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CHEST Special Feature

A History of Tuberculosis on Stamps

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Tuberculosis, only a few decades ago, was believed to be under control and decreasing in incidence, in both developed and developing countries. A number of scientists and physicians have contributed to the understanding of tuberculosis and have been honored on postage stamps by several countries around the world. This article contains brief histories of these individuals and depictions of the postage stamps commemorating them for their contributions to the better understanding of the disease. ***(CHEST 2009; 136:578–582)***

Tuberculosis, a disease caused by several species of mycobacteria, has afflicted humankind for many thousands of years. It is a worldwide disease and in many countries is a major cause of death.[1] After declining in incidence for a number of years, it has begun to increase in frequency, especially in developing and underdeveloped countries. This is primarily because of the AIDS epidemic. Ninety percent of the cases of tuberculosis diagnosed are pulmonary tuberculosis caused by *Mycobacterium tuberculosis*. The modern treatment of tuberculosis has been complicated both by resistance to drug therapy and by intermingling of the disease with HIV.

Many famous persons have been victims of tuberculosis, as follows: English poets John Keats (1795–1821) and Percy Shelley (1792–1822); American writers Henry David Thoreau (1817–1862) and Ralph Waldo Emerson (1803–1882); French poet Alfred de Musset (1810–1857); French novelist Honoré de Balzac (1799–1849); English novelists the Brontë sisters (Charlotte, 1816–1855; Emily, 1818–1848; and Anne, 1820–1849); Scottish novelist Robert Louis Stevenson (1850–1894); British administrator-financier Cecil Rhodes (1853–1902); Italian violin virtuoso Nicolò Paganini (1782–1840); and Polish composer Frederic Chopin (1810–1849). In the first half of the 20th century, many pulmonologists entered their profession because they themselves had tuberculosis. One of the original pulmonary journals was *Tubercle.*

The following eight historical figures associated with tuberculosis have had stamps issued in their honor: René Laënnec, Jean Antoine Villemin, Robert Koch, Carlo Forlanini, Léon C. A. Calmette, Jean-Marie Camille Guérin, Selman A. Waksman, and Edward Trudeau. The only one issued by the United States was for Trudeau. In many countries but not all, for a stamp to be issued, the individual must be deceased (in the United States one exception is a living president after his term of office). The approval goes through a citizens' advisory committee. The whole process can become very political. In many smaller countries the sale of postage stamps is their sole source of income. As a result many different stamps are printed.

René Laënnec

René Laënnec made a number of important contributions to the diagnosis of various diseases. In 1816, he invented the stethoscope, which made possible the early and more accurate identification of diseases of the chest. Laënnec was born on February 12, 1781, in Quimper, Brittany, in northwestern France. He received his MD degree from the École de Santé in Paris in 1804, after which he established

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a successful private practice in Paris and also held a succession of positions at the leading medical institutions in France.

For 3 years after he invented the stethoscope, Laënnec gathered data on diseases and conditions of the chest and correlated them with findings at autopsy. He published these findings in 1819 in his classic book *De l'Auscultation Médiate*. In this book, Laënnec described his new method of diagnosis by use of the stethoscope and provided details on the sounds of the heart and lungs in various afflictions, such as edema, tuberculosis, and pneumonia. During his lifetime, Laënnec had symptoms of pulmonary tuberculosis and probably had asthma. He died of pulmonary tuberculosis in Kerlouarnec, France, on August 3, 1826, when he was only 45 years old. In 1952, France honored him on a stamp[2] (Please note that it is not necessary to go back to the catalog year the stamp was issued; the stamp will be in the current year catalog. Five to seven volumes are published every year at approximately $100 per volume. Most libraries carry these.) [Fig 1].

Jean Antoine Villemin

Jean Antoine Villemin, a French physician, proved in 1867 that tuberculosis was an infectious disease, transmitted by contact from humans to animals and from one animal to another. His most important work, *Studies on Tuberculosis*, published in 1868, described his careful experiments in which he proved that sputum from a tubercular patient, fluid from tubercular cavities, and material from a scrofulous gland, when injected subcutaneously, produced tubercular lesions in rabbits.

Figure 1. René Laënnec (1782–1826).

Figure 2. Jean Antoine Villemin (1827–1892).

Villemin was born on January 28, 1827, in Prey, Vosges, in northeastern France. Starting in 1849, he studied at Bruyères and at the military medical school in Strasbourg, qualifying as an army physician in 1853. In 1853, he went to Val-de-Grâce, the military medical school in Paris, for further study, receiving his MD degree in 1863. In the same year, he was appointed professor at Val-de-Grâce, where he remained until his retirement. While at Val-de-Grâce he observed that healthy young men from the country often developed tuberculosis while living in the close quarters of military barracks. Aware that glanders, a disease similar to tuberculosis, is transmitted in horses by inoculation, he began the study of tuberculosis. Villemin died in Paris on October 6, 1892, and was honored on a stamp[3] issued by France in 1951 (Fig 2).

Robert Koch

The foremost figure in the field of tuberculosis studies is Robert Koch. In 1905, Koch received the Nobel Prize in Physiology and Medicine for his discovery of the causes of tuberculosis and cholera. He was born on December 11, 1843, in Clausthal, near Hannover, in north central Germany. After receiving his medical degree from the University of Göttingen in 1866, he practiced in a number of small towns and villages in Germany.

In 1880, Koch was appointed to the Imperial Health Office in Berlin, and in 1882 he announced the discovery of the tubercle bacillus. In 1885, Koch was appointed professor of hygiene at the University of Berlin and director of the new Berlin Hygiene Institute. In 1890, he introduced tuberculin, a solution containing growth products of the bacillus, as a cure for tuberculosis, provoking worldwide excite-

FIGURE 3. Robert Koch (1843–1910).

ment. Although tuberculin proved harmful, it came to be used as an indicator of previous exposure to the tubercle bacillus (tuberculin test). Effective management of tuberculosis was not achieved until antibiotic drugs became available many years later. Koch died of heart failure on May 27, 1910, in Baden-Baden, Germany. He was honored on a stamp[4] issued by Germany in 1944 to commemorate the centenary of his birth (Fig 3).

CARLO FORLANINI

Carlo Forlanini, Italian medical scholar and educator, is credited with providing the first definitive treatment of pulmonary tuberculosis: artificial pneumothorax. This novel approach (collapsing the affected lung and the cavity within it) introduced a new era in treatment, although it was much opposed at the time. Forlanini reported his results in 1906, after 12 years of experience with the method. It is still used occasionally, with some refinements.

Forlanini was born on June 11, 1847, in Milan. He received his MD degree from the University of Pavia in Italy in 1870. In the wake of the discoveries made by Robert Koch, Forlanini became interested in the pathology of diseases of the lungs, particularly pulmonary tuberculosis. He began his research in 1882, when he first postulated his theory of pulmonary therapy. From 1882 to 1906, he introduced many modifications and refinements in an effort to improve the efficiency of artificial pneumothorax.

During the last years of is life, Forlanini served as a professor of medicine at the University of Pavia. He died on May 26, 1918, in Nervi, a small seaport

FIGURE 4. Carlo Forlanini (1847–1918).

on the Gulf of Genoa in Italy. In 1953, Belgium honored him on a stamp,[5] the surtax of which was used for antituberculosis research (Fig 4).

LÉON C. A. CALMETTE

Léon C. A. Calmette, codeveloper of the antituberculosis vaccine Bacillus Calmette-Guérin with Jean-Marie Camille Guérin, was born in Nice on July 12, 1863, and received his MD degree from L'École Médécine Navale de Brest. In 1865, he obtained his doctorate from the University of Paris. During his lifetime, he served as a physician in many different parts of the world (Gabon, Newfoundland, Hong Kong, and Saigon). He returned to France to become head of the Pasteur Institute at Lille, where he established the first tuberculosis dispensary in Europe, and thereafter he devoted his life to the study of tuberculosis. While using a virulent bovine strain of the tubercle bacillus, Calmette found, after 13 years of study, that the strain was nonvirulent but still tuberculinogenic enough to incite antibodies. The resulting vaccine, introduced in 1921, was called Bacillus Calmette-Guérin. In 1922, he authorized the use of Bacillus-Calmette-Guérin in infants with tuberculous parents, and by 1924 the vaccine was being distributed generally. Several new vaccines are currently being developed. The first recombinant antituberculosis vaccine entered clinical trials in the United States in 2004.

FIGURE 5. Léon C. A. Calmette (1863–1933).

Calmette died of infectious hepatitis, cardiac collapse, and acute peritonitis on October 29, 1933. He was honored on a stamp[6] issued in 1948 by his native France (Fig 5).

JEAN-MARIE CAMILLE GUÉRIN

The other contributor to the vaccine was Jean-Marie Camille Guérin, a veterinarian surgeon who was born in Poitiers, France, on December 22, 1872. In 1892, Guérin enrolled at L'École Nationale Vétérinaire d'Alfort, from which he graduated as a veterinary surgeon in 1896. He worked with Calmette from 1908 to 1921, and together they produced the successful vaccine. In 1917, Calmette was named assistant director of the Pasteur Institute in Paris, and he appointed Guérin head of Services de la Tuberculose at Lille. Guérin died on June 9, 1961, and was honored on a stamp[7] issued by Monaco in 1996 (Fig 6).

SELMAN A. WAKSMAN

Selman A. Waksman in 1944 introduced the antibiotic streptomycin, the first effective drug treatment for tuberculosis, for which he was awarded the 1952 Nobel Prize for Physiology and Medicine. Waksman was born on July 22, 1888, in Priluka in the Ukraine. In 1910, he immigrated to the United States, and he obtained a bachelor's degree in agriculture from Rutgers University in New Jersey in 1915. In 1918, he obtained a PhD degree in biochemistry from the University of California and returned to Rutgers as a microbiologist at the New Jersey State Agricultural Experiment Station. Early in 1943, with one of his graduate students, Waksman developed streptomycin, a material found to be active against many Gram-negative organisms, including the causative agent of tuberculosis.

Waksman retired from active research in 1958. He died in 1973 and was honored on a stamp[8] issued by Gambia in 1989 (Fig 7).

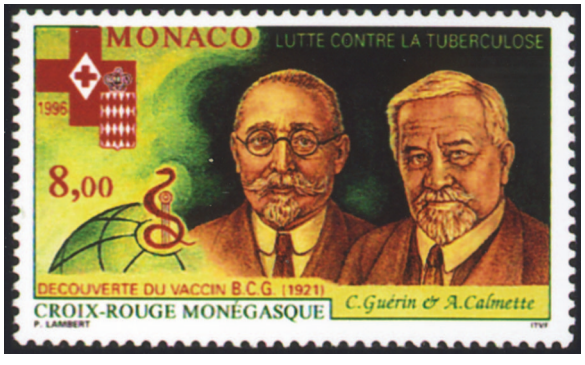

FIGURE 6. Jean-Marie Camille Guérin (1872–1961).

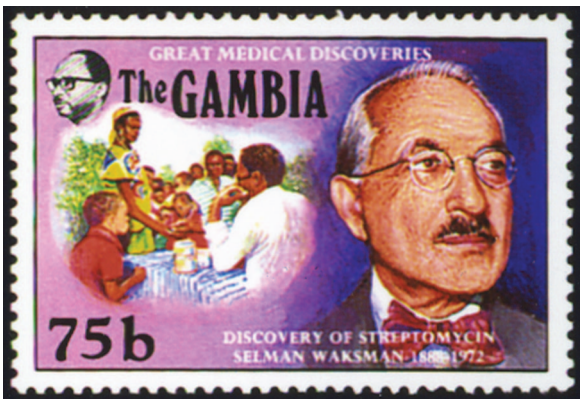

FIGURE 7. Selman A. Waksman (1888–1973).

EDWARD LIVINGSTON TRUDEAU

Edward Livingston Trudeau was honored on a stamp[9] issued by the United States in 2008 for

FIGURE 8. Edward Livingston Trudeau (1848–1915).

establishing the first successful sanitorium in the United States for the open-air treatment of tuberculosis (Fig 8). Although the main treatment for patients with tuberculosis now is hospitalization with drugs and possibly surgery, until 1945 these patients were often treated by placement in a sanitorium on the theory that exposure to open air was beneficial.

Trudeau was born in 1848 in New York City into a family of physicians. When he was in his late teens, his elder brother contracted tuberculosis, and Edward nursed him. He was deeply affected by the death of his brother 3 months later.

When he was 20 years old (1868), Trudeau enrolled in the College of Physicians and Surgeons at Columbia College (now Columbia University), where he completed his medical training in 1871. In 1873, Trudeau was himself diagnosed with tuberculosis. He went to the Adirondack Mountains in upstate New York and subsequently regained his health. In 1876, he went to Saranac Lake (New York) and established a successful medical practice there.

In 1882, after reading about the successful treatment of tuberculosis with the "rest cure" in cold, clear mountain air, Trudeau founded the Adirondack Cottage Sanatorium. It was reported that the British novelist Robert Louis Stevenson, suffering from tuberculosis, spent several months at this sanitorium.

After a fire destroyed his laboratory at the sanitorium, in 1894, Trudeau organized the Saranac Laboratory for the study of tuberculosis. He died in 1915.

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