FOURTEENTH ANNUAL REPORT

—OF THE—

PROVINCIAL BOARD OF HEALTH

—FOR THE—

FISCAL YEAR ENDED 31st MARCH, 1911.

THE GOVERNMENT OF
THE PROVINCE OF BRITISH COLUMBIA.

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1912.

To His Honour THOMAS WILSON PATERSON,
Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to present the Fourteenth Annual Report of the Department of Public Health for the fiscal year ended 31st March, 1911.

All of which is respectfully submitted.

HENRY ESSON YOUNG,
Provincial Secretary.

Victoria, B.C., 12th January, 1912.

REPORT OF THE PROVINCIAL BOARD OF HEALTH.

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Provincial Board of Health,
Victoria, B.C., April 30th, 1911.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

Sir,—I have the honour to submit the Fourteenth Annual Report of the Provincial Board of Health, being for the fiscal year ending March 31st, 1911.

While public health conditions throughout the world are improving, and fortunately there have been no alarming reports during the year, yet such conditions may not continue. It is consequently necessary to be always prepared to act promptly in the matter of preventive measures in any emergency which may arise.

British Columbia, from its position as a maritime country, as well as being a gateway from the United States, receives arrivals from many countries. The duty of protecting the Province from diseases through such arrivals is undertaken by the Federal Government, and I am pleased to report that, with the exception of tuberculosis, their action has been effective in the main; but I suggest, as has been before suggested, that when the Federal Government officials become aware of the presence of disease among arrivals, the Provincial Boards of Health be notified of such facts.

Frequently reports of the presence of such diseases as plague, cholera, small-pox, etc., in foreign countries and throughout Canada, are alarming. Provincial Boards of Health may, through an arrangement for interchange of information, obtain late facts. As the importance of early and full knowledge is too serious to be left in doubt, I beg to recommend that the Federal Government and Director-General of Public Health be asked to keep Provincial Boards of Health posted as to health conditions, not only throughout Canada and the neighbouring States, but generally throughout the whole world.

Small-pox.

During the year there were 346 cases of small-pox at the following places: Vancouver, South Vancouver, Point Grey, Victoria, New Westminster, Kamloops, Revelstoke, Arrowhead, Field, Golden, Cranbrook, Fernie, Sunnyside, Richmond, Mission, Abbotsford, Chilliwack, Dewdney, Port Hammond, Ladner, Campbell River, and Indian settlements.

This is the greatest number of cases appearing in any one year in the Province, yet, considering its presence in twenty-two distinct places, it may be looked on as being fortunate that the numbers were not higher.

In dealing with the epidemic, a serious difficulty was met from the fact that the true nature of the disease was frequently unrecognized until the infection became more or less diffused. This resulted because the disease generally was light and the ordinary signs and symptoms were not marked.

It is unfortunate to have to repeat what has been said and written so frequently, that the whole responsibility for the prevalence of small-pox in any place rests upon vaccination neglect. This has been proved and is now accepted by honest scientists throughout the world.

An appeal is now made that parents attend to their children and that individuals do their duty.

SCARLET FEVER AND DIPHTHERIA.

During the year there were reported 261 cases of scarlet fever and 158 cases of diphtheria. The death-rate in scarlet fever was 8½ per cent. and for diphtheria 15 per cent. Such a death-rate is high; but if parents would act quickly and get medical supervision for suspected diphtheria, fatal results would almost disappear. At the present date the value of diphtheria antitoxin is recognized, and it is known that, if used early and freely, diphtheria need not be feared.

In the year 1890 Behring advanced the use of antitoxin. Since that date the methods of its preparation have been improved and larger and more concentrated doses are now being used. Prior to the use of antitoxin, even under the best medical supervision, the death-rate from diphtheria varied from over 40 to 50 per cent., while under its use the death-rate varies from 4 to 16 per cent.

In the Boston City Hospital, before antitoxin was used, the death-rate from diphtheria varied around 48 per cent. At the present date the death-rate varies from 11 to 9.5 per cent. This is not only strong evidence in support of the efficiency of antitoxin, but is an unanswerable argument in favour of the duty of health authorities to promote and even to insist on its general use.

At present, antitoxin is a commercial article, and naturally the producers, agents, and sub-agents look for their percentage of profits. Such conditions are to be regretted, the article being too essential to the community to be made a mercantlie commodity.

Experience has shown that small doses of antitoxin are ineffective as a curative. The successful rule is, large doses repeated. The cost of such treatment is heavy, and doctors hesitate to press for it because of expense.

The antitoxin used in Canada comes from England, France, and the United States. In England and France the authorities doubtless have regulations governing the production of this article; in the United States, from where most of the antitoxin used in this Province is obtained, it is said to be examined as to purity and potency. Whether this examination extends to that imported into Canada, I do not know; but there is no medical inspection or examination made by the Canadian authorities.

The instability of antitoxin is one of its characteristics; so that to maintain its purity and potency great care must be exercised in its keeping. The passing of such an article from producer to agent and from agent to sub-agent carries its risk, and on account of its use being of such overwhelming importance chances should not be taken.

The length of time antitoxin keeps pure and potent depends largely on how it is kept. When, therefore, it is remembered that diphtheria appears at such irregular intervals, it will be apparent how difficult it becomes to successfully handle the article from a commercial aspect. I am sure that druggists as a class do their best, but, on the other hand, I have personal knowledge of the sale to the public of antitoxin below standard.

For years the Provincial Board of Health has advocated the production of antitoxin by the Federal Government. By such action this essential curative agent would be cheaper, knowledge of date of production would be absolute, and purity and potency would be guaranteed. Whether the various Provinces would or should enter into an arrangement with the Dominion to bear the cost of such a laboratory is, of course, a matter of detail which could,

if necessary, be settled between the respective Governments. I therefore beg to recommend that the Dominion Government be petitioned to establish a laboratory for the manufacture of sera, especially diphtheria antitoxin.

Last year the Provincial Government issued orders for the establishment of stations throughout the Province for the upkeep and distribution of antitoxin at cost to municipalities, and free to people outside municipalities unable to pay. This action has been successful and useful. The serum is bought from one of the best firms in the States, but unfortunately there is no guarantee as to purity and potency.

TYPHOID FEVER.

It is regrettable that there is so much typhoid fever in the Province. Last year there were reported 360 cases, but there is good reason to believe that the number was larger. The death-rate was 28 per cent., a lamentable result in face of the knowledge that typhoid fever so often results from carelessness.

The disease is spread by typhoid germs which are found in the bowel-discharge and urine. Thus linen and bedding become infected, and, unless care is taken, body and hands of patient, nurse, or doctor may carry and spread the disease.

The great cause of typhoid infection is want of proper purification of linen and bedding, and lack of disinfection of fæces and urine. Thus water and milk may become infected and epidemics sometimes arise from single and ill-managed cases.

TUBERCULOSIS.

During the year deaths from tuberculosis were 312. In what degree the payment of this fearful tribute which tuberculosis has long levied on the human race may be escaped will depend on how far the people can appreciate the significant truths that tuberculosis is not hereditary—that it spreads by infection, and that when recognized early and properly handled it is eminently curable.

UNHEALTHY CONDITIONS.

The importance of the work accomplished in the abatement of nuisances dangerous to health is not fully recognized. The direct spread of disease is apparent, but the good effect of strict sanitation has not yet assumed the importance to which it is entitled. The annual mortality of London between the years 1600 and 1700 varied around 80 per 1,000; from 1800 to 1835 it was 29; it now averages 17 to 19, and it is quite possible to effect further reduction by continuing the improvement of sanitary conditions.

The work of Health Officers moves on two lines: One, an effort to prevent the spread of contagious disease; the other, the correction of existing insanitary conditions. Both require stringent efforts to meet the ignorance of the masses and the indifference of the intelligent. Much forgiveness for the interference of Health Officers will result when it is recognized that present sanitary arrangements hold about the same relation to those of the coming century as those of the Middle Ages to the present day.

Appended are copies of reports.

I have the honour to be,
Sir,
Your obedient servant,
C. J. FAGAN,
Secretary.

LABORATORY REPORT.

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PROVINCIAL BOARD OF HEALTH,
VICTORIA, April 30th, 1911.

Dr. C. J. Fagan,
Secretary, Provincial Board of Health, Victoria, B.C.

DEAR SIR,—I beg to submit the annual report upon the work of the Laboratory for the year 1910.

Of seventy-six samples of sputum examined for tubercle bacillus, thirty-five were found positive and forty-one negative.

Of thirty-one cultures from throats examined, sixteen contained diphtheria bacilli and fifteen did not.

From ten specimens of blood examined for typhoid agglutination, only four responded.

In two samples of cerebrospinal fluid, the diplococcus meningitiis was found. Another sample revealed the tubercle bacillus after animal inoculation.

Samples of water were examined from Phoenix, Goldstream (six samples), Elk Lake, Beaver Lake, and Victoria Reservoir, Cranbrook (three samples), and Kamloops (five samples). Reports of all these were submitted.

An epidemic of dysentery occurring in Victoria and vicinity was investigated, and proved to be due to the Shiga dysentery bacillus. A full report on this was submitted.

Diphtheria antitoxin and vaccine have been kept at the Laboratory and disposed of as required. The following amount of antitoxin was distributed among different points throughout the Province.

Name.	1,000	2,000	4,000	5,000
Vancouver	137	77	30	165
Ladysmith	9	3	...	7
Ucluelet	2	...	...	...
Victoria	...	2	2	4
Greenwood	20	18	...	20
Chemainus	6	...	6	...
Nanaimo	21	11	1	11
Revelstoke	5	5	...	5
Total	200	116	39	221

I have, etc.,
WALTER BAPTY.

VICTORIA, B.C., July 27th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

DEAR SIR,—On Friday, July 22nd, at the request of Dr. Underhill, Medical Health Officer, I inspected certain conditions complained of in Vancouver City.

Certain Chinese quarters, owned by the Great Northern Railway Company, and situated near their terminus on Dupont Street, were visited.

These buildings are old, dilapidated, and rotting. The conditions around and through them are dirty in the extreme and cannot be cleaned. The rooms are small and overcrowded by occupants. The light in these rooms is entirely insufficient. Dr. Underhill told me that he had condemned these buildings many times and had made efforts to have them pulled down.

Together with Dr. Underhill, I called on the representative of the Great Northern Railway Company in Vancouver, and asked him to take action and remove these buildings, and told him that, if action were not taken, the law would be pushed to its extreme limit. After lengthened conversation, engagement was given that all tenants would be removed on the 1st of August.

I trust my action in this matter will meet with your approval.

Together with the Medical Health Officer and the Sanitary Inspector, I visited the eastern portion of Vancouver City. The conditions of the sewage in this district are entirely inefficient.

I took notes of the conditions, and later saw the Mayor regarding same. He promised that the matter would receive attention at the earliest convenience.

My next visit was to inspect the sewage system entering the harbour from Evans & Coleman's wharf up to the Canadian Pacific Station.

Three main pipes enter the harbour in this direction; all of them discharge above low-water level, and so defile the whole foreshore and present a most objectionable appearance.

I interviewed the Mayor on this question, reminding him that I had spoken of this matter last year. The Mayor agreed with my view of this question, and promised to have matters remedied.

I have, etc.,
C. J. FAGAN,
Secretary.

VICTORIA, B.C., July 27th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

DEAR SIR,—On Thursday, the 21st instant, I visited D.L. 301, bordering on Vancouver City.

This section, as no doubt you will remember, is outside municipal authority; it is situated immediately between Vancouver City and South Vancouver Municipality.

The whole district is divided up into city lots, and the buildings on same are numerous. The population I am unable to give, but I can say that it is large enough to call for municipal control.

There are no sanitary arrangements in the district, and, as you can understand, in such a populated district the conditions are disgraceful. Surface drains are all contaminated by sewage, and numbers of small pools of stagnant and polluted water are in evidence.

Beyond this general statement as to conditions I do not think it is necessary to go, but I would recommend that pressure be brought to bear on the residents to either form an independent municipality, or join to the City of Vancouver or South Vancouver.

If this is not soon done, drastic action must be adopted. I have given instructions for the clearing of the most glaring spots. This action will be of no practical value, but will simply make conditions less offensive to the eye.

I have, etc.,
C. J. FAGAN,
Secretary.

VICTORIA, B.C., July 29th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

SIR,—Acting on your instructions, I visited Rock Bay, a small inlet from Victoria Harbour, lined off Rock Bay Bridge.

On the west of this inlet is a hide-curing factory, the property being owned by G. B Ordanda. On the north is a tannery, owned by F. Norris & Sons. This tannery is not being operated. To the east of this lie the ground and water-frontage owned by Lemon & Gonnason. Here there is considerable filling-in of the foreshore by lumber-slabs.

The western boundary of the inlet is occupied on the north by the Lemon & Gonnason Mill, Victoria City owns the next lot, and farther south are situated the Taylor Mill Company and the gas works. The gas works occupy the southerly side.

At high tide this inlet is entirely covered with water, while at low tide the foreshores are exposed, a small amout of water remaining in the centre.

The inlet is used by the mills and gas works, and on occasions by the tannery and hide-curing factory. Logs in considerable numbers practically fill the inlet.

At low tide there is painful evidence of the insanitary conditions existing in this bay. Mud is prevalent along the foreshore and extends into the centre. This mud is many feet deep and offensive in odour. The principal cause of this condition is that the city has septic tank immediately outside the bridge, and no doubt the incoming tide carries the effluent into the inlet.

The next and stronger reason for present conditions is that the city permits what was meant to be a surface drain to enter the inlet from Government Street. On examination, this drain shows that not only surface water is running, but crude sewage also.

The conditions as above described are such as should not be permitted to exist in the heart of Victoria, and every effort should be immediately made to remedy them.

In the first place, the City of Victoria should make other arrangements for the discharge of its sewage, and in the next place, the inlet should be thoroughly dredged. The filling-in effected by lumber and sawdust should be removed, and a filling of solid material take its place. What the foreshore rights of the leaseholders are I do not know, but I would certainly recommend that they be compelled to keep this foreshore in reasonable sanitary conditions.

To effect this will be expensive and difficult, and although I feel I must make certain recommendations, I do so with hesitation, for business aspects and cost may place the matter outside my views.

I beg to recommend that Rock Bay Bridge be filled on each side, leaving a 20- or 30-foot entry to the harbour, with or without gate or lock, as may be deemed necessary, canals dredged to sufficient depth extending to the various mills, and the tide-flats filled in.

If this recommendation is not practical, I would then recommend that all the wood-slab filling be removed, and that the foreshore be filled in as far as possible with solid material, and that a wall be built around this filling. Then instead of canals the whole inlet could be kept full of water. The Rock Bay Bridge be handled as above suggested.

I sincerely trust this will be practically possible, for the present conditions must not be permitted to continue.

I have, etc.
C. J. FAGAN,
Secretary.

PROVINCIAL BOARD OF HEALTH,
VICTORIA, B.C., August 8th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

SIR,—In accordance with your instructions, I visited the Victoria Isolation Hospital and examined into the conditions now existing. The City Medical Health Officer, Dr. G. A. B. Hall, accompanied me, and explained the present and proposed arrangements.

The grounds lie to the north of the Jubilee Hospital grounds, are extensive (about 10 acres), and healthily situated.

The buildings consist of two brick and two frame structures, varying in distance from each other from 20 to 40 feet. The other structures are the caretaker's lodge, coach-house and stable, laundry, disinfecting-house, a large storehouse, and morgue. With one exception all these structures are sadly in need of repairs.

The buildings are sound, and with attention should be useful for years. The floors are concrete, but are now disintegrated and broken. The walls, cedar-lined in the frame buildings, plastered in the brick buildings, are in both cracked and broken, and in such condition generally that disinfection or cleaning is impossible.

The baths and water-closets are dilapidated and unsightly. The rooms, wards, and kitchen are unsuitable, and altogether conditions are such that a complete remodelling and refitting is demanded.

I have seen Mr. Hooper's plans for remodelling the present buildings. They are practical and up to date in every detail, and my only suggestion would be that some vacant spaces on the second floor be fitted up for patients' and nurses' rooms, and that all walls be painted with lead and oil, or otherwise so handled that washing and disinfection may be easily and effectively carried out.

The brick building to the east has been used in the past for small-pox patients, and I understand it is proposed to continue using it for the same purpose. This should not be permitted, and I would recommend that a small-pox hospital be built in the grounds, as far east as will keep it the legal distance from all other habitation.

Mr. Hooper's plans will give accommodation for forty-four patients. Judging by the past, this is amply sufficient, except, of course, in eases of severe epidemics, when emergency tents or other emergency structures could be used.

I have examined the plans submitted by Mr. Hooper for the Executive Building. The plans are excellent and very complete in every particular. Whether this building is needed is not for me to discuss, but I would certainly leave it to later developments in preference to curtailing in any way Mr. Hooper's plans for the Hospital.

I have been unable to find any books or reports as to work done and expense for same in this Hospital. I have written to the City Clerk for such reports, but I have not yet received any reply.

Appended please find plans.

I have, etc.,
C. J. FAGAN,
Secretary.

VICTORIA. B.C., August 30th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

DEAR SIR,—Acting on your instructions, I made hurried inquiries into the epidemic diarrhœa conditions in and around Victoria.

I sent circulars to twenty-four Victoria medical practitioners, and to-day received answers from ten. According to these answers, there were during the present month 109 cases and fourteen deaths. The ages of those affected varied from infancy to seventy-five years, being, as per the reports from ten practitioners, 22, two years and under; 42, two to fifteen years; 37, fifteen to forty; 8, forty and over. The disease is not located in any particular place, but extends all over and outside the City of Victoria.

Such a number of adults being attacked is unquestionably unusual, and shows that the causes of the trouble are of a more virulent character than is generally to be found in conditions causing infant diarrhœa.

I have obtained specimens from the discharge of two children and submitted the same to Dr. Bapty for bacteriological analysis. Dr. Bapty reports as follows:—

"I beg to report upon the bacteriological examination of a specimen of fæces received from a case of 'epidemic diarrhœa.' The only organisms isolated in dilutions on plate cultures so far have been staphylococcus pyogenes amens and staphylococcus pyogenes albus. From the same sample a fungus (a myselium) was obtained, which I believe to be of no importance. From another sample with which I am still working, I have obtained three varieties of bacilli, two of which belong to the colon group; the other is a spore-producing bacterium, which as yet I have not identified.'

From conditions as I note them, I have no doubt that, if other specimens were examined, we would get various bacteriological results, showing that no particular micro-organism is responsible.

Epidemic diarrhœa is something that has given sanitarians great concern for many years, and the cause of it has been discussed in many places. One point is universally agreed upon—namely, that certain climatic conditions always are present when these attacks prevail. Lengthened drought in hot seasons is now accepted as being almost certain to be followed by epidemics. The cause of this is clear. The earth becomes heated and the temperature of the ground, extending down sometimes to a foot or a foot and a half, shows a warmth of from 55° to 57° Fahr. Such conditions are most favourable to the development of bacteria, and when the surroundings are filthy, certain bacteria are developed that are undoubtedly irritants to the intestinal canal if admitted to it.

Here, then, we have myriads of bacteria developed of various kinds, depending on the surroundings. These are gathered from the surface and carried by the feet, by the blowing of dust, and by flies, around into the houses.

As said above, many kinds of these bacteria develop fermentation and the decomposition of foodstuffs. These foods, when ingested, cause irritation and diarrhœa follows, depending in intensity on the amount of decomposition and the character of the bacterial poisoning. Certain constitutions are able to resist, whereas others are more liable to the attacks.

From conditions that I personally have seen, and from what has been reported to me by members of the medical profession, I am satisfied that in and around Victoria much of the trouble could be avoided.

The bacteria developed from decomposing dead organic matter are most hostile to the human frame. Here, then, is a matter of simple common sense, and the observance of ordinary cleanliness will avoid much of the misery that exists to-day.

My view of the present conditions is that the trouble comes from various sources. Foods during the summer months are particularly liable to decomposition; as a result of this decomposition, ptomaines are formed, and, as above stated, when admitted to the stomach, will cause irritation and consequent diarrhœa.

Another cause is milk. This article is a splendid means for the development of bacteria, and provided the heat is sufficient, the development of germs in milk will be enormous. The remedy is plain. Keep the milk covered, and so protect from flies and dust. Keep it cool, and so prevent multiplication of bacteria.

Again, water, unless of the purest kind, is liable to multiply its germs, and so become an unhealthy drink.

In my opinion, all of these conditions have contributed to the present epidemic; but the main cause is the enormous number of bacteria developed in the soil, and made malignant by the presence of filth.

I sincerely trust that the present apparent change in the weather will continue, and that a strong rain will soon be in evidence. If the coolness continues, there will be no further development from the ground sources, and a strong rain will wash away the germs and stop the spread of the disease.

It is evident, if above conclusions are correct, that in the prevention of this summer disease certain precautions can effect a great deal. Attention to the following points would save many infants' lives:—

(1.) Do not wean your infants during the months of July, August, and September. To begin artificial feeding during hot weather is very dangerous.

(2.) All milk should be pasteurized or even boiled before being given to the infant. Milk and water, and still more, patent foods, if left two or three hours, go bad, and are then very highly dangerous to the infant.

(3.) All jugs or other vessels for keeping milk must be scalded out and kept absolutely clean.

(4.) The feeding-bottle should be thoroughly scalded after each meal.

(5.) The use of "comforters" is unhealthy, and when they fall on the floor are dangerous, and frequently the cause of diarrhœa.

A few general points for the benefit of all:—

(1.) Decomposing refuse, such as decaying vegetables, bones, fish-heads, etc., is a fertile source of diarrhœa. It should be burnt, not placed in the dust-bin.

(2.) Scrupulous cleanliness of the house, especially the rooms where food is stored, is most important. Dust in every form is dangerous to health, and for removing it wet cleaning is preferable to dry. Thus washing and scrubbing are safer means of cleansing floors, etc., than sweeping.

(3.) All food should be kept in clean, dry places, and be kept covered, so as to protect from flies and dust.

(4.) Milk should be kept on ice if possible, and absolutely protected from flies or dust.

(5.) When sewage systems are not available, dry-earth or ash-closets should be used, with covering to prevent flies from being present.

(6.) When in doubt as to condition of water-supply, boil all water used for drinking or vessel cleaning.

I have, etc.,
C. J. FAGAN,
Secretary.

PROVINCIAL BOARD OF HEALTH,
VICTORIA, B.C., September 20th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

DEAR SIR,—Acting on your instructions, I visited Revelstoke in order to examine into the construction of the sewage system at present being installed there.

The city authorities are anxious to make a change in the sewage plan submitted and approved by the Provincial Board of Health.

It is found that in the eastern district of the city the fall does not permit the sewage to be thrown directly into the Columbia River, and the engineer requests that permission be given to allow it to enter the Illecillewaet, at a point about one mile above the entry of that river into the Columbia.

With a committee of the City Council and the City Engineer I examined the sewage arrangements already carried into effect. The work is well done and will, I think, prove eminently satisfactory.

In the original plan submitted there were certain portions of the city not provided for These locations lie low, and in order to connect with the sewage system, pumping would have to be resorted to, unless permission were granted as requested.

The point on the Illecillewaet proposed to be made use of is about a mile distant from the Columbia River. The land extending from this point to the Columbia River is owned by the the Canadian Pacific Railway on the northern side, and on the southern side by private individuals.

Only two houses are situated on this land. The water for the household supply of these places is obtained from wells. The water in these wells is not derived from a spring, but from the river.

In the case of one of these wells, provided the city extended the sewage effluent pipe farther down the river, pollution could be avoided. In the other case, there would be no remedy for avoiding pollution. The river at this time of year is of considerable volume, and if the effluent pipe were run well out into the stream, I think the danger of the pollution of the well would be lessened, provided some arrangement were made with the owner of this one cottage. I would recommend that permission be given to the City of Revelstoke to empty the sewage into the Illecillewaet at a point not higher up the river than the bridge.

There are a number of other houses on the city side of the river that up to the present time have been using wells for their water-supply. All these wells are fed by the Illecillewaet River water. The householders using these wells could be supplied with water from the city, and therefore need not receive the same consideration as those on the distant side.

The only provision I would strongly recommend in making this grant is the following, namely: That if at any time the pollution of the water was found to be an injury to the household water-supply, the City of Revelstoke should agree to change their system to the satisfaction of the Provincial Board of Health; and, further, that the city obtain permission from the owners at present compelled to use the river-water.

I have, etc.,
C. J. FAGAN,
Secretary.

VICTORIA, B.C., October 3rd, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

SIR,—Acting under your instructions, I left Victoria on September 13th, and visited the following districts for the purpose of examining into and reporting on the health and sanitary conditions existing: Michel, Fernie, Cranbrook, Nelson, and Trail.

In these places, my first visit was to the Hospital. Speaking generally, all these institutions are well conducted. At a later date I will submit a report on each.

The gaols were also visited and reports will be submitted. Regarding the Cranbrook Gaol, I beg to call attention to conditions which require immediate interference.

The Cranbrook Gaol is under the superintendence of the City of Cranbrook, but Provincial cases are sent there. It is a small building consisting of three cells and a general room. The cells are the usual size, and the doors are solid, with a small vent in the top. The guard tells me there are often three prisoners in each cell. These cells are offensive in odour and ill-ventilated, and the existing conditions should not be allowed to continue for an instant longer than the time necessary for the preparation of fresh accommodation.

I was told regarding the deaths of two prisoners in this Gaol within the last six weeks. Early in September last, two brothers, aged thirty-five and forty, were prisoners. On the second or third morning they were found dead in their cells. From what I could see, I have little doubt that the insanitary conditions and want of ventilation contributed to the death of these prisoners.

Whenever I have time, I visit the schools and say a few words to the children on health matters. I do not do this with any hope that the children will benefit, but merely wish to impress the teacher with the responsibility of his position regarding teaching the children certain simple principles which will aid them to live their full lifetime in good health.

The schools visited are well situated, and the sanitary arrangements are good. The ventilation is of poor order, and I might here state that the artificial ventilation does not seem to be understood, or is badly constructed.

Freedom from damp and good ventilation are the most important requisites in a school. In some of the schools visited artificial ventilation is provided for. Whether the system adopted is fully carried out I cannot say, but the results are not satisfactory. The best artificial system will not give good results unless intelligent supervision is exercised.

In the schools where natural ventilation is used I have not found proper provision for same. I would recommend that this whole question be inquired into.

On September 17th I arrived in Cranbrook. Typhoid fever was prevalent in almost all the camps in this district, and thirty cases are now in the Cranbrook Hospital, all of which came from the logging camps at Marysville and other districts in the vicinity of Cranbrook.

I visited the Cranbrook Hospital and saw a number of these cases. From inquiry, it is evident that the conditions existing in these camps are, from a sanitary point of view, unsatisfactory. There are no arrangements for the disposal of excreta; waste and refuse from cook-houses and boarding-houses are thrown around, and no effort made towards sanitary disposal. The food and food-utensils are not protected as they should be, and there is no doubt that the presence of so much disease is due to neglect of the ordinary rules of sanitation.

On the 18th I arrived in Fernie, and on the same day drove to Michel, to examine into the sanitary arrangements there, and the question of the selection of a burial-ground for that town.

The town of Michel is situated in a valley, through which the Elk River runs. The houses are well built, and are so situated that a good air-space is allowed between each house. There is no attempt made to provide for the disposal of liquid waste, and the result is that odours exist around the houses of the most offensive character. Furthermore, bones and other refuse contribute strongly to the development of this odour. Closets are situated at the back of each house, at a good distance from same. These closets are wooden structures, and lead to holes in the ground. Such closets are, of course, insanitary to the highest degree, and should not be permitted to remain.

One or two of the hotels have water-closets in the buildings, which empty into cesspits. These cesspits are situated near the river, and the overflow no doubt finds exit there. Such insanitary conditions should not be permitted to continue.

The closets in connection with the mine are of the same order as those in connection with the houses. They are insanitary and should not be allowed.

While in Fernie I had an interview with the manager of the mine, and, judging from his statement, I am satisfied that, if pressure were brought to bear on the company, conditions would be changed. I pointed out to him the exact conditions, and told him that, should the present state of affairs continue, sooner or later, painfully evident results would be apparent among the residents of Michel.

The only remedy for the above conditions is the adoption of regular system of sewage. Judging from the natural condition, I consider that the cost of installing such a system would not be very great.

I beg to recommend that the company be asked to change their present arrangements and to adopt methods acceptable to the Board.

RE GRAVEYARD.

The new town of Michel is situated about three-quarters of a mile from the old town. In the centre of the new town is a graveyard. Requests have been made for the removal of this graveyard, and the Government very properly decided to close it. The question of a site for the new graveyard was then considered.

The Crow's Nest Coal Company selected a site two miles to the west of New Michel. The Miners' Union objected to this site on the ground that the distance was too great in cold weather. This objection seems reasonable in view of the fact that the thermometer often reaches 40 degrees below zero and cold winds frequently prevail.

I have seen the two sites recommended by the Miners' Union. One is to the west of the old townsite and the other to the east. The site to the west is on the hillside, close to the town and almost immediately overlooking the river. If a suitable site could be obtained in another position, I consider it would be advisable to take it in preference to this, for the reason that in heavy rain or snowfall the river might be contaminated by this graveyard.

The site selected by the Miners' Union on the west seems to me to be very suitable. It is situated about a mile to the east of the Company's selected site, and is well removed from both town and river. Provided the ground is suitable, I would strongly recommend its acceptance.

Referring to this site, I have requested Mr. Alexander, Government Agent at Fernie, to have this ground examined as to its suitability for burial purposes, and report to me. The Coal Company object to this site, first on the grounds that it is placed over a quarry, and the soil is rocky and therefore unsuitable; and, again, they claim that certain developments are likely to occur there with which the presence of a cemetery would interfere. Awaiting Mr. Alexander's report, I beg to recommend that the decision as to the location of the site be be held over.

On September 19th and 20th I examined into the conditions existing in and around Fernie.

The first place I visited was the septic tank. I found this tank in poor working order. The effluent was offensive and did not bear any evidence of change to be expected from septic-tank action. The effluent from this tank was not passed through filter-beds, but ran direct into the Elk River, contrary to the plans submitted and approved by the Provincial Board of Health. I called the attention of the Mayor and City Engineer to these defaults, and promises were given that these would be remedied.

My next visit was to the Isolation Hospital, to the construction of which I understand the Government contributed one-half the cost. The building is situated on the hill to the south of the town. It is a small building, and well constructed as far the outside is concerned. It consists of two separate departments, with kitchens for each department. Each department consists of two rooms, bath-room, and water-closet. Behind each room is a corridor, and at the back of the corridors are the kitchens. The building would accommodate about eight patients. There is no accommodation for convalescent patients. They must either move outside or remain in their sleeping-rooms. There is no accommodation for proper disinfection or change of clothing when patients are leaving. The construction of the building is that of ordinary type, and not in any way suited to the conditions met in an isolation hospital. I hardly feel justified in recommending that this hospital be now changed, but I would strongly advise that all hospitals built with financial aid from the Government have plans submitted and approved before action is taken.

While in Fernie Dr. Bonnell reported that eight cases of typhoid fever had arrived from a logging camp situated about twelve miles from Fernie. On inquiry, I found that a case of typhoid fever came from that camp fourteen days previous, and that this case was about two days in the camp. Here is evidence of a painfully strong character. There is no doubt whatever that this original typhoid case spread his disease over the camp, and it is evident that such spread was caused by gross insanitary conditions. This is a stern object-lesson, and points without hesitation to the need for active and drastic sanitary measures being adopted.

On September 22nd I arrived in Nelson, and visited the hospital, schools, and gaol, reports on which will be submitted later. On the 23rd I gave a public lecture on health questions, and am pleased to report on the intelligent interest shown.

While in Nelson complaints were made to me *re* the action of the local Health Officer in failing to placard houses were scarlet fever was present. I investigated these complaints, and as a result am satisfied that no irregularity occurred.

On September 24th I arrived in Trail. No doubt you remember my reporting to you regarding the presence of typhoid fever in a lumber camp outside Trail. Under your advice, I sent a wire to Trail, giving instructions as to action to be adopted, and asking for samples from all water-supply sources. Twelve samples were subsequently sent. On examination, these waters were found to be pure.

On my arrival in Trail, I asked Dr. Coghlin, who is in attendance on the typhoid cases, to come with me and visit the lumber camp from which the cases came. The camp is situated high up on the mountains, about six miles from Trail, and about four from Rossland. The camp is a new one, and only in action for some six months.

I examined closely into the water-supply, the sanitary conditions, and the arrangements for handling the food-supply. The kitchen and pantries were clean and undoubtedly exceptionally well kept. The vegetables and other foods were kept in a clean, cool, and dry storehouse. The meat was kept on ice. It is evident, then, that the trouble did not arise from neglect. The vegetables were supplied from Rossland by a Chinaman. Among the vegetables used was celery, and, as we already know, Chinamen employ the filthy habit of applying to such vegetables urine and other dejecta. It is quite possible that the typhoid fever was passed in this way. This, of course, is but surmise; but, in any case, I think the time has come when the filthy habits of Chinamen should be checked.

I have looked and inquired very closely into the conditions existing in this camp, and although I can find no evidence of the disease being passed on to other quarters by the Chinaman who supplies this camp with vegetables, yet I am unable to point to any other cause. Under instructions given and actively carried out by Dr. Coghlin, no further developments have arisen for the last two weeks, and it is to be hoped that the epidemic is now ended.

The employees of this camp were almost terror-stricken, and it was a question whether there would not have been an exodus. I know the men were very pleased because of my visit, and they are now satisfied that everything possible is being done.

From Trail I left for Victoria, arriving home on Tuesday, the 27th.

I have, etc.,
C. J. FAGAN,
Secretary

VICTORIA, B.C., November 17th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

DEAR SIR,—While in Ottawa attending the Public Health Conference, I called on the Deputy Minister of Immigration.

In my report to you dated September 11th, 1908, it is stated that the Deputy Minister of Immigration told me that, if we conformed to certain regulations and made application to him, immigrants who had arrived in British Columbia within the previous two years, and who were ill and in indigent circumstances, would have their hospital expenses paid for by the Immigration Department.

On this action being adopted and the hospitals notified, the Deputy Minister refused to act, and denied that he had so promised. Unfortunately, his statement to me was verbal; but I beg to point out that he sent me a large number of hospital forms, which were to be used by the hospitals treating immigrants, and making application for payment.

When I saw the Deputy Minister in October of this year, he still refused to admit that he had made such a promise as I claim.

I asked him what the law was on this question, and his reply was that there was no particular law, but that the Government acted in this matter as they saw fit, and that at present payments for indigent, sick immigrants were made only in Manitoba, Saskatchewan, and Alberta.

I have, etc.,
C. J. FAGAN,
Secretary.

VICTORIA, B.C., November 17th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

DEAR SIR,—Acting on your order, I left Victoria on October 4th to attend the Dominion Health Conference, held in Ottawa on October 12th and 13th.

The Federal Government was represented by Dr. Montizambert, Director-General of Public Health; Dr. Bryce, of the Department of the Interior; Mr. A McGill, Chief Analyst in the Department of Inland Revenue; and Dr. Drum, from the Department of Militia. The Provinces, with the exception of Quebec, were represented by the Secretaries of the Provincial Boards of Health. Dr. R. M. Simpson, President of the Manitoba Provincial Board of Health, Senator from Alberta, and Dr. George I. Porter, Secretary of the Dominion Anti-Tuberculosis Society, were also present.

Mr. E. B. Osler was Chairman of the Conference.

The meeting was called by the Commission of Conservation, of which the Honourable Clifford Sifton is Chairman. Mr. Osler was in constant attendance at the Conference, and the Honourable Mr. Sifton was present at the opening and conclusion of our meetings. The Honourable Sidney Fisher was present at two of the meetings, and gave valuable assistance and advice.

At the first meeting, after an address by the Honourable Mr. Sifton, four committees were appointed, with the object of reporting on the following questions:—

(1.) The pollution of waterways:
(2.) Tuberculosis:
(3.) Harmonizing of a Provincial health laws:
(4.) Formation of a Central Public Health Council and the establishment of a National Laboratory.

Committee No. 1 reported on the pollution of waterways. The need for action in this matter is apparent to all, and calls for no comment from me. I merely beg to draw attention by repeating the recommendation advanced by this committee to the authorities of the different Provinces:—

"No by-law providing for the raising of money for the construction, operation, or extension of any system of waterworks or common sewer, or system of sewerage or sewage disposal, shall be submitted to the votes of the electors by the Council of any municipality

until the consent of the Commissioner of Public Health, or of the Provincial Board of Health, as the case may be, to the proposed construction, operation, or extension has been obtained; and the preamble to every such by-law shall declare that such consent has been duly obtained. No debenture shall be valid if issued under any by-law passed in contravention of this section."

Committee No. 2 reported by pointing out the dreadful devastation to human life by reason of the presence of tuberculosis among our people, and showing how certain lines of action successfully worked towards the final eradication of this disease, and appealed to the Federal authorities to give substantial assistance.

The Honourable Mr. Fisher, Minister Agriculture, was present when this resolution was brought in. Mr. Fisher, being asked to give his views regarding the question, expressed himself as being in strong sympathy, but stated plainly that the Federal Government would not join with the Provincial Governments in establishing hospitals for consumptives, and explained that any money contributed by the Dominion Government would be so invested that the Government would have complete control over the expenditure.

The Chairman, Mr. Osler, while expressing himself as not being in sympathy with Mr. Fisher's views, yet urged the committee to adopt such resolutions as would most successfully appeal to the Government. The Honourable Mr. Sifton recommended that the Federal Government be asked to grant or procure large areas of lands in each of the Provinces, these lands to be divided up into sections in accordance with the use to which they are to be put, and leased to consumptives.

This suggestion of Mr. Sifton's was received with strong approval. The idea is a noble one, and fills the want apparent to every one taking an interest in this question. Beyond doubt, it is the one link missing in the chain of action already adopted in all civilized countries, and if the Dominion Government act in accordance with the Honourable Mr. Sifton's suggestion, they will place Canada and our Canadian people in a position to which no other country has been able to attain.

Dr. Hodgetts presented a report on the International Commission on Bovine Tuberculosis. By resolution, this report was endorsed.

Committee No. 3 brought in a report on the harmonizing of Provincial health laws. This report could hardly be expected to deal definitely with a question of this kind at such short notice as was given to them. But on one question the committee felt they were called to report, and made the following recommendation, which was unanimously adopted:—

"That the vital statistics of each Province be placed directly under the supervision of the Provincial health authorities of each of the Provinces."

Committee No. 4, on the establishment of a Central Public Health Council and National Laboratory, recommended that a meeting of health representatives from every Province in Canada be held at Ottawa at least once every year.

On the question of the establishment of a National Laboratory, it was pointed out that the various sera, vira, vaccines, toxins, antitoxins, and other products used in Canada came largely from England, the United States, and other foreign countries. As a result, the price of these necessary articles is almost prohibitive, and, further, there is no surety given as to purity or potency. The Conference were unanimous regarding the value of this resolution.

Many other points outside the matter dealt with by the various committees were discussed during the conference.

Attention was called to the Quarantine and Immigration Services. As at present handled, these services are under the charge of two separate and distinct sets of officers. It has been pointed out that this was not only needlessly extravagant, but was often a hardship and delay to travellers. Medical examination is undergone at the Quarantine Station, and must again be submitted to a few hours later at the Immigration Office. Such action naturally does not appeal to the public, and it was advanced at the Conference that experience plainly demonstrated the necessity of placing these services under one head and one Medical Officer.

It was further pointed out that both of these services neglected to report to the Provincial Boards of Health when infectious disease was found to be present among travellers entering the country. It was asked that whenever infectious disease was found to have been present on board any boat entering Canada, the Provincial Boards of Health should be so notified, and the names and destination of persons entering each Province be submitted.

Another question brought before the Commission was the want of information regarding the health conditions of countries having direct intercourse, personal or business, with Canada. If this suggestion is accepted and acted upon, it will be found very useful and helpful to the health authorities in the different Provinces.

Appended please find copy of the resolutions submitted and adopted at the Conference.

I have, etc.,
C. J. FAGAN,
Secretary.

VICTORIA, B.C., November 17th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

DEAR SIR,—While in Ottawa attending the Public Health Conference I called on the Department of Indian Affairs, and had two lengthened interviews with Mr. Scott, who, in the absence from illness of the Deputy Minister, represented the Department.

I placed before Mr. Scott the accounts paid by the Provincial Government for guarding the Indians in the Nanaimo and Cowichan Agencies during the small-pox epidemic of 1908. The particulars for every account were inquired into, and Mr. Scott listened attentively to my reasons for asking that the Dominion Government pay these accounts.

Finally, Mr. Scott told me that I could rely on his advising his Minister to pay our demand. I am officially writing to-day sending the accounts and asking for payment.

I trust my action will meet with your approval.

I have, etc.,
C. J. FAGAN,
Secretary.

PROVINCIAL BOARD OF HEALTH,
VICTORIA, B.C., November 21st, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

DEAR SIR,—The importance of proper selection of sources of a public water-supply cannot be overrated. This importance should be made apparent to the public when the

question of selection is to be decided by vote. Because such a selection is soon to be made by Victoria citizens, I therefore beg to lay before you a short statement regarding the present condition of the water and a few observations on the watersheds of Elk Lake and Goldstream.

Dr. Bapty has made two examinations of Elk Lake water and one of Goldstream. I cannot advance that results obtained from such limited work are definite, and merely offer them as an indication of actual conditions.

The samples were taken from Goldstream immediately after a heavy rainstorm. The bacteriological results found in samples taken under such conditions cannot possibly give a fair average of what is ordinarily found in water. The waters of heavy rain sweep over large land-areas and carry with them surface-soil bacteria.

From descriptions already submitted to the authorities, I understand that the watershed of the Esquimalt Water Company extends over 10,000 acres. The elevation of this shed is over 1,100 feet above the sea-level. The average rainfall reaches 64 inches. The catchment-area is so surrounded that it is absolutely free from any possibility of contamination, there being no habitation in or near.

Conditions as above pointed out regarding Goldstream are, unfortunately, rare, and the city, with power to utilize water from such an absolutely protected source, should indeed be thankful.

Elk Lake is situated on the Saanich Peninsula, about five miles from the City of Victoria, and has an area of 604 acres. It is surrounded by a limited number of farm-houses, but no house is on the lake-shore.

The watershed supplying this lake does not extend far from the shore. I understand that Victoria City owns less than one-half of this watershed, the remainder being private property. The lake-shore is owned by the City of Victoria. It is indeed unfortunate that the whole catch-water area does not belong to the city.

No doubt the farmers in this area use reasonable precautions to prevent contamination of the lake-water, but of this there is no certainty; in fact, it is generally taken for granted that contamination from man and animal must occurr, the amount of such contamination depending on the care and attention given by individuals.

From the fact that they have put in filter-beds, it is evident that the Victoria City authorities recognize these conditions. Three filter-beds are built, covering an area of 40,000 square feet.

I happened to see the sand being prepared for these filter-beds. The work was carefully done and the sand seemed to be in excellent condition for such use. The depth of the sand on the filter-bed seemed to be about 3 feet, but, so far as I could see, it was of the same character on the top as at the bottom of the filter. This is, I understand, unusual, the average course being to have coarse sand on the bottom, running to fine sand on the top.

Sand filter-beds are without question the best means known for purifying water, but to get the best results many important details must be closely followed.

As above stated, there are 40,000 square feet in these filter-beds, which amounts to less than an acre. Now, all authorities are agreed that two to three million gallons of water per day passing through an acre is heavy work. What amount of water is passed through these beds I do not know, but from the results of the bacteriological examination it is evident that the filter-beds are not acting efficiently. The passage of water through these filter-beds must not exceed a definite rate, and if it does the results of the filtering will be practically useless.

Authorities are agreed that the action of filter-beds is not only mechanical, but biological, and, so far as I can learn, the biological work has not much chance of action at Elk Lake, for the reason that the scraping of the surface layer is too frequent. At any rate, the results as found show that the bacteriological content was practically as high after the water passed through the filter as before it entered. This should not be, and although I have tried to give a few indications as to what was wrong, I have not considered the question sufficiently to give an absolutely definite opinion. But I can say this: that filter-beds properly constructed and properly worked should almost free water passed through them from contained bacteria.

Another point in connection with Elk Lake water-supply found by examination of the water was that the bacteria increased as the water passed on to Victoria City. In considering what was the reason for this, I could only see one cause—namely, that the water-pipe from the reservoir to Smith's Hill is too much exposed to sunlight and heat, and thus, the bacteria not being removed and the temperature of the water increased, means of course that the bacteria will multiply; this is what has been actually found in this water. The bacterial content at Elk Lake reservoir was 80 or 90 c.c., and at Smith's Hill and in tap-water was over 200.

As may be seen from Dr. Bapiy's chemical report, Goldstream water is much superior to that from Elk Lake.

Appended please find copy of Dr. Bapty's report.

I have, etc.,
C. J. FAGAN,
Secretary.

ANALYSES OF VICTORIA WATERS, AUGUST 23RD, 1910.

SOURCE.	Bacteria per cc.	SOLIDS.		Total Solids.	Chlorine.	PARTS PER 100,000.		
		Volatile.	Fixed.			Free Amm.	Alb. Amm.	Nitrites.
Middle of Elk Lake.....	45	32	11	....	2	.008	.028	....
Channel, Elk to Beaver Lake.	100	....	....	42	2	.008	.038	....
Intake, Beaver Lake.....	100	....	....	40	2	.018	.04	....
Reservoir, Elk Lake.....	30	33.6	6.8	....	2	.016	.028	....
Tap	215	....	....	64	2	.006	.03	....
November 13th, 1910:								
Intake, Beaver Lake.	50	....	....	....	1.5	.006	.018	Trace.
Reservoir, Elk Lake.....	90	....	....	....	1.6	.006	.016	"
do Smith's Hill....	200	....	....	57	1.8	.012	.012	"
Tap, after running one hour	210	....	....	....	....	....	....	....
Goldstream, Nov. 15th, 1910:								
Stream above reservoir	225	....	....	57	1	.0004	.001	Nil.
Japanese Gulch.....	250	....	....	....	1	.002	.003	"
Reservoir	150	....	....	....	1	.0004	.003	"
Water from water-wheel...	130	....	....	....	1	....	....	....

PROVINCIAL BOARD OF HEALTH,
VICTORIA, B.C., November 29th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

DEAR SIR,—I beg to apologize for delay in answering your communication of October 30th, enclosing plans for Isolation Hospital at Grand Forks, and asking for opinion *re* same.

It is estimated that the cost of this building, including the furnishing, will be $1,500, and the Government are asked to contribute $1,000. If the Government decide to grant this $1,000, I would certainly recommend that the proposed site be named, so that a report may be submitted before action is taken.

The plans submitted are of simple order. Three small rooms, each 9 feet 6 inches by 10 feet 6 inches, and a kitchen are on the first floor. The bath-room and water-closet are in the same room and open directly on to the corridor. On the upper floor there are two rooms, size 9 feet 6 inches by 8 feet 6 inches. On this floor there is no water-closet or bath-room accommodation.

It is certainly a simple structure, and I would recommend reconsideration of the plans before granting your approval.

In the first place, the rooms are small, and I cannot see how more than one patient could be admitted to each room. Then, again, should scarlet fever or diphtheria be present, there is no arrangement for segregation. One water-closet and bath-room will certainly not meet demands. Further, there is no arrangement for deposit of clothing and final disinfection.

Sewage arrangements as stated in the specifications are of the most objectionable character. A wooden drain is called for, which carries the sewage to a cesspit. This should not be permitted.

I would certainly advise further consideration of the plans of the Isolation Hospital at Grand Forks.

I have, etc.,
C. J. FAGAN,
Secretary.

VICTORIA, B.C., December 19th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

SIR,—In accordance with your instructions, I have examined into the conditions of the registration of vital statistics of this Province, and beg to submit the following report:—

Taking the Reports of the Registrar-General as published for the years 1907, 1908, and 1909, it is found that the classification of diseases is not in accordance with present-day systems. It is also seen that various terms are used for one disease under one heading, e.g., enteric fever and typhoid fever; apoplexy and cerebral hæmorrhage; atheroma and arteric sclerosis; rheumatism and rheumatic fever; influenza and la grippe; pneumonia, congestion of the lungs, and lung-fever; tuberculosis, phthisis, consumption, and pulmonary hæmorrhage; scarlet fever and scarlatina, etc. Again, many diseases are mentioned in two or more places, and numerous diseases are incorrectly classified, e.g., uræmia, syncope, rheumatism, and rheumatic fever as diseases of the organs of circulation; influenza, la grippe, and stricture of the esophagus as diseases of respiration; peritonitus, cystitis, and Hodgkins disease as

diseases of the digestive organs; tubal abcess as a disease of the urinary organs; septicæmia, empyema, and pyæmia as diseases of the integumentary system; and so on to the end of the report.

It may further be noted that many indefinite terms are used, such as abcess, cancer, tumor, hœmorrhage, paralysis, disease of the brain, spinal complaint, aneurism, jaundice, indigestion, etc.

Vital statistics, to be of any value, must be accurate beyond all question, and to be accurate it is necessary that one trained in the science of disease should be entrusted with their record.

As to the registration of births and marriages, I have only to say that births should be registered in the Department of Health, so as to assist in carrying out the vaccination regulations.

Regarding the importance of statistics of births and deaths, Parkes states :—

"The attention now paid to public health is in a large degree owing to the careful collection of the statistics of births and deaths and of the causes of death made in England during the last forty years. It may truly be said, indeed, that not only all Europe, but gradually the entire world, has been influenced by the work of the Registrar-General of England. We are now able to determine with some precision the limits of mortality and its causes, and are being led up to the consideration of the causes which bring about a high death-rate."

The Public Health Section of the Conservation Commission at a meeting held last October passed the following resolution :—

"That the vital statistics of each Province be placed directly under the supervision of the Provincial health authorities of each of the Provinces."

Appended please find copy of the Act introduced in 1905. I also beg to append copies of the Reports for 1907, 1908, and 1909.

I have, etc.,
C. J. FAGAN,
Secretary.

VICTORIA, B.C., December 19th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

DEAR SIR,—Certain complaints have been recently lodged in my office regarding the conditions existing in cold-storage buildings, fish-shops, and butcher-shops.

The handling of such places should no doubt be attended to by the local authorities, but the difficulty is to get the local authorities to appreciate the necessity for action.

I would therefore recommend that the amendment be made to our "Health Act" giving us the power to adopt regulations. I advise this because it would be well to have one regulation governing all such stores throughout the Province. If this amendment is adopted, all we have to do is draw up regulations and ask the different municipalities to carry them into effect, it being, of course, the duty of the Provincial Board of Health to see that the regulations are observed by the local authorities.

I have, etc.,
C. J. FAGAN,
Secretary.

VICTORIA, B.C., December 19th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

DEAR SIR,—I beg to recommend that the "Health Act" be amended so that the Board have power to adopt regulations regarding the construction, ventilation, sanitary arrangements, and general handling of hotels, boarding-houses, tenement-houses, and lodging-houses. Also regarding barber-shops, baker-shops, theatres, dance-halls, and other places where large gatherings meet for the purpose of amusement.

I hardly think it necessary to point out the advantages to the public of the Provincial Board of Health or the Local Boards having control over such buildings. The conditions existing at many of such places are distinctly unhealthy, resulting from ignorance or carelessness in construction and maintenance. The sooner control is put into operation, the less will be the financial loss to owners.

I also beg to recommend that section 21 of the "Health Act" be amended. Under this section, it would be impossible for large centres to erect hospitals for infectious diseases, for the simple reason that owners of houses on lots in close proximity to the land on which the hospital was erected would be in a position to demand the removal of the hospital were they nearer than 150 yards to such land.

I therefore beg to recommend that the words "no land" be struck out; and the question of distance of infectious hospitals from dwellings be allowed to remain, but with the addition "except with the approval in writing of the Provincial Board of Health."

Another amendment recommended is one dealing with working camps throughout the Province. Experience has shown us that logging camps, railway camps, mining camps, etc., are hurridly constructed to meet immediate requirements, and no consideration is given to sanitary or even ordinary health arrangements. As a result, the great bulk of typhoid fever in the Province this year came from such camps.

Section 60 of the "Health Act" passed at the session of 1904 calls for inspection of camps in the months of April and May every year. The Inspectors, who were constables, did their duty as best they could, but such work, to be effective, requires special training and continuous action.

I therefore beg to recommend that an Inspector be appointed who may give his entire time to health matters. Such an Inspector, by remaining as long as may be needed, can assist camp-owners by pointing out the requisites and their advantages, and announcing that frequent visits will be made, and neglect to carry out the regulations will be met by legal proceedings.

Regulations governing the sale of milk and the management of cowsheds, dairies, and milk-shops were adopted July 21st, 1904.

The question as to whether the Department of Agriculture or the Provincial Board of Health should carry these regulations into effect has been discussed many times. The late Captain Tatlow promised to bring the Ministers and heads of the two departments together for consideration and decision as to what is best to be done. Unfortunately this meeting was never held, and conditions are not much better than they were six years ago. The Department of Agriculture are taking some action, but the Provincial Board of Health are doing nothing.

I beg to advise that the question of enforcing regulations be definitely placed in one Department, and, wherever it is placed, that a competent medical man be made responsible.

I have, etc.,
C. J. FAGAN,
Secretary.

PROVINCIAL BOARD OF HEALTH,
VICTORIA, B.C., September 15th, 1910.

The Honourable Dr. Young,
Provincial Secretary, Victoria, B.C.

SIR,—In the absence of Dr. Fagan, I beg to submit the following report on the findings in a few dusenteric stools examined, and also a report on epidemic dysentery.

Before Dr. Fagan's departure, he ordered a large supply of antidysenteric serum, so in future cases more may be done for the patients and the mortality may be reduced.

The disease appears to be diminishing now that the weather conditions are more favourable, the temperature being lower than during August.

It will be during the late spring and summer of next year that great precautions will have to be taken, chiefly as regards general cleaning-up and the prevention of flies.

I have, etc.,
WALTER BAPTY.

BACILLARY DYSENTERY.

Baccillary dysentery is a specific infectious disease, in which frequent bloody mucous stools and abdominal pain and tenesmus are the most marked clinical symptoms. It occurs in epidemics, and is caused by the bacillus dysenteriæ, thus differing from the amœbic or tropical dysentery.

It has always been a disease of armies, being quite prevalent in the Manchuria and South African Wars, and prevails especially among those who live in unhygenic surroundings.

The bacillus was first isolated by Shiga and proved to be the cause of dysentery in an extensive epidemic in Japan, 1898. Since this, Flexner has described a somewhat similar organism isolated by him in the Philippine Islands, and a third type was also recognized. To this, two other types have recently been added.

The Shiga bacillus is very much like the typhoid bacillus in growth and appearance. It is not motile, does not form spores, and is not stained by Gram's method. It produces acid but no gas in bile-salt peptone glucose solution, and in stab cultures in litmus mannite agar the lower depths become pink, but the mannite is not fermented.

In two of my acute cases this organism was readily found in agar-plate cultures along with colon bacilli.

On agar plates the Shiga bacillus appears in twenty-four hours as thin flat colonies, 1 and 2 mm. in diameter, differing from the colon bacillus colonies, which are larger, whiter, and thicker. The colonies tend to coalesce, giving the leaf-like or map-like appearance. On Conradi Drigalski plates the Shiga colonies are blue and shining, while the colon colonies are pink and somewhat larger.

In three of my cases (the only three examined), in the later stages the blood serum, in dilutions of 1 in 25, readily agglutinated suspension of the Shiga bacillus in less than thirty minutes.

The earliest cases of dysentery occurring in Victoria appeared in the latter half of July, and were confined chiefly to Pembroke Street and vicinity, near the Chinese quarter of the town, so it is quite probable that the present epidemic originated from Orientals, as many of these are always coming from China and other parts of the East.

The disease spread into various districts, until at present but few localities of the town remain that have not been affected.

A case of an affected Chinaman is reported as occurring on July 7th by Dr. Holden, but few other Chinamen are reported to have been affected before the middle of August, at which time the disease was quite widespread.

Infection.—As a source of infection, the dysenteric stool is most important. Where privies are not properly protected, the danger from this is apparent, and in one instance where I inspected a yard, unofficially, and promptly reported to the city authorities, the danger was indeed very real. Only one who has suffered from dysentery can appreciate the terrible agony which at times comes over the dysenteric patient and compels him to relieve himself wherever he may be.

Hot weather tends to favour the development of flies, and probably keeps the bacillus active for some time after leaving the body. I think the majority of Victoria practitioners are agreed as to the rôle the flies play as an agent in the spread of this disease. In dry, dusty weather the bacilli might be carried in dust to a certain extent, but this is doubtful.

The disease is also carried by dysentery-carriers in the same manner as is typhoid fever. A number of cases have been up and about their usual work during the attack, and any of these persons, such as cooks and others who handle foodstuffs, might easily spread the infection.

Cases are reported by Shiga of small localized epidemics occurring even in the winter, caused by carriers who themselves remained quite well. Miss Wollstein, Rockfeller Institute, found the dysentery bacillus in three infants who had no symptoms of dysentery or summer diarrhœa; and many other cases are reported.

Hence it follows that the disease will again, no doubt, make its appearance in this Province next summer.

In certain epidemics water has been the great carrying agent. While the water-supply of Victoria is not satisfactory, being high in albuminoid ammonia (vegetable matter), it has not been proved to be a source of infection.

Age.—In the present epidemic the disease has not been confined to any age, but adults appear to have been the chief sufferers. Returns point to very few old people as having been affected. The following returns were received by the Provincial Board of Health up to about the 27th August, and are quite incomplete, as many cases have since developed, and some of those reported were still affected at the time:—

	1 to 5.	6 to 10.	11 to 20.	21 to 40.	41 to 50.	Over 50.	Reported as Adult (no age given).	Total.
Cases.....	34	23	13	26	2	3	10	111
Deaths.....	7	3	1	4	1	1	1	18

Included in the 1 to 5 column are seventeen infants, ranging up to eighteen months, among whom three deaths are reported. The mortality among adults is low, death being caused usually when the dysentery occurs as a complication to some other disease. Among my own cases, death occurred once in a convalescent who had had a severe attack of typhoid fever with a relapse. Another occurred in an alcoholic who had been on a drinking-bout.

General Symptoms and Course.—Dysentery is usually an acute disease, the symptoms occurring one to two days after the infection. It appears first as an ordinary diarrhœa, associated with some abdominal pain. The stools soon afterwards contain mucus, and in a few hours assume the characteristic bloody, slimy appearance. The total site of the abdominal pain depends upon the portion of the colon affected.

The abdomen is not distended and the muscles may be held tense. The patient complains of loss of appetite, great weakness, and of a feeling of pressure in the abdomen or in the rectum, of which he tries to relieve himself by constant straining, though he can pass but little.

The temperature is about 101° to 102° Fahr., and in children frequently runs up to 105°.

Vomiting is sometimes associated, but as a rule only in the severe cases. The tongue is white and furred, but becomes quite red and dry in advanced cases.

Favourable cases tend to get better in from four days to one week. Death may occur after two weeks, or the disease may become chronic. When the small intestine becomes involved the typhoid state supervenes. I have seen one such case in the Victoria epidemic, in which death occurred later from peritonitis.

Treatment, Prophylatic.—Flies must be carefully guarded against. All filth, garbage, and manure must be removed and destroyed to prevent, as far as possible, the breeding of flies. Houses should be screened and all foodstuffs carefully protected. Appended is a copy of Dr. Fagan's circular on "The House-fly Menace, and How to Lessen Same."

When a case occurs in a house, the other members of the household should be inoculated with antidysenteric serum as a preventive.

In all cases the stools should be carefully disinfected as in typhoid fever, with plenty of fresh slaked lime, carbolic acid 1 in 20, bichloride of mercury 1 in 500, or chloride of lime. The antiseptics are of value in the order named, and whichever is used, it should remain in contact with the stool for half an hour.

Treatment during Attack.—Absolute rest in bed is essential. A warm woollen bandage around the abdomen assists in keeping the bowels at rest.

No solid food is allowed, but a little liquid nourishment is given every two to three hours, such as thin chicken-broth, egg-albumen, and thin barley or rice water. If given at body-temperature, the food does not tend to excite peristolsis, and so cause pain. When the tongue is clean, indicating that the stomach is working well, milk may be given. Calomel and castor-oil are the chief medicines of importance, given in doses 2 to 10 grains of the former, and ½-oz. doses of the latter, repeated when necessary.

Shiga condemns the use of ipecacuanha, pomegranate, and astringents.

Enemata of 1 per cent. saline or soda solution are cleansing as well as soothing.

Methylene Blue, in doses of 1½ to 3 grains, and in enemata of 1/10 to 1/5 per cent. is strongly recommended.

When the specific cause is known, as it is in this epidemic, serum treatment is that most recommended.

Shiga's rules in giving the serum are as follows:—

(1.) In mild cases the serum is injected once in a dose of 10 c.c.

(2.) In cases of medium severity the serum is twice injected in doses of 10 c.c. The interval is from six to ten hours.

(3.) In severe cases the largest amounts of serum are injected (about 40 to 60 c.c.), but the daily dose does not exceed 20 c.c.

In favourable cases treated with the serum the patient begins to improve in one to two days, the pains leave, and the stools become normal, and the fever disappears.

Osler's "Modern Medicine." "Bacillary Dysentery," K. Shiga, M.D., University of Tokio, Japan.

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