

**LONG-DISTANCE COLONIZATION AND RADIATION IN GEKKONID LIZARDS,
TARENTOLA (REPTILIA: GEKKONIDAE), REVEALED BY MITOCHONDRIAL DNA
SEQUENCES**

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Abstract

Morphological systematics makes it clear that many non-volant animal groups have undergone extensive transmarine dispersal with subsequent radiation in new, often island, areas. However, details of such events are often lacking. Here we use partial DNA sequences derived from the mitochondrial cytochrome b and 12S rRNA genes (up to 684 and 320 bp, respectively) to trace migration and speciation in *Tarentola* geckos, a primarily North African clade which has invaded many of the warmer islands in the North Atlantic Ocean. There were four main invasions of archipelagos presumably by rafting. (i) The subgenus *Neotarentola* reached Cuba up to 23 million years (Myr) ago, apparently via the North Equatorial current, a journey of at least 6000 km. (ii) The subgenus *Tarentola* invaded the eastern Canary Islands relatively recently covering a minimum of 120 km. (iii) The subgenus *Makariogecko* got to Gran Canaria and the western Canary Islands 7-17.5 Myr ago, either directly from the mainland or via the Selvages or the archipelago of Madeira, an excursion of 200-1200 km. (iv) A single species of *Makariogecko* from Gomera or Tenerife in the western Canaries made the 1400 km journey to the Cape Verde Islands up to 7 Myr ago by way of the south-running Canary current. Many journeys have also occurred within archipelagos, a minimum of five taking place in the Canaries and perhaps 16 in the Cape Verde Islands. Occupation of the Cape Verde archipelago first involved an island in the northern group, perhaps Sao Nicolau, with subsequent spread to its close neighbours. The eastern and southern islands were colonized from these northern islands, at least two invasions widely separated in time being involved. While there are just three allopatric species of *Makariogecko* in the Canaries, the single invader of the Cape Verde Islands radiated into five, most of the islands being inhabited by two of these which differ in size. While size difference may possibly be a product of character displacement in the northern islands, taxa of different sizes reached the southern islands independently.