

Research Project STM
Activity carried out within the short-term mobility program,

*Setting up stratigraphic and paleoecological approaches
focusing the history of biodiversity and of the climate in Macaronesia.
Analyzing caldera infill corings, travertines and ash fall in the Canarian Islands*

Report for the campaign 13 to 27 May, 2013, and perspectives

Holder: Cesare Ravazzi, Senior Researcher
Institute: C.N.R. - IDPA
Senior Researcher, level II

Details of the official hosting Institution

Island Ecology and Biogeography Research Group, Master in Terrestrial Biodiversity and Conservation on Islands. University of La Laguna, La Laguna, Tenerife, 38206, SPAIN

Concurrent hosting institution

Holder Institute Department 1 - Terra e Ambiente

General objectives

Addressing the potential of stratigraphy, palaeoecology of terrestrial ecosystems, and geochronology to understand the evolution of plants and climate within a classical insular system during the last 10 Ma, with special focus on the Holocene.

Setting up techniques to develop proxies for the biological evolution and the palaeoclimate. Evaluating their potential through corings in calderas, in volcanic falls, in marine deposits imbedded in dated volcanic successions and in travertines.

Project description

The Laboratory of Palynology and Palaeoecology of C.N.R. - IDPA, the IEER Group at the University of La Laguna and the Departamento de Física (Geología), University of Las Palmas agreed addressing a common cooperation envisaging the potential of the above mentioned project. 1 PhD student (Univ. La Laguna) and 2 B.Sc. students (Univ. of Milano) are involved at the current advancement stage (May 2013).

Report activities May 13-27, 2013

The campaign carried out between May 13 and 27, 2013 in the Canarian Islands (Tenerife and Gran Canaria) included the following steps:

1) Visit to the Laboratory of Palaeoecology (Island Ecology and Biogeography Research Group, University of La Laguna, Tenerife) to set up a protocol for the palynological and microcharcoal particle analysis for the biodiversity of the Canarian Islands (May 14 to 18);

2) Seminars and field work in the laurel forests of Anaga and of the Cañadas del Teide (May 15, 16, 18 and 19) focusing on the vegetation structure of the Canary Islands and their relationships to climate, pollen production and pollen rain;

3) Technical coring in the following calderas in the Island of Gran Canaria: Calderilla (down to 8.50 m depth, May 22), Caldera de Los Marteles (down to 7 m depth, May 21), Caldera de Pino Santo (down to 9 m depth, May 20). Description and documentation of stratigraphic logs, preliminary subsampling. The potential of these deposits for palynology and the palaeoclimate reconstruction is confirmed.



4) Description of plant facies (bioherma and phytoclastic) at the travertines of Azuaje (3000 cal BP). Sampling for ^{14}C dating, palynology, macrobotany, and LOI. The University of Las Palmas provided the geological frame and the preliminary geochronometrical determinations.

5) Sampling the Pliocene sediments in the caldera of Roque Nublo, Artenara, Gran Canaria. The University of Las Palmas provided the geological and geochronological frame.

Perspectives

The campaign 2013 allowed addressing a wider research project, based on the research agreement active between national institutions of Spain and Italy. Further institutions involved in the project during the campaign May 2013 are University of Madrid (petrology of travertines) and Jardin Botanico Canario (plant identification and macrobotanical reference). The ongoing researches are partially framed within the project on vegetation sensitivity of the Gran Canaria vegetation to the Holocene changes (prof. J.M. Fernandez Palacios), while an EU project is envisaged to assess the emergent problem of palm biodiversity, evolution, conservation and management in natural and anthropic (i.e. urban) landscapes.

Requests to the Foreign Office of the C.N.R.

The writer wishes to evaluate the possibility framing the ongoing project into the current bilateral scientific agreements Italy / Spain.

Milano, May 30, 2013

Holder Signature
Cesare Ravazzi