Sir Leonard Rogers: pioneer in tropical diseases

This September will mark the 50th anniversary of the death, at the great age of 96 years, of Sir Leonard Rogers, a British authority on tropical diseases. His work has resulted in the prevention of suffering and death of countless dwellers in the tropics, especially from kala azar, cholera and amoebic dysentery.

Rogers was born in 1868 in Helston, Cornwall. His father was a captain in the Royal Navy. After education at local schools and Plymouth College, Rogers joined St. Mary's Medical School in 1886, at the age of 18 years. From this early age, he excelled in pathology and bacteriology, gaining several prizes in these subjects and often working alone in private study in the laboratory. Rogers qualified in medicine in 1891 and demonstrated that he was not only a budding pathologist but also a good clinician by passing his Fellowship of the Royal College of Surgeons (FRCS) the following year.

Young Rogers was keen to pursue a career in research in pathology (not an easy choice to make in a family of limited means – he was one of 16 children) and he chose an option that would gain him entry into this speciality – he joined the Indian Medical Service in 1893. Like all recruits, Rogers was sent for instruction in tropical diseases to the army medical school at Netley. Here he had the good fortune to be taught by Almroth Wright (the 150th anniversary of whose birth we recorded last year; Ellis, 2011), who at that time would have been commencing his important work on anti-typhoid immunization.

After training, Rogers sailed for India in July 1893. His initial posting was to the military branch of the Indian Medical Service, but his aim was transfer to the civilian branch of the service and to engage in research.

In 1896, Rogers was posted to Assam to investigate an outbreak of kala azar, which was threatening the tea industry. Although Rogers' research into aetiology was not successful (the flagellated protozoan was not described until 1903 independently by Charles Donovan and William Leishman – the Leishman Donovan bodies), his practical public health measures proved effective.

During leave in England, Rogers obtained his London Doctor of Medicine in 1897 and his Membership of the Royal College of Physicians the following year. Returning to India that year, Rogers worked on the control of rinderpest in cattle and trypanosomiasis in a variety of domestic animals. In 1900, Rogers gained his transfer to the civilian branch of the service, as sanitary commissioner in Bengal and professor of pathology in Calcutta Medical College.

He extended his studies on tropical diseases to the bedside. He carried out daily ward rounds in the medical college and neighbouring hospitals, made meticulous shorthand notes, and correlated his clinical findings with the subsequent autopsy examination. In 1904, he developed the technique of culture of the organism of kala azar, *Leishmania donovani*, and suggested that the disease was transmitted by a biting insect – he favoured the bed bug. It was not until 1911 that Charles Wenyon identified correctly that spread was caused by the sandfly.

By analogy with sleeping sickness, Rogers surmised that kala azar should respond to treatment by intravenous injections of antimony, in the form of tartar emetic. This proved to be so, and for decades this remained the standard treatment until it was replaced by pentavalent antimony compounds. His next major contribution to diagnosis and treatment was to differentiate clearly between amoebic and bacillary dysentery, devastating and widespread diseases of the tropics and subtropics, with epidemics occuring in the armed forces right up to the end of the Second World War. His clinical interest lead him to the important discovery of the specific action of emetine in amoebic infections; its use continued until the fairly recent introduction of the safer metronidazole. Another life-saving innovation was his use of needle aspiration for amoebic liver abscess, which replaced the far more dangerous open surgical drainage of this condition.

Perhaps the greatest contribution this extraordinary man made with regard to the saving of lives, with an importance as true as ever today and which again was the result of his close correlation of clinical and laboratory findings, was his realization that the high mortality of cholera was the result of the rapid and profound loss of water and electrolytes in the copious diarrhoea it caused. He introduced 'Rogers' fluid', sterile saline solution with added potassium and calcium, given intravenously in large amounts. This finding alone would have gained him immortality.

Interestingly enough, a young physician, Thomas Latta, in Leith, Scotland, noted that blood from fatal cases of cholera was concentrated and was deficient in salts. During a cholera epidemic in Leith in 1832, he treated moribund patients with large amounts of intravenous saline, and reported remarkable recoveries in a series of communications to the *Lancet*. Sadly, Latta died of tuberculosis the following year, the epidemic subsided and his work was more or less forgotten for many decades.

Rogers planned and raised the funds for the Calcutta School of Tropical Medicine and the associated Carmichael Hospital for Tropical Diseases.

In 1914, Rogers married a nursing sister in Calcutta. They had three sons, one of whom became a professor of mathematics. In the year of his marriage, Rogers was knighted and was elevated to Knight Commander of the Star of India in 1932. In 1916 he was elected Fellow of the Royal Society. He retired to London in 1921, but continued teaching, research and practice for many years. He died in Truro, Cornwall after a fall in 1962. Surely one of the truly great figures in tropical medicine. **BJHM**

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