CLIMATIC AND STRATIGRAPHIC PALEOINDICATORS FROM THE CANARY ISLANDS

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In the Canary Islands, some ancient fossiliferous marine deposits contain fossils remains that allow the understanding of the climatic and ecological evolution of the last 5 Ma. The definition of fossils with ecological and stratigraphical information enables an approach to the paleo oceanographic and ecological conditions through the study of the current conditions of the genera or species.

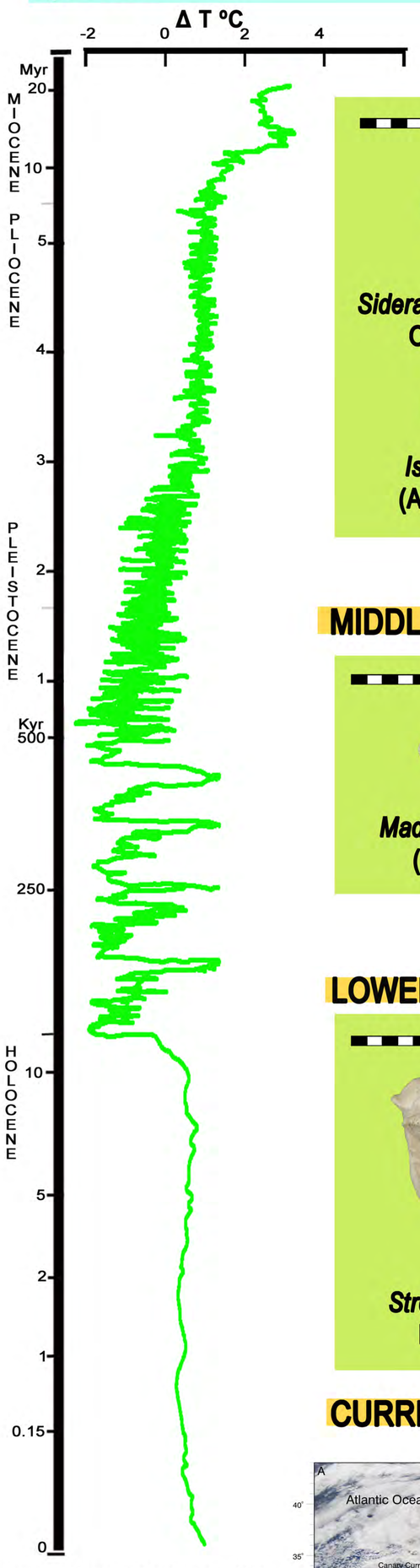
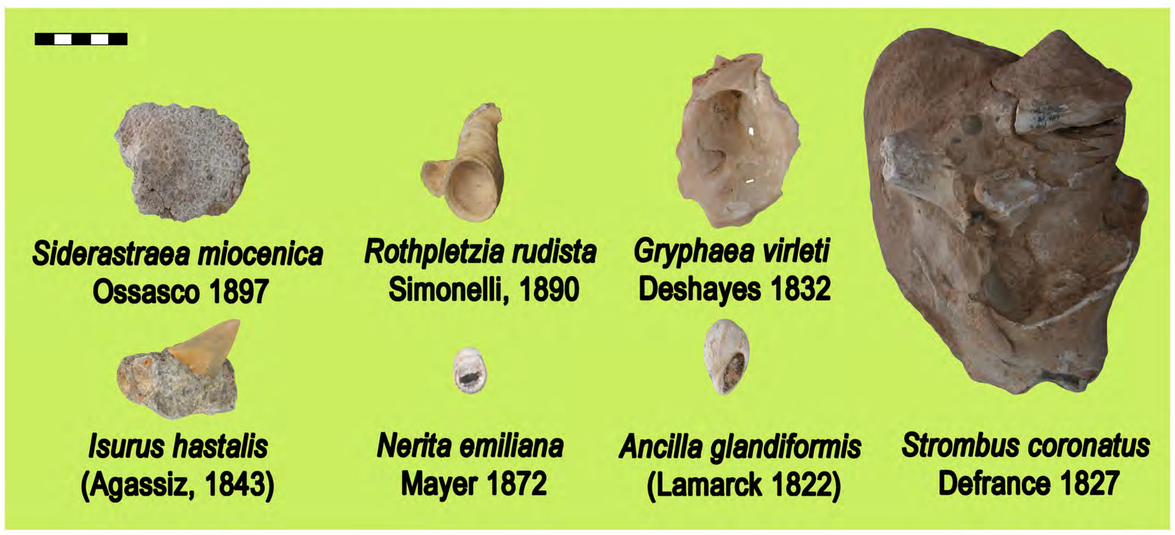


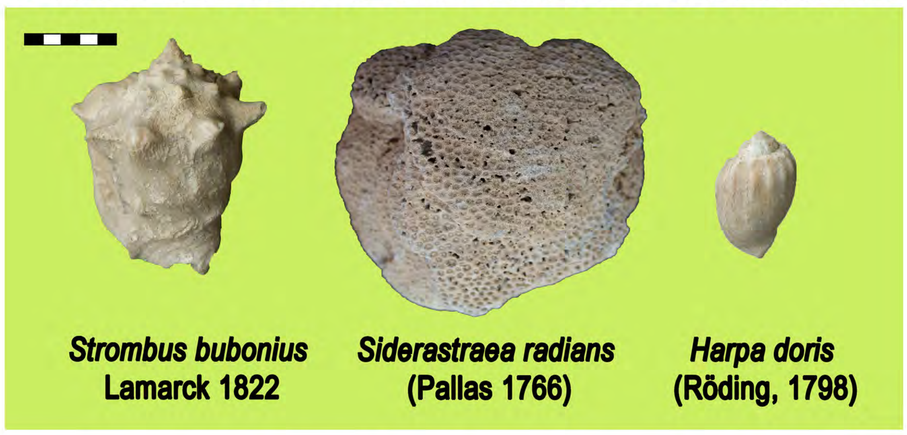
Figure modified from: Zachos, et al. (2001)

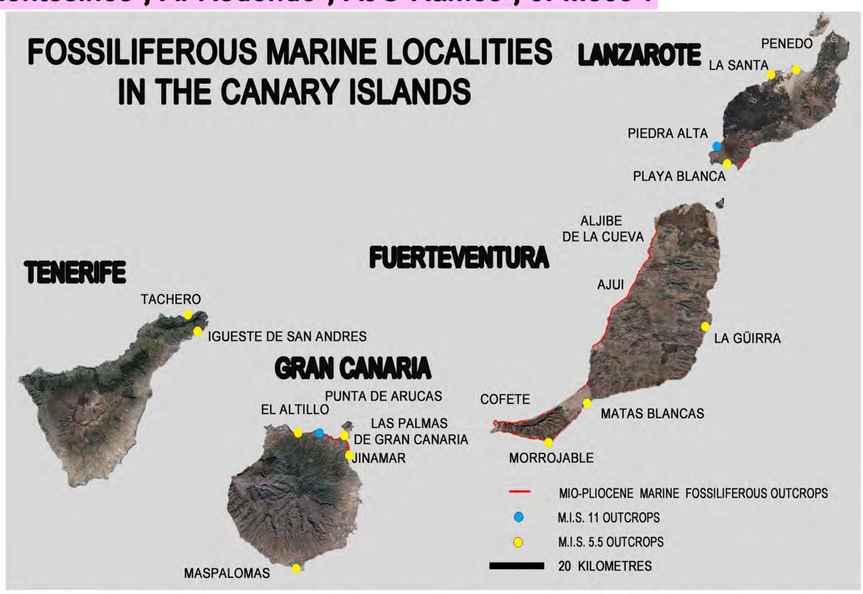
MIO-PLIOCENE PALEOINDICATORS



MIDDLE PLEISTOCENE PALEOINDICATORS. MARINE ISOTOPE STAGE 11

LOWER PLEISTOCENE PALEOINDICATORS. MARINE ISOTOPE STAGE 5.5



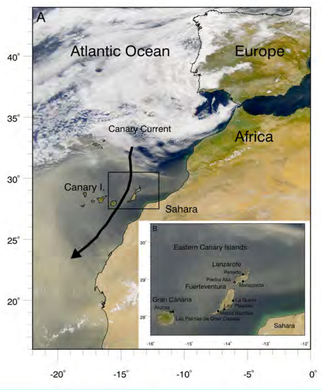


Mio-Pliocene marine deposits are located in Gran Canaria, Fuerteventura and Lanzarote. There are some characteristic fossils, typical of a very warm climate and littoral zone.
Associated lava flows have been radiometrically dated and provide a range between 8.9 (El Janubio, Lanzarote Island) and circa 4.1 Ma (Barranco de Tamaraceite and Barranco de Los Dolores, Gran Canaria Island).

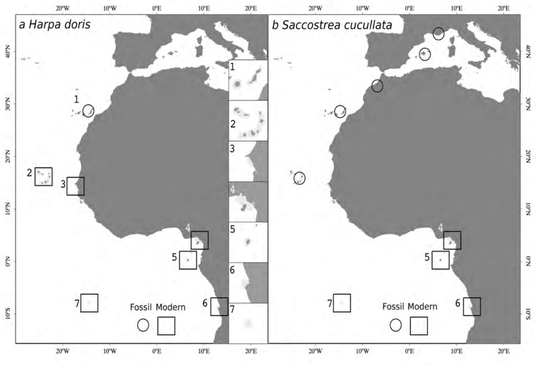
Fossil remains of MIS 11, circa 481.000 years ago, are preserved on the coast of Arucas (Gran Canaria Island) and in a tsunami deposit at Piedra Alta (Lanzarote Island).The former was dated by K-Ar method on pillow lavas (circa 420,000 years) and the latter by Uranium Series method on corals (circa 481,000 years).

Marine fossil deposits from the the Last Interglacial or MIS 5.5, circa 125,000 years ago, are present at Igueste de San Andrés (Tenerife Island); El Altillo, Las Palmas de Gran Canaria downtown and Maspalomas (Gran Canaria Island); Matas Blancas; Las Playitas and Morro Jable (Fuerteventura Island) and at Playa Blanca and Punta Penedo (Lanzarote Island). The main fauna are currently living in the Cape Verde archipelago, the Gulf of Guinea and the Caribbean.

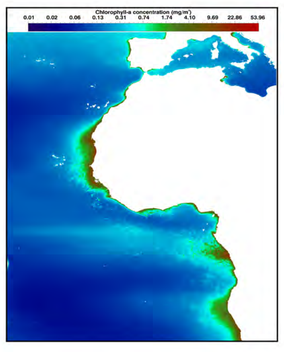
CURRENT BIO-OCEANOGRAPHY OF SOME PALEOINDICATORS



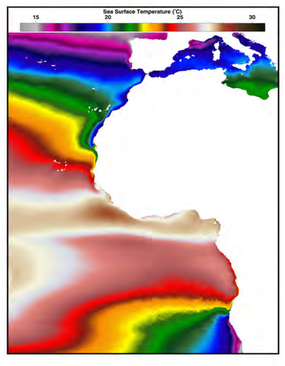
Quasi true color seawifs image (8th march of 2006). A) Canary islands location, arrow shows canary current. B) Eastern Canary Islands showing M.I.S 5.5 sites with *Harpa doris* (Röding, 1798) (filled circles) and M.I.S. 11 with *Sacostrea cucullata* (Born 1780) (diamonds).



Present distribution in the western African coast of *Sacostrea cucullata* (Born 1780) and *Harpa doris* (Röding, 1798).



Chlorophyll-a concentration mean image from MODIS-AQUA sensor data (2003-2013). Image generated using data monthly data available at Ocean Color Web (http://oceancolor.gsfc.nasa.gov/).



Sea Surface Temperature mean image from MODIS-AQUA sensor data (2003-2013). Image generated using data monthly data available at Ocean Color Web (http://oceancolor.gsfc.nasa.gov/).

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