

Molecular and morphological identification of African *Anopheles*

-an update-

Seth Irish/Neil Lobo

- Maureen Coetzee has a manuscript in the late stages of revision for the morphological identification of African *Anopheles*
 - Species added since 1987 are present in the key, including *Anopheles stephensi*

KEY TO THE FEMALES OF AFROTROPICAL *Anopheles*

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- Irish, Kyalo, Snow, and Coetzee have an accepted manuscript updating the country lists provided in Kyalo et al. 2017
 - 144 African species
 - Maximum number of species: 64 (DRC)
 - Minimum number of species: 1 (Lesotho)

Wellcome Open Research

Wellcome Open Research 2017, 2:57 Last updated: 30 AUG 2017



RESEARCH ARTICLE

A geo-coded inventory of anophelines in the Afrotropical Region south of the Sahara: 1898-2016 [version 1; referees: 3 approved]

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Maureen Coetzee^{2,3}, Robert W. Snow ^{1,4}

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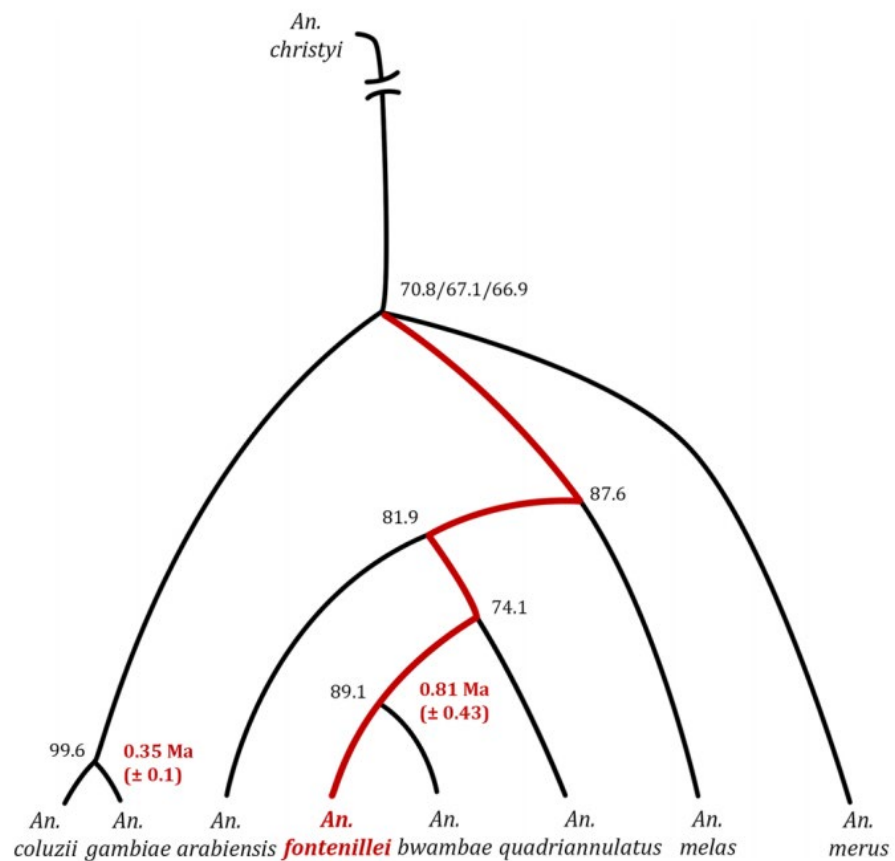
Daniel E. Strickman, Richard C. Wilkerson & Yvonne-Marie Linton
Mosquitoes of the World , Volumes 1 and 2.
Johns Hopkins Press.
960 pp., 199 line drawings, 168 color plates

- Volume 1
 - Glossary of morphological terms
 - Summaries of taxonomy, biology, distribution, and pathogen association of all 41 genera of mosquitoes
- Volume 2
 - Taxonomic catalogue of all 3568 species
 - Including synonyms, distributions, taxonomic works, and origins of scientific names

New website for the Walter Reed Biosystematics Unit

- www.wrbu.si
- New website up and running by February 14, 2020

Description of *Anopheles fontenillei* (Barron et al. 2019)



Work still needed for molecular identification

Of 143 species of *Anopheles* in Africa...

	CO1	ITS2	Either CO1 or ITS2
Sequence from any specimen	22	22	27
Sequence from voucher specimen	11	10	15

Positive side:

- All *An. gambiae* complex species have at least a CO1 or ITS2 sequence
- Sequences present for secondary vectors: *An. nili*, *An. moucheti*, *An. stephensi*, *An. coustani*

Negative side

- Not all *An. funestus* complex samples had a sequence (*An. aruni*, *An. funestus*-like)

Anopheles demeilloni



Novel Vectors of Malaria Parasites in the Western Highlands of Kenya

To the Editor: The primary malaria control techniques, indoor application of residual insecticides and insecticide-treated bed nets, are used on the basis of previously assumed key characteristics of behaviors of vectors of malaria parasites, i.e.,



Trans R Soc Trop Med Hyg 2018; **112**: 405–407
doi:10.1093/trstmh/try069 Advance Access publication 4 August 2018



Identification of *Anopheles* species in Sud Kivu, Democratic Republic of Congo, using molecular tools

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What is the path forward?

- Continued work on associating morphologically-identified (and museum stored) species with sequences (ITS2/CO1)
- Work designed to this end, specifically targeting collection of larvae and adults with the aim of determining species and sequence
 - Including collection of larvae, pupal pelts, and adults