A Synopsis of the

HISTORY OF THE SARANAC LABORATORY

by

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Director

The Saranac Laboratory originated as a small unit which Dr. Edward Livingston Trudeau established in his homestead in 1885. In his Autobiography Doctor Trudeau mentions that it was "the room opening from my little office, which was really the beginning of the Saranac Laboratory for the Study of Tuberculosis". A few years later, in December 1893, at a time he was ill in a New York hotel, Doctor Trudeau's home and laboratory were destroyed by fire. The Laboratory was continued, through the generosity of Mrs. Robert Hoe, in a small hastily-built addition to the stable of Doctor Trudeau until the new fire-proof Laboratory building, a gift of George C. Cooper of New York, a former patient of Doctor Trudeau's, was completed. The new Laboratory, which was erected in 1894, became the first institution of this type in the United States intended specifically for the study of tuberculosis. The library of the Laboratory was a gift from Horatio Garrett of Baltimore. During 1914 Mr. Samuel Mather made a bequest for the establishment of the Trudeau School, and since that time the Laboratory has been the headquarters of the School which has provided to nearly 1000 doctors basic training in the principles of tuberculosis and, during the past 20 years, also in the principles of the pneumokonioses and other occupational chest diseases.

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After Doctor Trudeau's death the Laboratory received assistance from the Edward L. Trudeau Foundation, which was established as a memorial endowment fund mainly for the support of the Laboratory. Subsequently the Milbank Memorial Fund and the Black Memorial Fund each contributed $100,000 as a special endowment for research by the Laboratory. The Laboratory has received generous research grants from industry and support from numerous philanthropists and in recent years has been entirely self-supporting.

The Directors of The Saranac Laboratory have been, successively:

Dr. Edward L. Trudeau, the founder,	from	1894	to 1915
Dr. Edward R. Baldwin	"	1915	" 1926
Dr. Leroy U. Gardner	"	1927	" 1946
Dr. Arthur J. Vorwald	"	1947	" 1953
Dr. Gerrit W. H. Schepers	"	1954	" present

The Laboratory has made three major contributions of great cultural value to this country. The first is the actual research which has been carried on during the past 60 years. The second is the teaching work done formally through the Trudeau School and informally to the many visitors and students from all parts of the world who have, from time to time, come to the Laboratory. The third is the public service rendered all over the country through the lectures and demonstrations by the staff of the Laboratory at various conferences of doctors, engineers, public bodies, etc. In addition, the Laboratory has served as the clinical pathology center for the local community and even for surrounding towns. From 1893 until

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1900 the Laboratory was a private non-profit institution of Doctor Trudeau's. In 1900 it was incorporated with the State University at Albany, a legal status it has retained to the present time.

The research work conducted by the Laboratory has concerned itself with two major chapters. The first and the longest phase, and in a sense one that is still continuing, is the study of tuberculosis. Doctor Trudeau was one of the first physicians in this country to identify the tubercle bacilli in a patient's sputum, a feat he first accomplished in 1886. He subsequently proceeded to demonstrate the pathogenicity of the bacilli to experimental animals and to prove the pathogenic effect of the bodily secretions of tuberculous patients. The next phase of the study on tuberculosis concerned the environmental influences on tuberculosis. Later, there followed a period of study on artificial immunity in animals. Next came a phase in which a variety of substances were tried as therapeutic agents, ranging from hot air to creosote, iodiform, sulphuretted hydrogen, hydrofluoric acid, essence of peppermint, etc., the experiments at the Laboratory proving mainly that the majority of these substances, while ineffective against the tuberculous disease, were capable of shortening the lives of the experimental animals. After this phase, the Laboratory concerned itself strongly with the problem of immune reactions and hypersensitivity and participated actively in a search for a possible remedy against tuberculosis. It pioneered the possibility of an anti-tuberculosis serum and, in the course of these studies discovered the presence of viable tubercle bacilli in imported T.R. tuberculin which was being sponsored in Europe as the result of the work of Koch. Through its

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support of the work of Dr. P. A. Levene, one of the pioneer workers at The Saranac Laboratory, the Laboratory pioneered the biochemical study of the tubercle bacillus. This work was continued later at other centers, particularly at the Rockefeller Foundation.

The second major contribution to research pertains to the systematic investigation of the pneumokonioses. This phase of the work was truly initiated by Dr. Leroy U. Gardner and concerned itself both with animal experimentation and with the clinical study of industrial personnel who might be exposed to dust. This industrial commitment of the Laboratory has tended to become progressively its more important branch of study, the more so as improvement in the general health conditions of Americans resulted in the situation that a major source of tuberculosis began to reside in the industrial population, specifically in those concerned with dusty trades. The Laboratory proved through its research that the inhalation of quartz dust was a major factor which adversely influenced the occurrence of tuberculosis in the industrial population of the United States. Through a series of systematic studies on animals, the Laboratory contributed a tremendous body of information concerning the pathogenesis of silicosis and the distinction between silicosis and other dust diseases. At the same time, the Laboratory continued to pursue its study of the tuberculogenic propensities of industrial dusts and demonstrated forcibly that the main phthisiogenic substance amongst these dusts remained the quartz particle. This work is still continuing.

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Antedating the publication of experiments by Canadian investigators dealing with the use of aluminum for the prevention of silicosis, The Saranac Laboratory engaged in experimental work on this subject. Studies revealed that compounds of iron offered some promise as therapeutic agents for delaying or preventing the development of silicosis. After the report from Canada on the much more promising aluminum prophylaxis, the Laboratory carried on a series of studies on the value of this agent. This investigation is still continuing.

The Laboratory has maintained a field division in the Wisconsin-Minnesota area for many years and thus became intimately involved in the problem of iron mining and the associated lung disease. This led to the establishment of an industrial hygiene service and the evolution of a radiological division.

The problems of coal miners in particular stimulated research into the field of emphysema and heart disease. This led to the establishment of the physiology department.

Next followed the extensive investigation into the very enigmatical issue of berylliosis currently still under study. Doctor Gardner had the genius to recognize at this stage the need for enquiry into biochemical pathology and therefore he created the department of biochemistry. This development of the Laboratory rendered possible the proper study of a new phase of the occupational dust diseases and prepared the way for investigations into carcinogenesis, with which the Laboratory is currently very much preoccupied.

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More recently the Laboratory has undertaken the study of dusts other than mineral and at present has underway an inhalation experiment in which the dusting material is a plastic.

Thus the Laboratory has striven to keep abreast of the problems of its times. Its approach has ever been pragmatic. At the same time the staff has constantly been enquiring into fundamental and even academic issues and in this spirit the institution operates currently.

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