

The Origin of the Khoisan Domestic animals



What do we know

The main domestic species held by Khoisan are:



The Centers of Origin

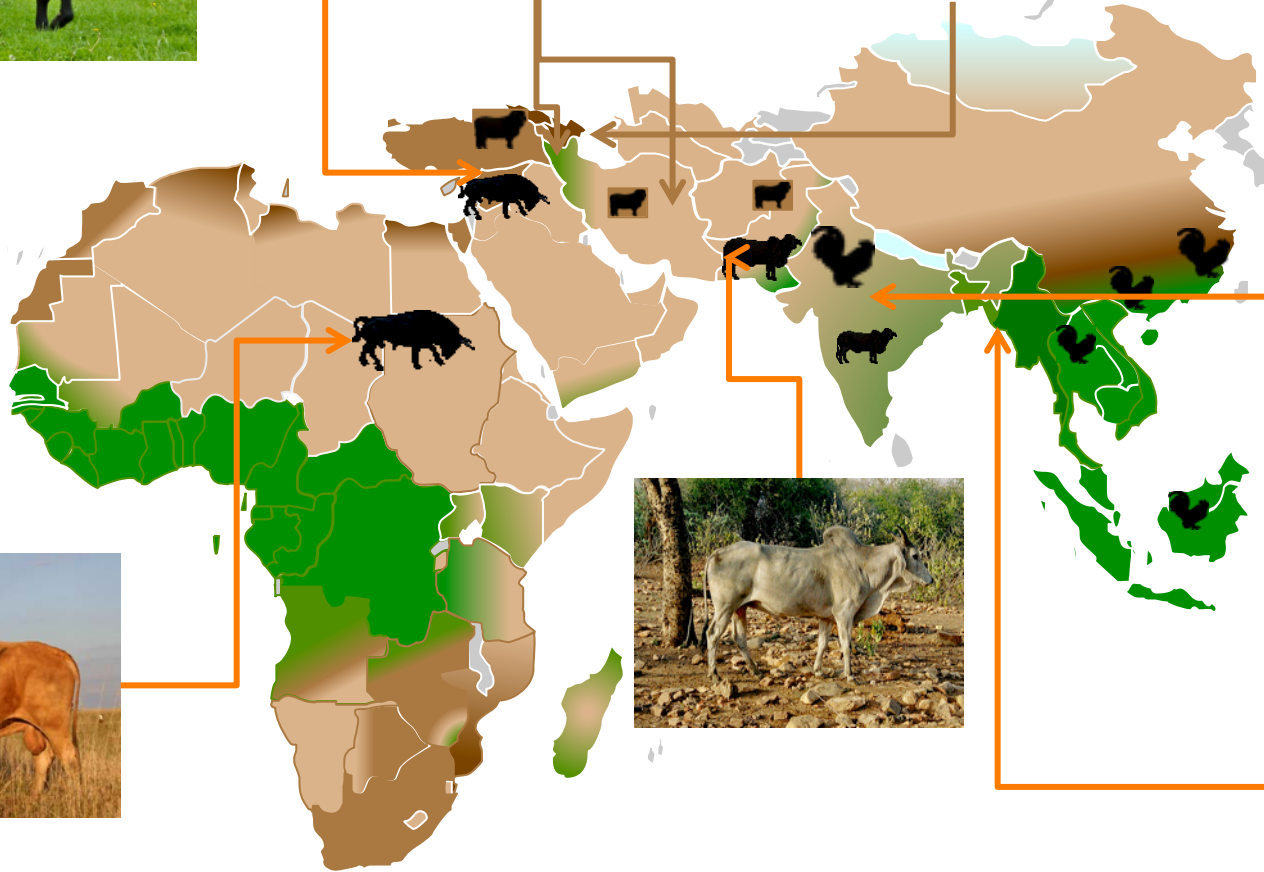
Arrival in Africa

Types and Varieties

Genetic Data

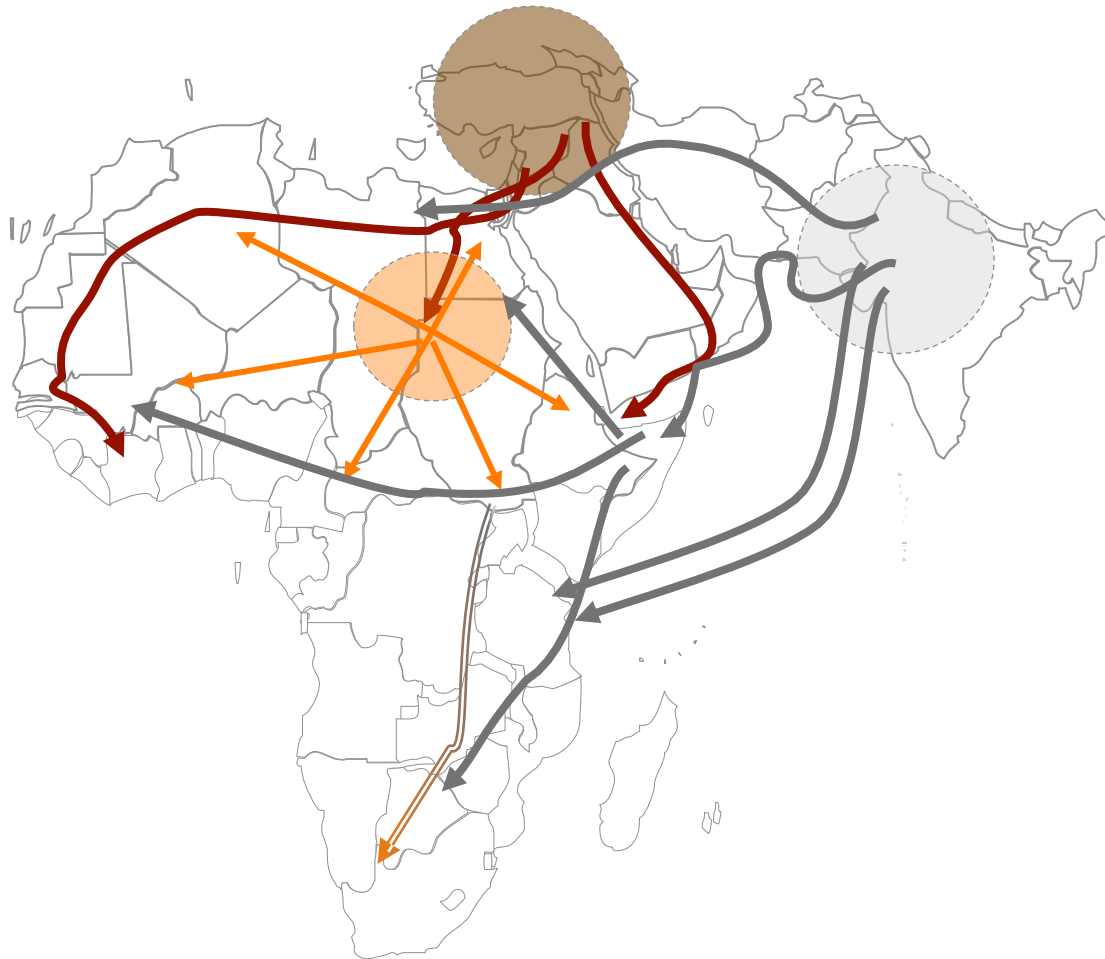
Interpretations and Future Directions

The Centers of Origin



Arrival in Africa

Cattle



Types and Varieties

Short - Long Horn - Pooled

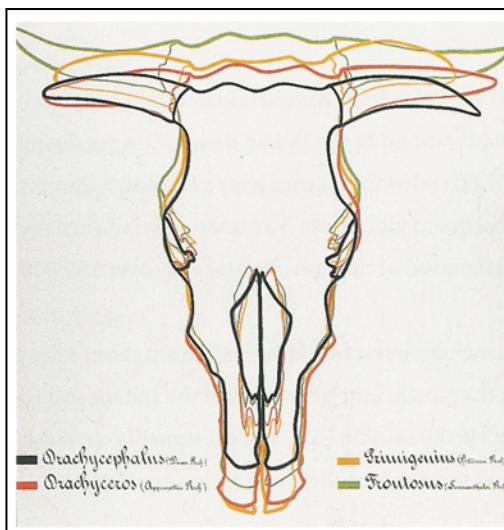
The Pastoral period of rock painting spanned between 2-5000 BC.



Tassili-n-Ajjer, southern Algeria where



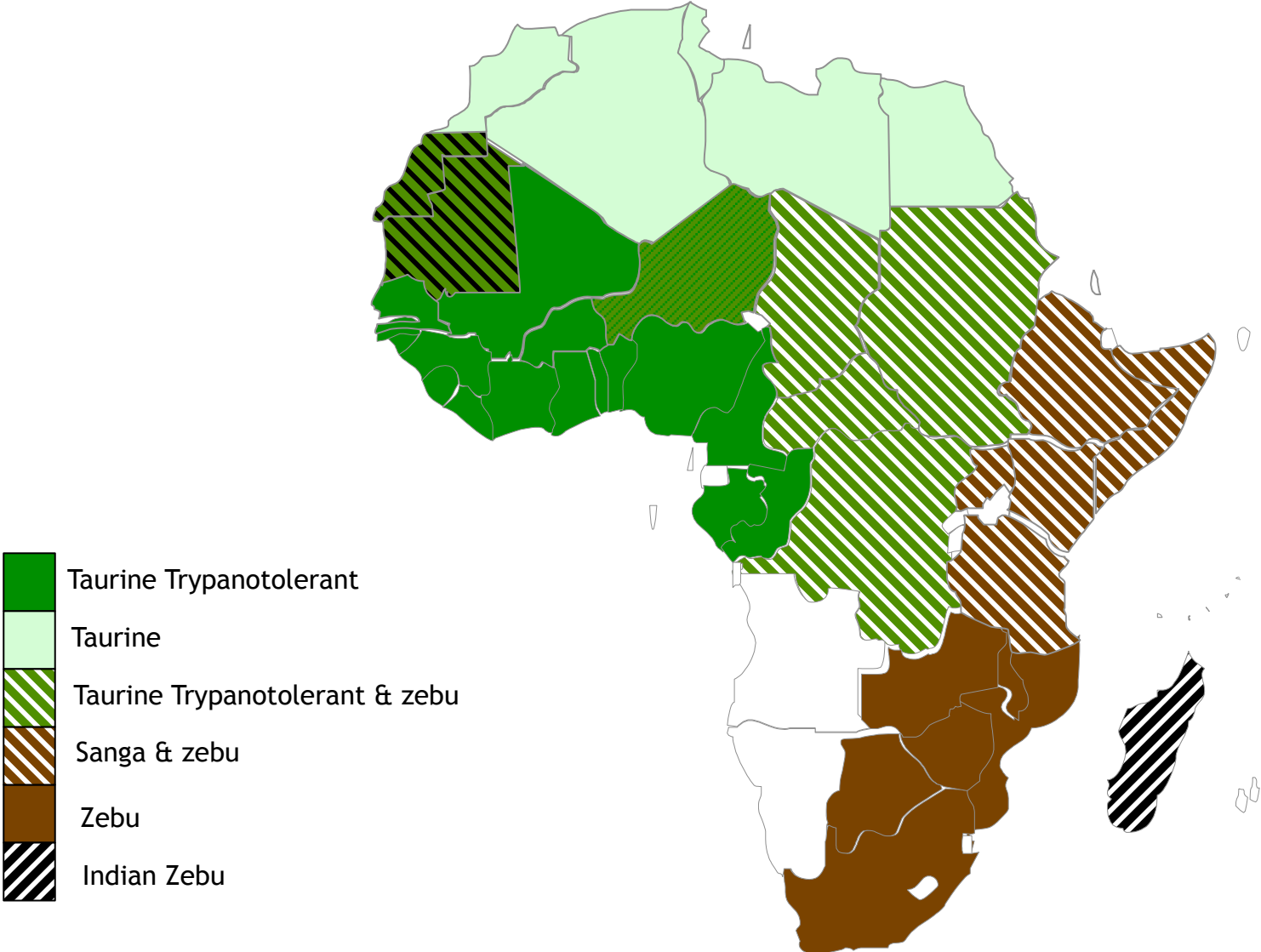
Wadi Tashwinet, Tadrart Acacus, Libyan Sahara



Egypt - 1-2000 BC

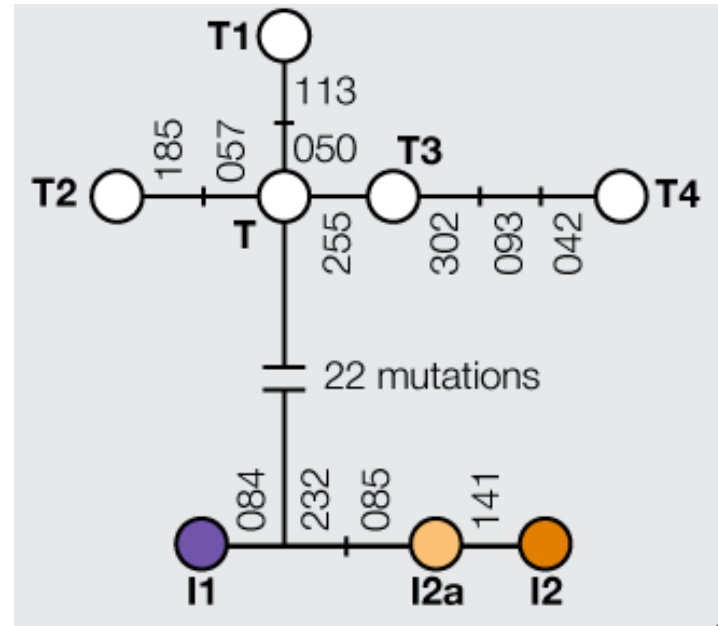
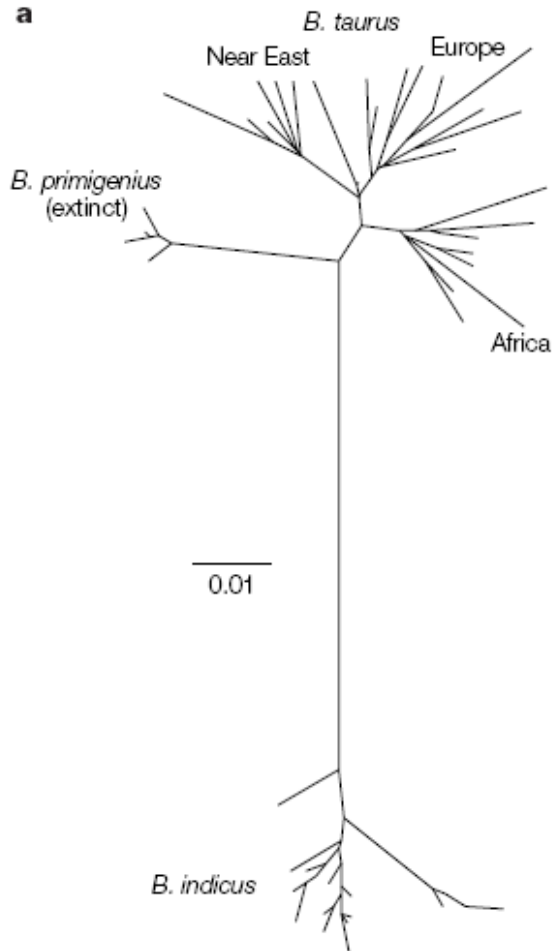


Types of cattle in Today's Africa



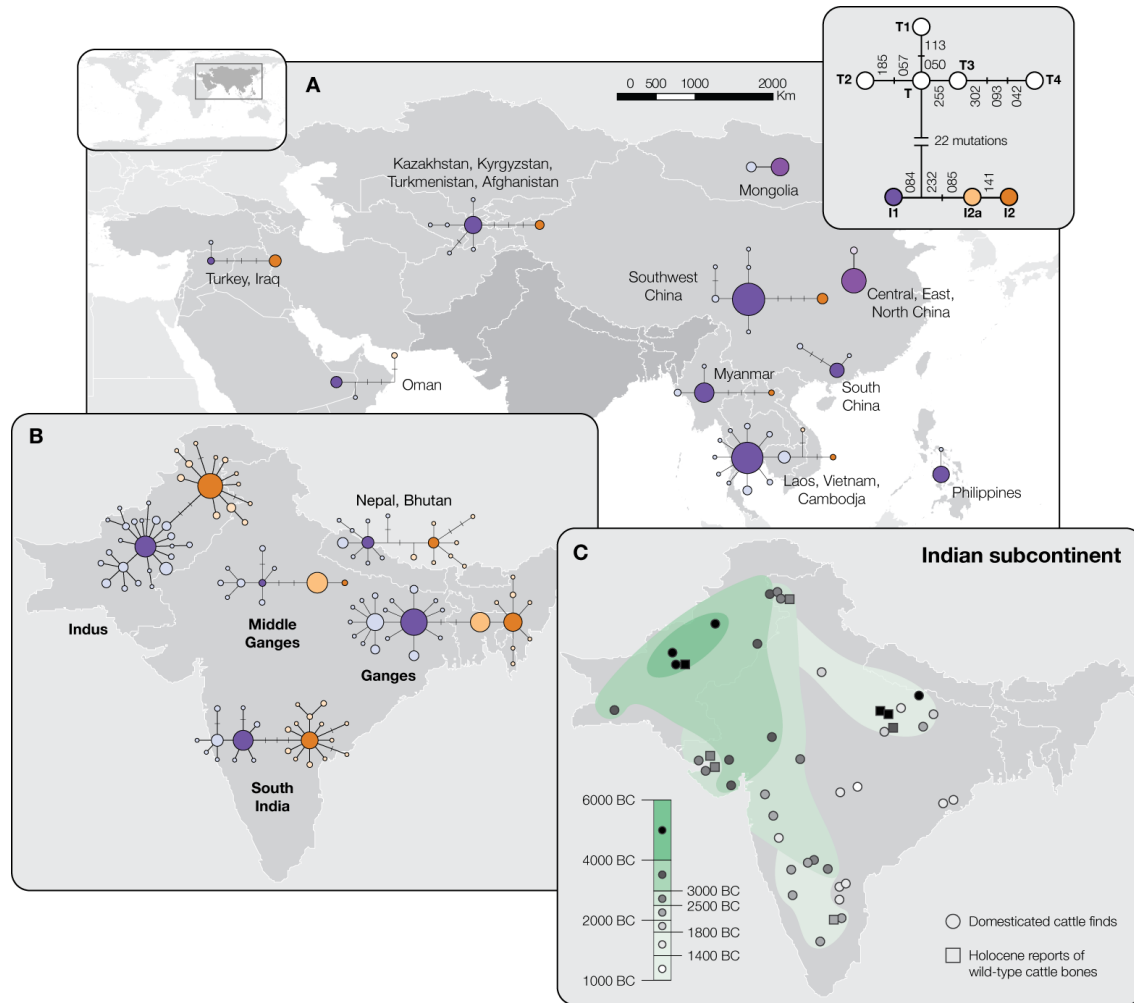
Genetic Data

MEDNA



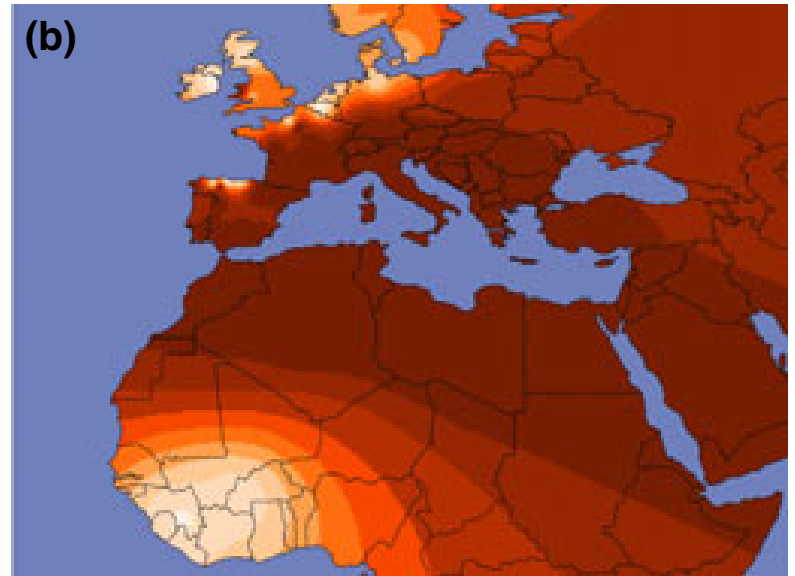
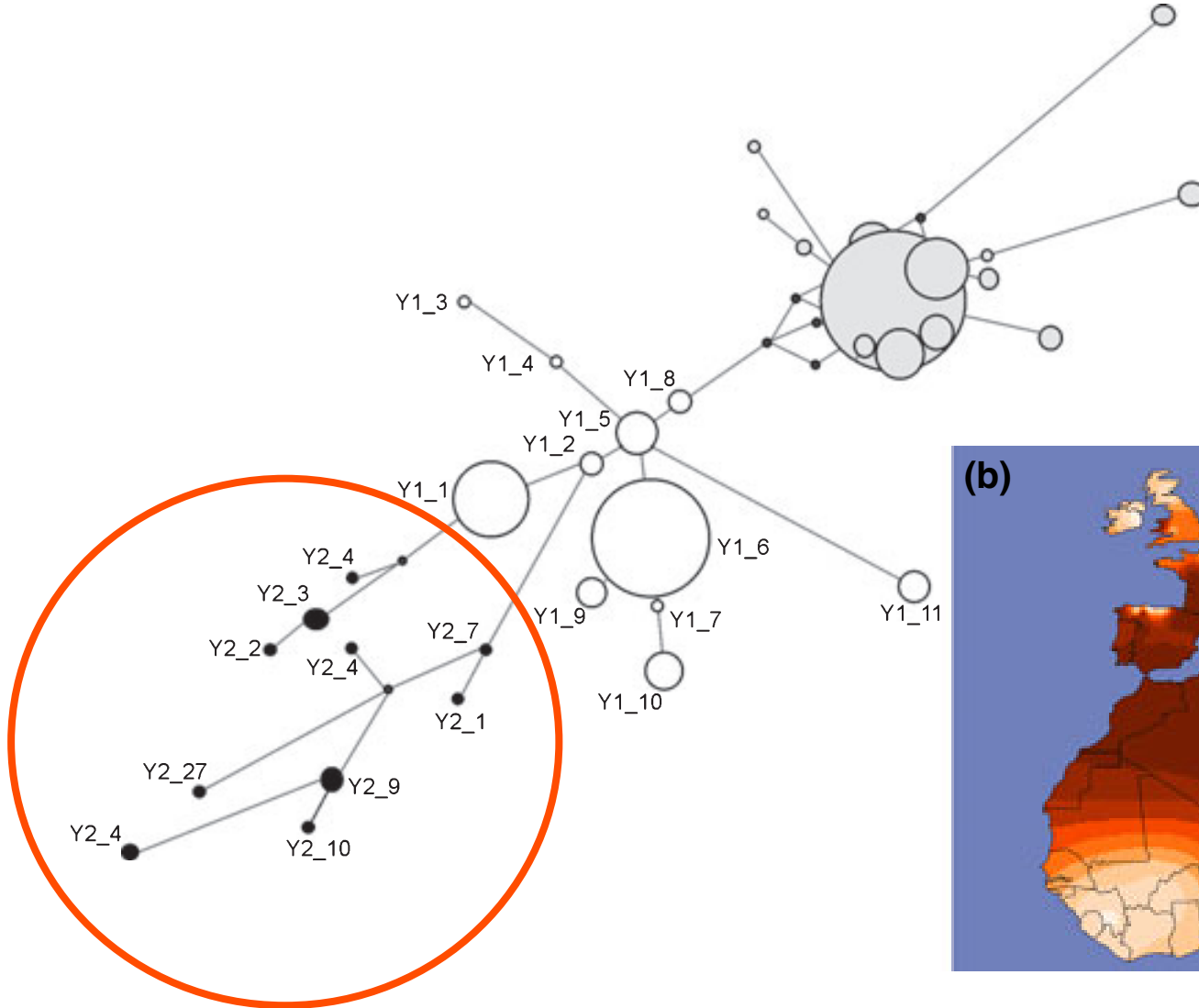
Geographic distribution of the zebu lineages

None in Africa



Y-Chromosome

(b)



Africa, Arabian Peninsula, Indian Subcontinent

15 microsatellite loci
(nearly neutral nuclear markers)

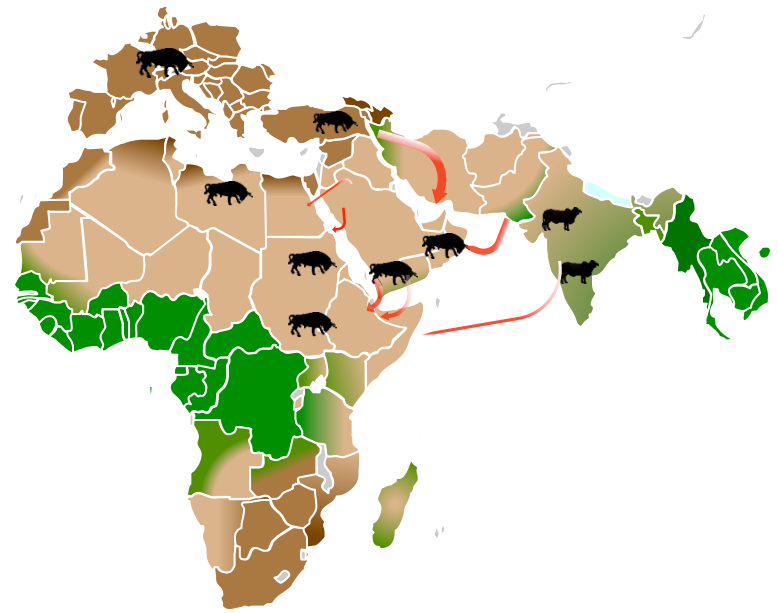
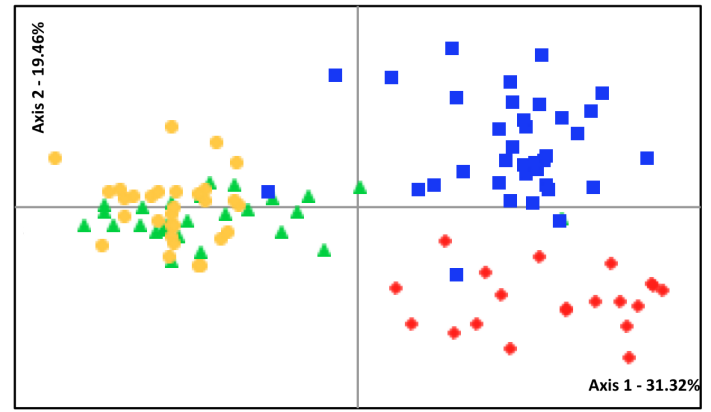
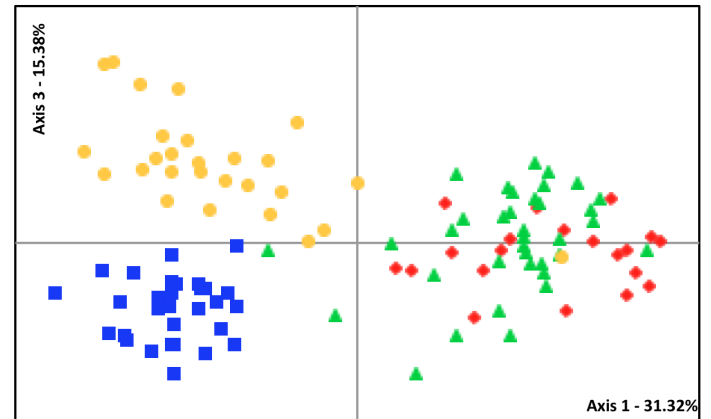


Figure 1



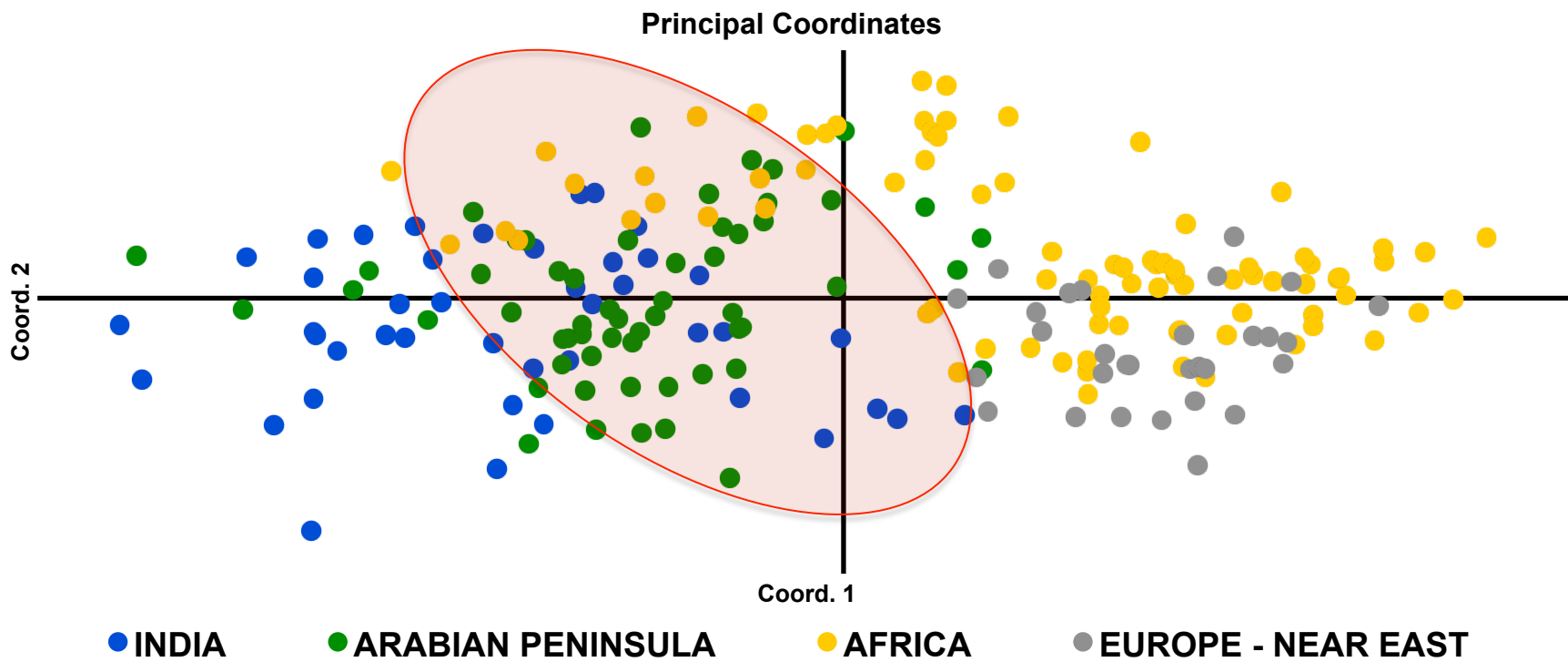
◆ Zebu (India) ▲ African taurine (Lybia) ● Near East Taurine (Friesian) ■ Oman



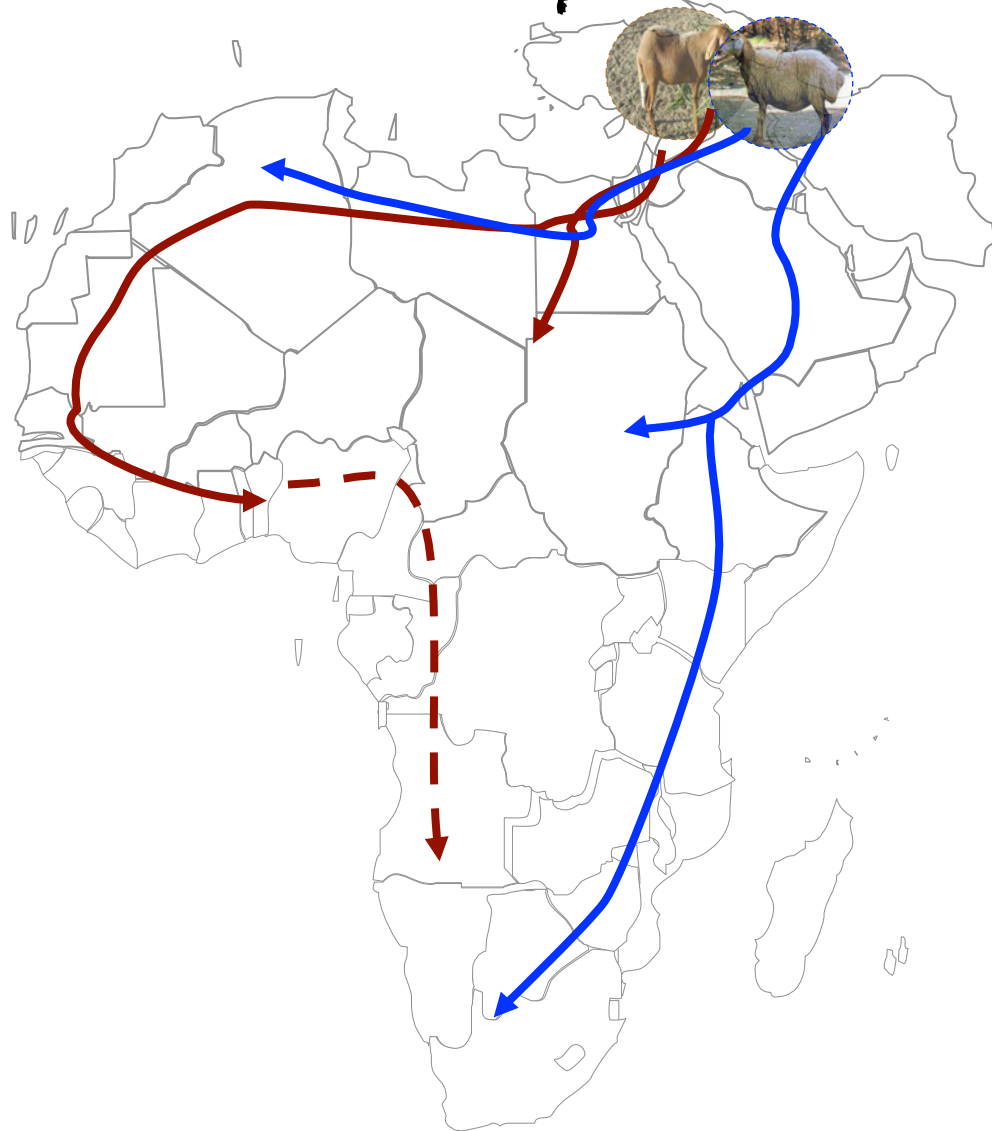
◆ Zebu (India) ▲ African taurine (Lybia) ● Near East Taurine (Friesian) ■ Oman

Source: Maghoub et al. 2011

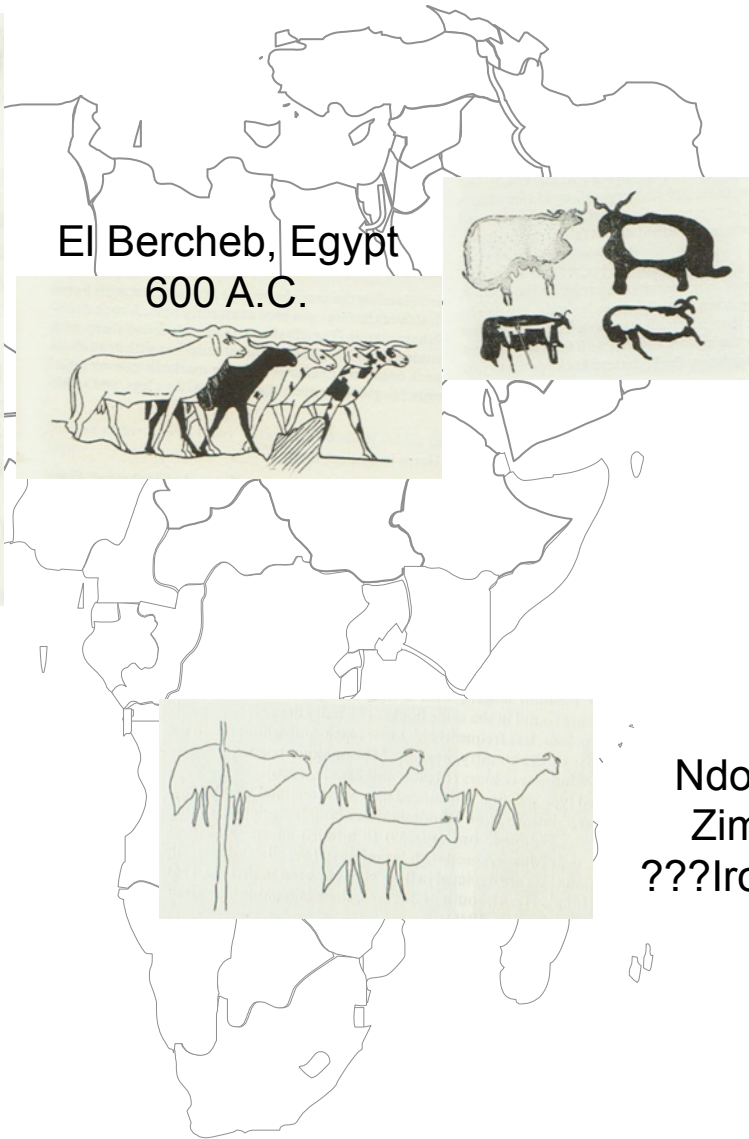
Genetic Relationships



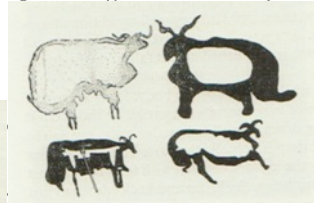
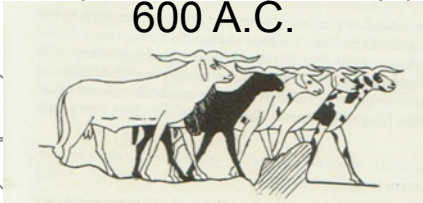
Sheep



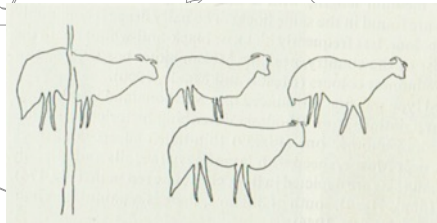
Neolithic Rock Jebe Bes
Seba, Art Atlas Desert



El Bercheb, Egypt
600 A.C.



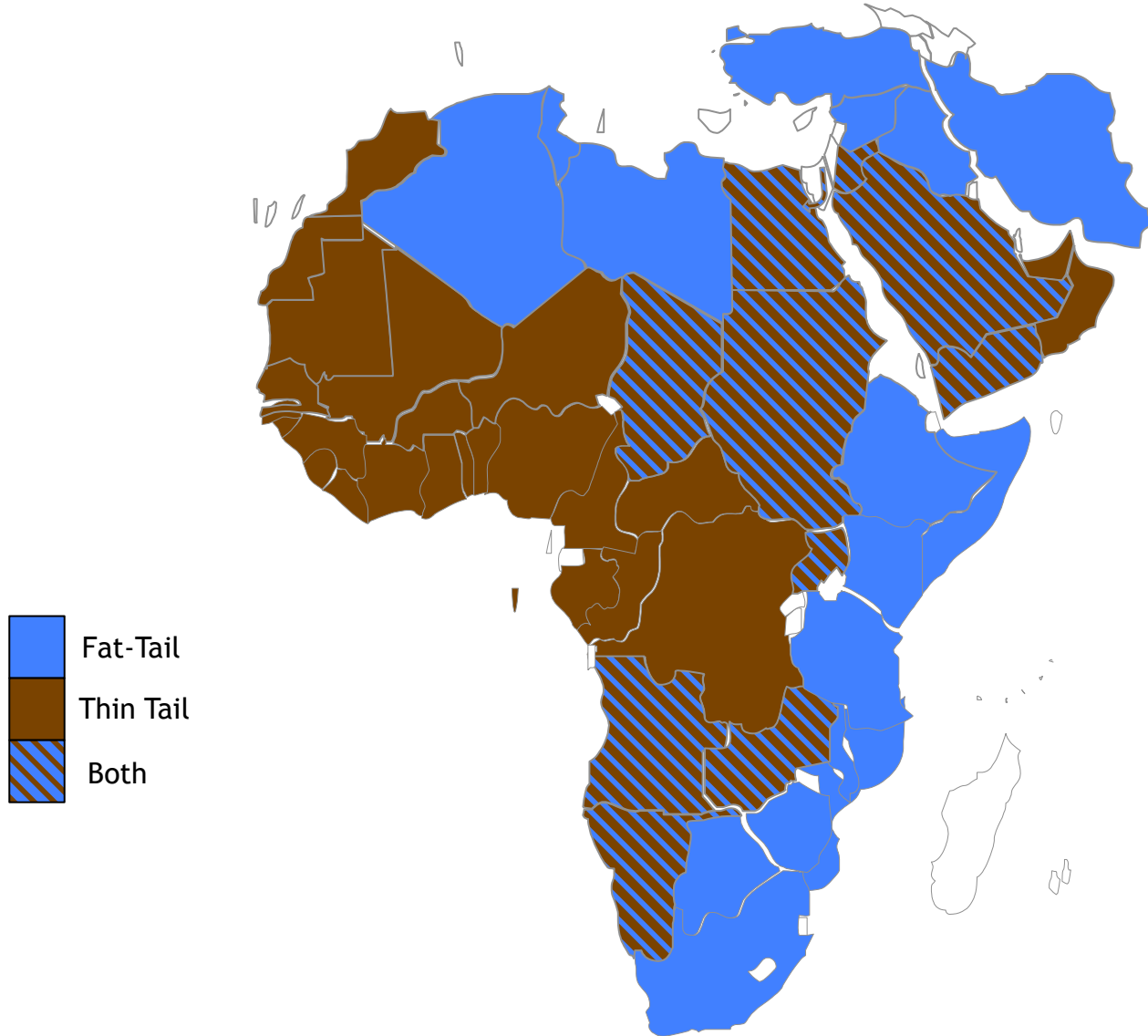
Central Arabia
Peninsula
1 000 BC



Ndobe Hills,
Zimbabwe
???Iron age???

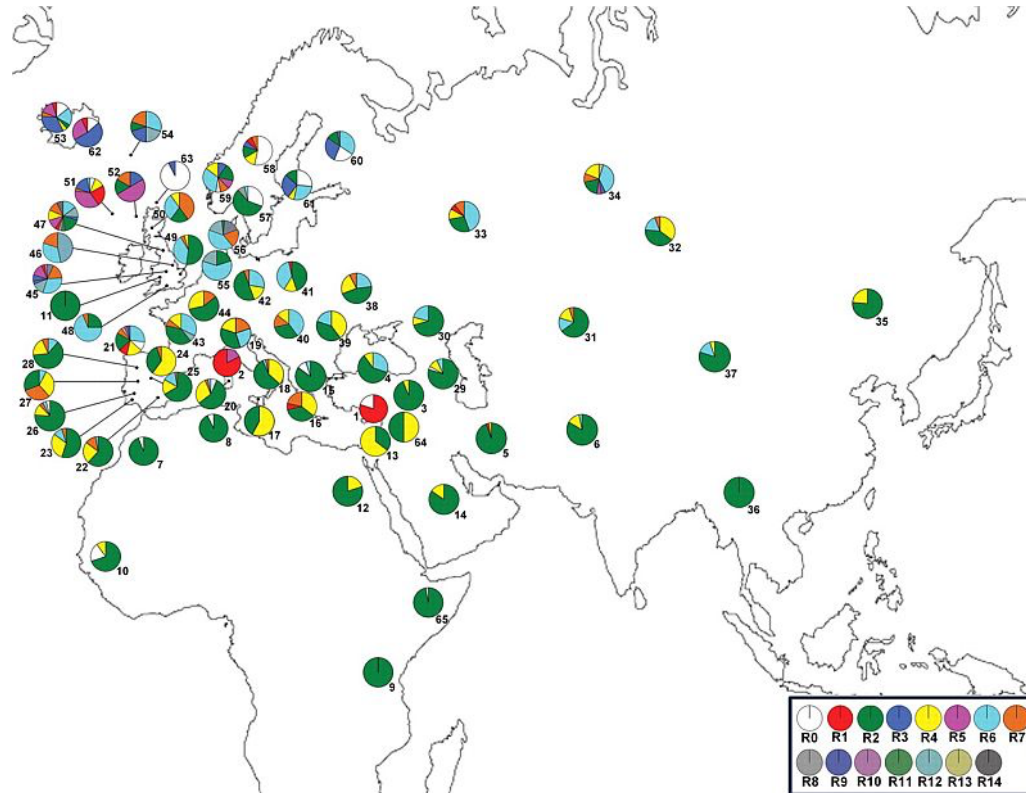
Types and Varieties

sheep in Today's Africa

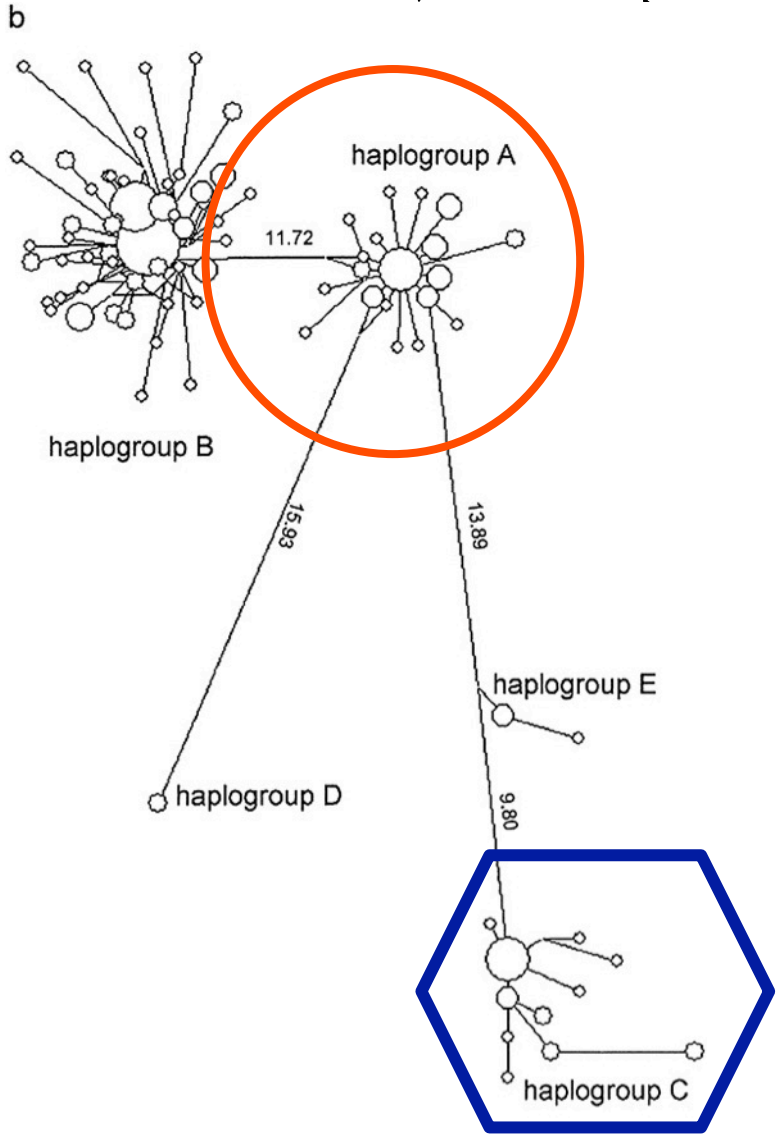


Revealing the History of Sheep Domestication Using Retrovirus Integrations

Chessa et al.

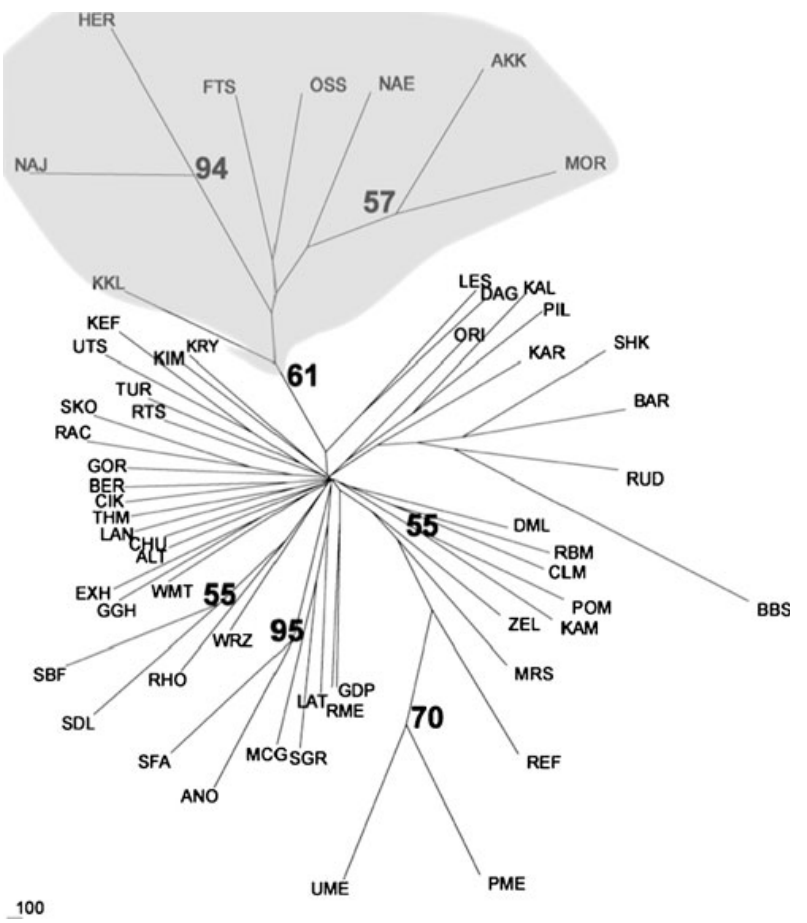


mDNA East and South Africa Sheep



Meadows et al. Genetics 2007;175:1371-1379

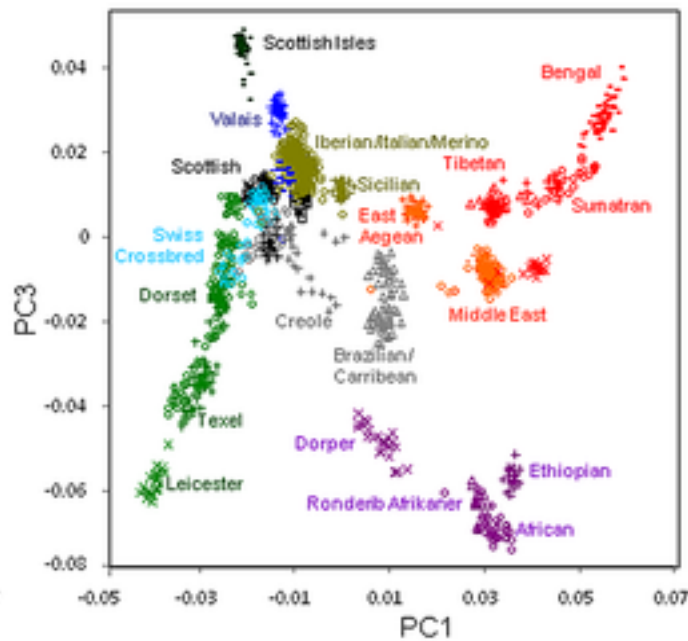
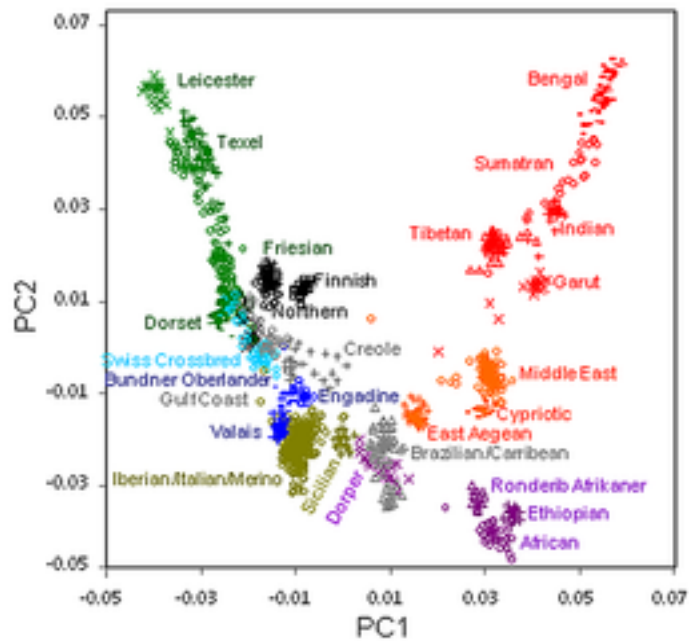
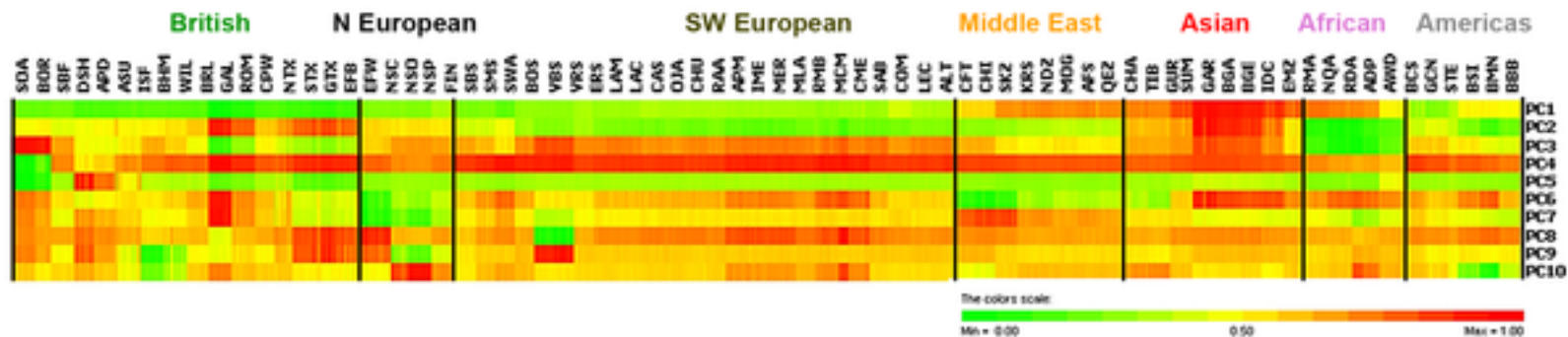
Microsatellites



Peter et al. Animal Genetics

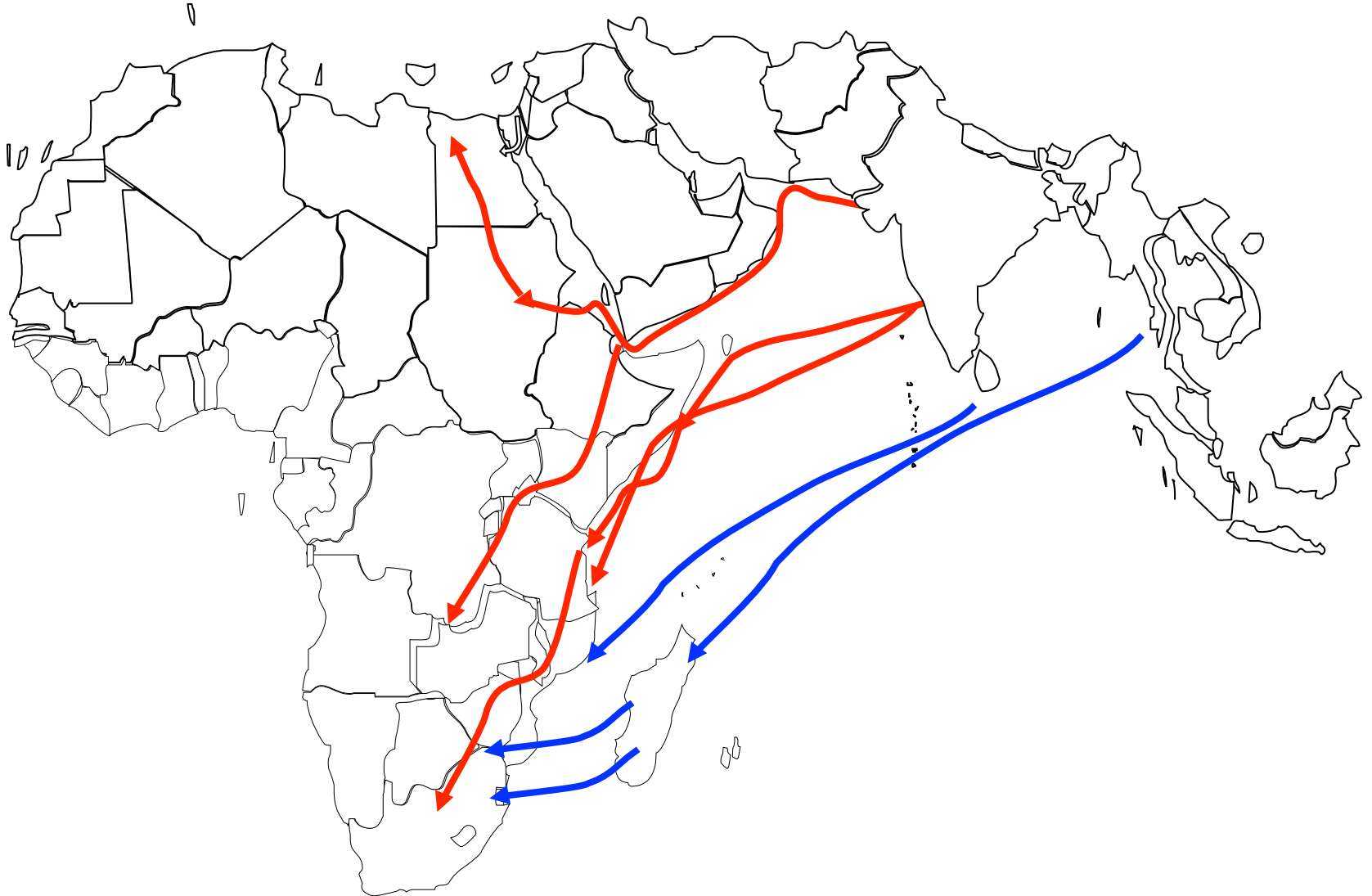
Lineage C has been observed mostly in fat-tail sheep breeds (Pedrosa et al. 2005; Tapio et al. 2006; Meadows et al. 2007).

Genome Wide Data

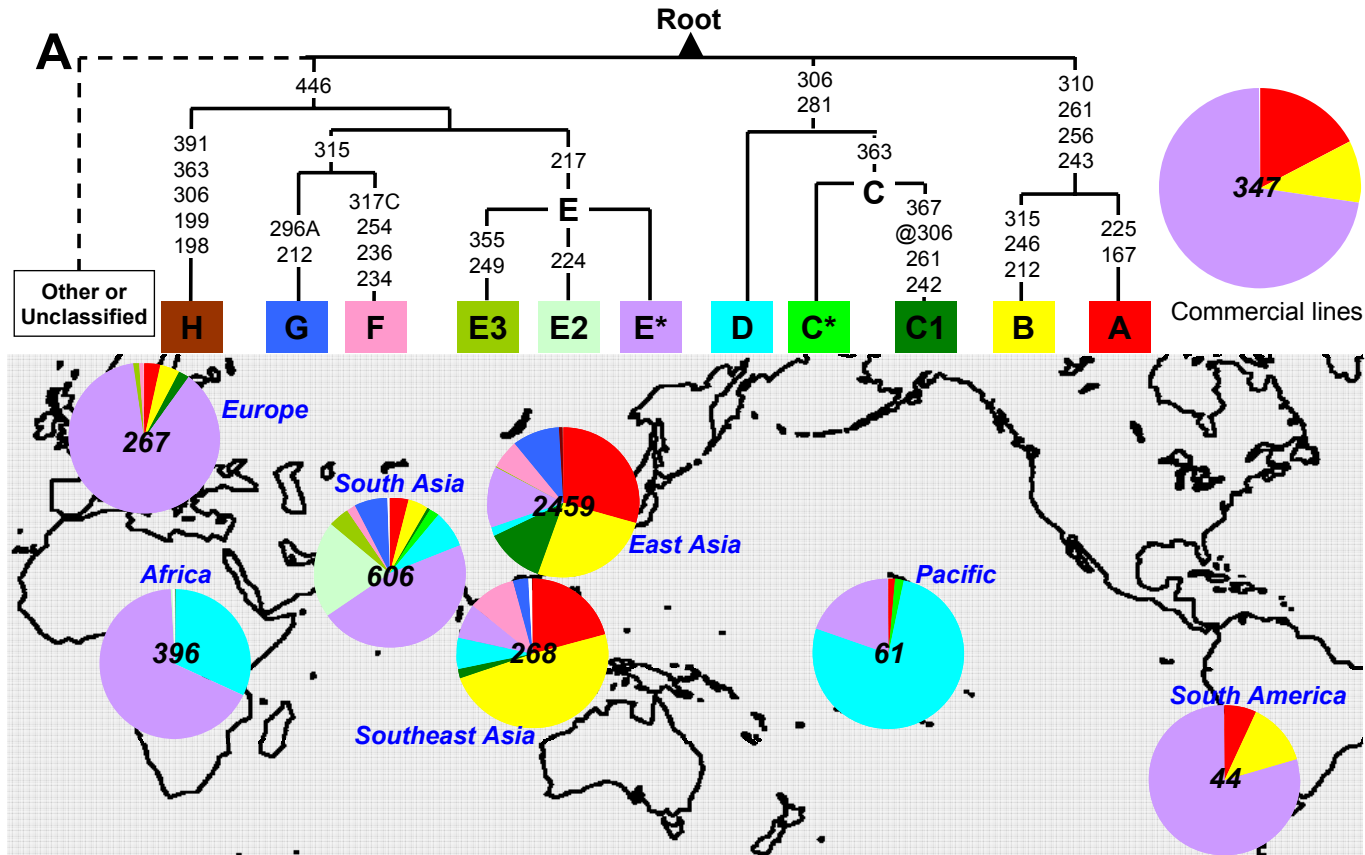


Kijas JW, et al. (2012), PLoS Biology

Chicken

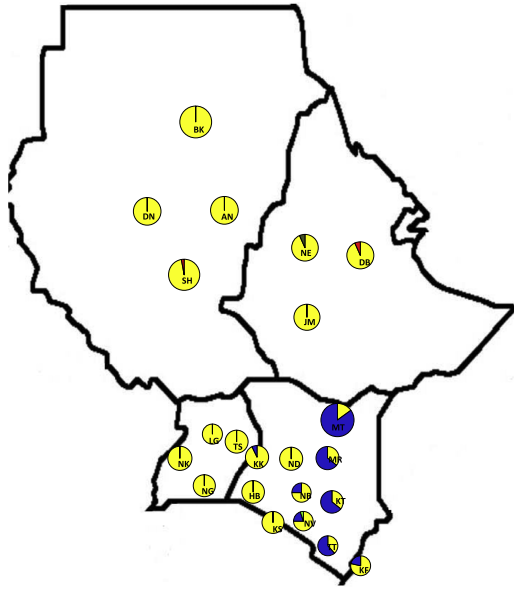


Chicken

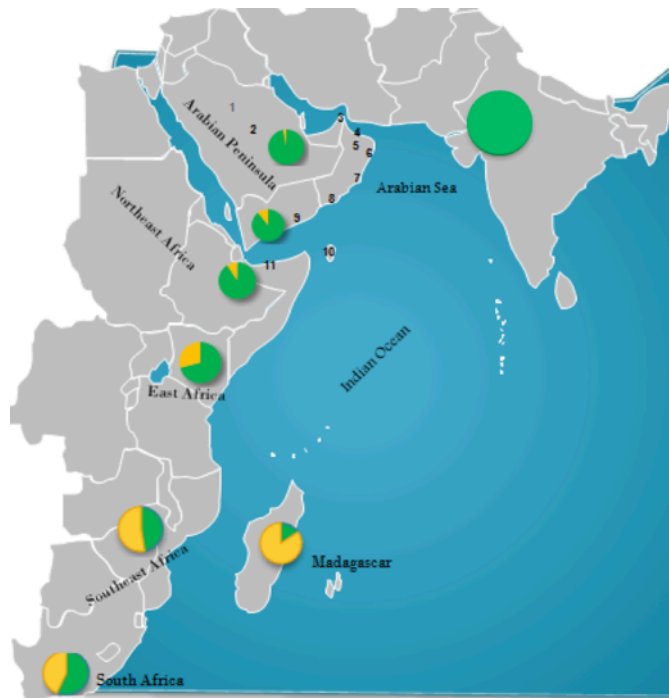
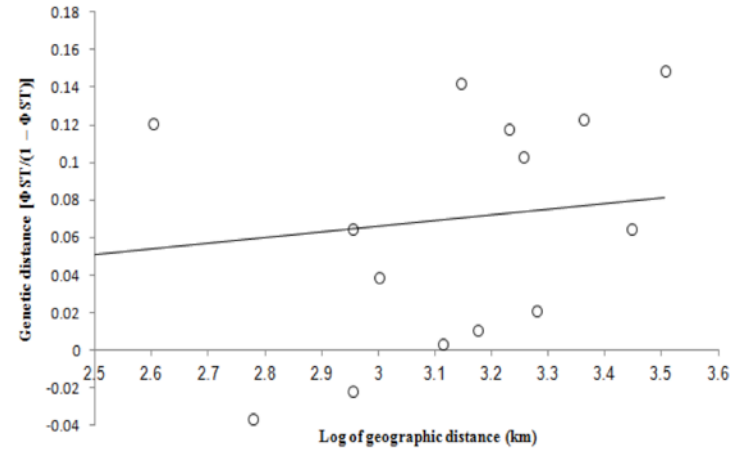


Source: Miao et al. 2012

Chicken in Africa



Mwacharo et al. 2012



What we don't know...

Circa 1880



Multi-species BioProxies: cattle, sheep and chicken
Inclusion of South-West Africa together with Arabian Peninsula and East coast may add missing pieces to the history of Southern Human Populations

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