



Cryptic invasion and dispersal of an American *Daphnia* in East Africa

Mergeay, Joachim, Dirk Verschuren, Luc De Meester

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ABSTRACT: We document the cryptic invasion of a North American genotype of *Daphnia pulex* into Kenya. During a survey of zooplankton samples and dormant egg banks of 41 natural lakes, ponds, and man-made reservoirs throughout central and southern Kenya, *D. pulex* was found at seven localities in the Rift Valley region. We used DNA sequencing (12S rDNA and cytochrome c oxidase subunit 1 gene [COI]) and microsatellite analyses (10 loci) to characterize each population genetically. A single haplotype was found for both 12S and COI sequences. Comparison with DNA sequences of the *D. pulex* complex from Europe and America reveals that the Kenyan *D. pulex* is not closely related to European *D. pulex* but clusters tightly with the American-Panarctic clade of *D. pulex sensu stricto*. Microsatellite data further reveal that all seven known Kenyan populations are genetically nearly identical and are dominated by a single clone. All populations except that in Lake Naivasha contained only one multilocus genotype, a fixed heterozygote for 3 of the 10 studied loci. Our data suggest that an obligately parthenogenetic clone of American *D. pulex* recently immigrated into Kenya and has subsequently dispersed over distances of several hundreds of kilometers. Most likely it was co-introduced accidentally during one of numerous stockings of North American fish or crayfish in Kenya's Rift Valley lakes since the mid-1920s.

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