

ASM

American Society
for Microbiology

news



Volume 40 ■ Number 12

December ■ 1974



WALDEMAR MORDECAI HAFFKINE, C.I.E. (1860-1930)
[Companion of the Order of the Indian Empire]

Bacteriologist: Public Health Pioneer
Dedicated to Faith and Folk

Presented by
The Waldemar Mordecai Haffkine International
Memorial Committee

DIAMOND JUBILEE

Microbiology in India— Another View

The article on Microbiology in India by Yvonne M. Freitas (*ASM News* 40:602-606) reflects an injustice to Waldemar M. Haffkine by dealing much too lightly with his crucial role in the foundation, organization, and establishment of the Bombay Bacteriological Laboratory which he started on 8 October 1896, the day after his arrival from Calcutta, after he had spent 2 years, without pay, inoculating tens of thousands of cholera-stricken Indians and others with the anticholera vaccine he had created in 1892 at the Pasteur Institute in Paris.

The Imperial Government of India reassigned him to Bombay, because an epidemic of bubonic plague had struck, in the hope that he would succeed in developing an anti-plague vaccine, which he accomplished just 3 months later, by December 1896. The makeshift laboratory he had to set up in a corridor of Grant Medical College was the scene of his labors. Due to enormous demands for his vaccine from many parts of India and elsewhere, that laboratory had to be moved to larger quarters several times, finally settling down in Old Government House in August 1899, where it has been functioning since then under the name of the Haffkine Institute, so renamed 10 years after Haffkine's compulsory retirement at age 55 in 1915 from India, having spent 22 years there in dedicated service to humanity.

The need for organized medical research in India became especially acute toward the close of the 19th century, when recurrent epidemics of cholera, plague, and other tropical diseases ravaged India. It was, without a doubt, Haffkine's work in Bombay that set that ball rolling. The King Institute of Preventive Medicine was started in 1903-04. The Central Research Institute in Kasauli, of which Haffkine had been promised the

post of Director-in-Chief soon after he came to India, and which he was to organize, but of which he was deprived by the hostility, obstructiveness, and jealousy of the Indian Medical Service army officers, was finally opened in 1906. The Pasteur Institute of Southern India at Coonoor began its work in 1907; the Pasteur and Medical Research Institute at Shillong, Assam, was opened in 1917, and several others spread throughout India in the next three decades.

But it was Waldemar Haffkine who in 1893 brought the latest knowledge of bacteriology and its application to medicine, long before it became microbiology.

As a pioneer in epidemiology, immunology, and preventive medicine, and their application to global public health, and especially to public health in India for the first time, Haffkine has earned more attention and space than Dr. Freitas devoted to him.

The Indian Medical Service consisted mostly of army officers trained before the newest of the emerging sciences, namely, medical bacteriology, became part of the medical school curriculum. Their lack of knowledge of this subject caused resistance and hostility to Haffkine's scientific approach to cholera and plague via inoculation. Added to this was the fact that he was not a medical doctor but a doctor of science, not in the civil service, and not British, but an outsider and a Jew, and this made him a target of efforts to cast doubt on his competence and, above all, to remove him from his post as Director-in-Chief of the Laboratory. He had painstakingly trained his entire staff of British officers and Indians, especially the latter, in complicated and precise laboratory techniques. He was not permitted to publish his scientific papers under his own name. They had to be passed through channels and often came into print under the name of an Indian Medical Service officer connected with Haffkine's Laboratory. His appeal to

change this procedure fell on deaf ears. Insubordination on the part of some of his staff exacerbated the scientific difficulties which spilled over into personal antagonism.

Dr. Freitas endows the British with "...microbiology can be said to owe its origins and foundations in the last century to the British, especially to the men of the Indian Medical Service." Nothing could be further from the actual facts, as demonstrated by the following excerpt, dated Bombay, 28 February 1898, when the plague was raging: "... As, however, the Surgeon-General is certain to resort to every means that his obstructiveness can devise to place difficulties in Haffkine's way, ... when issuing the orders, direct in them that he should report that he has complied with them."

That is but one of the many incidents that occurred during the 22 years Haffkine devoted himself to alleviating human suffering in India. Up to 1925 over 25 million doses of his plague prophylactic alone had been issued, not counting the millions of doses of his anticholera vaccine. He did not receive royalties on doses the Government of India sold to various provinces in India or to other countries. His salary of 2,000 rupees a month was the only compensation he received.

In June 1899, Lord Lister described Haffkine as a "Saviour of Mankind" at a gala public dinner in London where both shared the spotlight.

In August 1899, at the opening ceremony at Old Government House, the last move of the Plague Research Laboratory, Lord Sandhurst, Governor of Bombay, stated that "The discoveries of this great scientist, Haffkine, have saved, and are still saving millions of lives; when the history of our times is written, his name will be given an honoured place."

In spite of such high praise by Lord Lister and Lord Sandhurst, one cannot but be perplexed by the omission or neglect, or both, by historians of science and by historians of medicine, with the disregard in their works

of the contributions of Waldemar M. Haffkine, this giant in oblivion.

Edythe Lutzker
Vice President, Waldemar Mordecai
Haffkine International Memorial
Committee
New York, N.Y. 10024

Microbiology in India— The Haffkine Institute

In 1896, the bubonic plague, known as "Black Death," was raging uncontrollably in Bombay. All attempts to curb the spread of this dread disease met with failure. The medical authorities were desperate as *Yersinia pestis*, the causative agent of the plague, seemed to challenge the world of medical science.

About this time, Waldemar Mordecai Haffkine, a Russian bacteriologist and former student of Elie Metchnikoff, was engaged in the study of cholera. Dr. Haffkine, a brilliant scholar, researcher, and disciple of Louis Pasteur, had established an effective vaccine against cholera. The government of India invited him to investigate the possibility of a similar success with *Yersinia pestis*, and he quickly accepted the challenge.

Dr. Haffkine landed in Bombay in the midst of the raging plague, and he immediately set up a miniature laboratory with a staff of four in a corner of the Petit Laboratory in the Grant Medical College in Bombay. There his devoted work culminated in the production of a vaccine effective against bubonic plague.

As demand for the vaccine increased and eventually became world-wide, Dr. Haffkine found it necessary to expand his facilities for large-scale production. He moved first to "Cliff Bungalow" at Malbar Hill and then to "Khushru Lodge" at Napean Sea Road. Finally he moved his laboratory to the sprawling old Government House at Parel. In 1925, a quarter of a century after its founding, the institute which he established was named after Haffkine. It was a fitting tribute to the great scientist who devoted his life to serving humanity.

The present site of the Institute has an

interesting history. An imposing Hindu temple of Parli Vaijanath had adorned this spot of scenic grandeur. When the Portuguese conquered Bombay in the early sixteenth century, the Jesuits demolished the temple and built the majestic Roman Chapel. When the British took over Bombay in the seventeenth century, they transformed the Chapel into Government House and used it as a palace for the British governors. It served temporarily as a royal residence when the then Prince of Wales, later Edward VII, visited Bombay and stayed in the House for seven days. Although it is now four centuries old, the building retains the splendor of its earliest days.

The facilities of the Institute have continued to expand to accommodate its ever-increasing activities. Additional modern buildings presently provide work space for a staff of over 1,500, of which over 300 are scientific and technical personnel. The Institute includes departments of administration, quality control, bacteriology, biochemistry, chemotherapy, clinical pathology, immunology, pharmacology, virology, viral vaccine, and zoonosis, and maintains a blood bank, animal house, and library. Animals are bred in large numbers and varieties for use in research and bio-assay work, and there is a farm at Pimpri with acreage for 300 horses. The Institute's snake farm is the only one in India and one of the few in the world. The library, one of the largest in the country, contains publications in seven languages and serves other organizations and laboratories in addition to the Institute.

Research is at the Institute oriented primarily toward the study and eradication of communicable diseases, malnutrition, and public health. Research programs are conducted by the Institute itself, or under the sponsorship of national or international organizations or private enterprises. Research

fellowships at the Institute are most often granted by branches of the Indian government.

The Haffkine Institute has been a training ground for research and technical personnel, and its trainees are found throughout the world. In affiliation with the University of Bombay, it furnishes graduate degree programs in fifteen specialties. It conducts an annual course in medical laboratory technology and short- and long-term technical training in areas selected by sponsoring organizations.

In addition to its research and training facilities, the Institute is a large production center for biologicals and non-biologicals for both research and therapeutic use. Under stringent quality control, it produces vaccines, antitoxins, sera preparations, plasma fractions, diagnostic reagents, parenteral preparations, antiseptics, sulfa drugs, vitamins, and substances for veterinary use. Some preparations are available in a lyophilized condition with a shelf life of over ten years. Recent interest has focussed on tranquilizing agents and anticancer compounds.

The Institute's laboratories are available to the public for a wide variety of clinical, pathological, and biochemical tests, including pregnancy tests. These laboratories also maintain surveillance of drugs and give advisory help in analytical techniques to other laboratories. Mobile units are provided to contain outbreaks of communicable diseases.

The Haffkine Institute has been a source of knowledge and inspiration to the health profession, a citadel of research, and a constant source of service to humanity. India and the world owe much to the pioneering efforts of Dr. Haffkine.

Francis Louis Saldanha
Assistant Director, Haffkine Institute
Bombay, India

