

Little flies in the big city: What you find depends on how you look

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Meet a newly recognized Los Angeles neighbor -- vinegar fly *Drosophila gentica*.

Credit: Kelsey Bailey, Natural History Museum of Los Angeles County.

A group of researchers from the U.S. and Australia have announced the completely unexpected discovery of exotic "vinegar flies" (drosophilids) in urban Los Angeles in a paper appearing in the journal *PLOS ONE*, titled "Strange Little Flies In The Big City: Exotic Flower-Breeding *Drosophilidae* (Diptera) In Urban Los Angeles."

Two species, previously known only from outside the U.S., were collected by the Natural History Museum of Los Angeles County project, Biodiversity Science: City and Nature (BioSCAN). "I was as surprised as anyone when such unusual flies were found in our samples," said Brian Brown, NHM Entomology Curator and one of this study's authors. "But urban biodiversity is an almost unknown frontier."

Flies in the insect genus *Drosophila* (the "fruit" flies, more accurately called "[vinegar flies](#)") are among the world's most-studied organisms—over 16,000 research papers were published in the last five years with the word "*Drosophila*" in the title. "*Drosophila*" is probably the only insect genus name most people have heard. Yet we still know little about their [natural history](#), this study shows.

One of the newly-noted species, *Drosophila gentica*, is the second-most common fruit fly in the Los Angeles BioSCAN traps. This species was described in 1962 based on specimens collected in El Salvador in 1954, the first and last time it's been recorded anywhere until now. "Los Angeles is definitely not the first place I'd have started looking for new specimens of this species," said David Grimaldi, Curator at the American Museum of Natural History in New York, also an author on the paper.

The other newly-noted species, *Drosophila flavohirta*, has its origin in Australia, but has accompanied transplanted eucalyptus from Australia to South Africa and Madagascar. That might also explain its presence in California, given the popularity of eucalyptus trees and shrubs there.



Meet a newly recognized Los Angeles neighbor -- vinegar fly *Drosophila genticola*.
Credit: Kelsey Bailey, Natural History Museum of Los Angeles County.

How could these species of one of the world's most studied organisms have escaped notice for so long in a place like Los Angeles? It all depends on how you look. Previous surveys used fruit or other baits to catch vinegar flies. This study's authors think that may be why these [species](#) were missed—both of these newly-noted flies breed on flowers, not fruit. This study uses a tentlike insect trap called a "Malaise trap", thirty of which are housed in L.A. backyards, two gardens (including the NHM Nature Gardens), and one school. "The citizen scientists that host these traps share in the credit for this discovery," said Brown, "as do the Museum and the Seaver Foundation, both of whom fund the BioSCAN project."

More information: *PLOS ONE*, [journals.plos.org/plosone/arti ... journal.pone.0122575](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0122575)

Provided by Natural History Museum of Los Angeles County

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