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The Intimate Coupling of Changing Vector and Disease Distributions

The geographic limits of vector-borne diseases are almost certainly due, in most cases, to the geographic distribution of the arthropods most capable of transmitting the particular pathogen. Thus it is crucial to understand the factors determining vector distributions and, in particular, how anthropogenic changes in the environment may induce changes in the most dangerous species' distributions. The focus of this talk is on mosquitoes and the histories of colonizations that can serve as guides to future changes in vector distributions. This would allow predictions on the potential spread of these debilitating diseases and thus allow for planning of prevention. Exciting technical advancements can be brought to bear on this subject, e.g., global satellite imaging data and molecular population genetics. We will also present recent results of molecular diagnoses of the species/form of *An. gambiae* that colonized South America in the 1930s.