

ST. JOHN, N. B., SATURDAY, NOVEMBER 12, 1904.

IT IS NOT HEREDITARY AND IS NOT INCURABLE.

An Address on the Prevention and Cure of Consumption, Delivered by Dr. William Bayard Before the N. B. Association in 1889, and Published Later by the Provincial Board of Health—It is of Special and Timely Interest.

Your Honor, Ladies and Gentlemen: Good health is the greatest blessing that can be conferred upon mankind. And it is beyond the region of doubt that we possess, in a measure, the power of preserving it. But how few realize its value until they begin to lose it.

Hence the State has found it necessary to enact preventive laws. Boards of health have been established to enforce them. And in those places where the laws have been faithfully observed and obeyed, the death rate has invariably decreased. In the year 1837 when the first sanitary laws were enacted, the general mortality was fifty per cent. more than it is at present, and that mortality will decrease in proportion as the laws are obeyed.

England is the mother of hygiene. As an illustration I may say to you that the mortality from consumption yearly in Russia is 4,000 per million, while in England it is 1,358 for the same number.

It is claimed that in this country each healthy adult individual is worth one thousand dollars to the State. And I find by a late report of the Registrar General of England, that he values the life of every individual, old and young of both sexes, at one hundred and fifty-nine pounds sterling. The disease of which we are about to speak is a chronic one, and it is claimed that each death represents six hundred and thirty days of sickness. Therefore the State is interested from a pecuniary standpoint, and the individual from that of self-preservation.

But man is so tenacious of his liberty of action that he chafes under restraint, even when it is enforced for the benefit of himself and those dependent upon him, as is illustrated by his neglect and opposition to that wonderful protective—vaccination. Such "fanatics" not being amenable to reason, should be subjected to the arm of the law, for no man should be allowed to indulge his "fad" at the risk of the life of his neighbor.

But in the present instance we do not wish to invoke the power of the law, we wish to educate and appeal to the good sense of every individual to aid us in preventing the spread of that dreadful disease, consumption, in this Province. A disease which it has been estimated kills in the world yearly one million one hundred thousand, or two in each minute—and which is responsible for twenty-nine deaths out of thirty-seven in our hospital last year—and one which I fear few in this room cannot call to mind the loss of a friend or relation by it.

I will now give you an outline of the formation of the Association, after which I propose explaining to you the nature of the disease, and the best mode, so far as we at present know, to prevent its spread. The members of the Provincial Board of Health recognizing the facts that, tuberculosis is a contagious disease, that it is responsible for double the number of deaths caused by any other disease, that, like other contagious diseases, its ravages can, and should be, largely prevented, and that this can only be accomplished by co-operation, instruction and persuasion. They have, therefore, deemed it expedient to appeal to philanthropists in this Province to co-operate with them in forming an Association to be called "The New Brunswick Association for the Prevention and Cure of Consumption and other forms of Tuberculosis."

sisted by the medical profession, to educate the members, and place before them the best mode of procedure, and it will be their duty to impart the information they may possess to all with whom they may be brought in contact, even to the remote parts of the Province. It is also hoped they may enlist the co-operation of the sufferers themselves.

I may say to you that a similar Association has been established in England, of which Sir William Broadbent was president, but now Lord Derby has taken his place. The Prince of Wales, in December last, displayed his interest in the movement by calling a meeting at his residence, at which Lord Salisbury, Lord Rosebery and many of the leading men from various parts of the Kingdom spoke strongly in support of the undertaking.

You will naturally ask the meaning of tuberculosis. It is a name given to a class of diseases, caused by a germ called the Tubercle Bacillus. This germ may infest various parts of the body, as the intestines, lungs, brain, joints, glands, etc. And the disease receives its name from the locality in which the germ is found. When the germ appears in the lungs, it causes what is commonly called consumption, a disease always with us, and one with which we are too familiar. The disease was formerly supposed to be hereditary, or transmitted from the parent to child.

But recent investigations have taught us that the disease is "caught" from a pre-existing case in man or animal—in man from the germs in the expectoration from the animal, by drinking its milk, or eating its meat when it is not properly cooked. Millions of these germs are found in the expectoration, they present themselves in the form of rod-like little demons, so small that they are only visible by the aid of a powerful microscope, and many of them can rest upon the point of a needle.

When the germs obtain access to the lungs, if the soil is suitable, and if they are not destroyed by existing organisms, they multiply, blocking up the air passages, and ultimately forming pin-head solid bodies, which again change their characters and become cavities, when, what is commonly called consumption is established. These bacilli are possessed of extraordinary vitality; they are not like other bacilli—killed by light and air, though this has been disputed. Drying the sputum does not destroy them, so that in the form of dust they survive indefinitely. Therefore the environment of the patient cannot be too carefully guarded.

The contagion is not conveyed by the breath; the bacillus cannot be disengaged from the sputum so long as it is moist; when it becomes dry and pulverized it is disseminated through the atmosphere and inhaled. We have often seen the notes dancing in the sunbeams crossing a room, every mote is a dust particle which may carry millions of bacilli. They may also be conveyed by the hair, whiskers, or any part of the body or clothing that may have been soiled by the expectoration. Hence the necessity that the sufferer—for his

own protection and that of others—should be scrupulously clean. It is quite evident that the best preventive against the spread of consumption is the destruction of the sputa before it becomes dry, but this destruction is surrounded by difficulties. The sufferer must be made to understand that unless they adopt and carry out faithfully the necessary precautions, they are a standing danger to their family, to their friends, and to the public generally. The family of the patient must be impressed with the same idea. And the public must guard itself. It will take time and education to accomplish this, for man, as a rule, may protect his family and friends, but he cares little for the public. Consumptive patients who wish to prevent transmitting their disease to others will carry and use receptacles that have been devised for the reception of the expectoration. This will largely prevent the filthy habit of expectorating on the sidewalk, floors of rooms, railway cars, etc., etc. There should be a law to prevent the use of cuspidors in hotels, or public places, without a certain quantity of some disinfecting fluid in them. The contents of the vessel should be burned daily or often, never throw on the ash-heap, street garden, or field. The vessel should be immediately placed in boiling water, allowed to remain there 20 minutes, then some disinfecting fluid placed in it. A consumptive should be smooth shaven, as some of the expectoration falling on his beard would soon dry, and the germs become distributed. A consumptive mother should not nurse her infant. Consumptives should not engage in occupations where they are compelled to handle food products of any kind. Before such restrictions are placed upon any individual, it should be certain that he has the disease. This certainty can only be arrived at in its initial stage, after a careful bacteriological examination of the sputum. The Provincial Board of Health has urged the government to appoint a specialist in the city of St. John to carry out that object. And I am glad to inform you that request has been granted by the appointment of Dr. G. A. B. Addy.

Therefore ladies should be careful to wear their skirts so that they can not touch the ground. I wish to emphasize this caution. Skirts are dragged through the sputa on the sidewalks, are taken home, dried, brushed, and cleaned, and thus infection is introduced into the household. As I have already stated, consumption cannot be conveyed by the breath; it can be carried by the clothes, hair or hands, soiled by the expectoration of a child laboring under the disease hence when it is certain that the child has the disease he should be refused admission into the public schools, or, if admitted, he should be isolated in a separate room or building. Girls kissing each other in school rooms should be discouraged. Consumptives are not fit subjects for a general hospital; they are a menace to the other patients in the institution.

Is consumption hereditary? No. Prior to the discovery of the germ by Koch, it was generally believed to be transmitted from parent to child. This belief was supported by the fact that the children of consumptives often, suffered from the disease, forgetting that they were more exposed to the contagion than others. It is true that two persons may be equally exposed to the invasion of the bacilli, one will escape while the other will not. We do not yet know the cause of this predisposition.

Is consumption curable? Yes, to a much larger extent than is generally believed. Statistics teach us that when the disease is treated in its early stage nearly fifty per cent. recover. Hence the necessity for a general knowledge of the disease and an early bacteriological test of the expectoration. Spontaneous cures have repeatedly taken place in persons in whom the disease was not suspected or treated. It has been claimed that out of every one hundred consumptives about one hundred having died accidentally, or of diseases other than tuberculosis, twenty-five showed evidences of healed tuberculous lesions. The fact that an individual has a cough need not alarm him, but should exist any length of time let him have his expectoration examined.

If every consumptive will observe the simple recommendations to prevent him giving his disease to others, he would render isolation unnecessary, but if he persistently disregards them, isolation should be enforced. Patients afflicted with the disease, confined in lunatic asylums, should be kept in separate parts of the institution. Disinfection—Rooms or apartments that have been occupied by consumptive patients, or those in which they have died, should be thoroughly disinfected before others are allowed to occupy them. Better that the patient should be removed, if that is not done, the walls should be well rubbed with fresh bread and the debris burned and the floors and wood-work washed with a solution of corrosive sublimate. This must be used with care. All bed and other clothing should be disinfected by steam or

fumigation. I may here repeat that the expectoration should always be kept moist by some fluid disinfectant as a solution of carbolic acid, one part to forty of water. Tuberculosis in Cows—It has been claimed that from three to twenty per cent. of all cows have tuberculous. As an illustration of the disease among cows, I may say to you that out of the queen's herd of forty dairy cows, thirty-six were found to be labouring under the disease. They were all ordered to be destroyed. When the disease gets into a herd it spreads rapidly, and at a certain stage of the disease the milk is loaded with germs, and when taken—as it is—by infants and children, without having been sterilized, it produces the various tubercular diseases of the brain, intestines, joints, glands, etc., so fatal at that period of life. It is pleasing to be able to inform you that mothers are learning these facts, and obeying the advice given, with the result that the mortality has decreased amazingly, but we must not rest satisfied with the present reduction, we must increase it. I will not believe that any woman worthy of that "lovable name mother," would knowingly poison her infant. This she is undoubtedly doing, when she feeds her child with milk from a diseased cow. We must not leave her in ignorance of this fact. She may say to you that her forefathers did not take these precautions. True, probably they were not informed of the fact that at their period sixty-five children out of every hundred died before they reached the fifth year of age, while now not half that number die. It can be easily proved that this great reduction in the mortality is largely attributable to the observance of the precautions I urge. Milk containing the bacilli, when taken by an adult, may and often does produce consumption.

The power possessed by milk of absorbing germs from the surrounding atmosphere is such that, being allowed to remain for a comparatively short time in a room with a patient labouring under typhoid fever, scarlet fever, diphtheria, or cholera, another drinking it would probably take the disease. It will also absorb the germs from any foul atmosphere, hence prudence dictates that it should be always kept in the purest atmosphere possible. There should be a positive prohibition against exposing milk in restaurants or railroad stations for sale unless it is kept in close vessels with taps to them. For it will not be disputed that the atmosphere in such places is far from being pure. The conditions of a wholesome milk supply are healthy cows kept in clean and well-ventilated stables, affording not less than two thousand cubic feet of air space, for each animal. The health of the animal should be assured by the tuberculin test, once in every three months. The cow should be well and carefully fed, daily groomed and washed when soiled, milked outside of the barn, and standing on a clean spot. If the udder is not protected it should be washed before the milking is commenced. The hands of the milker

should be thoroughly clean, and his ordinary clothing should be covered with a washable sack. The milk should be drawn in sterilized cans, and immediately and rapidly cooled and kept in a pure cold atmosphere until delivered. Unless the herd from whence the milk is obtained is known to be free from disease, boiling injures its taste; from disease it should be boiled or sterilized. Indeed, it is more prudent to take this precaution always, for milk may, and often does, absorb germs from unsuspected sources. On one occasion in London two hundred and ninety-four cases of scarlet fever were traced to one dairy, in which a case existed. Sterilization is a simple process, and one that any cook can perform; all she has to do is to place the milk in the inner cooker of a double-cooker, surround it with boiling water, heat slowly until the milk reaches a temperature of 160 degrees, an ordinary thermometer being used, then cooled as quickly as possible, placed in bottles, previously sterilized by being placed in boiling water, and then corked with cotton-wool, after which it should be kept in a cool and pure atmosphere. Milk treated in this manner will remain sweet double the time that it will without having passed through this process.

I have said nothing about the treatment of consumption, our mission is to prevent the spread of it so far as we can. Its treatment must be left to those who have made a life study of it, with other diseases. But I may say a few words in favor of sanatoria as aids in prevention and cure of it, and in which the open-air treatment accompanied by therapeutic resources, as ably urged by Dr. Philip of Edinburgh, has proved so successful. It has been claimed that when patients have been placed in those institutions, during the early stage of the disease, the recoveries have reached seventy per cent.

This treatment can be successfully practiced in the homes of the wealthy not so in those of the poor. Picture a tenement home, a dark, dreary and unclean room, little air, and that bad, crowded with husband, wife and several children. In one corner of the room lies the husband in bed in the last stage of consumption, the poor wife caring for him and her little ones, as best she can. After months of suffering he dies. In a year or less she follows him, leaving the helpless children as a legacy to the State, to follow later on with the same disease. This is not an over-drawn picture, it may be seen daily. The eye will often take in that which the ear will not, and I am quite certain that if you witnessed such misery it would appeal successfully to your sympathy. It may be asked why they should not be received into general hospitals? Many are received; it is claimed that about one thousand are annually treated in the general hospitals of Ontario, with a mortality very little less than when treated at their homes. The air in such institutions is not suitable; that which would benefit them would injure the other sick. And as a rule they do not

seek admission until the disease has reached its incurable stage when it is most dangerous to others, and after a sojourn averaging fifteen months they die. Statistics teach us that consumption is the cause of one-seventh of all deaths in a community. Experience teaches us that this mortality is largely among the poor, whose environments are such that they are seldom treated successfully at their homes. When they enter general hospitals this success is not much better. And experience is daily teaching us that when they are placed in sanatoria, and treated at an early stage of the disease, recoveries range from thirty to sixty per cent. If those are facts, and I do not think they will be disputed, do they not call loudly for remedial measures? Sanatoria must, therefore, be thrust upon all. They cost money for their construction and support. Who should furnish the money? The State or the kind philanthropists? I unhesitatingly say the State. All are to reap benefit. And throwing aside the moral interest, the State has a money interest in the life of every individual in it. I have already claimed that every sound adult is worth from \$850 to \$1,000, to the State. Let us reduce that amount to \$500. Last year 102 persons died from tuberculosis in this city out of 670 from all causes. Suppose thirty out of the 108 to have been saved, here we have a money value of \$15,000. We have no means of ascertaining the death rate of the disease for the Province, but we may assume it to be nearly the same. Apply this calculation to the whole loss and the saving would supply all the sanatoria required, and leave a margin that would support all the hospitals in the Province.

When the members of the legislature are approached to grant money for the saving of human life they are hard to move. This is not from want of sympathy or feeling; it is because they have not been made to appreciate the necessity for it. They give freely to railways, exhibitions, for the purchase of fine horses, cattle, sheep, pigs, etc. Why? because the constituents—knowing what they want—push the members and they in turn, push the government. Let us follow the example of the constituents; let us all educate the members to that which we believe to be advisable, and they in turn will push the government, and success will follow, if not immediately, it must in the near future, for the day is approaching—among civilized nations—when there will be but one opinion upon this subject.

The location and construction of the sanatoria must be left for future consideration, but I may say that they should be located on elevated porous ground, with a southern exposure, as nearly as possible protected against a cold wind, and preferably in the neighbourhood of a pine forest. Out of the range of fog, and on the line of railway, but not distant from the homes of the patients. In conclusion, your honor, ladies and gentlemen, let me say that, while I do not pretend to have exhausted my subject, or clothed my appeal in fitting language, may I hope that I have said enough to enlist your interest in this undertaking and ask you to register your names as members. Your work will not be arduous. It will be devoid of danger and one of love for your fellow-man, to learn the nature of the cause, and the prevention of that dreadful white plague of the present age, and save the information you may possess broadcast through our Province, when I have no doubt, in the near future, you will reap the pleasing reflection that you have saved the lives of many breadwinners, and prevented the exhibition of that "tablet to the memory"—the vacant arm-chair at the fireside.

MEMORIES OF SCOTLAND, WRITTEN FOR THE TIMES.

Edinburgh is of course the Mecca of all patriotic Scotchmen. So much of the history of the nation centres in that city, it is so full of memories of the early struggles for independence, both in national and church life, that one cannot linger about its streets without entering into and understanding somewhat of the pride of birth and breeding that characterizes the place. The new town is handsome enough. Princess street is perhaps unequalled anywhere in Europe, but the real interest of the place centres around the narrow streets and closes of the old town. The chronicles of the city read more like a romance than a narration of actual fact. There were stirring times when earls and barons had their town houses near Holywood or bordering on the Grassmarket. Many a day these streets rang with the clash of steel and the shouting of warriors as opposing factions fought each other for supremacy. The blue banner was here held aloft right gallantly, and here in the Grassmarket it was trailed in the dust while the stout hearted yeomen who had bled beneath it were sacrificed to party spite. Many of the houses in this part of the city are four and even five centuries old, built with their upper stories projecting over the lower. One custom these sturdy old Scotchmen had which appears not a little singular in our eyes. This was the engraving of scripture texts over the doors of their buildings. One of these I noticed in a close off the Grassmarket. This, as the quaint inscription proclaimed was a house of call for the brewers and distillers and the text was—"Except the Lord do build the house they labor

Edinburgh and Its Castle—Holyrood and Mary—The Den and Bonnie Hoose O'Airlie—Stirling and Bannockburn—The Language of the Lowlands and Its Relation to the English Tongue.

many such. The one on John Knox's house in the Canongate has become historic—"Thou shalt love the Lord thy God with all thy heart and thy neighbor as thyself." Edinburgh has been in a peculiar way the gathering place, the focus point towards which the master minds of Scotland have flocked in all ages. Other cities have their seats of learning, but the very soul of wit, the grandest monuments of national literature have been nurtured within her bounds. Many of these great men sleep their last sleep in the old graveyards, and the civic pride of the inhabitants has marked their sepulchres with lasting memorials. Perhaps the saddest sight in Edinburgh is the ancient palace and abbey of Holyrood, which is eminently fit to linger through the halls in which the Stuarts held sway so long. Wonderful memories crowd on one as he wanders from chamber to chamber, listening to the garrulous old guide as he points to each. The saddest of all are Queen Mary's rooms. These are preserved as nearly as possible in the original state. Her bedchamber, with the worn carpet and rotten tapestries, the work of her deft needle, hold one, the supper chamber, with the dark oak wainscoting and the stair landing outside recall the terrible tragedy of that winter night so long ago. Different opinions are held as to the degree of the unhappy Queen's guilt. Guilt there certainly was, and the evidence unhappily seems to point to the darkest, but no man can stand on that stair landing, with the red stain in the oak, and think hardly of her. If Mary sinned deeply she also suffered deeply, and in the last extremity she was not without vain that build it." There are

great mass of granite which was fitted over her will be that it was no wonder she burst. Edinburgh Castle is one of the historic fortresses of Scotland, and Stirling is her rival in fame. The battle of Bannockburn gave Stirling an undying interest for all who love to read of the struggles of the race towards the ideal. The battle itself was fought near the village of St. Ninians. St. Ninians is still only a village, famous as the home of a colony of nail makers who make precarious living at their little forges. The interest on the field of Bannockburn centres around the Bore stone, where the Bruce flung the lion of Scotland to the breeze. Nearby is the ruined abbey of Dundreunan, to which King Robert retired after the battle to render thanks to heaven for his victory. The only thing noticeable in the ruins of Dundreunan now is a tablet placed there by the late Queen Victoria to the memory of one of the early Stuarts who was buried here. Coming back again to the neigh-

borhood of the little town we started from, about 15 miles to the west, is the Den and Bonnie Hoose o' Airlie. This is one of the loveliest spots in that district of Scotland. The Den is a very narrow one, clothed on each side with the birch and mountain ash, and with maiden hair and hart's tongue ferns growing everywhere in great profusion. In the season of the year I visited the place the ash trees and hawthorn hedges were in full bloom, and the smell from trees and the violets and meadow sweet was delicious. The stream in the lower part of the Den literally forces its way between huge boulders, breaking every now and again into spray that glistened like pearls in the sunlight. Higher up the waters fell sheer over a precipice about fifty feet high. At the bottom of this fall the stream gathered itself into a pool before taking a final leap of another fifty feet to the valley below. This last plunge was not accomplished as clean as the other but immemorial little jutting pinnacles broke the water into spray as it

descended. Viewed from below, the whole appearance was a fine mist, which when the sun shone upon it turned into the rarest lace, white and bronze and gold. In the middle of this scene of natural beauty the old Earls of Airlie had built their home. It could never have been a place of great natural strength, and either the warlike chiefs had an eye to the beauty of the scene too keen for those entrusted entirely to the insolence of strength. The tragedy connected with the "Hoose o' Airlie" is the theme of one of the most mournful of the old Scotch songs. The quarrel with the powerful Earl of Argyle is recounted, and the hankering of the savage chief for revenge. Then the preparation at the opportune time when Airlie himself was absent, the defence by Lady Airlie, the capitulation consequent on the false promises of Argyle and finally the burning of the castle. A little nearer the town was the estate of Panmure. The Maules of Panmure had taken part in many a stirring time, and no mean part either. One of the race rode in the '45 for bonny Prince Charlie. There is an old fashioned iron gate at the end of one of the avenues which is always kept locked. The tale in connection with it is that the fiery earl rode out of this gate with his retainers when he went to battle, and he gave directions that it should never be opened more till the king came to his own again. After the failure of the rebellion the earl fled to France and his estates were confiscated. It was only in the reign of the late Queen Victoria that the sentence of forfeiture was finally reversed.

Of course the thing that troubles the tourist most in Scotland is the Lowland Scotch, but in a short time he will get used to it and understand it as well as if native born. Much has been said and written about the Lowland Scotch language, as it was entitled to that distinction. Personally I am a Scotchman in proud of the broad Dialect, but historical evidence all goes to prove that the Lowland Scotch is simply English in an arrested state of development. The student well knows that the ancient Scotch can easily be read by any one who understands the oldest English. The chief difference is that the northern people preferred the harder sounds. Thus church and kirk, churn and kirm are different forms of the same words. In the southern part of the island the Anglo-Saxon tongue absorbed foreign words more quickly than in the north. This is accounted for by the greater commercial activity of the English. It has been said that there are words in the Scotch for which there are no equivalents in English. While this is no doubt true it is open to question—there are words in common use on the east coast which are never heard in the west and which the people do not understand, and vice versa. The east coast was open to a great many influences which never touched the west or which had not the same lasting impression on the people there. There can be no doubt that the Norse colonies planted in the west lingered long as separate communities, and were only partially absorbed in the lapse of centuries. The French also had more influence on the west and there are French words still in use only in a slightly altered form.