A new record of human settlement and past environmental change of the Comoros

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Abstract

As humans have colonized new places, they often initiate dramatic environmental change, even in the distant past. On remote islands, where levels of endemism are high, species and environments are often particularly vulnerable to the effects of introduced species like humans, and the plants and animals they deliberately or accidentally bring with them. The first study of the environmental history of the Comoros, a volcanic archipelago in the far western Indian Ocean, was conducted in 2016 in order to test the hypothesis that the Comoros were stepping stones for prehistoric human migration from east Africa to Madagascar. Sediment cores collected from the island of Anjouan along an altitudinal transect incorporated a range of ecologies including lowland swamp gardens (Ntrontroni Swamp - 10masl), upland dry forest (Dzialoutsounga Crater - 710masl) and upland wet forest (Lake Dzialandze - 925masl). Preliminary results from Ntrontroni Swamp show that a shift from a swamp forest and and a lagoonal system to a peat swamp occurs around 1000 years ago soon after deforestation. Pollen and phytoliths identifying taro, cotton, rice and various spice trees (nutmeg, cloves) reveal the introduction of agricultural crops to the island as early as AD 900, with rice appearing around AD 1400. In addition, analysis is underway for all sites including ITRAX, humification, pollen, charcoal, and phytolith analysis and this will be reported on in this paper. This research will contribute to our understanding of patterns and chronologies of human colonisation, as well as the environmental impacts that humans have had. The pollen and charcoal records show dramatic changes in vegetation and fire regimes in the last 1500 years that are best explained through the influence of human settlement. Such studies of the past are extremely useful for better understanding and mitigating the effects of human-induced environmental change today.

Keywords: pollen, charcoal, palaeoecology, human migration, Comoros

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