

How vector-borne disease shaped the course of human history

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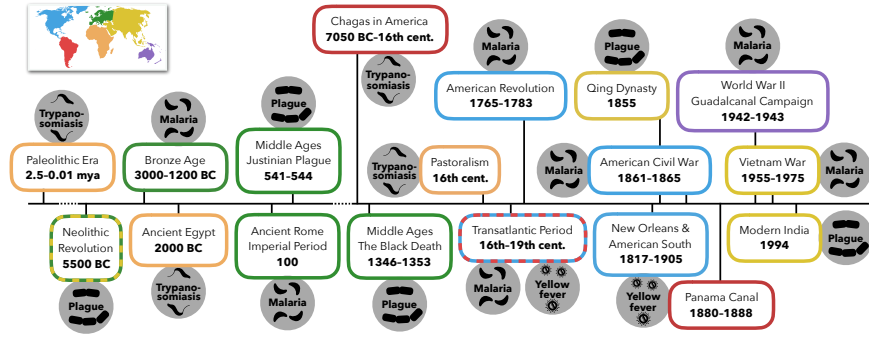
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Abstract

The extent to which vector-borne diseases (VBDs) have shaped human history remains under-recognized, even in the disease ecology community, despite several well-known examples. Although they represent a significant threat to global human health, accounting for more than one billion cases and one million deaths annually, VBDs have coexisted with humans since the advent of civilization and have migrated with humans around the world. Here, we synthesize historical, anthropological, and archaeological evidence and examine it through an ecological lens to illustrate how four major VBDs—plague, malaria, yellow fever, and trypanosomiasis—have shaped the course of human history through three main pathways: (1) outcomes of colonialism, imperialism, war, and conflict; (2) human interactions with the environment; and (3) intrasocietal human interactions. For example, malaria tipped the American Revolution toward the Continental Army; plague promoted reforestation in Europe; yellow fever entrenched African slavery in colonies in the Americas; trypanosomiasis impeded large settlements and central governments in pre-colonial sub-Saharan Africa. By drawing comparisons across diseases, time periods, and geographic locations, we show how VBDs have historically affected human populations, from the age of early *Homo sapiens* to the modern context, and how they continue to impact the world.

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