Major General Sir David Bruce (1855-1931)

David Bruce was well known for his study of Malta fever (brucellosis) and sleeping sickness (trypanosomiasis). Born in Australia and moved to Scotland aged 5 when his family returned home. He graduated from Edinburgh Medical School. He was a great physician and a pioneer of veterinary microbiology.

Into Africa

- 1894 Bruce was posted to Natal at the request of the Governor, Sir Walter Hely Hutchison, a former Lieutenant Governor of Malta. Hutchison asked him to investigate an epizootic disease, ‘Nagana’, that was afflicting cattle in northern Zululand.
- Captain and Mrs. Bruce sailed for Pietermaritzburg, continuing the long journey to Umbombo by ox cart, in much the same way as David Livingstone had some 40 years previously.
- After trekking for five weeks, the Bruces arrived at Umbombo, where they lived for two months in a wattle-and-daub hut, using the veranda as a laboratory.
- Impressed by Robert Koch’s recent discovery of the tubercle bacillus, Bruce decided to investigate Malta fever, which annually hospitalised around a hundred soldiers of the British garrison for an average of three months. Malta fever was responsible for 130,000 days of disease each year.
- Following Koch’s postulates he identified Micrococcus (Brucella) melitensis (1887) as the aetiological agent of brucellosis in humans and cattle.
- In 1905 Bruce headed the Commission for the Investigation of Mediterranean Fever where T. Zammit, one of the Maltese members, found that goat’s milk was the disseminating vehicle of Malta fever.
- When goat’s milk was eliminated from the diet of the Malta Garrison, the disease disappeared. This disease is now called brucellosis. The names “Malta Fever” or other names such as “Mediterranean Fever” or “undulant fever” are no longer used.

Malta Fever

- After a brief spell in general practice, Bruce started his military medical career by entering the Army Medical School at Netley, passing out top of the list in 1883, and in August that year was commissioned Surgeon Captain in the Army Medical Service.
- The following year he was posted to Valletta Hospital, Malta, which had no research facilities. Bruce provided his own microscope and equipment.
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Back to Africa

- 1903 He was appointed head of the Royal Society’s Sleeping Sickness Commission to Uganda. His team consisted initially of Dr David Nunes Nabarro and a Sergeant Technician, Dr A. Castellani, the remaining member of the first commission.
- Demonstrated trypanosomes in the cerebrospinal fluid of 25 victims before leaving. He taught Bruce the techniques for lumbar puncture and specimen examination.
- Trypanosoma gambiense is the aetiological agent of sleeping sickness in Africa. The disease is transmitted by the tsetse fly Glossina palpalis.
- Left for Malta in 1904.

And Again

- 1908, Bruce rejoined the commission. 1911, appointed Director of the third commission and went to Nyasaland. Trypanosoma gambiense was transmitted by Glossina palpalis.

Current Nomenclature

- Trypanosoma gambiense found in the West Africa
- Trypanosoma rhodesiense found in East Africa
- Trypanosoma brucei found in Sub-Saharan Africa

What is Trypanosomiasis?

Human African trypanosomiasis, sleeping sickness, African leishmaniasis and Congo trypanosomiasis is estimated that 50,000 to 70,000 people are currently infected, the number having declined somewhat in recent years. Four major epidemics have occurred in recent history: one from 1896–1906 primarily in Uganda and the Congo Basin. There were under 10,000 cases reported in 2008 according to WHO figures which represents a huge decrease from the estimated 500,000 new cases in 1998. The disease has been recorded as occurring in 30 countries, all in sub-Saharan Africa. It is endemic in south east Uganda and western Kenya, and killed more than 44,000 Africans in 2008.

Captain Bruce proved that a Trypanosoma brucei was the agent causing Nagana in cattle and sleeping sickness in humans and the tsetse fly Glossina morsitans was the vector transmitting the disease (1895).