

aspects of their evolutionary history are different: intra-island genetic diversity was found to be greater on Lanzarote and Fuerteventura for *E. balsamifera*, and within Tenerife for *K. neriifolia*. Demographic analyses in *E. balsamifera* supports a pattern of recurrent back-colonization to the African continent, whereas divergence time estimates suggest that *K. neriifolia* has remained isolated from its closest extant relative (*K. anteuphorbium* from northwest Africa) for the last 2 million years, with no evidence of admixture. Using fresh and herbarium material, we also confirmed that the sister species of *E. balsamifera* is *E. adenensis*, an Eastern African-Southern Arabian endemic that is geographically isolated from *E. balsamifera* by thousands of kilometres of north African desert.

OP5

Inter-island colonization and evolutionary processes in the Canarian endemic genus *Parolinia* Webb (Brassicaceae): implications for conservation in a biodiversity hotspot

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The different ontogeny geological histories of the Canary Islands, which cover an age range between 0.5 (El Hierro) and 21 (Fuerteventura) million years, have drawn different patterns and processes of spatial colonization and diversification not only between islands, but also within islands. In addition, demographic events like migration, colonization, geographic isolation, genetic drift, hybridization, etc. that took place in the past determine the genetic relationships between the current species in a region. The Canary Islands, as an isolated oceanic archipelago, is a good framework to study these evolutionary processes, although the origin of its flora is still the subject of debate. While some authors argue that, most groups are monophyletic and multiple colonizations are prevented by competition with earlier colonizers (the 'niche preemption hypothesis'), the 'surfing syngamenon hypothesis' suggests that monophyly is artifactual, because high migration rates from the mainland to the archipelago and among the islands likely facilitated secondary contact among lineages previously isolated in the mainland, and the high genetic diversity generated by repeated hybridization among these colonizers would have favored both lineage diversification and the colonization of new areas. In this study, we use nuclear microsatellites on an exhaustive sampling of all the species of the endemic genus of the Canary Islands *Parolinia* in order to test both colonization hypotheses in this genus. Microsatellite data revealed a close relationship among *Parolinia* species and support the hypothesis of a recent evolutionary origin of these Canarian endemics. Bayesian analysis detected a geographical division between the western and the central islands, which may indicate different colonization processes followed by secondary contact within islands and inter-island colonization.

OP6

Evaluation of BEAST2 substitution rate-based calibration models as an alternative to the widely used fossil-based models in an automated pipeline to compute divergence times in the Macaronesian flora

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