

FIFTH
ANNUAL REPORT
OF THE
PROVINCIAL BOARD OF HEALTH
FOR THE YEAR
1897.

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HALIFAX, N. S.:
COMMISSIONER OF PUBLIC WORKS AND MINES, QUEEN'S PRINTER.
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PROVINCIAL BOARD OF HEALTH,
HALIFAX, NOVA SCOTIA, 1897.

FIFTH ANNUAL REPORT.

TO THE HON. G. H. MURRAY,
Provincial Secretary,
Chairman of Provincial Board of Health.

SIR :

I have the honor to submit the fifth annual report of the Provincial Board of Health.

EXECUTIVE COUNCIL CHAMBER,
Halifax, 12th March, 1897.

A meeting of the Provincial Board of Health was held at 3 o'clock P. M. Present: Chairman, Hon. Geo. H. Murray, Hon. C. E. Church, Dr. Geo. L. Sinclair, Dr. Edwd. Farrell, and Dr. A. P. Reid, Sec'y.

The minutes of previous meeting were read and confirmed.

The first question presenting was the new anatomy bill and the appointment of an Inspector of Anatomy.

After discussion, it was moved by the Hon. C. E. Church and seconded by Dr. Farrell, that James Ross, M. D., be appointed Inspector of Anatomy. Carried *nem. con.*

It was moved by the Hon. C. E. Church and seconded by Dr. Sinclair, and carried unanimously, that the salary be (\$100) one hundred dollars per year.

It was moved by Dr. Farrell and seconded by Hon. C. E. Church, that in compliance with the Act in reference to circular and blank forms that the whole matter be submitted to a joint committee of this board and a committee appointed by the Halifax Medical College who should have power to carry out what they considered necessary.

The committee of this Board to be the Hon. Atty. General, Hon. Commissioner of Public Works and Mines, and the Secretary.

This motion carried *nem. con.*

A letter was received from Dr. Hattie in re Tuberculosis, but no action was taken on it.

It was also agreed that the next meeting of the Board take place in three months.

On motion the meeting adjourned.

A. P. REID,

Secretary.

I would report that the conjoint committee entered on their duties, and the circular and forms, see appendix, were decided on and were ordered to be printed in conformity with the Act.

The very general distribution of small pox in western cities would demand careful observation on the part of health authorities, so that any imported case may be immediately cared for.

In the last report of the "Local Government Board of London" is an article showing that extended observations have been made on glycerinated calf lymph, and demonstrates the fact that after it has been kept for four or five weeks or more it is perfectly sterile—even on "pulp" derived from the calf—(extraneous organisms are destroyed). When additions of bacillus of diphtheria and also tuberculosis have been added to a 30 to 40 per cent. glycerine lymph emulsion in a month or less it is perfectly sterile. The different pyogenic organisms are also destroyed.

But with all there is no diminution in the potency as a vaccine, and it produces perfect and healthy pustules.

Since 1891 several European governments have undertaken the preparation of glycerinated vaccine lymph. After storage for a sufficient time the resulting emulsion has to pass the test of a bacteriological examination and it is then issued for the purpose of vaccination.

In the future we are likely to have the old methods by points and tubes displaced by a vaccine which is perfectly sterile, and there will be no fear of the serious local and constitutional symptoms that at times attended vaccination with bovine virus.

Humanized lymph will be completely displaced by that from the calf, and any fear of the introduction of constitutional disease

dissipated, while at the same time the irritation that resulted in some patients from the use of calf lymph will not take place.

Another great advantage will be that the probability of its efficiency will not be destroyed by time, such as now occurs with ordinary lymph, which is not only a great source of annoyance but expense.

Research is still being carried out in this direction and we will learn more details of its reliability.

In the appendix is reprinted the circular sent some time since to all parts of the province, and in view of the spread of Small Pox in the western cities it would be well to repeat it.

TUBERCULOSIS AND CANCER.

These diseases appear to be on the increase, and in the following table I give the deaths from these causes during the last six years at the V. G. Hospital :

Year.	Total Number of Deaths.	From Tuberculosis.	From Cancer.
1892	57	14	3
1893	39	12	4
1894	52	16	7
1895	63	13	8
1896	65	18	5
1897	56	21	9
Six years.	332	94	36
Percentage		28.3	10.8

Shewing at the Hospital that nearly 40 (39.12) out of every hundred deaths (from all causes, accidents, surgical cases, fever, &c.) are caused by these two diseases. This is much above the general rate, because all cases of serious malady are likely to try the effect of Hospital treatment; and many also go home to die when nothing can be done for them here, but these do not appear in this list.

CANCER is a form of disease about which we are very much in the dark as to its cause, the conditions which favor its spread, and a satisfactory treatment; and before much can be done to alleviate it we must have more reliable knowledge concerning it. The ablest minds of the profession in every country are and have been at work on this problem and we are in hopes of light on the subject.

TUBERCULOSIS is the chief factor in the death rate of every civilized country, and thanks to Prof. Koch we have an amount of definite and reliable knowledge on this subject which, if properly utilized, should in time enable us to satisfactorily cope with the destroyer.

Our domestic animals are subject to its ravages, especially the bovine race, and active means are now in vogue in most countries tending to its obliteration.

Koch's tuberculin is a test which is perfectly harmless to the individual and distinctive as to the presence or absence of tubercle, and it is now in general use as a means of separating diseased from healthy animals, with the probability that tubercle will be in time stamped out of the bovines. It has been found that not every animal which gives the reaction is so diseased as to require to be destroyed, but they do require to be separated from the healthy and so kept apart until the test shews that they have perfectly recovered—or getting worse they are destroyed. Science is farther ahead in the treatment of the lower animals than in the human subject, and there does not appear to be any reason why individuals in whom there may be a suspicion of disease should not be subjected to the tuberculin test, which, if negative, would set the mind of the person at rest, and if positive would enable him or her to place themselves in the best way to have the health restored.

Too often before the health has so far been lowered as to prejudice recovery people are unaware of their condition and are not able to adopt that treatment which if taken in time would have prevented ill health and death.

Physical examination by a doctor is not resorted to sufficiently early in many cases to avert an untoward result, and in the early stages the symptoms are not well defined.

This objection does not obtain with the tuberculin test, and I can see no reason why it should not be included amongst the ordinary means of diagnosis in the human subject. It would appear as though we have more interest in the health of cattle than the members of our own race—yet I think the time is rapidly approaching when the prejudice against the early use of tuberculin in man will pass away—and its use be insisted on as a matter of regular diagnosis.

When the disease has so far progressed as to be plain to the observer, it is too often beyond a good prospect of cure.

This question of the early detection of tuberculosis by microscopic test for tubercle and by physical examination was specially referred to in the report of last year in Dr. Hattie's "Report of

Bacteriologist," and as the subject is of so much importance I will reproduce the paragraph :

"The trend of the expert opinion of to-day is unquestionably in favor of legislating in this matter. Such vast good has followed the more or less efficient attempts at state control in others of the infectious diseases, that it is not unreasonable to suppose that special legislation would have the ultimate effect of markedly limiting the prevalence of this malady also. What has been done in the case of small-pox might be done in the case of consumption were proper means to such an end generally adopted. There should be exacted of local health authorities the faithful and rigid execution of the duties assigned to them. System in the inspection of the homes of the infected, with supervision of the methods of disinfecting, could not fail to be productive of good. Then it might be advisable to require that every person—man, woman, child—should submit to a physical examination by a competent physician at least once in two years, and be able to produce a certificate shewing the result of such examination. In the case of the poor, the same provision might be made that is now made for vaccination. An arrangement such as this would assure the detection of all new cases of tubercular disease in a fairly early and probably curable stage, and would permit of a thorough and proper system of notification, and thus of the adoption of the preventive measures indicated. At the same time an organized veterinary inspection should aim at the extermination of the disease from our domesticated animals."

Dr. Bethune, M. P., when Chairman of the Humane Institutions Committee of our Provincial Legislature, advocated and did his best to get government recognition to a plan by which consumptives should be separated from the healthy and those laboring under other diseases, either in special hospitals or sanatoria, as may be deemed best.

So far no action has been taken, chiefly because of financial reasons, as well as a definite idea as to the best mode of procedure.

As an illustration of the most advanced ideas on this subject I append the purport of a paper read at the International Medical Congress at Moscow last year.

PREVENTION OF TUBERCULOSIS.

In a paper at the late International Medical Congress at Moscow, Professor Vaughan, of the University of Michigan, recommends the following means for the prevention of tuberculosis :

1. That no milkman shall sell milk without a license from the municipality. The permission should not be given until the cattle have been inspected by a competent veterinary surgeon. The tuberculin test should be applied to every animal, and any found suffering from tuberculosis should be destroyed.

2. All animals kept for milking purposes should be submitted to an examination by a competent veterinary surgeon.

3. Disinfection of sputum of persons suffering from pulmonary consumption is indispensable, and these persons should not be allowed to expectorate in streets or public vehicles.

4. All houses which have been inhabited by phthisical persons ought to be disinfected.

5. The government ought to construct, organize and maintain hospitals for paupers suffering from tuberculosis. These hospitals should be of two classes—one for incurables, and the other for persons who may recover.

6. Tuberculosis is a disease which taken in time is, comparatively speaking, easy to cure, therefore persons who are yet in the early stages of the disease ought to be auscultated at least once or twice a year by a doctor. Government ought to provide for the poor the means of having this done.

Professor Leyden, of Germany, read a paper before the same Congress, on the treatment of consumptives. His recommendations may be summarized as: Choice of a suitable climate; pure air free from dust; good nourishment; judicious exercise; methodical treatment in special institutions; medical treatment as auxiliary to the general treatment. He said that cold fresh air is of the greatest importance.

The same speaker called attention to the enormously large number of persons who perish from the disease, and said that in Germany there are 1,200,000 consumptives, of whom 180,000 die every year. He estimates the annual mortality from consumption in Europe as upward of 1,000,000 persons.

This subject is of so much importance that prominence should be given to any plan of research or treatment holding out prospects for its amelioration.

Hence I present the subjoined communication of Dr. Hattie, which was read at last meeting of the Board and on which action was deferred.

HALIFAX, N. S., March 12, 1897.

A. P. REID, ESQ., M. D., ETC.,

Secretary Prov. Board of Health.

DEAR SIR,—Despite the immense amount of study devoted to the question of tuberculosis from the earliest times the disease continues to be the greatest scourge of the human race. Disappoint-

ment has been the main outcome of nearly all research, and one often despairs lest we may never find a remedy for this dreadful disease.

Yet an occasional discovery is made which seems to throw more light upon the disease, and serves to renew the hope that we may yet happen upon some measure which will prove efficacious in dealing with this malady.

Out of all the points which have been demonstrated, with reference to tuberculosis, during the past fifteen years, I would like to isolate three, and to apply them (in conjunction with certain other data) to such modest investigation as my limited ability and uncertain spare time will permit. They are as follows :

1. Koch's discovery of the tubercle bacillus.
2. Metschnikoff's demonstration of the part played by the white cells of the blood in providing immunity and contending against disease.
3. Vaughan's determination of the bactericidal properties of nuclein, and of the power which this agent possesses of inducing the multiplication of leucocytes.

Now, it has recently been found that the source of uric acid, which was for long a mystery, is, in the main, the white cells of the blood. It would seem to be a reasonable deduction that an increase in the number of white blood cells would mean an increase in the quantity of uric acid formed in the system.

The existence of an apparent antagonism between gout and phthisis has been frequently noted. Thus no less an authority upon medical topics than the late Sir Andrew Clarke said: "When I was a young man I had to choose between gout and phthisis, and I chose gout."

I do not mean to claim that the remedy for phthisis lies in giving a man the gout. But I feel that there is reason for attributing natural immunity from tubercular disease to a substance which must be closely allied to uric acid. Perhaps the nearest approach to a remedy for phthisis which has yet been introduced is the nuclein of Vaughan. Now nuclein is, chemically, very closely allied to uric acid. I have come to believe that immunity to tuberculosis is in all probability due to a substance which is neither nuclein nor uric acid, but which is very nearly related to these substances—possibly an intermediate compound. To give my reasons for this belief would take too much of your time, so I merely draw your attention to the fact that our most successful measure of treatment

in this disease is overfeeding with nitrogenous foodstuffs—that is, with those foods which contribute the greatest amount of uric acid and allied compounds to the animal organism.

With this theory in mind it is my earnest desire to attempt some investigation, in the hope of attaining the result which so many have aimed at without success. This will, of course, entail a large amount of labor, and some expense. Not being possessed of a superabundance of this world's goods I feel unable to undertake their investigation unaided. And inasmuch as the matter is one which is of vital interest from the public health point of view, I make bold to present my ideas—through you—to the Provincial Board of Health, and to ask if I might expect any assistance from the Board in the event of my undertaking the work.

Your obedient servant,

W. H. HATTIE.

A letter was received from Councillor Edmund McDonald, Chairman of Board of Health for Sect. 17, Pictou Co., detailing a grievance under which they labored. This was submitted to the Attorney-General, and the letter and answer are subjoined :

EUREKA, N. S., May 29th, 1897.

DR. A. P. REID, ESQ.,

Secretary Prov. Board of Health.

DEAR SIR,—As Chairman of Board of Health for this district I beg to enquire for direction in the following matter which has been placed in our hands. There is in the centre of this town a swamp into which the sink and cellar drains of a number of houses empty, and into which have accumulated an amount of filth and dirt, becoming a cess-pool, menacing the health of the whole community. We have been requested to clean it up, but are met with the following difficulties: First, the owner of the swamp is not the owner of any of the houses producing this result, and is not affected by it, and refuses to take any action either to remove the nuisance or to prevent the parties from depositing filth in the swamp, and it is doubtful if we could recover anything of him even if we had the work done, as he is, I presume, insolvent. Secondly, the only outlet to the swamp is the East River, which supplies the towns of Stellarton and New Glasgow with water, a few miles down, and it is doubtful if they would permit us to run this drain into the river. Then what can we do? An early answer will enable us to act in the matter.

Yours obediently,

EDMUND MACDONALD,

Councillor Sect. 17, Pictou Co.

MEMO.

I have read carefully the letter of Mr. Edmund McDonald, of Eureka, and I beg to say that in my judgment the matter is one entirely within the office of the Local Board of Health to deal with, and it is only in the event of the Local Board of Health refusing to deal with it and the matter assuming a position in which large interests are concerned that the Provincial Board of Health would have any justification in interfering with the matter. The matter may assume that form in the end, but I do not think there is sufficient data in the letter to lead to any such inference. I am sure if the matter becomes one of local nuisance the local authorities not only will be disposed to deal with it, but the policy of the law would compel them to deal with it.

J. W. LONGLEY,

Attorney-General.

June 28, 1897.

The Local Boards of Health are very dilatory in reporting to the department, and hence there is inability to give an accurate estimate of the health of the province. There have been sporadic outbreaks of Diphtheria, Typhoid Fever, Measles and Scarletina, but none of great fatality or wide distribution.

I subjoin the Health Report to the Warden and Councillors of the Municipality of Argyle by the Secretary, P. Lent Hatfield, the only report so far received.

To the Warden and Councillors of the Municipality of Argyle:

GENTLEMEN,—Your Board of Health for this Municipality beg leave to make the following report on the sanitary condition of the Municipality during the year 1895.

From reports received from the Sanitary Inspectors we are informed that five cases of Typhoid Fever have existed in this Municipality during the past year, one of which died. Also thirty-three cases of Scarlet Fever have been reported to us, three of which died.

Most of the cases reported to us have been in Tusket Wedge and Argyle Districts.

Taking the whole Municipality into consideration, it appears from the reports sent in that it has been an unusually healthy year, and that but little contagious sickness now exists. A large number of

regulations have been sent to the Sanitary Inspectors for distribution. Scarlet Fever Placards have also been furnished to the Sanitary Inspectors.

All of which is respectfully submitted.

By order of the Board,

P. LENT HATFIELD,

Sec. to Board.

Tusket, 15th January, 1896.

Since we have no health statistics in this province—and it is very desirable that some practical method of collecting them be adopted—with the consent of the Chairman, the Hon. Geo. H. Murray, the following double post card has been distributed to the profession. Our returns have not been on a sufficiently extended scale to generalize, but they are appended.

By the kindness of the Postmaster General, and influence of Mr. Blackadar, our worthy Postmaster, we were allowed free distribution through the mails for card going and returning.

CARD.

PROVINCIAL BOARD OF HEALTH.

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DEAR DOCTOR,—Your attention is drawn to the printed form attached, and you are requested to favor the Board by filling in the blanks as fully and accurately as you can, and returning to us before the 10th prox. We are desirous of obtaining complete statistics of the morbidity and mortality of our Province, and adopt this method in the hope of securing the hearty co-operation of the medical profession. We will forward you a similar blank at the end of each quarter year, and anticipating your courteous attention will, in return, supply you with the tabulation of each quarter's statistics as soon as made complete.

Yours truly,

A. P. REID, M. D.,

Secretary.

(BLANK FORM TO BE FILLED OUT AND RETURNED.)

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 Report of Dr. for 3 months ending..... 189

DISEASE.	Cases under treatment.	Previously reported.	Deaths.
Consumption
Acute Lung Disease.....
La Grippe.....
Typhoid Fever.....
Diphtheria
Scarlet Fever
Measles
Whooping Cough.....
Small Pox.....
Erysipelas.....
NOT CLASSIFIED.	.		
.....
.....
.....
.....

Deaths of Children under one year.....

“ from accidents.....

Births..... Twins

Illegitimate..... Stillborn.....

The result of the first distribution of statistical cards is appended, with accompanying letter, which have been distributed throughout the province to the medical men from whom we anticipate returns.

PROVINCIAL BOARD OF HEALTH.

HALIFAX, N. S., Nov. 18th, 1897.

DEAR DOCTOR :—In fulfilment of the promise made in my Card of Sept. 30, I append a tabulation of the mortality returns received for the months of July, August and September. It is much to be regretted that so many of the profession have neglected

to comply with the request of the Board, only 57 out of about 350 physicians practising in our Province having responded. The returns, therefore, are so incomplete as to be of little value, and are appended because they were promised to the profession and to shew how valuable such a table may be made.

The prime object of our attempt to gather statistics is to provide the Board with information as to the prevalence of the *infectious* diseases, and the death rate therefrom, in the various parts of the Province. We have no special interest in knowing of the non-infectious cases which come under your care, although it would be profitable to know of the number of deaths occurring among such patients. The blank form which we will send you at the end of each quarter-year has been arranged with a view to enable the busy practitioner to afford us the information we desire with little trouble or inconvenience.

We trust that hereafter we may be favored with a report from every physician practising in Nova Scotia. The Board is desirous of doing all that is possible to advance the health of our people. In this we should have the hearty co-operation of the medical profession. We are glad to perform for the profession, free of charge, the Bacteriological Test for Diphtheria and the Serum Test for Typhoid, while Sputum is examined for the Tubercle Bacillus for the nominal fee of \$1.00, and other examinations of a bacteriological or pathological nature are made at a fee very much below that usually charged by the laboratories. In return for this we only ask the support of the profession and co-operation in our attempt to secure reliable vital statistics.

Yours truly,

A. P. REID, M. D.,

Secretary.

PROVINCIAL BOARD OF HEALTH.—Vital Statistics of Nova Scotia for 3 months ending Sept. 30th, 1897.

COUNTY.	ANAPOLIS*		ANTIGONISH.		CAPE BRETON.		COLCHESTER.		CUMBERLAND.		DIGBY.		GYSBORO.		HALIFAX CO.		HALIFAX CITY.		HANTS.		INVERNESS.		KINGS.		LUNenburg.		PICTOU.		QUEBENS.		RICMOND.		SHELBURNE.		VICTORIA.		YARMOUTH.			
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.						
Number Doctors Registered.....	7	3	19	23	36	12	9	17	30	4	11	1	1	28	1	20	4	8	4	1	13	1	1	1	2	4	1	1	1	1	1	1	1	1	1	1				
Number Doctors Reporting.....			
Consumption.....	1	1	19	3	10	1	6	2	4	1	4	1	4	10	30	4	6	1	14	3	11	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Acute Lung Disease.....	
La Grippe.....
Typhoid Fever.....
Diphtheria.....
Scarlet Fever.....
Measles.....
Whooping Cough.....
Erysipelas.....
Malaria.....
Deaths of Children under one year.....	9	5	6	1
Deaths by Accidents.....	1	2	1
Births.....	81	41	62	13	16	39
Twins.....	1	1	..	1
Illegitimate.....
Still born.....

*No Returns were received from Annapolis County. †Returns Gathered from Register of Deaths, City Hall.

PAST YEAR.

In concluding the report for the year I would call attention to the financial statement, and you will perceive that we have made no call on the balance of the appropriation of \$100 so kindly placed to our credit by the Government, which was increased by fees so as to leave at our credit last year \$71.63. This year we have not only paid current laboratory expenses but added \$21.74 to our surplus, giving us to our credit \$93.43.

The chief objection at the time this department was established was on the score of expense, but the result has more than carried out the anticipations of its promoters as to the small cost as well as the usefulness of the institution.

By referring to the Bacteriologist's Report (appended), you will perceive what a large amount of work has been accomplished in new lines of research, and, as well, the amount of time expended by the Bacteriologist, whose remuneration of \$300 a year is absurdly small.

This department will in time, if properly supported, be of untold value to this province.

I am much indebted to Dr. Hattie for the time and attention he has devoted to this subject and his many personal favors.

Also to you I feel greatly indebted for the assistance rendered in working out new lines, and your kindly advice.

Yours respectfully,

A. P. REID, M. D.,

Secretary.

BACTERIOLOGIST'S REPORT.

A. P. REID, Esq., M. D., Etc.,

Secretary Provincial Board of Health.

DEAR SIR,—During the year now ending I have examined 65 specimens of sputum for the tubercle bacillus, 43 swabs (taken from suspected throats) for the diphtheria bacillus, 138 specimens of blood for the typhoid reaction, and about 20 other specimens for the determination of some or other matter of pathologic interest. More than 120 physicians contributed material for examination, several of these having sent, at different times, as many as six or eight specimens. These figures shew a gratifying increase in the interest shewn by the profession in our laboratory, and prove that its usefulness is being appreciated.

TUBERCULOSIS.

Some months ago I presented to you, in brief, a theory with regard to the pathology of tuberculosis, which I would like to make the text for some original investigation. I have already devoted considerable study and some experiment to the question, but this has been outside of my regular duties, and, moreover, the results are too incomplete to warrant publication. I am eager, though, to continue study along this line, as time will permit, and will be glad to have the sanction of the Board to proceed with such investigation as might seem to offer a means to secure light upon what is now a very obscure problem.

That tuberculosis is a common disease in our province is all too evident to even the least observant. *That it might be entirely eradicated is not an impossibility.* The laboratory of the Provincial Board of Health might be made of very definite assistance in the stamping out of this disease. The laboratory exists. It remains for the Board and for the profession to make full and free use of it, and to apply the information which it is capable of affording to a systematized attack upon this the greatest scourge of our race.

The result of examination of the 65 specimens of sputum submitted was as follows: In 36 cases the tubercle bacillus was found; in 29 cases it was not observed. In 3 cases duplicate examinations (of new specimens of sputum) were made; in two cases three times and in one case once. Each examination furnished a confirmation of the original report.

Of the 36 cases in which the tubercle bacillus was found, it was noted to be present in small numbers in 8, in moderate numbers in 17, in large numbers in 9, and in very large numbers in 2.

The association of other bacteria with the tubercle bacillus, in these 36 cases, may be roughly tabulated as follows :

Streptococci	in	5	instances.
Staphylococci	"	24	"
Sarcinae	"	10	"
Other bacteria	"	20	"

In those cases where the tubercle bacillus was not discovered, bacteria were noted as follows :

Streptococci	in	14	instances.
Diplococci	"	19	"
Staphylococci	"	6	"
Sarcinae	"	13	"
Other bacteria	"	19	"

In one instance a specimen of pus from the pleural cavity was submitted and found to contain the tubercle bacillus.

I would like if all specimens of sputum could be sent in clean bottles, which can be readily packed for safe transmission through the post. Frequently specimens come dried on paper. Such specimens are not only very unsatisfactory to work with, but expose me to such a definite danger that I feel I should be exempted from examining them.

DIPHTHERIA.

This disease, has, very fortunately, not been as prevalent throughout Nova Scotia, during the past year, as it usually is. You will remember our method of furnishing the bacteriologic test to those who are in doubt about this disease. Outfits are provided, free of charge, which enable the physician to easily procure some of the exudate from a suspicious throat, and forward it safely to the laboratory for examination. These outfits may be procured from a number of distributing centres* situated in various parts of the province. As a general rule, if the diphtheria bacillus be present, we are able to detect it within six or eight hours after the outfit is delivered at the laboratory, although occasionally we are not able to report so promptly.

* The following druggists keep our outfits on hand, and are also constantly supplied with a fresh preparation of a reliable antitoxin: R. C. Fuller & Co., Amherst; J. D. Copeland, Antigonish; C. T. G. Taylor, Bridgewater; Hattie & Mylius, Halifax; G. C. Macdougall, Kentville; Adam C. Bell, New Glasgow; Dr. A. D. McGillvary, Sydney, C. B.; Crowe Bros., Truro; C. C. Richards & Co., Yarmouth.

In the last year we have had 43 outfits returned, of which 16 were found to contain the diphtheria bacillus while 27 did not. Four were duplicates, of which one confirmed a previous positive report, and two a negative report. The fourth was taken from a throat which, four weeks previously, had yielded the diphtheria bacillus, but was now free from that germ.

Two of the swabs failed to yield a culture. In one of these the explanation was that the physician mailed the wrong outfit. He had provided himself with two outfits, one of which he at once made use of, but he confused them before mailing and forwarded the outfit containing the sterile tube to the laboratory.

In three cases an almost pure culture of the diphtheria bacillus was found, but usually this bacterium had associated with it a large number of other organisms roughly as follows :

Streptococci	in 8 cases.
Staphylococci	“ 4 “
Sarcinae	“ 7 “
Other bacteria	“ 8 “
Yeast forms	“ 4 “

Of those cultures (27) which did not shew the diphtheria bacillus, a tabulated synopsis of the result of examination is as follows :

Streptococci	in 15 instances.
Staphylococci	“ 19 “
Sarcinae	“ 13 “
Other bacteria	“ 18 “
Yeasts	“ 4 “
Moulds	“ 2 “

The bacillus was identified in microscopic preparations made directly from the swab in 3 cases out of the 16 in which it was subsequently discovered in the cultures.

TYPHOID FEVER.

The serum test for typhoid fever has received a great deal of attention during the past year, and has been proven a very valuable addition to our diagnostic armamentarium. This test depends upon the recently discovered property possessed by the serum of the blood of patients suffering under typhoid fever, of stopping the motion normal to the typhoid bacillus and causing the individual bacilli to agglutinate into large groups. We have followed out the method suggested by Wyatt Johnston, of Montreal, which appears to be most convenient and most applicable to our Board of Health work. The finger or ear of the patient is pricked with a clean

needle, and a drop of the blood secured upon a piece of paper and permitted to dry thoroughly before the paper is folded. The blood should be allowed to dry in a fairly thin layer, rather than be spread out on the paper. The dried blood is then forwarded to the laboratory, where the agglutinative principle is extracted with water and the test applied.

Reports upon the results obtained from this test have come from investigators in every quarter of the globe, and, in the total, represent a vast number of trials from which the conclusions to be drawn accord closely with those to which our own results have led us. Briefly they may be stated as follows:

(a.) In about 95 per cent. of cases of typhoid fever, the application of the test gives a positive result.

(b.) Exceptionally a positive reaction is given by the blood-serum of patients who are certainly not the subject of typhoid. This happens so infrequently, however, as to detract little from the value of the test.

(c.) Although occasionally the test is available on the second or third day of the illness, it is not often obtained before the fifth or sixth day, and is sometimes delayed even longer. Consequently it is not so useful in permitting an early positive diagnosis as was at first hoped for, but its chief value is in aiding in the diagnosis of those dubious cases of some standing which often puzzle even the most skilled diagnosticians.

The total number of tests made in our laboratory during the year was 138, but, as 30 of these were duplicates, the actual number of cases in which the test was applied was 108, divided as follows:

Cases in which the diagnosis was typhoid.....	42
“ “ “ “ not typhoid.....	9
“ “ “ “ doubtful.....	57

Of the 42 cases diagnosed as typhoid, a positive reaction was obtained in 37 (88 per cent.), a negative reaction in 3 (7 per cent.), and an indefinite reaction in 2 (5 per cent.)

Of the three cases in which a clinical diagnosis of typhoid had been made but which yielded a negative reaction, one case had been ill but a day when the test was applied, and a second case was so mild that the patient was confined to bed for scarcely a week. In this case the test was applied repeatedly, but always with a negative result.

Of the two cases which gave an "indefinite" reaction, I am unable to say anything, as nothing has been heard of them since they were reported on.

In nine cases in which the diagnosis was *not* typhoid, a negative reaction was reported in seven and a positive reaction in two. In these two cases carelessness in the application of the test must be admitted. The appearance of a reaction led to a hasty opinion being formed, which, on subsequent examination of the same specimens, proved to be incorrect. What has been styled a "pseudo-reaction" had developed, and I had not allowed sufficient time to elapse to shew that this was the condition. However, I at least learned caution by the experience.

Out of the 59 cases in which the diagnosis of the attending physician was doubtful, to which I had opportunity to apply the test, 24 (40 per cent.) yielded the typhoid reaction—but 3 of these gave a negative result early in the disease and the positive result was obtained from subsequent examinations. Of these 24 cases I have since been informed that the subsequent clinical history was confirmatory of my report in 12; of the remaining 12 I have heard nothing. Twenty-eight of the 59 doubtful cases (i. e., 48 per cent.) gave a negative reaction; of these 10 turned out not to be typhoid, 2 ran the course usual to that disease, and of the remaining 16 nothing more has been heard. Seven of the 59 doubtful cases gave an "indefinite" reaction, but of these I have no further information.

I regret that it so oftens happens that once we have furnished a report on a case, we hear nothing more of it. In order to shew just what the value of laboratory diagnosis is, we must have information as to whether the history of cases subsequent to our report is confirmatory of the report or not. This necessitates only the writing of a post card by the physician interested, which is so small a matter that its importance is not appreciated. If, however, every physician to whom we make a report would remember that unless he informs us of the ultimate history of his case we cannot compile complete statistics, I feel sure that the difficulty would be overcome, and that our statistics might be made much more reliable and consequently more instructive.

In closing I must thank you for your continued interest in the work of the laboratory, and for your never failing courtesy and readiness to aid and council me in the performance of my duties.

Your obedient servant,

W. H. HATTIE.

Laboratory of Provincial Board of Health,

Halifax, N. S., Sept. 30, 1897.

APPENDIX.

FINANCIAL STATEMENT.

1896.

Laboratory Receipts.

To various sums received up to date from parties for examinations of specimens of Sputa.	\$ 28 00
Government Grant.	100 00
	<u>\$128 00</u>

Laboratory Expenditure.

Postage	\$ 7 69
Material of various kinds.	48 62
	<u>\$ 56 31</u>
Balance to credit of Laboratory.	71 69
	<u>\$128 00</u>

FINANCIAL STATEMENT.

1897.

Laboratory Receipts.

To balance to credit from 1896.	\$ 71 69
“ Receipts for examination of specimens.	38 00
	<u>\$109 69</u>

Laboratory Expenditure.

Postage	\$ 9 85
Apparatus	6 41
To credit of Laboratory.	93 43
	<u>\$109 69</u>

FEES FOR LABORATORY EXAMINATION.

The Bacteriologic tests for diphtheria and typhoid fever are performed without charge.

Microscopic examination of sputum, \$1.00 for each specimen.

Microscopic examination of vomitus, fœces and urethral discharges, \$2 for each specimen.

Bacteriologic examination of water, one sample only, \$10.00.

“ “ “ “ additional samples, each \$5.00. When it is desired that the bacteriologist shall personally collect samples, travelling expenses only will be charged in addition to above fee in cases not necessitating an absence of more than one half day, but after a half day an extra fee of \$10 per day will be charged, in addition to travelling expenses.

For Bacteriologic examination of milk, the same charge is made as in the case of water.

PROVINCIAL BOARD OF HEALTH.

To City and Town Councils, and Local Boards of Health:

The attention of City and Town Councils, and Local Boards of Health, is respectfully invited to the necessity of precautionary measures to guard against the introduction or spread of Small Pox.

The year 1885 was marked by the appearance of the disease in this Province, as well as in other parts of the Dominion. A general vaccination took place in Halifax and some adjoining counties, but since that time, owing to absence of danger from Small Pox, no systematic vaccination has taken place, with a result, *an unprotected* state of a considerable portion of the population. In the neighboring States and Provinces of the Dominion Small Pox has prevailed during the past year, and tends to increase. Hence it is very desirable that such precaution be taken as to insure the proper protection of the people by Vaccination and also Re-Vaccination.

Re-vaccination is very much needed, owing to the fact that the protective influence of vaccination is gradually lessened with the lapse of time.

The Provincial Board of Health suggest that immediate action be taken by the City and Town Councils, and Local Boards of Health. If a public notice be given that vaccination is necessary,

no doubt the great majority of the people will attend to it. In the case of the poor the local authorities should make arrangements for the attendance at certain times and places of physicians who will vaccinate without charge.

The attention of Boards of Health is called to Sections 16 and 17 of Chap. 9 of Acts of 1888.

In order that Local Boards of Health may obtain satisfactory results from vaccination it is desirable that one or more public vaccinators be appointed to vaccinate on certain days, thereby enabling vaccine to be purchased in quantity, and used when fresh. It is desirable to be careful to select public vaccinators who realize that vaccine inoculation ought to be made with the *same antiseptic precautions as any other surgical operation*, and that those vaccinated be warned not to unduly expose themselves to cold during the time the virus is active in the system.

It is therefore hoped that your Local Board of Health will take prompt action in the matter, and report without delay to the Provincial Board of Health the extent to which it has taken advantage of the powers given it for the protection of the Municipality and of the Province.

By order of the Provincial Board of Health,

A. P. REID, M. D.,

Secretary.

ANATOMY ACT.

PROVINCIAL BOARD OF HEALTH.

Information to be furnished to the Inspector of Anatomy in connection with the delivery of dead human bodies to be used for scientific purposes in accordance with the Nova Scotia Anatomy Act.

- 1. Name of deceased.....
- 2. Sex.....
- 3. Age.....
- 4. Marriage State.....
- 5. Religion.....
- 6. Nationality.....
- 7. Occupation.....
- 8. Date of Decease.....
- 9. Disease or other cause of Death

N. B.—This information is required to be as complete as possible.

Given at.....in the County of.....
.....this.....day of.....189

This paper must be signed by the)
Coroner, Hospital Superintendent, or)
other Officer as specified in Sec. 6 of)
the Act. (Sgd.).....

To.....
Inspector of Anatomy.
Halifax, N. S.

ANATOMY ACT.

PROVINCIAL BOARD OF HEALTH.

OFFICE OF INSPECTOR OF ANATOMY.

Halifax189

You will please deliver (or forward) tothe body ofat present under your charge (if still unclaimed) to be used for scientific purposes in accordance with the Nova Scotia Anatomy Act.

Inspector of Anatomy.

To

PROVINCIAL BOARD OF HEALTH.

OFFICE OF INSPECTOR OF ANATOMY.

Halifax189

Received fromthe body ofto be used for scientific purposes in accordance with the Nova Scotia Anatomy Act.

Inspector of Anatomy.

ANATOMY ACT.

Province of Nova Scotia, County of

I,ofin the County ofdo solemnly declare thatwho died on theday ofA. D., 18 , atinin the County of, is a relative of me, this Declarant, within the degree of second cousin inclusively.

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath, and by virtue of "The Canada Evidence Act, 1893."

Declared before me, at this day of , A. D. 18

The declaration may be taken by a Notary Public; Justice of the Peace; Police or Stipendiary Magistrate; or a Commissioner authorized to take oaths in the Provincial Courts.

ANATOMY ACT.

PROVINCIAL BOARD OF HEALTH.

CIRCULAR.

To all Coroners, Superintendents of Hospitals, Keepers of Poor Houses, Prisons, Morgues, Etc.:

I am directed to transmit to you herewith a copy of the "Nova Scotia Anatomy Act" as recently amended and approved by the legislature, and to furnish you the following additional instructions as to the carrying out of the details of the Act, which have been approved by the Provincial Board of Health.

1. Immediately after the death of any patient or inmate in any of the institutions specified in section 6, and as soon as any dead human body shall come into the charge of any Medical Examiner or Coroner, the Superintendent, Keeper or other officer in charge, or the Coroner or Medical Examiner, as the case may be, shall—provided no relative has appeared to claim the body of the deceased—at once notify the Inspector of Anatomy concerning such body; but, in order to afford possible unknown relatives every opportunity of claiming their dead, the body shall not be delivered up until at least 48 hours after death, when it shall, if still unclaimed, be delivered to the Inspector or to the person named in his order, along with the particulars of description specified in section 6, and shall in return receive a receipt for such delivery from the Inspector.

2. In cases where bodies are required to be forwarded from country districts or provincial towns, the Superintendent, Keeper or Coroner, when transmitting such body, may direct the usual undertaker employed in such cases to coffin and encase the body in the cheapest and plainest manner possible, and forward the same with bill of charges to the undertaker in Halifax as named in the order of the Inspector. The bill shall be made out in the name of the Halifax undertaker.

3. In the event of the body not being taken charge of by the Inspector it shall be buried or disposed of as in cases which do not come under the Act.

N. B.—1. In sending notices from districts outside of Halifax, they should be by telegram to the Inspector, and marked "collect."

2. The Provincial Board of Health has appointed James Ross, M. D., 87 Hollis Street, Halifax, Inspector of Anatomy.

A. P. REID, M. D.

Secretary Prov. Board of Health.

Halifax, June 15th, 1897.