

General William Gorgas: outstanding medical administrator

This year marks the 100th anniversary of the death of General William Crawford Gorgas, probably the most famous public health administrator, who first achieved fame for his work in dealing with the epidemic of yellow fever in Cuba in the early 20th century.

Yellow fever, which is almost never encountered in the UK, is a viral infection which is transmitted from primates to man by the mosquito, and occurs in tropical Africa, the Caribbean and South America. There is a short incubation period of 3–4 days, followed by the sudden onset of jaundice, rigors and abdominal pain. Its course may be fulminant, with renal failure and a bleeding diathesis. The mortality rate is high.

The first to suggest that the mosquito was the carrier of yellow fever was Dr Carlos Finlay, of Havana, Cuba. The work of Major Walter Reed, then Professor of Bacteriology at the US Army Medical School, his colleagues and his courageous army volunteers in Havana pointed strongly to the prevention of the disease being bound up with the destruction of the *Culex* mosquito.

William Gorgas, then a major in the US Army Medical Corps, first came to prominence when he introduced the rigid public health measures that brought the disease rapidly under control. As a result of these measures, during the year 1901–2 only five deaths from yellow fever were recorded.

William Crawford Gorgas was born in 1854 in Mobile, Alabama. His father was General Josiah Gorgas, who had served in the Confederate Army during the American Civil War. William qualified Doctor of Medicine at Bellevue Hospital Medical College in New York in 1879. He served as an intern at Bellevue for a year, before joining the US Army Medical Corps. Gorgas was appointed surgeon major and chief sanitary officer in Havana in 1898. In appreciation of his work there he was promoted colonel and assistant surgeon general by a special Act of Congress in 1903.

The Panama experiment followed. Up to 1904, the campaign waged by the authorities against yellow fever in the canal zone had been a failure, with a high mortality rate among the canal workers and the American troops stationed there. In 1905, Colonel Gorgas was posted to Panama.

President Teddy Roosevelt compelled the canal commissioners to resign and appointed Judge Charles Magoon as governor of the canal zone. Gorgas and Magoon, armed with autocratic powers, introduced strict regulations that were equally strictly enforced. Every house in Panama was disinfected and stringent measures were taken for the early detection of cases by daily inspection of every inhabitant of Panama City. In addition, the breeding places of mosquitoes were actively treated – water tanks and cisterns were cleaned and covered, and a water pipe supply installed. Mosquito netting was widely adopted. All this was in place by May 1905. The last case of yellow fever occurred in Panama on 14 September. Incidentally, these measures controlled the spread of malaria, which had also been shown to be spread by the mosquito in 1898.

In October 1905, Gorgas and Magoon offered a reward of \$50 in gold for any person notifying a case of yellow fever anywhere in the canal zone; there is no record of anyone claiming the prize.

In 1913, Gorgas was invited by the Chamber of Mines in Johannesburg to investigate the high death rate from pneumonia among the black miners of the Rand. Next came a survey of endemic yellow fever in South America. In 1914, Gorgas was promoted surgeon general of the US Army. Since 1907 he had been permanent Director of the International Health Commission of the Rockefeller Institution, with headquarters in Washington.

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During World War I, Gorgas visited Serbia with the Rockefeller anti-typhus mission and, with the United States' entry into the war in 1917, helped to organise the hygiene arrangements of the American army.

At the end of the war in 1918, Gorgas retired from the army, having reached the mandatory retirement age of 64 years. By now, his health was not good. On a visit to London in 1920, he became seriously ill and was admitted to the Queen Alexandra Military Hospital, Millbank, where he died on 3 July. While in hospital, he was visited by King George V, who bestowed upon him the Knight of St. Michael and St. George. His body was taken in formal military procession from Millbank to St Paul's Cathedral for a memorial service. He was buried at a further military ceremony at Arlington National Cemetery, Washington.

The reputation of Gorgas has been challenged by some because he was not responsible for the actual discoveries without which his work could not have been done. The work of Carlos Finlay, of Major Walter Reed and of his brave volunteer 'guinea pigs' deserve their place in history. Gorgas was the link between discovery and its application. His genius was in organisation.

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