



Università
Ca'Foscari
Venezia

PROJECT ACRONYM AND TITLE: Mill(e)-Stones: Ground stones and plant food processing during MIS 3 in the Caucasus. A Microarchaeology approach to the role of dietary carbohydrates at the dawn of modern humans colonization of western Eurasia boreal latitudes

FUNDING PROGRAMME: Other International Funding

CALL: Leakey Foundation Research Grants

DESCRIPTORS: microarchaeology, plant food processing, modern human colonization, MIS 3, Southern Caucasus, starchy food

HOST DEPARTMENT: Department of Environmental Sciences, Informatics and Statistics

SCIENTIFIC RESPONSIBLE: Elena Badetti

FELLOW: Laura Longo

FINANCIAL DATA:

Project total costs	Overall funding assigned to UNIVE
€ 22.070,86	€ 22.070,86

ABSTRACT:

1-3: Mill(e)-Stones addresses the transformation of plant starch rich storage organs (PSRSO) into calorific food as part of Homo sapiens (HS) successful strategy to colonize the boreal latitudes 60-25 ka. Previous studies by the PI identified ground stones (GSTs) used to process PSRSOs dating back to > 30 ka. Recently, genetic signatures support HS adaptation to efficiently digest starch by coupling the AMY 1 gene cluster and in S. Africa charred ryzhomes, interpreted for consumption, were retrieved in hearts from 170 ka. My hypothesis is that economic exploitation of geophytes starch-rich storage organs by means of GSTs allowed the exploitation of a different nutriotope (starchy food) providing an evolutionary edge to HS while migrating into boreal attitudes of Eurasia. Hence the occurrence of GSTs in Initial Upper Paleolithic (IUP) assemblages can be used to identify the makers of IUP, providing fresh evidence to a highly disputed topic.

4: Mill(e)-Stones' multidimensional investigative approach includes: (a) the application of different microscopies (light and electronic beams) to the study of wear-traces and use-related starch grains; (b) experimental reproduction of the use of GSTs; (c) morphological and physical-chemical characterization of starch granules by means of spectroscopic techniques.

Mill(e)-Stones will brought about the origins of starchy food as a highly relevant biological and behavioral trait as it will: (i) prove the enhanced fitness of early HS colonizers by relying on calorific and energetic nutrient foods, (ii) provide revelatory keys on the authorship of IUP cultures.

5: The archaeological materials under analysis are: GSTs, faunal teeth calculus and sediments from caves dating to MIS3 from Southern Caucasus: Ortvale klde and Bondi cave.

The project is also innovative in blending regional and linguistic expertise with an interdisciplinary study of other aspects of vernacular culture to form a totalizing, holistic understanding of its regional political culture in the 1920s-1930s.

Planned Start date

Planned End date

1st April 2022

31st March 2023

PARTNERSHIP:

1 Università Ca' Foscari Venezia

Venice (IT)

Coordinator