A CONTRIBUTION TO THE HISTORY OF MEDICINE IN BRAZIL

The Early Work and Reports of

Dr. Adolfo Lutz

as

Director of the Bacteriological Institute of the State of São Paulo
from 1893 to 1908

FOREWORD

A large part of the History of Experimental Medicine in Brazil would remain for ever unknown unless the extraordinary work done by Professor Adolfo Lutz at the Bacteriological Institute of the State of São Paulo were published. His reports as Director are a noteworthy summary of the activities of that Institute during its earliest days. They cover an imposing array of subjects related to human and animal pathology and mark the beginnings of a new school. Reading them can but increase one's admiration for the unique personality of Adolfo Lutz. By editing them, the Instituto Oswaldo Cruz fulfills a duty to present and future generations. It pays deserved tribute to the memory of a comrade whose achievements stand forth in these simple records, which further reveal a tremendous capacity for work that served as a stimulus to his disciples, Carlos Meyer, Theodoro Bayma, Adolfo Linderberg, Arthur Mendonça, Vital Brazil, Bruno Rangel Pestana, Affonso Splendore, J. Roxo, Pereira Alves and Bonilha de Toledo.

The publication will be made by subject matter so as to make it easier to follow developments. The documents necessary for this undertaking were assembled thanks to the good-will of the Directors of the Department of Public Health and the Bacteriological Institute (now Instituto Adolfo Lutz) of the State of São Paulo but chiefly through the determined efforts of Dr. Bertha Lutz and her brother Professor Gualter Lutz as a tribute to the memory of their illustrious father.

In this number of the Memorias we shall publish the excerpts from the reports relating to Cholera and Dysentery. In later numbers other subjects will be treated in the same manner and in accordance with the data available in the files of the Department of Public Health and the Bacteriological Institute in São Paulo and the private files of Professor Lutz.
The Instituto Oswaldo Cruz thus tries to serve the literature of Medicine and to do very sincere and heartfelt homage to the unforgettable example of their late colleague.

Rio, March 26 1943.

Dr. Henrique Aragão Pro-Tem. Director.

INTRODUCTION

DR. ADOLPHO LUTZ IN S. PAULO

Towards the end of 1892 the government of the State of São Paulo founded the first Bacteriological Laboratory in Brazil. Felix Le Dantec was invited to organize it, and Adolpho Lutz, who returned from Hawaii, early in 1893, was appointed sub-director in March of the same year. By April he had to take over from Le Dantec who was anxious to return to Paris. Before Dantec left he warmly recommended Lutz to the government as the best man to succeed him. He pointed out the wide range of Lutz’ knowledge, his experience of Tropical Medicine and his deep interest in all the collateral fields. Lutz was appointed and remained at the head of the Institute until 1908, when he joined the Instituto Oswaldo Cruz, which had been organized meanwhile and was first known as Instituto de Medicina Experimental de Manguinhos.

The Bacteriological Institute of the State of São Paulo had an unusual task to fulfill. Bacteriology was new. Endemic infectious diseases were rampant; they had to be diagnosed without any preconceived views and put to the final test of laboratory methods. Epidemics, swept in by the tide of an enlarged world trade and the surge of immigration, had be met and new means of controlling disease, both in man and animals, to be introduced, sometimes in the face of considerable opposition.

It fell upon Adolpho Lutz to bring the necessary changes about. This was a task for which he was well qualified. Although born in Rio, of Swiss parents, he had been educated in Europe. He acquired a sound training in Medicine and Natural History in Bern and supplemented it by shorter periods of study at universities and hospitals in several European countries. Parasitology and Bacteriology interested him keenly. He pursued them with zest and soon mastered a resourceful and original technique in the field and in the laboratory. When appointed to the Bacteriological Institute he already had considerable experience of the clinical side of his profession and of medical problems in warm countries. Having a gift for languages and being stationed in a different part of the world from most other scientific observers, he read the literature and maintained a steady correspondence with
the leading men in various fields. This enabled him to keep abreast of progress and discovery.

He was destined to make his mark upon São Paulo and to become a unique personality in the medical world of Brazil. The men in charge of Public Health in São Paulo soon learnt to rely on his judgement and to follow his advice on their problems. Many distinguished physicians, in different parts of Brazil, especially in Rio and Bahia, where there were Medical Colleges, followed his work closely and were only too willing to cooperate with him and to learn from him. But in others, especially a small group of prosperous traditionalists, trained above all in dialectics, his new solutions for old ills aroused fierce antagonism. This made itself felt all through his stay in São Paulo and provided an undercurrent of opposition throughout the period of reforms carried out under the aegis of the Bacteriological Institute.

These opponents waged war continually but they varied their methods in accordance with the circumstances and the problems. In the case of some diseases, like cholera, or plague, they fastened on questions of diagnosis; they raised doubts as to its accuracy, in fact they questioned the very presence of the diseases that were being combated.

In others, yellow fever, for instance, they put obstacles in the way of prophylaxis. Being totally unaware of the rôle of blood-sucking diptera in the spread of disease, they poured ridicule on the excentric who troubled to collect and classify mosquitos and to study their biology.

Such attacks were not always confined to the precincts of learned societies but were allowed to overflow into the daily press. At times even the populace was instigated against the public health authorities, and it became rebellious when unwelcome compulsory measures against small-pox and plague were introduced.

Lutz was extremely averse to publicity and objected, on grounds of medical ethics, to discussing medical problems in newspapers and to courting the unqualified opinion of the lay public. Nevertheless, he met opposition with the serenity of conviction and continued his work spurred on by a stern sense of duty. He took great pains to elucidate all reasonable doubts but scornfully disregarded objections made in bad faith. And as time passed the results of his efforts made themselves felt, first in improved conditions and very much later in recogniton.

When Lutz joined the Bacteriological Institute it was installed in central but small and poorly-lit rooms. In 1894 it was moved to better quarters still in the business part of the city, but the disadvantage of not being able to keep animals continued to make itself felt. During the move some cultures
were contaminated despite all care. The air of the new laboratory was full of spores of fungi and a Sarcina become very obnoxious. This led Lutz to remark that similar conditions must have prevailed in other laboratories of the country and were probably not entirely unconnected with premature announcements of the discovery of the germ of yellow fever.

In 1896 Lutz secured a new building in the grounds of the Isolation Hospital. It was rather small and very simple, especially as compared to the sumptuous building of its present-day successor, the "Instituto Adolpho Lutz". Last year it was demolished to permit the widening of an avenue cutting through the Medical Centre now being built. It was functionally planned, however, by Lutz, and there he proceeded to change the sanitary conditions of São Paulo, thereby setting up new standards for Brazil. Yellow fever, for instance, was effectively dealt with in São Paulo before anti-mosquito prophylaxis was even attempted in Rio.

Cold storage, rooms for cultures at the right temperatures, and other problems difficult to solve within the limited resources available, were met by ingenious devices, described in Lutz' report for 1896. Ample and adequate housing for laboratory animals was provided, including for poisonous snakes. Out of very slender funds a library was started, added to, and cared for, in spite of much dilatory resistance. It provided a connecting line between an out-post of experimental science and distant centers of research. This was reinforced by the correspondence assiduously kept up by Lutz, in four languages, with fellow-workers in Brazil, America, Europe, Britain and Australia,

A collection, of pathology, with a wealth of cases of epidemic and endemic diseases, then prevalent, was patiently put together. Unfortunately, it was destroyed many years later, during a period of subordination of the Bacteriological Institute to the newer Butantan Institute. The latter had its beginnings in 1897, when Lutz began to study poisonous snakes and the making of serum from their venom in collaboration with Vital Brasil, who was then his assistant, at the Bacteriological Institute. On Lutz' recommendation Vital Brasil was appointed director of the new Institute, in recognition of services rendered by him during the plague epidemic of 1899.

During the whole period of Lutz' directorship, the medical staff of the of the Bacteriological Institute was composed of four doctors only, himself and three assistants. There were also two servants and a porter. Later two disinfectors were lent by the Public Health Service and did all sorts of auxiliary work. During short periods, Lutz had a secretary and a draughtsman. The medical staff was not always kept complete even at the time of the great epidemics.
In the last decade of the 19th century, São Paulo was sought out by hitherto unseen diseases, such as cholera and plague. Meanwhile, yellow fever, which had reached a peak year in 1889, continued to levy heavy toll. Malaria was endemic along the coast and in several zones of the interior. It spared the capital city, but there typhoid fever, wrongly diagnosed, and euphemistically called “São Paulo fever”, was very common. It caused fewer deaths than yellow fever, but it accounted for a very much larger percentage of illness. There were several epidemics of influenza.

Foreigners poured into the state, so that the Immigrants’ Hostel often housed several thousand persons at a time. They occasionally brought in diseases not seen before, like cholera, or not common in hot countries, like scarlet fever and exanthematic typhus; cases of diphtheria were relatively frequent among them. In their turn the immigrants fell victims to severe infections, like typhoid fever, or yellow fever against which they had no immunity.

In 1893 and again in the summer of 1894 to 1895 epidemics of cholera broke out. As soon as it had been diagnosed and controlled, Lutz began to study the São Paulo fevers, which he rightly suspected and soon proved to be typhoid fever, thereby unleashing the first of many storms in the medical world of São Paulo.

In 1895 a bacteriological collection was set up. In his yearly report Lutz states that the bacteria found by him in São Paulo were much the same as those he had seen elsewhere and points out the cosmopolitan character of bacteria. Studies on mycoses were also made. Observations on the hematozoa of birds, man and reptiles began. Many medical men still believed that the São Paulo fevers (shown by Lutz to be typhoid) were really malarial and Lutz found it necessary to prove that no malarial parasites were found in and around the city and to investigate the blood parasites of birds.

By 1896 cholera had been stamped out. The new building was finished and moved into. Various diseases of man, such as typhoid fever, amoebic dysentery and diphtheria were studied. Work on myxosporidia and hematozoa continued.

In 1897 Lutz succeeded in putting his assistants on the medical staff of the Charity Hospital. Work on snake venom and its use in making serum against snake bites was begun. As specimens were few, Lutz appealed to collectors and zoologists in South and Central America for snakes.

Much of that year’s report dwells on typhoid fever and amoebic dysentery, laboratory work being supplemented by Lutz’ large practice and increasing opportunities for post-mortem examinations.
As opposition against his diagnosis of São Paulo fever, as being really typhoid fever, continued, Lutz exhibited a collection of 25 intestines with typical lesions at the Society of Medicine and Surgery. Notwithstanding this and other proof, including a certificate from Eberth that the cultures sent him by Lutz were genuine cultures of the bacillus of typhoid fever, the society returned a majority vote against Lutz' views...

A collection of animal pathology was received from Dr. Mooney-Suffren, the veterinary at the municipal slaughter-house. This led to studies on the diseases of cattle and domestic animals, which were furthered by observation of the animals kept at the Institute.

Next year an epidemic of small-pox caused 300 deaths in the city of São Paulo. Scarlet fever and diphtheria were diagnosed by Lutz in the Immigrants' Hostel. He reported to the government on the recent advances in Tropical Medicine abroad and pointed out the new trends in the work of the British school. He again appealed for living snakes and already then offered appropriate boxes and the lasso still furnished to collectors, which, incidentally, was devised by him.

No report for 1899 is available, at present, which is regrettable, as that year plague was imported and Lutz had a great deal of information on the subject.

In 1900 Lutz gives a summary of the plague situation in Asia, Africa and Australia, as well as in Brazil and also reports on cases introduced into European harbours. Cases of exanthematic typhus were seen. Pneumo-enteritis of hogs was studied carefully.

According to Lutz, 1901 was a very good year for Public Health, with no major epidemics and a decrease of endemic disease. Lutz collaborated closely with Theobald, on behalf of whose studies on mosquitoes, at the British Museum (Natural History), the Foreign Secretary, Joseph Chamberlain, besought the aid of foreign scientists.

The 1902 report was made by Dr. Meyer, Lutz' faithful assistant and substitute during his leaves of absence. It is an administrative document and no single subject stands out in relief.

In 1903 Lutz published his paper on "Forest Malaria" discovered by him in the steep and densely forested slopes of the Serra de Santos, where there are no stagnant waters but an anophelid mosquitoes (Myzomyia Lutzi) breeds in the water which collects in the leaf-cups of bromeliads. Incidentally, it should not be overlooked that Lutz was the first to mention epidemics of silvan yellow fever, not caused by Aedes aegypti.
In the same year the Havana experiments on the transmission of yellow fever by mosquitoes were repeated in São Paulo, at the Bacteriological Institute. Lutz was one of the volunteers and superintended the choice of patients and mosquitoes. For these experiments he received a gold medal struck by the State of São Paulo as a reward.

The report for 1904 simply mentions the historic fact that after anti-mosquito prophylaxis was introduced, following these experiments, no epidemics of yellow fever occurred in the State of São Paulo. This was the first year in which they were absent in the life-time of the Institute and it remained true in the following years. São Paulo was thus the first place in Brazil, to successfully fight yellow fever. Lutz tried several times to persuade Oswaldo Cruz’ predecessor to try anti-mosquito prophylaxis in Rio, without achieving anything but vague promises.

In 1905 Lutz represented the state government at the International Congress of Tuberculosis in Paris. Following many years study of blood-sucking diptera he published descriptions of new Culicidae and his first paper on Tabanidae.

Next year more studies on Tabanidae followed. Cases of cerebro-spinal meningitis were described; many people were vaccinated against plague in the interior of the State.

In 1907 the government of the State of Pará invited Lutz to study equine trypanosomiasis. This was so prevalent on the island of Marajó, and elsewhere, that horses had long been substituted by oxen for riding. Lutz investigated the disease, the natural host of the trypanosome, and the tabanids of the region, as possible transmitters. A paper on the hematooza of birds was presented by him and Dr. Meyer jointly to the 6th Congress of Medicine and Surgery in São Paulo and another, on blood sucking diptera as parasites and transmitters of disease, by him, alone, to the 3rd Latin American Medical Congress.

Shortly before giving up his post in São Paulo, in 1908, Lutz organized the exhibits of the Institute in the São Paulo Pavilion of the National Fair held at Rio. They included animal pathology, parasitology, blood-sucking diptera, chromogenic bacteria etc. They were very much appreciated, especially by medical men and scientists, and won a prize. Lutz was most interested in the discoloring effects of continued exposure to mercury vapour lights on pigment-forming bacteriological cultures and labels written with typewriter ribbons stained with aniline dies.

Lutz’ fifteen years of active work at the head of the Bacteriological Institute of São Paulo were not only productive but also strenuous. Besides fighting epidemics, there was a heavy routine to be got through. Hundreds of
post-mortems were made, at all hours, even late at night. Severe public health measures often depended on careful diagnosis and accurate findings so that no trouble could be spared. Microscopic preparations and cultures were made forthwith and whenever necessary animals inoculated. Yellow fever alone gave rise to 121 post-mortems, from Rio and from Santos, São Paulo and the rest of the state; fatal cases of typhoid fever contributed 92; cholera totalled 62 from August 1893 to February 1895; plague quite a number, including 28 of bubonic and 2 of pneumatic plague, and several others with diverse complications. More than seven thousand rats were examined.

Over 1000 blood tests for malaria and 200 agglutinin reactions for typhoid were made. Sputum examinations were constantly asked for, especially by the Military Hospital.

At the start all examinations were made free of charge for physicians as Lutz wished to get the medical class used to employing bacteriological methods.

From the beginning, much more than bacteriology was asked of the Institute, which was then the only Public Health Research Institution extant in the state. In early years, when any unknown, or suspect, disease broke out anywhere, within the state, Lutz was called upon to accompany the Director of Public Health or to diagnose it himself, regardless of whether it was at the Immigrants' Hostel or at the frontier of one the neighbouring states.

As there was no Pasteur Institute, hundreds of dogs and a number of cats had to be examined for rabies. The police and courts looked to the Bacteriological Institute for microscopic expert testimony. The Department of Public Works called upon it, many a time, for analyses of waters intended to increase the drinking supply of a fast-growing city. During the first years, quite a number of these analyses were carried out at distant spots by Lutz in person, so as to make sure that the results corresponded to the natural conditions. One of the most unpleasant chores was testing cures for incurable diseases, offered by quacks and supported by lay men in office.

Often he and other members of his staff had to work outside the city. Lutz made over forty such journeys, travelling all over the state. He often came to Rio. Twice he was sent abroad on medical missions.

It was only as time went on, and the chief problems of Public Health came under control, that Lutz was able to devote himself, more and more, to research, especially on blood-sucking diptera, whose relation to disease was ever of interest to him. (1)

1) For papers published by Lutz, while in São Paulo, see the bibliographical lists in the Memorias do Instituto Oswaldo Cruz for 1925 XVIII, 1 pp. VIII-XXII and 1941. XXXVI, 1, pp. X-XXII.
By then the work done by him at the Institute had gained recognition. The more enlightened public men, some of them future Presidents of Brazil, realized its importance. Judges, legislators, foreign diplomats, and even ships’ doctors, interested in tropical diseases visited the Institute. All the scientists and medical men who came to Brazil sought Lutz’ assistance.

But as soon as the grim fight against fell disease was won, Lutz, who was by nature a pioneer and by vocation a scientist, began to lose interest and to weary of the daily round of dull routine. He gladly left the field of Public Health on accepting Oswaldo Cruz’ invitation to join this Institute. Here he devoted another thirty years (1908-1938) to quiet research, mainly on medical Entomology and on Helminthology, which were his chief interests, varied by occasional incursions into the fields of Medicine or of pure Zoology.

Following this introduction we shall publish excerpts from Lutz’ reports and early work, as a Contribution to the History of Medicine in Brazil. We shall begin with Cholera and Dysentery. Other subjects will follow later.

Before going on to this, sincere thanks are extended so all those who have given their generous cooperation to this project. Special thanks are due to Dr. Salles Gomes, Director General Dr. Eloy Lessa, Secretary and Dr. José Bernardino Arantes, Director of Archives of the Public Health Department of the State of São Paulo; to Dr. Carvalho Lima, Director and Bruno Rangel Pestana, of the Instituto Adolfo Lutz; to Dr. Flavio da Fonseca, Director of the Institute of Butantan and Miss Heloisa Alberto Torres, Director of the Nacional Museum, for assistance in matters pertaining to the collecting of data and documents.

They are equally due to Dr. Henrique Aragão, Director of the Instituto Oswaldo Cruz, for valuable advice; and, for help in bibliographical research, to Dr. Cassio Miranda, Secretary, Dr. Souza Araujo editor of these Memórias, Mr. Overmeer, librarian of the same institution and to Miss Olinda Hempel, librarian of the Instituto Adolfo Lutz.
O antigo Instituto Bacteriológico de São Paulo — 1896-1940

Instituto Adolfo Lutz, inaugurado em 1940
Gentílesa do Dr. Carvalho Lima