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PRESS RELEASE

FOR IMMEDIATE RELEASE
Friday, September 19, 2025

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Study reveals how the yellow fever mosquito became invasive after arriving to the Americas

New Haven, CT – Scientists at The Connecticut Agricultural Experiment Station (CAES) lead by Dr. Gloria-Soria, in collaboration with a team at Verily Life Sciences, Yale University, and scientists around the world have sequenced and analyzed the complete genome of 1,206 *Aedes aegypti* mosquitoes from 73 world locations to investigate the historical movements and molecular changes that lead to the evolution of this highly invasive, domesticated mosquito, considered the main vector of arboviral diseases worldwide.

The yellow fever mosquito, *Aedes aegypti*, transmits diseases that affect two-thirds of the world population, including dengue, chikungunya, Zika and yellow fever viruses. These mosquitoes are highly adapted to humans, able to breed in artificial containers and feed almost exclusively from people. This close association to humans facilitated *Ae. aegypti's* global expansion in the last half century. Although typically considered a tropical and subtropical mosquito, *Ae. aegypti* is now frequently recorded in temperate regions, often becoming established despite low winter temperatures, putting the human population at risk for the diseases it transmits.

Using genomic analysis of divergence, migration, and selection among populations, CAES Scientist revealed that populations from Argentina are remnants of the mosquitoes that once travelled across the Atlantic from Africa, becoming established in the Americas over 320 years ago. The study also suggests that adaptation to new

pathogens and changes in feeding habits played a role in enabling further expansion across the continent and the world.

“These findings advance our understanding of the evolution and geographic expansion of this harmful mosquito”, said Dr. Andrea Gloria-Soria, author and Associate Scientist at CAES. “In addition, we have increased by 20-fold the number of complete genome sequences available for the species, building an important resource for the research community.”

“This deadly mosquito is expanding its range both in the United States and globally”, said Dr. Jason White, CAES Director. “The information generated by this groundbreaking study will help us better prepare and respond to this invasive threat.”

The study was published in the journal *Science* on September 18, 2025, Volume 389, Issue 6766. DOI: 10.1126/science.ads37

Paper overview: https://www.science.org/content/article/how-yellow-fever-mosquito-conquered-world
Academic paper: https://www.science.org/doi/10.1126/science.ads3732

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