

## LSTM and TBRF in Africa

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- In 1905 Everett-Dutton identified *Borrelia* as causative agent of TBRF in W. Africa - then died from the infection, ... hence the name *B. duttonii*.
- More recently, Brian Coulter visited Mvumi and (re)described importance of TBRF in the area - 1980s
- Trial of ITNs v. TBRF in Muungano - started in 2002
- Studies on tick vectors - taxonomy, behaviour and natural history.

## The vectors of TBRF in Africa

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### Soft Ticks -

In most of Africa...

***Ornithodoros moubata***  
the “eyeless or hut  
Tampan”

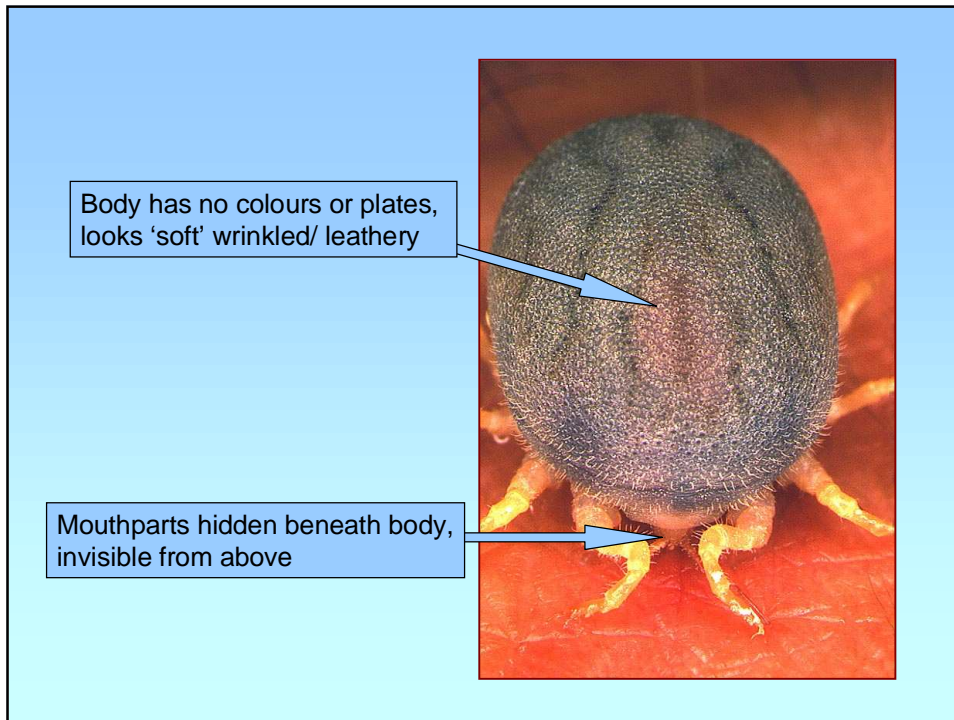


## The vectors of TBRF in Africa

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**HARD ticks - Ixodids**   **SOFT ticks - Argasids**

Attach firmly and feed for days/weeks	Attach lightly and feed in < 30 mins
Feed 3 times in its life	Feed many times in its life
Live in vegetation/ fields	Live in the home



### The vectors of TBRF in Africa

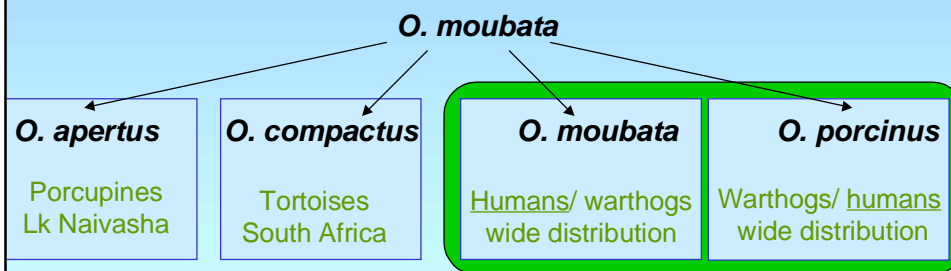
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#### ***Ornithodoros moubata***

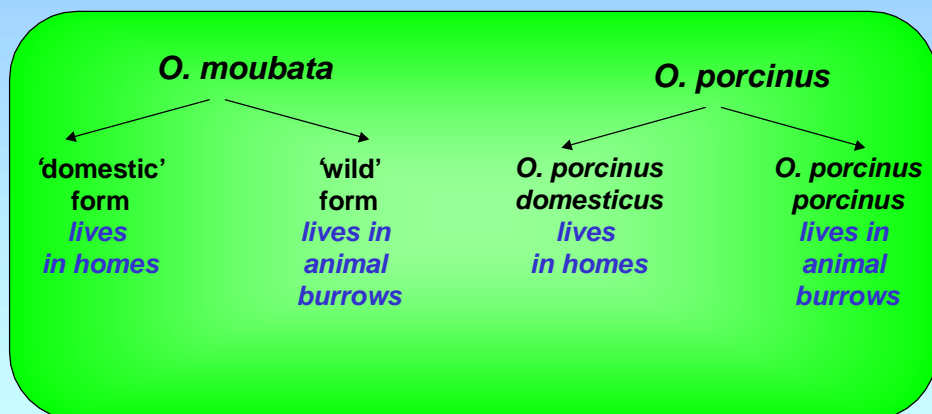
- *Occurs across a very wide area of sub-Saharan Africa*
- *Like many vectors it is a complex of species and... potentially each one may have its own feeding behaviour, distribution...*
- *Although they all look similar they may have some morphological differences, albeit very slight*

## The vectors of TBRF in Africa

Classic studies on *O. moubata* by Dr. Gerry Walton in Tanzania, Kenya and Uganda in late 1940s and 1950s



## The vectors of TBRF in Africa



## The vectors of TBRF in Africa

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Which of these are the vectors...?

- Feeds on humans (only?)
- Feeds indoors
- Lives indoors
- Supports development of *Borrelia*

## The vectors of TBRF in Africa

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*O. moubata*

'domestic'  
form

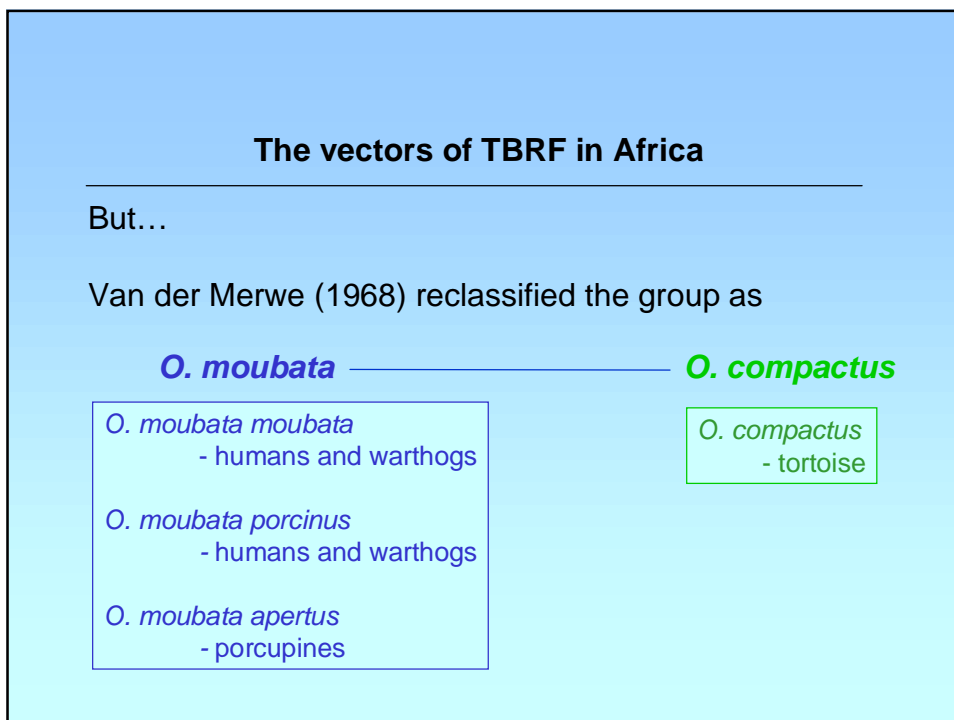
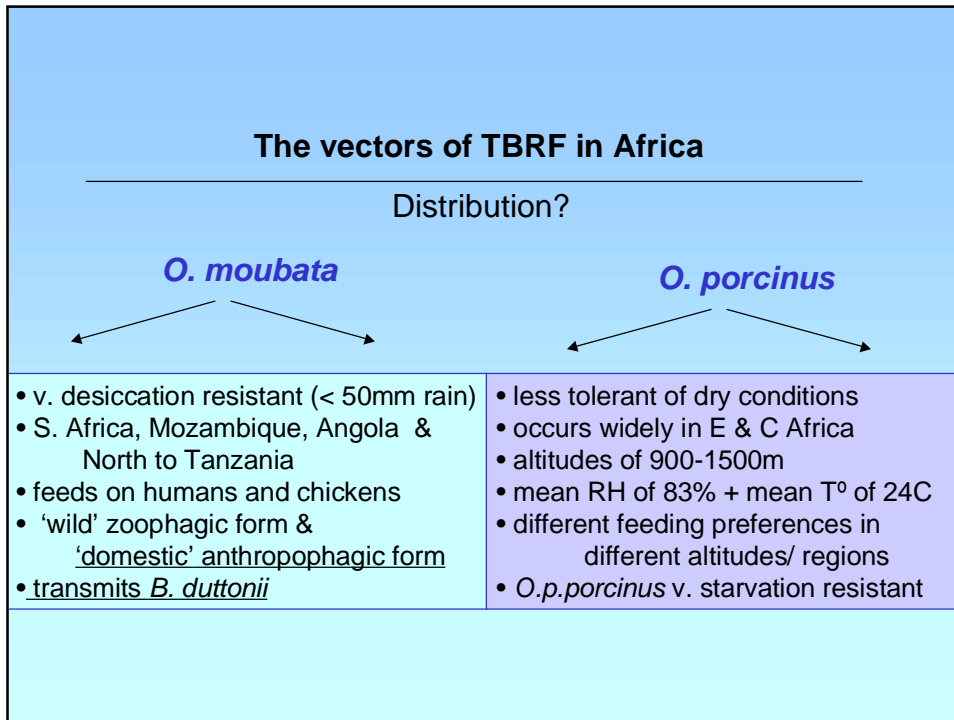
'wild'  
form

*O. porcinus*

*O. porcinus  
domesticus*

*O. porcinus  
porcinus*

Responsible for > 8000 cases in 1946 epidemic



## What will be investigated?

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- Determine the taxonomic structure and phylogeny of the *Ornithodoros moubata* species complex
- Characterise the behaviour (host preferences, resting and feeding behaviour)
- Characterise the natural history (habitat, climatic preferences, distribution)
- Determine the vectorial capacity of the members of the complex
- Characterise the vector-parasite associations between members of the species complex and *Borrelia spp.* in Africa

## Thanks to:

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**Alison Talbert**  
**William Kisinza**

**Sir Halley Stewart Trust**

**Tom Kelly - *University College Cork, Ireland***

