Vector Hazard Report: West Africa

Part 2: Sand Flies, Ticks and Host Densities

Information gathered from products of The Walter Reed Biosystematics Unit (WRBU)

Catalog of Subfamily Phlebotominae

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Sand Fly-borne Diseases

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3. Notes on Medically Important Sand Flies

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Estimates of Cutaneous Leishmaniasis Incidence, 2012

[Map showing incidence of cutaneous leishmaniasis across different regions with color coding for no data, absent, present, cases reported, and historically endemic areas.]
Estimates of Visceral Leishmaniasis Incidence, 2012
Visceral Leishmaniasis Endemic Areas, WHO 2010
Habitat suitability models: Sand Fly Vectors
Habitat suitability model: *Phlebotomus duboscqi*
Habitat suitability model: *Phlebotomus orientalis*
Habitat suitability model: *Sergentomyia adleri*
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Habitat suitability model: 
*Sergentomyia africana*
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Habitat suitability model: 
*Sergentomyia bedfordii*
Habitat suitability model:
*Sergentomyia clydei*
Habitat suitability model: 
*Sergentomyia ingrami*
Habitat suitability model: *Sergentomyia schwetzi*
Medical Importance

**Phlebotomus orientalis**
The vector of *L. donovani* (or *L. archibaldi*) and main man-biter in the Acacia-Balonites forests of Sudan (Hoogstraal & Heyneman, 1969; Killick-Kendrick, 1990).

**Phlebotomus duboscqi**

**Sergentomyia antennata**
Frequently found infected with untyped promastigotes in Kenya, where it is abundant in termite hills and sometimes feeds on mammals (Kaddu, 1986; Mutenga, 1986; Mutenga et al., 1986a,b).

**Sergentomyia clydei**
Recorded feeding on mammals (including barks and man) in Chad, Nigeria, Sudan and Kenya, where frequently found infected with untyped promastigotes and believed to be the principal vector of Sauroleishmania adleri (Abonnenc, 1972; Kaddu, 1986; Minter & Wijers, 1963; Mutenga, 1986; Southgate & Manson-Bahr, 1967). Suspected vector of *S. hoogstraali* in Sudan and found infected with Trypanosoma sp. in Senegal (Desjeux & Waroquy, 1981; Williams & Coelho, 1978).

**Sergentomyia ingrami**
Untyped promastigote infections found in Kenya (Kaddu, 1986), some of which produced lesions characteristic of *L. major* when inoculated into mice (Mutenga et al., 1986a).

**Sergentomyia adleri**
Recorded biting man in Sudan and near termite hills in Kenya, where found infected with untyped promastigotes (Abonnenc, 1972; Mutenga, 1986; Mutenga et al., 1986a). Recorded as vector of Trypanosoma sp. in Senegal (Desjeux & Waroquy, 1981).

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Medical Importance

**Sergentomyia affinis**
Recorded feeding on man, as well as on reptiles, in Guinea and Kenya, where found infected with untyped promastigotes (Abonnenc, 1972; Kaddu, 1986; Mutinga, 1986).

**Sergentomyia africana**
Geographical character variation noted by Rioux et al. (1975). Untyped promastigote infections found in Kenya (Kaddu, 1986).

**Sergentomyia bedfordi**
A polytypic species recorded from a wide range of habitats, including termite hills and houses, and (in Kenya) frequently recorded biting man and infected with untyped promastigotes (Abonnenc, 1972; Kaddu, 1986; Minter, 1964; Mutinga, 1986). Recorded as vector of Sauroleishmania adleri in Kenya and of Tryoeanosooea boueti in Ethiopia (Heisch et al., 1956; Williams & Coelho, 1978).

**Sergentomyia antennata**
Frequently found infected with untyped promastigotes in Kenya, where it is abundant in termite hills and sometimes feeds on mammals (Kaddu, 1986; Mutinga, 1986; Mutinga et al., 1986a,b).

**Sergentomyia schwetzi**
Recorded biting man in West Africa (Abonnenc, 1972) and Kenya, where frequently found infected with untyped promastigotes and common in termite hills as well as houses (Kaddu, 1986; Minter & Wijers, 1963; Mutinga, 1986). Recorded as vector of Trypanosoma sp. in Senegal (Desjeux & Waroquy, 1981).
Tick Vectors

Habitat Suitability Models:

*Amblyomma arboreus*
*Amblyomma boueti*
*Amblyomma compressum*
*Amblyomma transversale*
*Dermacentor circumguttatus*
*Hyalomma dromedarii*
*Hyalomma hoodi*
*Hyalomma moreli*
*Hyalomma paraleachi*
*Ixodes aulacodi*
*Ixodes moreli*
*Ixodes nchisiensis*
Habitat suitability models: Tick Vectors
Habitat suitability model: 
Amblyomma arboreus
Habitat suitability model:
*Amblyomma boueti*
Habitat suitability model:
Amblyomma compressum
Habitat suitability model:
*Amblyomma transversale*
Habitat suitability model: *Dermacentor circumguttatus*
Habitat suitability model: *Hyalomma dromedarii*
Habitat suitability model: *Hyalomma hoodi*
Habitat suitability model: *Hyalomma moreli*
Habitat suitability model: 
*Hyalomma paraleachi*
Habitat suitability model: *Ixodes aulacodi*
Habitat suitability model: *Ixodes moreli*
Habitat suitability model: *Ixodes nchisiensis*
Host Densities

Contents:

1. Human population density
2. Domestic animal population density
Host Densities, Food and Agriculture Organization of the United Nations, 2005

Cows per sq. km

Sheep per sq. km

Goats per sq. km

Poultry per sq. km

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References

Sand Flies
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Ticks
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Maxent model for Amblyomma compressum, Dornak, L. November, 2011.
Maxent model for Dermacentor circumguttatus, Dornak, L. November, 2011.
Maxent model for Hyalomma dromedarii, Dornak, L. August, 2012.
Maxent model for Hyalomma hooidi, Dornak, L. November, 2011.
Maxent model for Hyalomma moreli, Dornak, L. November, 2011.
Maxent model for Hyalomma paraleachi, Dornak, L. November, 2011.
Maxent model for Ixodes nchisiensis, Dornak, L. August, 2012.
The Walter Reed Biosystematics Unit is part of the Walter Reed Army Institute of Research and is based at the Smithsonian Institution Museum Support Center. To access taxonomic keys, the Systematic Catalog of Culicidae or to learn more about WRBU visit www.wrbu.org.

VectorMap is only as good as the data you provide. If you have collection records, models or pathogen testing results please contact the VectorMap team to learn how to contribute data at mosquitomap@si.edu.

Vector Photos Courtesy of Judith Stoffer, Walter Reed Biosystematics Unit, Graham Snodgrass U.S. Army Public Health Command and the Armed Forces Pest Management Board

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