies in the purification of the soil, air, and water;

in the increased activity of local authorities, in sewerage, house draining, street paving, and in the removal from villages and towns of many sources of nuisance—such as common privies, movable pails, slaughterhouses, cowsheds, and dairies—from places where they ought not to be. He insists, wisely too, on the local and general inspection of our food supplies, and especially of our water supplies. By attention to these principles, and by carrying out in the early life of individuals, in the regulation of the home and in the governing of communities, it is now—thanks to the investigations of Snow, Simon, Farr, Netten, Radcliffe and others—pretty clearly established that cholera may be successfully kept at bay, at least in European countries (and still more so

on this Continent); no other system of precautions will avail, and a reminder that it is so is just now timely and useful. Nothing useful can be expected from sanitary cordons or quarantine; much may be attained by civic sanitation and personal hygiene." It is not then any too soon for municipal health authorities, rural as well as urban, to be up and doing—putting their house in order—draining, scavenging, disinfecting, lime washing, and well-cleaning and inspection of water supplies; in short to provide for the early destruction of every trace of waste organic refuse of every sort; while it is never too soon to adopt rules of personal hygiene, as in accordance with our article on Avoiding and Preventing Infection in this JOURNAL of last month.

A FAVORITE HABITAT OF DIPHTHERIA.—ITS REMOVAL.

AT the fourth annual meeting of the Association of Executive Health Officers held in Brockville in August last, Charles McClelland, M. D., medical officer of Trenton, read a paper entitled "A Favorite Habitat of Diphtheria." He said: We gather from the observations of writers on diphtheria, both in Great Britain and elsewhere, that the disease is much more prevalent in rural districts—especially where the rainfall is great without efficient drainage—than in populous towns and cities, and one writer of great experience asserts that the number of fatal cases in rural districts is nearly three times greater than in cities. The late outbreak in our own unorganized townships has emphasized these remarks. A quite satisfactory explanation of this statement has yet to be discovered, though the same writer remarks that whatever conditions promote fungoid growth appear to favor the incidence and persistence of the disease. . . . "I now come to point out a favorite habitat of the disease in my own locality. This district has been settled for more than half a century, and some of the houses of the pioneers or their immediate successors still serve as dwellings for laborers on farms and in vil-

lages. They are in all stages of decay, especially well advanced where the floors and foundations rest, as most of them do, on damp soil with no air space beneath and where no sunlight can penetrate. The under surface of the timber is found on removal to be covered with white or gray leathery fungus, not unlike the diphtheritic membrane itself. The old homesteads of the better class, though presenting a trim and well painted exterior, are, like the cabins, without under ventilation, and present the same fungoid growth hanging like flat icicles beneath the floors. A case where one was recently destroyed by fire was so remarkable in this respect as to excite the curiosity of the workmen who removed the foundations.

"Although these once happy homes of a by-gone generation are interesting from an historical point of view, yet I have been so often called to see cases of diphtheria in them that I seldom pass one without wishing it had long since been converted into firewood to warm its unfortunate tenants in a new and healthier home. They are mapped out on my memory as plague spots where diphtheria is surely lurking. Most of the cases in my practice began in one or another of such houses, though they

have often spread from them to more favored residences, and I have annually been called to attend children, often of different families, who have inhabited them at different times. I have similarly, in the old homesteads, attended grandchildren on summer vacation who have arrived in perfect health.

“I am persuaded that the absence under these buildings of dry air and sunlight, which so much favors fungoid growth, is the principal cause of the occurrence of the disease, for we have a large tract at the mouth of the Trent, formerly covered by water, now filled in with sawdust to the depth of many feet, on which rows of workmen’s cottages for the employees of the extensive sawmills have been erected either on piles or substantial stone foundations with large ventilators in which it rarely occurs. It therefore appears, from local observations, that what promotes fungoid growth favors the incidence and persistence of diphtheria.”

This JOURNAL is entirely in accord with the above view as to conditions favorable to this disease, as readers of it must know and Dr. McClelland has brought to notice

a very important subject, indeed, which should receive attention at the hands of health boards, but instead of destroying “these once happy homes” mentioned by the doctor, the JOURNAL (the editor of which has on many occasions been called upon to examine, and give an opinion upon the best means of improving, houses of a similar character) would recommend that, when of much value they may be raised well up from the ground and all decayed parts about the foundation be carefully removed and renewed; that the ground under and around be well underdrained and provision made for ventilating well all parts beneath the rooms, whether for cellar or not. And in this connection we would repeat that the construction and use of cellars should be forbidden by statute unless of entirely different construction from ninety-nine in every one hundred now in common use,—that is, unless they be made of practically imperishable material throughout, such as stone and cement, well lighted and ventilated constantly, and the ground for a yard or more beneath the cemented floor thoroughly drained.

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#### MISCELLANEOUS NOTES AND EXTRACTS.

##### A SANITARY WASH-HOUSE.

Albert Shaw has a most suggestive paper in the *March Century* entitled “Glasgow; a Municipal Study,” from which we quote the following: Not the least important feature of the health department’s work in Glasgow is the Sanitary Wash-house. A similar establishment should be a part of the municipal economy of every large town. In 1864 the authorities found it necessary to superintend the disinfection of dwellings, and a small temporary wash-house was opened, with a few tubs for the cleansing of apparel, etc., removed from infected houses. For a time after the acquisition of Belvidere a part of the laundry of the hospital was used for the purpose of a general sanitary wash-house. But larger quarters being needed, a separate establishment was built

and opened in 1883, its cost being about \$50,000. This place is so admirable in its system and mechanical appointments that I am again tempted to digress with a technical description. The place is in constant communication with sanitary headquarters, and its collecting waggons are on the road early every morning. The larger part of the articles removed for disinfection and cleansing must be returned on the same day, to meet the necessities of poor families. I visited the house on a day when 1,800 pieces, from 25 different families had come in. In 1887, 6,700 washings, aggregating 380,000 pieces, were done. The quantity, of course, varies from year to year with the amount of infectious disease in the city. The establishment has a crematory, to which all household articles whatsoever that are to be

burned after a case of infectious disease must be brought by the vans of the sanitary department. The carpet-cleaning machinery and the arrangements for disinfection by steam, by chemicals, and by boiling I cannot here describe. As net results of the sanitary work may be mentioned, the almost entire extinction of some of the worst forms of contagious disease, and a mastery of the situation which leaves comparatively little fear of wide-spread epidemic in the future, in spite of the fact that Glasgow is a seaport, has an unfavorable climate, and has an extraordinarily dense and badly housed working population, with, too, the steady decline of the total death-rate, and its remarkably rapid decline as regards those diseases at which sanitary science more especially aims its weapons.

#### THE DANGERS OF INFECTED MILK.

Dr. Russell, medical officer of health of Glasgow, lectured on the subject "Some Relations of the Business of the Dairy Farmer to Public Health" to the members of the Glasgow and West of Scotland Agricultural Discussion Society, on January 15th 1890, (British Medical Journal). Dr. Russell began by explaining how milk, while only one of the many media for the transmission of disease, was the most dangerous, since it was capable of affording nutrition for the propagation of the disease as well as its distribution. He referred to Lister's experiments as proof of the fact that in the milk of the healthy cow there was no inherent putrefactive or fermentative property. Consequently the reproduction of the conditions of Lister's experiments as far as possible in the dairy farm was the guarantee of the public safety—the pure air of the country, the carefully washed teats of the cow, the clean hands of the dairymaid, and the carefully washed dishes. Dr. Russell next spoke of scarlet fever, enteric fever, and tuberculosis in relation to milk. Since 1857, 69 epidemics of enteric fever traceable to milk had been recorded, affecting 3,900 persons. The epidemics of scarlet fever due to milk showed that the existence of a family of young children at a

farm implied a constant threatening of possible mischief to the farmer or milk agent, and demanded constant and suspicious circumspection as to health, not only of the actual workers, but of their families; while the epidemics of milk scarlet fever, not traceable to infection of the milk from a human source, led him to the practical conclusion that milk produced by a cow which was not absolutely healthy, constitutionally and locally, should not be used as human food. The slightest disease in any cow should be accepted as a sufficient reason for excluding the animal's milk from the common stock. Dr. Russell referred to the recent American investigations, tending to show that the bacilli of tuberculosis were present and active, in a very large proportion of cases, in the milk of cows affected with tuberculosis, but without discoverable lesion of the udder, and urged upon farmers the duty of diminishing tuberculosis by giving cows increased air space and better ventilated byres, by judicious feeding and milking and scrupulous cleanliness of the hyre and the cow itself.

#### VENTILATION AND MICRO-ORGANISMS.

Dr. Richard Stern says (Archiv. f. Hygien) that in still air particles of dust containing bacteria are deposited on the floors of rooms, and the atmosphere becomes almost free from germs in one or two hours. If the floor and the furniture are then washed with an antiseptic solution, the room may be regarded as disinfected. A system of ventilation which enables the air contained in a room to be renewed about four times every hour, has very little influence in carrying away the germs floating in the air. A strong draught which changes the air seven times within an hour, secures rapid and complete removal of the germs from the room. Attempts to throw down the germs in still air by the introduction of steam into the room give no satisfactory results, and sprays are also worthless for the purpose of disinfection of the air. The ordinary customary ventilation of clothing, bedding and carpets is useless, unless they are at the same time brushed and beaten.

## THE LANCET ON THE ART OF EATING.

There is little if any doubt that cooking has been employed by man in the preparation of food from the remotest ages. It is probable also that empirical ideas of what conduces to comfort in diet early formed the basis of a gastronomic art not without some relation to physiological truth. It has been reserved for later times, however, and for civilized man, to discover and formulate a regular method of dining. By a process of natural selection, the work of elaborating this system has in great measure passed into the hands of our French neighbors, who have thus been able to develop an art characteristically their own. Our simpler national customs relating to the table have, in common with those of most other peoples, attracted less attention, though it is not likely that they will ever disappear. It is needless here, however, to discuss in detail each local peculiarity. We should rather aim at understanding those common principles which underlie all rightly constituted systems, and give to each its value as an aid to wholesome nutrition. The time of eating is a matter of no small consequence. This is to some extent subject to individual convenience, but we may take it that as a general rule not less than five hours should separate one meal from another. The short interval of rest usual after meals will commend itself as being in strict accordance with physiological necessity. The quantity and quality of food taken also require careful attention, and these again must be regulated by reference to the work to be done by a given person. Some difference of opinion has always existed as to the proper daily allowance of meat. We shall probably do justice to the digestive powers of most persons, however, by advising that only one substantial meat meal be taken daily. More than this would tend, if continued, to overload the tissues with digestive products, and less would hardly suffice for full nutrition. Drink, if alcoholic, should be sparingly taken, or not used at all. Cookery has in these days been elaborated almost to excess. Variety and delicacy are carried to an extreme, and we should probably gain rather than lose if plainness combined with care were adopted as our

## NOTES ON HEALTH REPORTS.

FROM ASHBURNHAM, Ont.—The Medical Officer, Dr. J. Clarke, of Peterborough, reports that no death from infectious disease has occurred during last year, and but two cases—one of typhoid fever and one of diphtheria—during that time. The amount of ordinary or non-infectious illness had also been very limited. There had been only 14 deaths throughout the year, making the death-rate for the village a fraction above  $9\frac{1}{2}$  per thousand. In Peterborough, Dr. Clarke says, it has steadily decreased as sanitary work has become more general and more efficiently performed. "This is the rule everywhere. Even if neglect does not produce illness directly, a polluted air lowers the vitality of the human system so much as to make it the prey of any disease that comes along, as, for instance, the recent epidemic. A great deal of sanitary work has been done during the year." He continues, "I have made it my duty to take every opportunity of instructing householders as to cheap and efficient means of disinfection, not only in contagious disease, but for ordinary and every day use around the house. Earth closets, slop receptacles and anything containing the elements of putrefaction should be disinfected regularly, especially in the hot months."

THE BOSTON (Mass) Health Report for 1889, just received, is in size about like the Montreal and Toronto reports. For twelve years the inspection of live animals and dressed meat at the Boston abattoir had been done by officers of the health department, who were somewhat familiar with the disease among animals; and though not scientifically trained for the work, they had succeeded in detecting and condemning much unwholesome meat which, through the innocence of its owners or otherwise, would have forced its way upon the market. Believing, however, that this work should keep pace with the advanced knowledge of the diseases among domestic animals whose flesh is used for human food, and in the danger of communicating such diseases to man through animal food, the board instituted a new order of inspection on the 1st of October, and Dr. Alexander Burr, a recent graduate from the Harvard Veterinary School, was appointed as inspector. There are now about three hundred and fifty thousand loads of garbage, ashes, street sweepings, and other miscellaneous *debris* gathered up by the city teams annually and carted away to different places and for different uses. The annual cost to Boston in handling this, is about five hundred thousand dollars, about one hundred thousand of which is spent in collecting

EDITORIAL NOTES.

THE PUBLIC HEALTH DISCUSSION IN PARLIAMENT.

garbage. The board of health recommend that the Mayor be authorized to appoint a board of three sanitary experts, who shall consider and report, within six months from their appointment, the best method and specifications for ventilating the school-houses and of disposing of the excreta therefrom. The chairman of the Board of Boston is a physician, Dr. Durgin, who has now occupied the position many years. Besides him there are five high class physicians connected with the board, a city physician, an assistant physician, a port physician, and an assistant, and a medical inspector. Fifteen inspectors are constantly employed and more are called for, especially for inspecting the 8,000 tenement houses of the city.

FROM ST. PANCRAS (Eng.), with a population of over 244,000, the medical officer, Dr. John Sykes, reports the mortality, for the first time down to 19 per 1,000. Dr. Sykes seems inclined to regard school-closing in the prevention of measles as of doubtful value, as an epidemic of measles rapidly expends itself, and by the time it has been found necessary to close the schools, is generally on the wane. An important point to decide is whether the children are any the less likely to come into contact while playing together promiscuously out of school, than they are in the class rooms or school ground. It was found that the very young children not attending school were a fertile source of the disease. Dr. Sykes considers that some earlier action than the crude method of closing schools appears to be necessary, since to close a school is to admit that it has been allowed to become generally infected to a dangerous extent.

IN THE LEEK (Eng.) Sanitary district report, by Dr. Parsons, Medical officer, it is said that, diphtheria, from which the Leek District had been free for three years, had during the past twelve months broken out in several distinct localities. It was limited to a small number of households, but the members of these households have suffered severely, children being especially attacked. In all the households attacked the inmates were living exposed to the influence of grave sanitary conditions, and in almost all the localities the first case was a person who had possibly been exposed to the infection of scarlet fever or measles. At all the houses gross and dangerous nuisances were found, such as a damp, dilapidated, and ill-ventilated condition of the house, defective drains, some in direct connection with the interior of the house; faultily-placed privies, and water supplies exposed to contamination.

WE DEVOTE a good deal of this number of the JOURNAL to a full report from Hansard of the discussion in the House of Commons here, on Monday, March 10 inst., of Dr. Roome's motion for the establishment of a Federal Health Department for the Dominion. Dr. Roome, we may state, did not desire a full department with a Minister at its head, at the present time, but a sort of sub-department, with a deputy or commissioner as its head, in connection with the Department of Agriculture. We give this space the more particularly (and with two extra pages of reading matter) because no other publication (except Hansard) has given anything approaching a full report of the discussion.

THE EFFECT of the discussion upon the House and upon the Country cannot but be very favorable and highly promotive of the public health interests; and Dr. Roome's action may be regarded as by far the most important and decisive that had ever before been taken in Parliament on behalf of the public health. It was not expected that any special action would be taken by Government this year. The First Minister's suggestion to have a conference of representatives of the Federal and the different Provincial governments, in order to settle upon some satisfactory scheme for carrying out the proposal, was probably the best that could be devised. We have no doubt that by such a conference a satisfactory plan could be agreed upon by which the objects of Dr. Roome's motion would be attained, and the establishment of a Central Bureau or Department of health, such as has long been advocated by this JOURNAL and the leading sanitarians of the Dominion, would follow in reasonable or due time.

SIR JOHN MACDONALD, we believe, intends to provide during this year for the conference. Dr. Roome we think is not one to allow the matter at this stage to have a rest, but will push it on until something practical results. It may be reasonably expected that at the next session of parliament a still more important advance will be made by members of the House on be-

half of the public health of the Dominion. From a pretty general canvass of members, it may be stated, it appeared that had not Dr. Roome been asked to withdraw his motion, it would have been carried by a good and probably a very large majority. There appeared indeed to be hardly any opposition to the proposal, members nearly all agreeing, it appears, that some such action was desirable; while Sir John concludes his remarks with the words, "we cannot ignore" the subject.

ON THE REGISTRATION OF DEATHS, Dr. Beaumont Small, of Ottawa, in a paper written for the Brockville meeting of health officers, said: In this paper I wish simply to direct the attention of the Association to the important subject of the registration of the causes of death in this Province. We are now becoming interested in, and commencing to study the statistics furnished by our governments, particularly the mortuary returns of the Dominion Government and the report of the Registrar-General of Ontario on the births, marriages and deaths. Both of these are arranged in a very creditable manner, and provide us with a fund of information which should prove of inestimable value; unfortunately, however, there is a prevailing suspicion that the figures are not trustworthy, that there is a want of care in their collection, and an absence of that accuracy which is so essential to make them of service. The latter of these reports being confined to this Province, this Association cannot do better than investigate, and if found to be defective the fact should be made public at once, and the attention of the authorities directed to the source of the error.

THE SECTION of the Act that relates to the physician was then read by Dr. Small and he continued: From this it will be seen that our duty is very clearly defined, and it is so simple and reasonable that we can have no proper excuse to offer, if it is not observed. Any neglect is the more culpable, when we consider that it is upon our own efforts that the correctness or incorrectness of the returns depend. The question then is, do physicians obtain the blank forms, and regularly furnish certificates of death, or if not, how does the Registrar in preparing his returns, obtain the causes of the deaths that are registered? In the city of Ot-

tawa I regret to say, the returns are collected in such a manner, that as a record of the cause of death, they are of little value. It is only on rare occasions that a physician gives a certificate of death. . . . All the information the Registrar receives is that obtained by the caretaker of the cemetery, from the friends at the time of burial. It is easy to realize how untrustworthy such facts must be.

THE VALUE of infectious disease notification is well illustrated in the following statistics by Dr. Cameron, medical officer of Leeds and Huddersfield, Scotland. In Huddersfield, the deaths from the four diseases, small-pox, scarlet fever, diphtheria and fever, in 1874 to 1876, before notification was compulsory, was per 1,000,000 respectively 23, 940, 123 and 357. In 1886 to 1888, when notification was compulsory, the deaths were 7, 337, 250 and 123, in all cases, except diphtheria, showing a marked reduction. The death rate from measles and whooping-cough, which were not notified were much increased. The following table, given by Dr. Cameron, showing the deaths per 1,000,000 for the eight years previous to notification, and the twelve years after, speaks for itself:—

	Small-pox.	Measles.	Scarlet Fever.	Diarrhœa.
1869-76 . . .	116	330	925	640
1877-88 . . .	4	474	394	243
P. e. decrease, 96.9	...	...	57.4	62.0
" increase, ...	43.6	...	...	43.8

SOME YEARS AGO we received censure from several English medical and sanitary journals (Canadian and United States Journals are more liberal) because in an article in this JOURNAL relative to the value of vaccination, we strongly urged the importance of strict isolation as a prophylactic, and in so doing rather belittled, though unintentionally, the value of vaccination. In January last, a paper on the "Working of the Notification of Infectious Diseases Act" was read before the Glasgow Medico-Chirurgical Society by P. Caldwell Smith, M.A., M.D., D.P.H. Camb., who is Lecturer on Hygiene, Western Medical School, Glasgow, and Examiner in the Sanitary Association of Scotland, spoke as follows:—Take the case of Leicester. It is notorious that this town is the head quarters of anti-vaccination, and that a large proportion of the population are unvaccinated. Yet, in 1888, according to Dr. Tomkins, small-pox was

introduced into the town thirteen different times and in no case did the disease spread, action being taken by the authorities at once owing to the compulsory system of notification. We have only to look at the last epidemic in Sheffield to see what ravages that disease can make even in a well vaccinated population, where no system of notification exists, or where such notification is only voluntary.

THE SANITARY INSPECTOR'S office is a somewhat peculiar as well as an important one and requires to be filled with due care. Dr. B. W. Richardson (of Lonon. E.), at the seventh annual banquet of the Association of Sanitary Inspectors of Great Britain held last month, said: At one time, as editor of a journal, he had anxiously asked, "How is the working part of the Act (1855) to be carried out. The medical officer of health might justify all hopes, but where would he be able to get the men from that he must have in order to carry out the work in detail. The wonder was to know what part of the community could supply those men. At first the great difficulty was to get the men at all, and when got, what was to be their name. The name of sanitary inspectors was no doubt appropriate, but would the public tolerate inspectors unless they were of good manners and not obtrusive. They must be not only men of tact, but must be able to make a good report.

IN DECEMBER we gave, from the annual report of Dr Griffin, M.O. of Brantford, Ont., an account of an outbreak of diphtheria in that city, as follows: In a healthy neighborhood in a clean and tidy kitchen a child was accustomed to play at the kitchen sink, to pump water and watch it run down the water pipe which led to a buried sink pit. She contracted fatal diphtheria; her father took the disease from her and also died; and other five deaths occurred in the house of an immediate neighbor visiting and directly exposed to these cases, and nine other non-fatal cases occurred among the immediate neighbors also exposed. We added that we should be glad if Dr. Griffin would inform us if the sink was trapped in any way. Dr. Griffin kindly writes to us, under date February 15th.: "I never had a chance to find out till to-day, when I found there was no kind of trap whatever."

SPRING CLEANING, around farm premises as well as in villages and towns, should be commenced early and completed before the very warm weather commences;—"and don't you forget it."

THE TURKISH BATH is excellent for cleansing and invigorating the skin, and rendering it elastic and insusceptible to sudden changes of temperature, and hence it helps to prevent "colds." It is especially useful in the spring. In most towns is an establishment for giving these baths. They should be under the supervision of a physician. Our readers in Ottawa may always find an excellent one of this kind at Dr. Logan's, 126 Albert St.

STILL HIS OPINION.—He was a coroner. "I only wished to say," feebly he spoke as he dragged himself out from under the wreck made by a terrible railway collision, "that, in my opinion, nobody is to blame for this accident." And he peacefully breathed his last.

CHARITY THAT BEGINNETH NOT AT HOME.—"And what's all this I hear, Barbara, about your wanting to find some occupation?"—"Well, you see it is so dull at home, uncle, I've no brothers or sisters—and papa's paralyzed—and mamma's going blind—so I want to be a hospital nurse."

#### NOTES ON CURRENT LITERATURE.

IN THE MARCH CENTURY are the most striking pictures which have appeared in the Joseph Jefferson autobiography. The frontispiece is a full-length portrait of Jefferson as *Dr. Pangloss*, there being six large portraits, in various characters. A good portrait of Sothorn as *Lord Dundreary*, and one of Laura Keene, are also given. Jefferson tells for the first time, from his point of view, of the great success of "Our American Cousin," in which he created that famous character of *Asa Trenchard*, and Mr. Sothorn that of *Lord Dundreary*. Three timely and important subjects are treated: Municipal Government in the local government of Glasgow, one of the world's model cities; the subject of Irrigation; and the third in a paper by Professor Fisher on "The Nature and Method of Revelation." The number is also notable for the beginning of the most authentic and original account yet published of the "Prehistoric Remains in the Ohio Valley," and in the next number Prof. Putnam will describe the famous "Serpent Mound." There are also the artist La Farge's second group of illustrated "Letters from Japan"; "Gloucester Cathedral," "Some Wayside Places in Palestine," and a striking paper on "The Sun-Dance of the Sioux."



THE ILLUSTRATED NEWS OF THE WORLD, as the reprint of the Illustrated London News is now called, has given during the last four numbers many highly interesting sketches of Stanley's Emin Pasha's Relief Expedition, and thrilling sketches in the Island of Formosa and on the Thibet Frontier. Also sketches in Madagascar, in Asia Minor, in Burmah, and at Delagoa Bay; the "Gold Fields of British Guiana"; "Recent Explorations in Central Africa"; "Winter Scenes in Newfoundland"; "a Day's Antelope Hunting in Nevada"; "In the Desert," very fine; and "Wreck" and "Rescue of the Crew" of the "Irex" Isle of Wight. Three charming full page illustrations are: "News from Home", "Mariana", and "Going to the Dance". The low price of this admirable weekly is a marvel and surpasses anything of the kind on this continent.

IN THE POPULAR SCIENCE MONTHLY for March the "New Chapter in the warfare of Science." is on "Comparative Mythology," Part II., by Andrew D. White, LL. D., L. H. D.: Other subjects are, "Mission of Educated Women," by Mrs. M. F. Armstrong; "Absolute Political Ethics," "The Laws of Films," "The Psychology of Prejudice," "Origin of Land Ownership," "The Gross and Net Gain of rising wages;" "Concerning Shrews;" "A Chemical Prologue."

THE APRIL number will contain an article by Prof. Huxley "On the natural inequality of men," dealing with Rousseau's idea of the equality of men in the state of nature; and another vigorous answer to Mr. Grant Allen's article, by Miss Alice B. Tweedy, who asks, "Is Education Opposed to Motherhood?"

THE NATIONAL MAGAZINE for March contains the continuation of an interesting article by Professor Schele de Vere of the University of Virginia, entitled "How we Write," giving many historical facts. Rev. J. C. Quinn, LL. D., contributes "Biblical Literature." F. W. Harkins, Chancellor of the National University of Chicago, describes the working of the "National Circulating Library" of 20,000 volumes and a non-resident course of study of the University. A timely article on the Extension System of England is by Rev. C. C. Willett Ph. B. The ladies will be particularly interested in the new Woman's Institute on an unique plan, described in this number. Published the first of each month at 147 Throop St. Chicago, Ill. Sample copy, 10 cents.

THE CANADIAN QUEEN is now having its ANNUAL FREE DISTRIBUTION of choice Imported Flower Seeds, a large package containing an immense number of rarest varieties together with THE QUEEN ON TRIAL FOR THREE MONTHS will be sent FREE to each of our readers forwarding her address and only 3 2c. stamps to cover the ACTUAL EXPENSE. Five trial subscriptions and five packages by mail or express, (free of expenses) to SAME ADDRESS in Canada or U. S., for ONLY \$1.00.

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