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CAMBIOS DEL CLIMA, DURANTE LOS ÚLTIMOS CINCO MILLONES DE AÑOS, OBSERVADOS EN EL ÁFRICA ATLÁNTICA (ISLAS CANARIAS)

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Resumen

En las Canarias orientales, testimonios geológicos del inicio del Plioceno hasta la actualidad han permitido constatar la evolución paleoclimática desde una importante posición en el margen sahariano atlántico. Esta evolución revela la existencia de oscilaciones climáticas caracterizadas por la sucesión de climas que pasan de húmedos y cálidos a cálidos y áridos y que coinciden, respectivamente, con el inicio y el final de períodos interglaciales durante los que el mar fue transgresivo.

Abstract

In the Eastern Canaries geological indicators from Early Pliocene to present days show the palaeoclimatic evolution from a relevant situation of the Atlantic Saharian side. This evolution reveals the existence of climatic oscillations, characterised by a sequence which undergoes changes from humid and warm to warm and dry, which respectively coincide with the beggining and the end of the interglacials periods. Marine transgressions are found in these inter-glacials.

The Later Miocene was an oceanian equatorial climate as is indicated by the fossil presence, in those marine deposits, of extinct species of the equatorial genera, as Strombus and Nerita. This climate was replaced by a desert coastal climate characterised by strong winds –the oceanic circulation changed with the onset of the cold Canary Current–, as we see indicated by aeolian dispersal and altitude reached of the marine bioclastic sands over the islands. Ap-proximately ten climatic briefly oscillations introduced a humid temperate climate with strong equinoctial rains as indicated by alluvial deposits intercalated between the dunes and the presence of the land snail Theba pisana.

The Quaternary begins with a humid period which, unlike the previous one, was warm. For the first time dust from the Sahara came over the islands, as it is shown by the sandstone with slight rubefaction and decalcified over which the first poorly developed palaeosol was formed. On that ground, the vegetation leaded the arrival of the mining-bees (that feed on flowers), judging from the presence of the oldest fossilized brood-cells. Afterwards, the first Pleistocene marine transgression with its marine fauna, which indicates a similar climate to the present one, was placed in an interglacial (MIS 63). By that time the climate fluctuated from very humid –with continuous seasonal rains as observed in the layered sandstones and alluvial deposits– to dry, marking the begining of the climatic process that would favour a thick calcrete formation. It is the frequent case of a coastal tropical climate, linked to the first appearance of the northeast trade winds, which turns increasingly dry. It is at the end of the Early Pleistocene that a new drainage system appears.

During the last 500 ka, three main similar climates oscilations take place with their correspondent marine transgressions (during the interglacials of MIS 11.3, MIS 5.5 and MIS 1). The warm–water characteristic of the fossil fauna in the three marine deposits is most pronounced during the second one (MIS 5.5), when the Senegalese fauna (the coral Siderastraea radians and the gastropodes as Strombus bubonius and Harpa rosea) arrived at the Canaries. The be-ginning of these interglacial periods were humid–evolving from cold and dry to humid and warm– as evidenced by the palaeosols with fossil minig–bee brood cells, and finish with an in-creasing dryness which left polygonal soils (end of MIS 11.3) and thin calcareous crusts (end of MIS 11.3 and end of MIS 5.5) at the end of those interglacial periods.