



# Sir James Mackenzie

## Man with a heart

The heart is a potent Valentine’s Day symbol – but for physician Sir James Mackenzie, the heart represented a lifetime of passionate research culminating in the opening in 1913 of Britain’s first cardiac department at The London Hospital.

**W**hen young James Mackenzie started out as a GP in Burnley, Lancashire in 1879, few could have guessed he would become the world’s leading clinical authority on heart disease. Today, modern cardiology owes a debt to this dedicated doctor who, by painstaking observation, identified the signs of cardiac arrhythmia, angina and other heart conditions that are now easily diagnosed.

Born in Scotland in 1853, the son of a tenant farmer, James Mackenzie was first apprenticed to a chemist’s in Perth before moving to Glasgow as an assistant chemist. Soon after, he was bitten by the medical bug and decided to study medicine at Edinburgh University, qualifying in 1878. Once he completed his residency at Edinburgh Royal Infirmary in 1879, he headed south to Burnley.

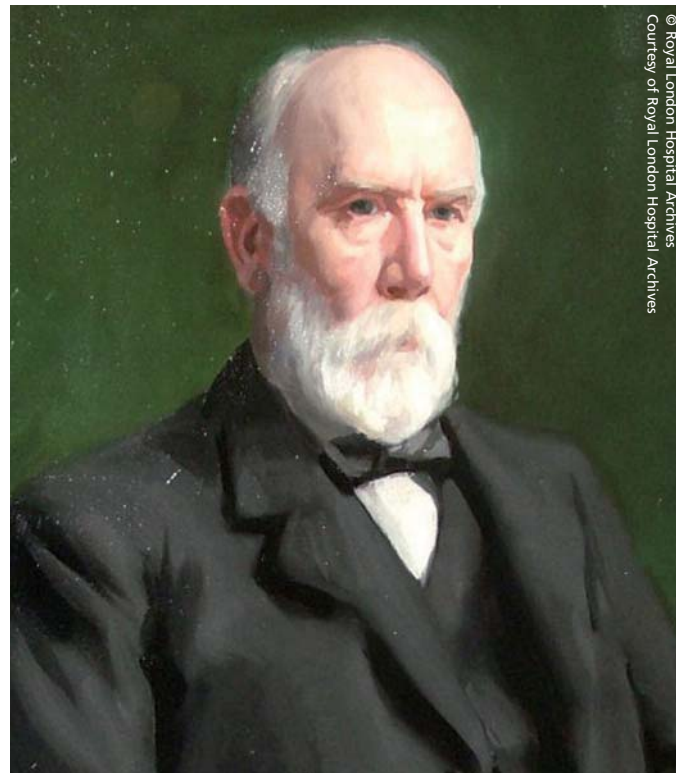
### Rife with infectious disease

Much of Mackenzie’s knowledge was gleaned from his extraordinarily busy practice in this socially-deprived industrial town. Victorian England was rife with infectious disease and the new Dr Mackenzie found himself seeing 60 to 70 patients a day and delivering three babies a week, at a time when infant mortality in Burnley was 205 per 1,000 births.

Mackenzie found many of his patients’ conditions differed from accounts in his medical textbooks. So he began a process of minutely observing his patients’ progress through their illnesses, quickly developing a fascination with the heart.

In 1890, he noted that the chambers of the heart could beat out of their correct order – an irregular heartbeat or cardiac arrhythmia. While carefully following up his patients, Dr Mackenzie developed a device called the polygraph, a portable, clockwork, ink-writing instrument that recorded heart pulses simultaneously. It enabled him to distinguish harmless and dangerous irregularities and diagnose various types of heart block.

For patients with irregular heartbeats, his discoveries meant an end to being made



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**“His discoveries meant an end to being made cardiac invalids by anxious doctors who, until then, confined them needlessly to bed.”**

cardiac invalids by anxious doctors who, until then, confined them needlessly to bed or restricted their activity. Mackenzie would later describe more complex heart irregularities, including auricular fibrillation, and also demonstrated the effectiveness of digitalis, a drug prepared from the dried leaves of the foxglove, in treating heart arrhythmias.

Privately, he was a man with wide-ranging interests – he studied Greek and German, played golf and started writing a novel about social deprivation. He owned

one of the first cars in Burnley, holidayed in 1885 in America’s Yellowstone Park, and, when he married two years later, honeymooned in Italy. He and his wife, Frances, had two daughters.

Ever ambitious for his career, in 1907 he moved to London and set up in private practice, although his main objective was to become a consultant at The London Hospital (as The Royal London was then known).

### Good for the patients

In 1911, The London finally appointed him lecturer in cardiac physiology with the use of six beds, and in 1913, he triumphed, opening the first cardiac department in Britain – and one of the first in Europe – in a general hospital. The eminent medical man, Sir William Osler, described Mackenzie’s appointment as: “good for the hospital, good for the patients and good for the profession.”

Renowned for his huge capacity for work, he published more than 50 papers during his career and several books, beginning in 1902, aged 49, with *The Study of the Pulse*, written after 24 years in general practice.

Knighted in 1915, Sir James left London in 1917 to set up an institute for general practice research in St Andrew’s, Scotland. Ironically, having correctly diagnosed his own condition, Sir James died of angina pectoris in London in 1925. He had arranged for his former assistant, Sir John Parkinson, to carry out a post mortem and send his heart to the medical museum of St Andrew’s University, where it remains.

Today, three university chairs of general practice are named in his honour. The instruments Sir John used were eventually given to The Royal London Hospital’s museum, where they still remain – a fitting medical memorial to the ultimate man with a heart.



The Royal London Hospital Museum is open to the public. Contact details and opening times are available on the Barts and The London website at [www.bartsandthelondon.nhs.uk/museums](http://www.bartsandthelondon.nhs.uk/museums).