

# Malta Fever



## 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.

### 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 Valetta Hospital, Malta, which had no research facilities. Bruce provided his own microscope and equipment
- 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 120,000 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
- 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

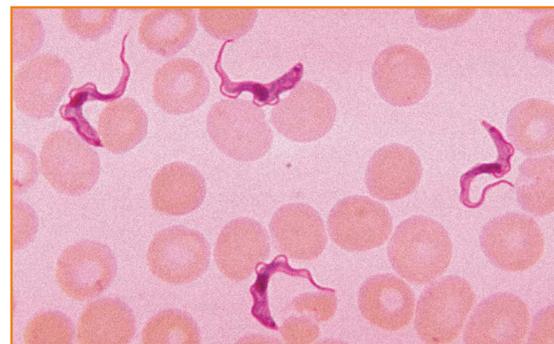


Laboratory at night - Major General Sir David Bruce

### 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 Ubombo, where they lived for two months in a wattle-and-daub hut, using the veranda as a laboratory
- Nagana, a devastating disease, was killing large numbers of the Zulu's cattle
- This had serious implications, as the cattle were essential to their welfare and way of life
- A similar disease known as Surra had been described in West Africa
- Also in India, a disease had been described that attacked horses, asses, mules, and camels
- In 1877 a surgeon, Timothy Lewis of the Royal Army Medical Corps, discovered a trypanosome in a rat whilst working in Bombay

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



### Back to Africa

Captain David and Mary Bruce returned to South Africa to investigate the outbreak of enteric fever during the Boer War. They were present at the siege of Ladysmith where he commanded a Field Hospital. He returned home 1901.

### And Again

- 1908, Bruce rejoined the commission. 1911, appointed Director of the third commission and went to Nyasaland, Trypanosoma gambiense and the tsetse fly Glossina palpalis being implicated

### Again

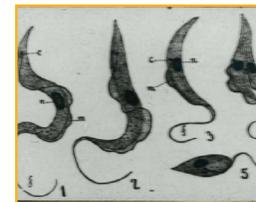
- 1903 He was appointed head of the Royal Societies Sleeping Sickness Commission to Uganda. His team consisted initially Dr David Nunes Nabarro and a Sergeant Technician
- Dr A Castellani the remaining member of the first commission demonstrated trypanosomes in the cerebrospinal fluid of 25 victims before leaving. He taught Bruce the techniques for lumbar puncture and specimen examination. Trypanosoma gambiense and the tsetse fly Glossina palpalis the vector
- Left for Malta in 1904

### Current Nomenclature

**Trypanosoma gambiense** found in the West Africa

**Trypanosoma rhodesiense** found in East Africa

**Trypanosoma brucei** found in Zululand, causing Nagana



### What is Trypanosomiasis?

Human African trypanosomiasis, sleeping sickness, African lethargy or Congo trypanosomiasis It 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 2009 according to WHO figures which represents a huge decrease from the estimated 300,000 new cases in 1998. The disease has been recorded as occurring in 36 countries, all in sub-Saharan Africa. It is endemic in south east Uganda and western Kenya, and killed more than 48,000 Africans in 2008.