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DIRECTOR OF THE CONNAUGHT LABORATORIES

UNIVERSITY OF TORONTO

(Dr. J.G. FitzGerald)

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REPORT OF THE DIRECTOR OF THE CONNAUGHT ANTITOXIN LABORATORIES

DR. J.G. FITZGERALD

Contained in the Report of the Board of Governors for the Year ending June 30th, 1919.

During the first half of the current year, the work of these laboratories was carried on under the immediate direction of Dr. R.D. Defries, in the absence of the Director, on active service in France. Until the armistice was signed, the routine production of anti-tetanic serum and other products of value in preventing or combating communicable diseases in the army, was continued without interruption. Letters of appreciation of this work have been received from the War Office and from Headquarters of the Overseas Military Forces of Canada. Altogether nearly one quarter of a million doses, of fifteen hundred units each, of anti-tetanic serum, and a half million tubes of small-pox vaccine, were prepared for Army use. This great quantity was supplied at approximately the cost of production and a very large sum of money was thus saved by the elimination of war contracts with manufacturers of these products outside Canada.

The routine production of other sera and vaccines for distribution by Provincial Boards of Health in various Canadian Provinces has also been carried on as before. The true worth of this service has become more and more apparent during the past year. The following statement from the Commissioner of Health for Saskatchewan illustrates the value in a human and economic way of some of the work:-

"From September 1st, 1917 to September 1st, 1918, the total amount of antitoxin distributed was thirty-seven million, seven hundred and ninety-seven thousand (37,797,000) units at a total cost of $6,101.63.

"Before antitoxin was distributed free the price charged was $1.25 per

thousand units, by a special arrangement the Commissioner of Public Health has been able to secure antitoxin at fifteen cents (15¢) per thousand units.

"The following figures show the financial saving of the people of the Province for the amount used.

37,797,000 units at $1.25 per thousand..... $47,246.25

37,797,000 units at 15¢ per thousand..... 5,669.55

"It is thus evident that there has been a saving of over $40,000 to the people of Saskatchewan for the amount of antitoxin used in one year. Besides the financial saving, as a result of this measure, a far greater gain is evident in that many lives have been saved; comparison of the death rates from diphtheria for 1916 and 1917, is as follows:-

	No. of Cases	No. of Deaths	Death rate per 100 cases	Death rate per 100,000 of population
1916	276	44	16	6.15
1917	1005	93	9.2	13.0

"During 1917 there was a marked increase in the number of cases of diphtheria, epidemics occurred in various places throughout the province and the disease was particularly prevalent in the city of Regina.

"Compared with the 1916 death rate of sixteen per one hundred cases, the 1917 death rate shows a decrease in the number of deaths from the disease of almost 50 per cent. This showing, although very satisfactory, is undoubtedly not as good as it is in fact, as the free antitoxin was distributed during only part of the year.

"If the same number of deaths in proportion to the number of cases had occurred during 1917 as in 1916, instead of ninety-three deaths there would have been one hundred and sixty (160) so that it is to be assumed that free antitoxin has been the means of saving at least sixty-seven lives in Saskatchewan, at a total cost of $6,101.63 or slightly over $91.00 per life. As

the economic value of an individual life to the state is rated at about twenty-seven times this amount, there is no doubt but that a great saving both of life and money, has been effected for the people and it is to be hoped that death from diphtheria will, in the near future, become an unusual occurrence."

It is safe to say that no movement of recent years in public health work in Canada has been more uniformly approved and appreciated than the project of making freely available all vaccines and sera of life saving value in such work. The establishment and operation of these laboratories has rendered this work possible at this time.

Almost coincident with the end of the war a great emergency arose in which the laboratories were provided with an opportunity of doing public service work of a national character.

One of the measures proposed by leaders in public health work for the control of influenza, was the use of influenza vaccine. This vaccine was prepared in very large quantities in these laboratories, and the executive Health Officer in each Province was communicated with by telegram and offered the vaccine in any quantity desired, to be supplied free of charge, on condition that records be kept in order that the merit of the vaccine might be determined. It was particularly emphasized that vaccination against influenza with the products to be supplied was an experiment, but that the cooperation of laboratories and physicians was essential in order to determine the possible value of such a vaccine. Large quantities of vaccine were sent to every Canadian Province, to various American States, to the United Kingdom, and the Canadian Railway War Board was supplied with sufficient quantity to vaccinate all employees of Canadian railways who wished to have such prophylactic inoculation. This work engaged the joint services of the staff of the Research and Antitoxin Divisions for nearly two months.

During the past six months a certain amount of reorganization of the laboratories has been accomplished to meet the changed conditions which have come about with the cessation of hostilities. The laboratories, in future, are to be designated the Connaught Antitoxin Laboratories, and have been divided into Research and Antitoxin Divisions, the latter including the University Farm, these Laboratories and the Department of Hygiene being now recognized as quite distinct University Departments but with a personnel partly common to both.

Through the Research Division, arrangements have been entered into with the Department of Soldiers' Civil Re-Establishment, whereby certain laboratory work for that department will be done, which will permit of material being made available for the purpose of research and investigation, and also permit these laboratories to engage in public service work of another order but of great national value. The work contemplated embraces laboratory studies of pulmonary and venereal diseases. Dr. A.H. Caulfeild is in charge of the former and Dr. H.C. Cruickshank, of the latter work.

The members of the Research Division have been chiefly engaged in completing the work undertaken during the war, in connection with gas gangrene and also, as noted above, certain work in relation to influenza. Publications dealing with these two subjects are to appear shortly. Further reference to the subject of diphtheric wound infections is the subject of a communication by the Director of the Laboratories, which will shortly be published. Work has also been published dealing with mixed infections in meningitis.

It is with deep regret that the death of Dr. E.P. Lachapelle of Montreal, a member of the Honorary Advisory Committee, has to be recorded. Dr. Lachapelle, for a quarter of a century, was one of the outstanding figures in public health endeavours in the United States and Canada. Professor

Arthur Vallee, of Laval University, Quebec, has accepted the place on the committee thus rendered vacant. Dr. Roy H. McGrath of St. John, N.B., has resigned from membership on the Advisory Committee and has been succeeded by the Hon. Dr. Wm. F. Roberts of St. John, Minister of Health for New Brunswick.

More adequate provision has been made to provide quarters for the Research Division of the Laboratories, including space for the work being carried on for the Department of Soldiers' Civil Re-Establishment. It is anticipated, therefore, that research problems can now be more energetically attacked, and the completion of war-work will permit the members of the staff to devote themselves very largely to the solution of these problems. The continued very cordial support of the members of the staff of both divisions of the laboratories is gratefully acknowledged.