THE PREVALENCE

OF

VENEREAL DISEASES IN CANADA

A Presentation of Facts and Figures made to the Conservation Commission of Canada on January 17th, 1917.
Gentlemen of the Conservation Commission,

A few years ago when Superintendent of the Toronto Hospital for the Insane, it became apparent to me that gradually the admissions contained more and more cases of General Paresis. All of these patients were of course suffering from syphilis. A careful survey of the figures revealed the fact that twenty-five per cent. of the male admissions were syphilitic, a startling proportion.

When I transferred to the General Hospital service it was soon apparent that Venereal Diseases were steadily on the increase in the community, and in a small clinic conducted for the Feeble Minded, no less than seventy-nine paretics came under observation in about a year. Many of these cases had congenital syphilis—in other words were the victims of an inherited form of this malady.

The prevalence of this disease among children—very largely the offspring of recent arrivals in Canada, was significant.

So commonly was the general Out-Door Department attended by people asking for treatment for syphilis that we were forced to develop a Special Clinic for Venereal Diseases, open for three days and one evening in the week.

What happened when this was established, made us look further, and it was thought advisable to make a careful examination of the blood of every Public Ward patient entering the Hospital.

What has been discovered in the Clinic for Feeble Minded, in the Special Clinic and in the General Wards, is the basis for an argument before this Commission.

The facts and figures to be presented to you by the speakers who follow me, will prove conclusively that the time has come for the establishment of drastic legislation to control the evil.

The situation is a serious one, and the importance of it will be thoroughly appreciated by those who have been following the world-wide movement for the suppression of Venereal Diseases.

When it is learned that more than 12 per cent. of the patients admitted to the public wards of the Toronto General Hospital, for various diseases, medical and surgical, have syphilis, it will be realized that we are dealing with an acute situation, as the facts which apply to that institution are merely an index of the prevalence of syphilis in the community.

The menace to the health of the nation is perhaps greater than that of tuberculosis, as the problem is so much more difficult to deal with, and the subtle manifestations of the malady are so much more involved and obscure, as well as not easy to treat.

If registration of the tuberculous is desirable, the same argument is doubly applicable in the regulation of syphilis.
No false sentiment, no desire to shirk our manifest responsibility should be encouraged. It is a case where a spade should be called a spade without the least hesitation.

In tuberculosis it is possible to control infection, in syphilis it is extremely difficult to do so for reasons that are self-evident.

One of these reasons is, that prostitutes are the source from which the greater part of the infections come—carefully compiled statistics showing that 75 per cent. are traceable to the women of the street.

As 60 per cent. of all prostitutes are feeble minded, a serious situation at once faces us in Canada, as very little intelligent provision has been made for the care of this class.

To show how this works it may be said that in our Clinic a few weeks ago we had under observation at one time, a feeble minded girl and five men she had recently infected with syphilis.

In the Old World the problem has been faced for some years with varying success, and since 1874 and 1876 Denmark and Norway have employed a system of compulsory registration.

In England at the present time a large number of the best people in the realm are moving actively, as the menace has grown to such proportions, and in Canada we must find some solution of the present difficulties.

In Western Australia advanced legislation went into force on December 8th, 1915. Bill No. 55 of 1915. An Act to Amend the Health Act, 1911-12.

This is no doubt the most advanced legislation of the kind in existence, and deals with the following subjects, among others, "Venereal Diseases, Their Treatment by Medical Practitioners only—

Persons suffering from these diseases must place themselves under treatment and keep themselves under treatment until cured.

Medical practitioners are to report cases of Venereal Diseases under treatment by them.

Name and address of patient to be reported on failure to continue treatment.

Certificate of cure to be given.

Bacteriological examinations to be made free of charge.

Compulsory examination and treatment under certain conditions.

Subsidized Hospitals or salaried Medical Practitioners to give free treatment.

The prohibition of quack cures.

Secrecy to be preserved, etc.”

The Act is an excellent one and full of suggestions worthy of the greatest consideration in Canada.

In the City of New York advanced legislation is in force and follows along the general lines indicated in the Western Australian Act.

Many educational pamphlets are also issued both in Australia and New York. These are available for public use. They treat of such subjects as the following—
To warn persons not infected.
To warn and instruct persons who are infected with these diseases so that they will appreciate the absolute necessity of treatment.
To arouse a desire in the persons who have been infected to know absolutely whether they have been cured.
It is a matter of opinion among the majority of Sanitary Officers that no distinction should be made between venereal and other infectious diseases.
If this be admitted there must be intelligent educational campaigns, proper prevention, effective isolation and persistent treatment.
Venereal diseases stand pre-eminent as a menace to the race and incidentally to the nation. The physical and social evils following in their wake are well known to the whole medical profession. When we realize the immediate and remote results of infection that is not treated, and contemplate the horrors entailed by a possession of these vile diseases, we shudder for the future of civilization, and marvel that the Health authorities have not risen in violent protest long ere this.
In Canada we are rapidly reaching a condition not much better than that in the Old World where Venereal Diseases have played such a prominent part in the degeneration of the race. Not only that we must not shut our eyes to what is likely to occur when the war is over and the returned soldiers are to be cared for. We might as well face the probabilities squarely and make proper provision.
In all armies Venereal Diseases are rampant—the armies of to-day are no exception to the general rule and the proportion of diseased among those who have already come home is alarming and disturbing. We may well ask what shall the harvest be in the near future? There is abundant reason for anxiety and those who remember what tragedies resulted after the Boer War will readily appreciate the force of our contention.

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THE PATHOLOGICAL ASPECT

Gentlemen of the Conservation Commission,

Although the immediate effects of venereal disease on the individual are serious enough, their great importance from the standpoint of Race Conservation lies in their delayed effect upon the individual and his, or her offspring. It is this aspect of the question which especially impresses itself upon the Pathologist. Whereas he may not often see in the post mortem room the evidence of recent syphilis, he is continually being brought face to face with its delayed effects.

Syphilis is a disease due to a minute spiral organism called the Treponema Pallidum. Ordinarily this is transmitted from one individual to another through sexual intercourse. If this were the only method of transmission, however, the possibility of control and prevention might be a simpler problem. Unfortunately extragenital infection occurs oftener than people realize and the prevention of these extragenital infections becomes one of the most difficult tasks of the Sanitarian.

The organism when it enters the tissue as a rule produces after an incubative period of from eight to ten days, a so-called primary sore. This primary sore presents well marked clinical features which enable the Physician to recognize it, but if there is doubt, there are laboratory methods by means of which the diagnosis may be rendered absolutely certain. This primary sore tends to undergo spontaneous healing and a careless or ignorant person may not be caused serious inconvenience. After a second incubation period of about ten weeks, the so-called secondary stage of the disease develops. This is in the nature of trouble in the skin, in the mouth and in the system generally, due to the invasion of the whole body by the parasites. In many of the secondary lesions, multitudes of the parasites are found and during this stage the patient may be intensely infectious and especially liable to spread the disease by extragenital paths.

These so-called secondary manifestations of the disease may persist for months or even years, but they also tend to heal and the patient may become apparently well and properly treated cases may recover completely. Unfortunately, however, syphilis is a disease in which the parasite, following these primary and secondary forms, may remain dormant in the system for years. Sometimes after many years, evidence of disease supervenes and the patient develops the so-called tertiary lesions. These are of the nature of chronic inflammatory and degenerative processes which may occur anywhere in the body but which show a special tendency to attack the blood vessels and the nervous system. The effect of
the disease on the blood vessels depends upon the vessels involved. For instance, the syphilis parasite shows a special tendency to attack the large artery which carries the blood from the heart, the aorta. As a result of this localization the walls of the vessel becomes weakened and dilated. This is what is called an aneurysm and to-day all aneurysms of the aorta are recognized as due to syphilis. The wall of the aorta where it leaves the heart is especially liable to involvement, with the result that the valves which guard its mouth fail to close properly and become incompetent, producing serious effects upon the general circulation. Whenever a patient of middle age with this form of heart trouble comes to a physician, he immediately suspects syphilis and he has a test of the blood made to exclude it.

The same tendency for the beginning portion of the aorta to be scarred by syphilis leads to an involvement of the coronary arteries, the arteries which nourish the heart itself. When this takes place the heart muscle is damaged and the patient shows the symptoms of that most terrible of all heart troubles, angina pectoris. Syphilis in its late stages is one of the most fruitful causes of angina pectoris. When the arteries of the brain are involved in the syphilitic process, the nutrition is cut off from the brain and the patient suffers from a paralytic stroke. In men between the ages of forty and fifty a stroke in the vast majority of cases is due to syphilitic disease of the cerebral arteries.

The microbe of syphilis shows a special tendency to become lodged and to remain dormant in the central nervous system. Lodged there, in later life it awakens to activity and there results two diseases which are the most serious ones of the central nervous system, either locomotor ataxia, in which the spinal cord is mainly affected, or paresis, general paralysis of the insane, where the brain itself is involved.

All these late tertiary manifestations of the disease take a tremendous toll from the most important and active part of the community and just at the age when their activities are of the greatest importance in the life of the community.

The most serious thing about these late developments in the blood vessels and brain is that it bears no relationship to the severity of the primary disease or its secondary symptoms. A patient may suffer from a relatively insignificant primary infection, may be only slightly inconvenienced by the secondary stage, yet he may die before fifty from the vascular or nervous troubles.

It is just on this account that it is essential for the State to institute control over diagnosis and treatment. The very nature of the disease leads to concealment and tends to throw the sufferer into the hands of quacks. Ignorance of the ultimate consequences and the promptness with which the primary and secondary lesions disappear under treatment is apt to lead to undue optimism in the patient. This optimism leads to too early cessation of treatment and the condition of dormant infection is set up to be followed in later life by some of these serious late forms of the disease. It is upon this side of the question that the public needs more thorough education:
that diseases which the public are apt to think of as the necessary accompaniment of the wear and tear of life are in many cases directly traceable to a venereal infection contracted in early manhood and from which the victim congratulates himself he has completely recovered.

A recent writer upon the relation of syphilis to life insurance says "No applicant who has had syphilis deserves to be considered a first class risk". "The average syphilitic will not live to his full expectancy". "Mortuary records show that diseases of the circulatory organs are the cause of death in over fifty per cent. of syphilitics".

But perhaps the most terrible results of syphilis from the standpoint of Race Conservation is seen in its influence on the offspring. Syphilis is a disease which is transmitted from the parent to the child before birth. The result of this is either the mother miscarries or gives birth to a dead child, or if the child is born alive it may die in early childhood from the results of the congenital infection. Even if it grows to adult life it sooner or later will show the same late forms of the disease in which the organs of circulation or of the central nervous system are involved. It may serve as a source for the further propagation of the disease and may even transmit it to the third generation.

"The severity of the infection in the child is not in proportion to the severity of symptoms in the parent. Mild symptoms or latency in the parent are often found with malignancy of infection in the child".

Innumerable statistics might be quoted to show the effects of syphilis upon the race from this standpoint, but the following observations of Kaufmann will suffice. Among nine syphilitic couples there were sixty-six pregnancies; these included thirty-three abortions or still births, and thirty-three living children. Of the thirty-three living children, twenty died—fourteen during the first year of life, three suicided, two were epileptics, and one died at the age of forty. Thirteen are still living of whom only two are normal.

J. J. MACKENZIE,
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THE BORDET-WASSERMANN REACTION IN SYPHILIS

In the diagnosis of syphilis, as in the diagnosis of any other condition, we make use of all the data at our command, and it is only by so doing that scientific accuracy can be hoped for or attained. The study of any case divides itself naturally into two phases—the clinical study, and the laboratory findings. While the importance of the former should never be minimized, it is nevertheless true that the tremendous advances in the fundamental laboratory sciences, especially in recent years, have emphasized the enormous value of certain laboratory tests and have shown us how many things had been missed before the advent of these methods of study. In no other single disease has the aid of the laboratory been so invaluable as in syphilis, and the statement, extravagant as it sounds, may also be unhesitatingly made, that no single laboratory test has so revolutionized our ideas on any disease as has the so-called Bordet-Wassermann test done in the case of syphilis.

This test was the outcome of a series of brilliant researches by two Frenchmen—Bordet and Gengou—elaborated later on by others until it has attained its present high degree of efficiency. It is a complicated test, requiring expert laboratory training and accurate scientific knowledge, along with much experience in its performance and interpretation.

By means of this test we are able to detect the presence of syphilis in approximately 98% of all cases, excepting in the very early stage, in which case we have other tests which lend themselves admirably to the circumstances. A strongly positive Wassermann test done in a reliable laboratory has now come to be regarded by the best authorities as certain evidence of syphilitic infection.

The only other diseases which are conceded to give a positive test are certain tropical infections which are very easily ruled out, and these, moreover, are exceedingly rare in this country.

By means of this test we have learned some astounding facts concerning the prevalence of syphilis in our population. In the Toronto General Hospital, where we do a test on every case admitted to the wards for any ailment whatsoever, we have learned that between twelve and fourteen per cent. of admissions are syphilitic. These figures are borne out by investigators in Britain and the United States. What is even more illuminating is the fact that the great majority (66%) are not suspected of suffering from the disease. This is due to the following well-known facts: (1) Syphilis is a mimic and can simulate almost any known disease; (2) There is a so-called latent stage of syphilis, in which the patient shows no evidence of being infected—feels well, looks well, and
on physical examination exhibits no lesions. Yet that patient is a menace to the community on account of his or her ability to infect others, or to bring syphilitic children into the world. Then again, such a patient is living on the crater of a volcano, for the dormant infection may light up at any time. The Wassermann test has done a great service in enabling us to detect this type of case. Let me mention only one other condition—the etiology, or cause, of which has been cleared up by this test. I refer to General Paralysis of the Insane. It is only in recent years that we have proved beyond doubt that this is a late but none the less direct result of syphilitic infection. The test has also served a most useful purpose in the detection of juvenile cases of this disease—the result of congenital or hereditary infection.

It is not only in diagnosis that the Wassermann reaction is of assistance, but it finds a wide use in following the progress of treatment. and no patient is now discharged as cured until his test has been consistently negative for months or even years after treatment has been completed. This application of the test can not be emphasized too strongly, for many cases whose treatment has not been sufficiently thorough, seem to slip back as time goes on and finally yield a strongly positive test. Such a plight would be entirely overlooked were this test not available.

It is not only at this time to go into technical details, for it would be tedious and would serve no useful end. It is necessary, however, to merely mention in passing, some of the facts about this laboratory procedure in order to impress upon everyone the importance of properly equipped laboratories, and above all, properly trained workers. In Toronto, and apparently it is no exception, there is a tendency into regard the Wassermann reaction as a simple routine measure not requiring skilful technicians and expert supervision. The result is that, in the past, the profession and the public have suffered from erroneous results and doubtful reports. Nothing will so quickly bring discredit upon this important procedure as quackery and incompetence. We have no protection from that sort of thing at present. A similar test to the Bordet-Wassermann reaction for syphilis has been devised for the detection of generalized gonorrhoea, and while its application is not as wide as the former, it is nevertheless coming to be regarded as a requirement in routine of all well-equipped laboratories. It is even more difficult to perform, and the interpretation of results is, of course, all the more important.

When it is remembered that the test is accomplished by the use of the serum from guinea pigs, sheep's blood, immune rabbit's serum, extract of human heart—as well as the patients' blood, and that these various ingredients require much attention, proper scientific knowledge and absolute accuracy in their preparation and use, it will be easily recognized that such an important test should only be done in well-equipped laboratories by properly trained medical graduates. These laboratories require to be generously financed by the State, so that they may not be handicapped in their usefulness. They should be under the control of,
or at least inspected by, the Departments of Pathology of the Universities, or other recognized authorities, so that the medical profession and the public may be assured that the reports issued from the various laboratories are to be relied upon. We strongly urge this point as one of the most vital and far-reaching factors in the campaign against venereal disease.

H. K. DETWEILER, M.B.,
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Statistics of the Prevalence of Venereal Diseases

Gentlemen of the Conservation Commission:

When one begins to obtain any authentic statistics on the prevalence of venereal diseases in this country, the very evident fact that there is no registration of the same makes it apparent that one can only draw some definite conclusions from the statistics of other places and from the complications of these diseases. This fact is emphasized in the Report of the British Royal Commission, published in 1916, as to their prevalence in Britain.

(Sec. II, C.F., Memo, Appendix 1). The death rate per million of population, from four causes of death as considered from the Registrar-General’s Report for the year 1910,—viz.:

<table>
<thead>
<tr>
<th></th>
<th>Syphilis</th>
<th>General Paralysis of the Insane</th>
<th>Locomotor Ataxia</th>
<th>Aneurism</th>
</tr>
</thead>
<tbody>
<tr>
<td>England and Wales</td>
<td>46</td>
<td>62</td>
<td>16</td>
<td>31</td>
</tr>
<tr>
<td>Scotland</td>
<td>42</td>
<td>48</td>
<td>14</td>
<td>36</td>
</tr>
<tr>
<td>Ireland</td>
<td>22</td>
<td>17</td>
<td>10</td>
<td>11</td>
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</table>

Paragraph 14, Section II, emphasizes the fact that these reports furnish no adequate estimate of the prevalence of venereal disease.

In considering gonorrhoea no attempt is made to report the prevalence, but some of the sequelae of gonorrhoea show its prevalence. A very large percentage (Page 28, paragraph 85, Report) of pelvic inflammations in women are due to gonorrhoea. Sterility in women (Page 28, paragraph 86) 50% of all causes is due to gonorrhoea. (Page 31, paragraph 97) of 1,100 cases of blindness in children, 24.3% was due to gonorrhoeal infection of the eye. Of 102 children, 41 cases were traced to corneal defects from gonorrhoeal infection of the eyes, probably at birth. Some startling statistics of the effects of syphilis on national life are given. (Page 30, paragraph 93). Evidence shows possible transmission of the disease to the third generation. The most prolific cause of miscarriage and premature birth is syphilis. Thirty-four syphilitic mothers with 175 pregnancies only gave birth to 30 (apparently healthy) children. 104 of these were premature births, still births, or deaths in infancy. Of 22 married women suffering from locomotor ataxia (page 30, paragraph 94) 7 were sterile; 69 pregnancies occurred with only 10 living children.

Veeder in the American Journal of Medical Science claims that 10 to 30% of syphilitic marriages are sterile; 13% result only in abortion. Out of 331 pregnancies in 100 syphilitic families, 131 or 40% died before birth, 15% died after birth; total of 55% died. 35% living but syphilitic; 10% escaped syphilis.
On page 30, paragraph 94, the Report deals with eye diseases and blindness caused by syphilis. Of 1,100 children in the Blind Schools, 31.2% was due to positive syphilis, plus a probable 2.8%. Page 30, paragraph 95; Ear diseases and deafness—25% of congenital deafness is due to syphilis; of 845 children deaf, 7.2% was judged due to congenital syphilis.

Another startling statistic given in this Report of the national loss is that England and Wales spend annually in asylums for the syphilitic insane, $750,000.00.

In view of the above findings these facts are of an especial significance to Canadians as many of our immigrants of the past have come—and many of the future will come, from the Mother Country. The loss of child life from this disease is appalling, and when the congenital effects or defects are added, the question is one of very great importance to the nation.

Now let us consider the prevalence of venereal disease as published by the Report of New York City Department of Health, 1914. The following number of cases were reported:

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syphilis</td>
<td>21155</td>
</tr>
<tr>
<td>Gonorrhoea</td>
<td>9526</td>
</tr>
<tr>
<td>Chancrel</td>
<td>517</td>
</tr>
<tr>
<td>Total</td>
<td>31198</td>
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</table>

They also have an Advisory Clinic connected with the Department of Public Health. At this Clinic in the first six months of 1915, 1,389 patients attended and the source of infection sought. The majority of these cases were males. A history was obtained in 803 cases. 70% of the infection was through the public prostitute; 25¼% due to the clandestine prostitute and 2½% the result of wedlock. The Department claims that there is as much syphilis as tuberculosis in New York. Of the six million people in New York City 25% have venereal diseases of some kind. They report 10 out of every hundred have syphilis; 8 out of 10 men and 5 out of every 10 women have had gonorrhoea at least once. (Pamphlet on Venereal Diseases published by the Department of Health, City of New York). Nearly 5,000 people die annually in New York City as the result of syphilis. Nearly ¾ of the serious operations in women are due to gonorrhoea.

One further amazing statistic of the prevalence of syphilis in the United States is published in the Army Reports from two of their recruiting depots of about 2,000 recruits between the ages of 20 and 30, selected from 98 different occupations in life. 16.7% were found to be syphilitic and the report adds that there is reason for believing that the percentage may be 20%.

That syphilis is a menace to public health is becoming so apparent that one feels that most stringent methods must be adopted to control its spread. This is further proven by the fact that the blood tests prove its existence without the patient having any knowledge of how the disease was contracted. Dr. H. N. Cole of Cleveland, in the December, 1916, number of the Journal of the American Medical Association, reports 61 cases of primary syphilitic sores occurring extra-genitally.
Ages. Cases.

<table>
<thead>
<tr>
<th>Ages</th>
<th>Cases</th>
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<tr>
<td>5-10 years</td>
<td>4</td>
</tr>
<tr>
<td>10-15 &quot;</td>
<td>0</td>
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<tr>
<td>15-20 &quot;</td>
<td>3</td>
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<tr>
<td>20-25 &quot;</td>
<td>7</td>
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<tr>
<td>25-30 &quot;</td>
<td>13</td>
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<td>30-35 &quot;</td>
<td>16</td>
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<tr>
<td>35-40 &quot;</td>
<td>5</td>
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<td>40-45 &quot;</td>
<td>6</td>
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<td>45-50 &quot;</td>
<td>1</td>
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<td>50-55 &quot;</td>
<td>2</td>
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<tr>
<td>55-60 &quot;</td>
<td>3</td>
</tr>
<tr>
<td>65 &quot;</td>
<td>1</td>
</tr>
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</table>

Total ........................................ 61

Of these 33 were married, 28 single.

The sores occurred as follows:

Lips ........................................ 43
Tonsils ...................................... 3
Tongue ........................................ 1

47 or 77% in buccal cavity.

Hand .......................................... 10
Neck .......................................... 1
Jaw ........................................... 1
Abdomen ...................................... 1
Breasts ....................................... 1

Let us now consider our own Province. If we take the Registrar General's Report for 1915, one would think that venereal diseases were not a great factor in the death rate in the Province. On page 25, Nos. 37 and 38,—Syphilis; Number of deaths caused by

Syphilis, including cities and towns of Ontario .................................. 48
Caused by gonorrhoea ................................................................. 4

Total ........................................ 52

However, many other diseases result from syphilis, the more generally recognized being as follows:

Locomotor ataxia, which caused .... 49 deaths (Page 27)
General paralysis of the insane.... 76 " " "
Diseases of the arteries, atheroma and aneurism ............................ 1242

1367

In the last entry there may be doubt of its accuracy, as no distinction is made between aneurism and diseases of the artery, but this is more than offset by the fact that a great many deaths from angina pectoris and some of the other diseases mentioned are undoubtedly due to syphilis.
During the past thirteen months a syphilitic treatment clinic has been conducted in the Out Patient Department of the Toronto General Hospital, the patients being referred from the other clinics and the results give a fairly accurate idea of the prevalence of the disease. 152 clinics have been held and 373 patients have been treated. Of these 28, or 8% only were treated in the primary stage of the disease—70, or 18% in the secondary stage, and 206, or 55% in the later stages of the disease. The remaining 69 cases were—congenital 7, quiescent 24, not classified 38.

We have done 871 blood tests or Bordet-Wassermann tests with 344 of these being positive—or 40%. The number of intravenous treatments given was 1,595 to 298 patients. Our records show that 34% are married males and 31% married females—or 65% married, representing 30 families. In these families there have been 54 miscarriages or dead infants, showing the dreadful loss of child life, while some of the living children undoubtedly have congenital syphilis. In three families the fathers have died in the asylum or have syphilis of the nervous system, and some of their children are infected. Since October 6th, 1916, routine Wassermann tests have been done in the wards of the Toronto General Hospital, and out of 971 tests 125 have shown positive syphilis—between 12 and 13%.

In view of the above statistics one feels that the control of venereal disease becomes a question of national importance, not only from the standpoint of an economic loss, but also from the standpoint of the preservation of life, the wastage of which in this present world crisis one feels will be hard to replace.

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GONORRHOEA AND ITS SEQUELAE

Gentlemen of the Conservation Commission,

The disease syphilis has been discussed in its various aspects by the previous speakers. It is my duty to put before you certain facts regarding gonorrhoea more especially as it affects the female.

There can be no question that gonorrhoea is very prevalent in Toronto and in Ontario. In the wards set apart for diseases peculiar to women these cases form a large proportion of those treated. I have had considerable experience in similar wards in the Royal Infirmary, Edinburgh, Scotland, a hospital serving a city of almost the same size as, and a country district not dissimilar to that surrounding Toronto. I have no hesitation in saying that many more cases of gonorrhoea and its complications are admitted to the wards in Toronto than to those in Edinburgh.

Out of a total of 329 operations performed in that department of the Toronto General Hospital during the past year, 40 or over 12% were undertaken for the relief of conditions directly due to gonorrhoeal infection. When we take account of major operations only, 25% were performed for gonorrhoeal complications. These figures do not differ materially from New York Hospital statistics. They take no account of the number of patients who recover without operation.

The classes of women suffering from the disease are prostitutes, feeble minded, domestics, clerks and married women. It is an important fact to note that of the 40 cases I mentioned as requiring major abdominal operations for gonorrhoeal infection 28 were married and 12 single. The married women were in nearly every case innocent victims of infection conveyed by their husbands. The latter too in many cases were innocent to the extent that they believed themselves to be no longer infective. Had they been placed under a proper system of treatment and control and been warned of the danger of their condition their wives would have escaped.

The tremendous importance of all this lies in the fact that gonorrhoea in the female is a very serious condition, much more so than in the male. It is serious from the following points of view:

(a) The disease tends to spread from the primary site of infection up into the uterus and into the Fallopian tubes and so to the peritoneal cavity, a condition of affairs which puts the patient's life in jeopardy. If she recover it is often only to lead the life of a chronic invalid or to have to submit herself to an extensive and mutilating operation which renders future child bearing impossible.

(b) Apart from the above severe complications sterility very often results from milder attacks. Probably 50% of all cases of sterility in the female are directly the result of gonorrhoeal infec-
tion. From the point of view of the conservation of the race, this is one of the most serious aspects of the question.

(c) In the female the disease often assumes a latent form which is extremely difficult to recognize. Treatment is difficult and it is not easy to be sure when a cure is effected. The possibilities of spread of the contagion from the individual female are thus very much greater than from the individual male.

(d) If a woman be suffering from gonorrhoea at the time of labour, her child runs a great risk of developing ophthalmia. 40% of all cases of congenital blindness are due to this cause.

A consideration of these facts shows the great loss to the State resulting from gonorrhoeal infection, a loss expressed by:

(a) The diminished working capacity of the individual and the frequent necessity for maintaining her in hospital or elsewhere.

(b) The diminished birth rate.

(c) The birth of permanently disabled children.

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University of Toronto.
CONCLUSIONS AND PRINCIPLES OF CONTROL

Gentlemen of the Conservation Commission,

The control of venereal diseases would not be a matter of importance if the results were confined to acute symptoms of the recently infected, but the necessity for action lies in the fact that the immediate symptoms are trivial when compared to devastations of its later manifestations. These manifestations are so numerous and varied that the possibility of venereal disease must always be considered by the physician or surgeon. The loss to the country by death in the prime of life of many an able man through aneurism and angina pectoris and vascular diseases of syphilitic origin can be appreciated by anyone who allows memory free scope. The loss and the expense by reason of nervous affections such as general paralysis of the insane and locomotor ataxia, amounts to many hundreds of dollars a year. These examples can be readily grasped, but there are few statistics which can give any idea of the loss through the innumerable manifestations which go by masking names or are classed with like affections of other origin. The statistics which show that 12 per cent. to 14 per cent. of hospital cases are syphilitic only tell part of the story. Here only latent cases discovered in the course of routine tests, and those so far incapacitated by the disease as to be confined to bed, are included. To these must be added the ambulatory cases, with or without symptoms, which can only be definitely diagnosed as syphilitic by means of laboratory tests, and those who are inhabitants of asylums, homes for incurables, and homes of the “poor house” class. The loss alone through sterility, non-productive pregnancies, early death and mental deficiency is such that no country can afford to view unconcerned this aspect of venereal disease. The individual who has ever been infected and knows that tests for cure exist, should not be given the chance of ruining his family life, depriving the state of healthy citizens, and burdening it with physical and mental defectives.

These statements and much that has just been given by the former speakers may seem exaggerations to those who are not in touch with the advances in Bacteriology and the perfection to which sera tests have been brought. The revelations coming from the scientific laboratories have not only confirmed the impressions of physicians as to the venereal origin of many affections, but have shown that many unsuspected affections are of that origin. These revelations have changed beliefs to well established facts from which a feasible system of control can be deduced.

The viruses of venereal disease are of such a character that their
transference from one individual to another usually requires personal contact—a contact so definite as to bring the moist surfaces of mucous membranes or abraded skin together. Rarely is the transfer made by other means, such as through the agency of inanimate objects—though one can readily understand why much is made of this possibility. The mentally deficient recruit the ranks or the prostitutes and show the most neglected forms of venereal diseases in the infective stage.

The virus of syphilis can be readily transmitted for some months by the recently infected individual. After this varying period the danger of transmission decreases for any single contact. After six years, even without treatment, transmission is improbable. Early and vigorous treatment shortens the infective period, even though the virus is not entirely destroyed in the body of the individual. The virus can be demonstrated in the primary and secondary lesions by trained workers. The Bordet-Wassermann test and the Noguchi test, as conducted by the scientific laboratories, are reliable up to 98 per cent.

The virus of gonorrhoea is more readily transferred by the recently infected for many weeks and months. The danger of transmission decreases after several months, but may still exist for several years even though there are no evident symptoms. Treatment is uncertain in its results. Bacteriological tests readily demonstrate the virus in the acute stage but the help of the scientific laboratory is required in the chronic stage and for the proof of cure. In both acute and chronic stages of the disease in women it is more difficult to demonstrate infection.

The transference being by direct and intimate contact, the control of the disease must entail the supervision and the treatment of the infected during the period when such transfer is probable. An absolute control by isolation is out of the question for obvious reasons. A partial control could enforce treatment during the infective period, while the contracting parties in marriage could be protected by blood tests and medical examination.

Even though control might not show an immediate lessening of venereal diseases, yet the spread of knowledge that is entailed by enforcement of some form of control, would eventually produce this result and lead to demands for more stringent measures.

The essential features of any measure for control should include:
1. Non-public registration,
2. Public registration and isolation of recalcitrants,
3. Free treatment for all who apply for it,
4. Free tests,
5. Supervision of mental deficients,
6. The administration of the plan by a Dominion body through the Provincial Board of Health.

1. Registration of cases of venereal disease can only be made effective by securing the information from the physician to whom
the infected person applies for treatment, and by shutting off all other sources of treatment. Severe penalties would have to be imposed upon others offering, selling, or advertising medication for the treatment of venereal diseases. Any person developing symptoms must apply for treatment within three days of the onset. Any person wishing to discontinue treatment from any physician must either secure a certificate that he is undergoing treatment by another physician or secure a certificate of cure from the Board of Health. Release from treatment to be obtained when examination and tests show that the infective period is passed.

2. Public registration and isolation by the Board of Health should be enforced where any person shall knowingly transmit any venereal disease and where any person shall discontinue treatment during the infective period.

3. Free treatment is absolutely necessary for the great majority of infected individuals, not only because of the cost, but because every inducement should be offered to prevent concealment and treatment by quackery and nostrums.

All local Boards of Health should post and advertise the fact that free treatment can be obtained from approved hospitals, clinics and salaried physicians.

All hospitals, clinics and medical institutions receiving grants from the Dominion or the Provincial Governments, and any physician in receipt of salary from the Provincial Government or Local Board of Health, shall provide free treatment.

4. Means for the efficient carrying out of tests for diagnosis, prognosis, and proof of cure, must be provided free of cost.

The whole plan stands or falls according to the efficiency and accuracy of these tests. Not only are trained technicians needed for the carrying out of the bacteriological and sera tests, but close and frequent supervision by the trained bacteriologist and serologist is required to ensure the accuracy of even the standard tests. To accomplish this supervision, there are at present available the laboratories of the universities of the Dominion.

5. The supervision of mental defectives is necessary for efficient control of venereal diseases because they are unfit to understand their responsibilities and it is from this class that the majority of prostitutes and moral perverts are recruited. This class should either become the wards of the state, or be rendered innocuous by reverting to the logical but extreme measure of unsexing.

6. The administration of any plan of control should be in the hands of a body provided for by the Dominion Government. Under this body the Provincial Boards of Health could carry on the work in the Province directly or indirectly through the municipal Boards of Health.

The cost of administration should be borne by the Dominion, the Provinces and the Municipalities in such a way that the control remains with the Dominion to such an extent that fear of expense and local influences will not interfere in the effective and uniform enforcement of the measure.
Dominion control is necessary for the reasons that emigration laws are made and enforced by the Dominion, and also that the Dominion Government has the sole control of the militia and the returning soldiers.

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