

Continental mosquito with 'vector' potential found breeding in UK after 60 year absence

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A species of mosquito has been discovered breeding in the UK that has not been seen in the country since 1945. Populations of the mosquito, found across mainland Europe and known only by its Latin name *Culex modestus*, were recorded at a number of sites in the marshes of north Kent and south Essex in 2010 and 2011.

The discovery was made by post-graduate student Nick Golding, and the mosquito was definitively identified by colleague Stefanie Schäfer of the Centre for Ecology & Hydrology. The mosquito was also concurrently found by medical entomologists at the Health Protection Agency as part of their nationwide mosquito surveillance programme. Details of a collaborative study between CEH and HPA are published today in the journal *Parasites and Vectors*.

This particular species of mosquito is suspected to transmit (or vector) West Nile virus (WNV) to humans during sporadic epidemics in southern Europe. However, to date, WNV has never been found in the UK so there is no known current risk to humans living in the country. WNV primarily infects birds, but when the pathogen is transmitted from birds to humans by the bite of a mosquito it can very occasionally cause severe disease, although it usually causes only asymptomatic or mild infections.

Nick Golding said, "It is unclear how long *Culex modestus* has been breeding in the UK – the new specimens were found during field studies in 2010 and 2011 - but it seems likely that the species has arrived fairly

recently. A handful of individuals were collected on the south coast in the 1940s, but didn't appear to be an established [population](#). Since those records the species hasn't been seen again in the UK, until now."

Nick Golding's doctoral supervisor, Dr Miles Nunn from the Centre for Ecology & Hydrology said, "Not all mosquito species can transmit West Nile virus to people. In continental Europe, *Culex modestus* is able to do because the virus can reproduce inside the mosquito and the mosquito feeds on both humans and on birds which are the main host of West Nile virus. Once the mosquito's salivary glands become infected the virus is secreted into the host (man or bird) in saliva when the mosquito feeds. However, in the UK the mosquitoes biting habits and ability to transmit West Nile [virus](#) have yet to be investigated"

Nick Golding, Dr Nunn and colleagues at the Centre for Ecology & Hydrology, the Health Protection Agency, and Oxford University are continuing to work together to establish just how widespread these mosquitoes are and whether there is any risk to human health. They have been using satellite imagery in order to identify habitats where the mosquito might be breeding, before looking for it on the ground.

Nick Golding is also studying *Culex modestus* and other mosquitoes to determine the specific habitat within the marshes in which they breed and what effect wetland management has on this habitat.

Dr Nunn added, "*Culex modestus* is difficult to distinguish from related [mosquitoes](#) that are less likely to transmit viruses to humans. Its [discovery](#) highlights the importance of expert long-term biological recording of UK wildlife by the scientific community."

Provided by Centre for Ecology & Hydrology

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