

The Real Threat of European Schistosomiasis

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Urogenital schistosomiasis



S. haematobium

Transmission – **Urination** and *Bulinus* snails

~110 million people infected

Local transmission of *Schistosoma haematobium* in Corsica, France



Jerome Boissier, Université of Perpignan

(Berry *et al.*, Emerging Infectious Diseases 2014)

16 May 2014

- **124 tourists** were confirmed to have urogenital schistosomiasis
- **Corsican locals** were infected
- Active transmission - **2011, 2014, 2015**



Local transmission of *Schistosoma haematobium* in Corsica, France

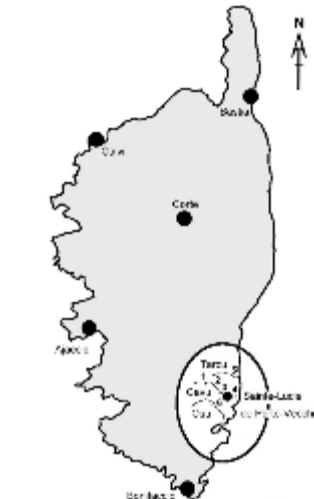


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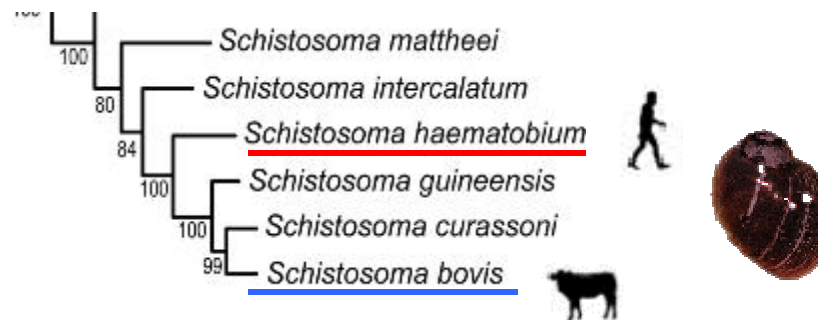
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B. truncatus
~4000 collected

Bulinus truncatus

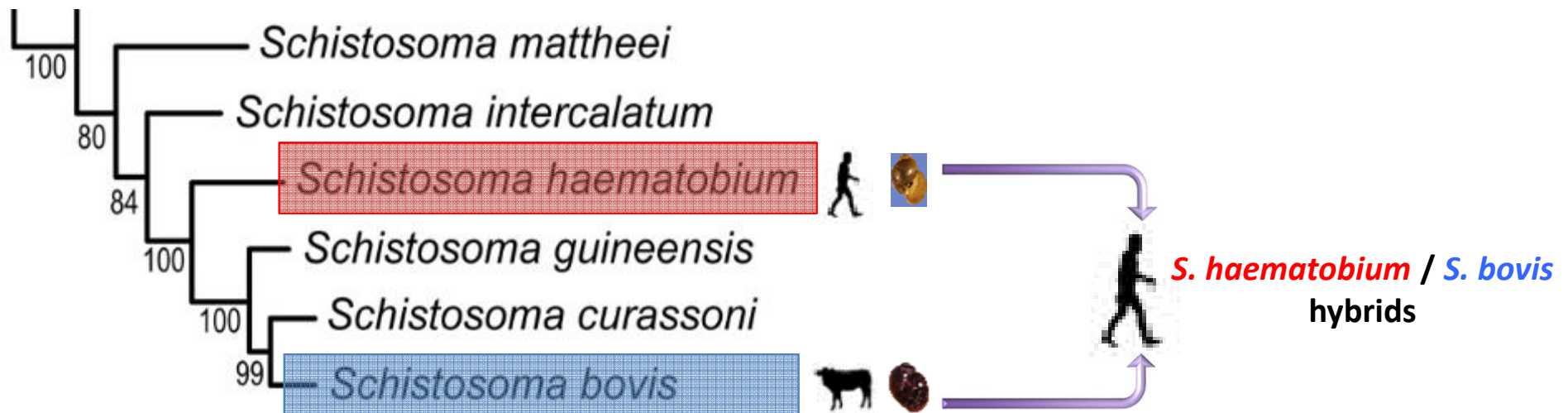
- ***B. truncatus*** snails endemic in Africa – transmit *S. haematobium* and *S. bovis*
- ***B. truncatus*** snails endemic in Southern Europe and transmitted *S. bovis* in Corsica, Spain, Portugal and Sardinia.



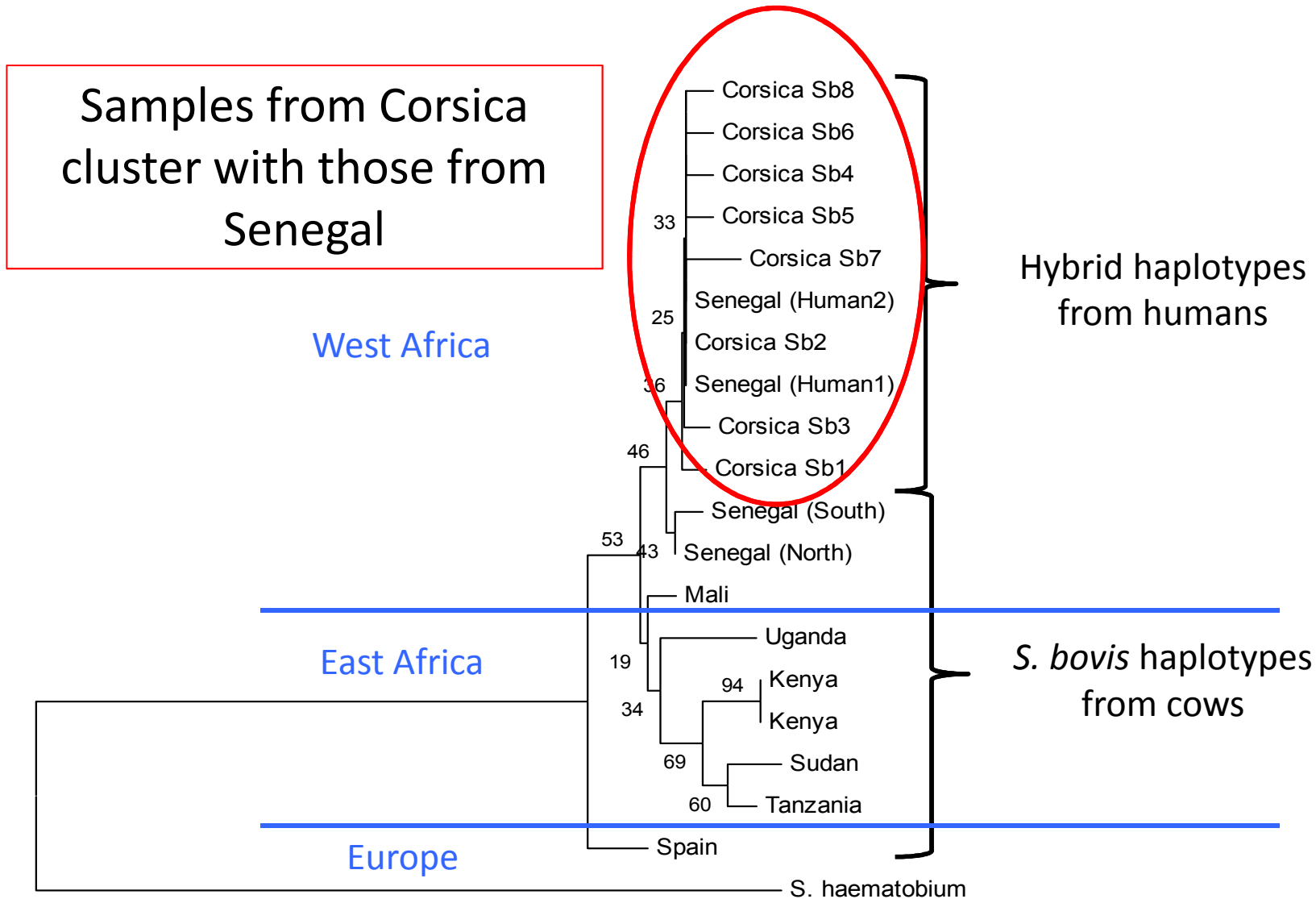
Molecular characterisation of the Corsican schistosomes



Hybridisation in West Africa (Senegal, Mali, Niger)



Molecular Analysis shows a West Africa Origin for the Corsica Outbreak



Senegal was a French Colony

- Senegal was a French colony
- Nationals freely migrate between Senegal, France, and Corsica
- France is the primary emigration destination for the Senegalese
- Senegalese Nationals go to Corsica for summer work
- People acting as the vectors for this disease



Easy transmission?

- 3 million tourists a year (2.7 in high season May - October)
- 3,000-5,000 people swim in the Cavu River every day in high season (locals, immigrants, travellers, tourists)
- Urogenital schistosomiasis will be easily spread as urination is common while swimming
- Infected individuals will more frequently urinate



Last European focus of urogenital schistosomiasis

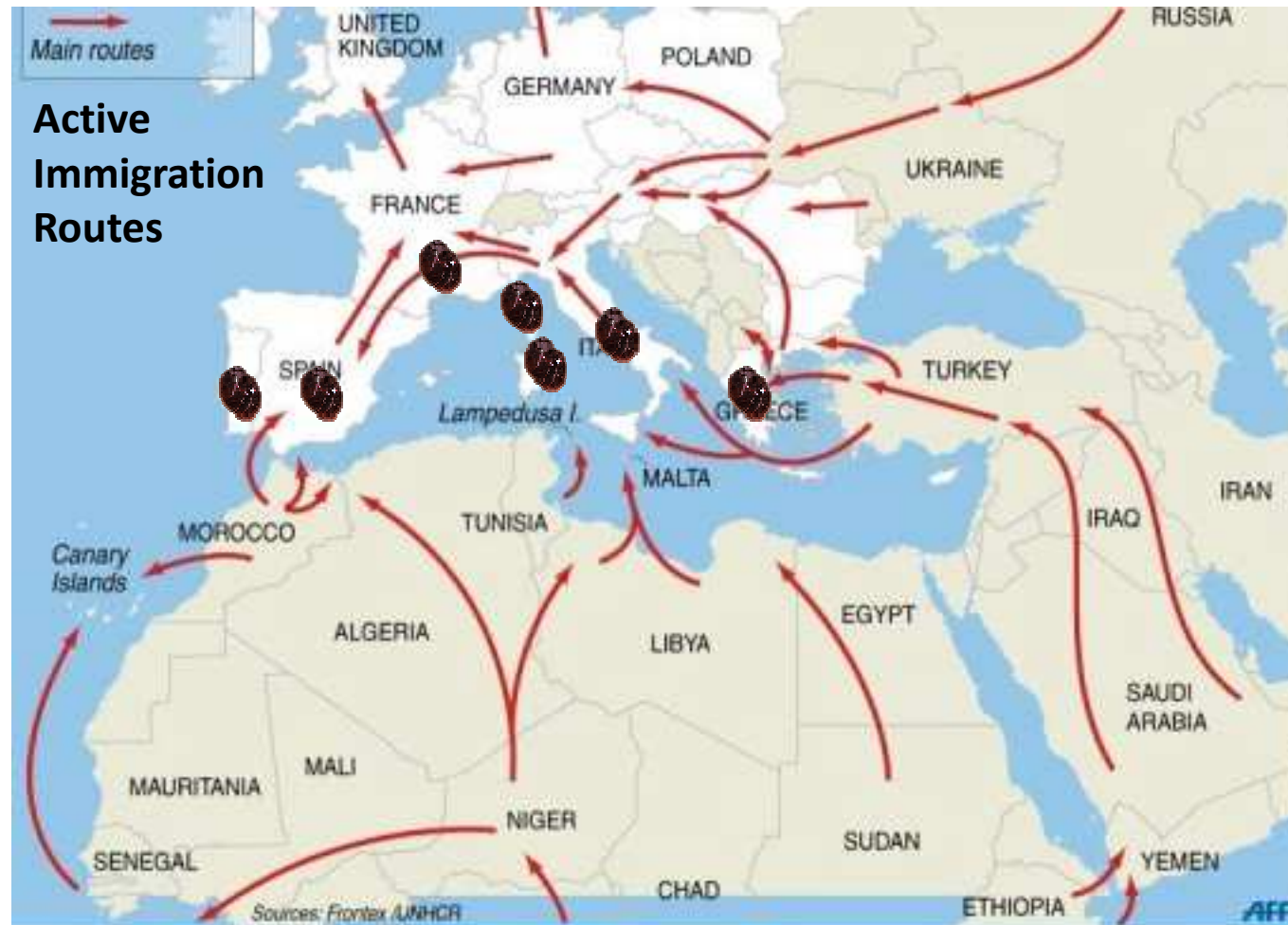
- **Urogenital schistosomiasis** was established in the **South of Portugal in 1921**.
- Transmission ceased in the **1970's**
- Introduced by immigrants and travellers from Morocco or a Portuguese colony in Africa (Angola, Mozambique, or Guinea Bissau)?



Planorbarious metidjensis



Further risk of introduction into European countries



Mean water temperature are set to increase in Southern Europe aiding transmission

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their samples