Geophysical Research Abstracts, Vol. 7, 05044, 2005
SRef-ID: 1607-7962/gra/EGU05-A-05044

Geochemical and isotopic characterization of Tertiary flints from South-Western Europe: a tool for tracing trade networks at the end of the Neolithic

C. Bressy (1), W. Abouchami (1), A. Hofmann (1), K. P. Jochum (1), X. Clop (2) and H. Plisson (3)

(1) Max-Planck-Institut für Chemie, Mainz, Germany, (2) Universitat Autònoma de Barcelona, Spain, (3) UMR 6130-CNRS, Valbonne, France (cbressy@mpch-mainz.mpg.de / Fax: +49 6131 371 051 / Phone : +49 6131 305 362)

The late Neolithic (3.300 to 2.300 B.C.) in Europe is characterized by the occurence over great distances of long flint blades (up to 35 cm). Several productions were simultaneously spread throughout Western Europe. In particular, blade workshops of banded brown Oligocene flint were located in the Largue Valley (Alpes de Haute-Provence, South-East France). The precise extent and the modalities of this trade network which conveys economic, social and cultural information on past societies are not well-known.

In order to characterize the raw material and trace its provenance, a combined petrographic, geochemical and isotopic study of geological samples and artefacts from different areas (Provence and Languedoc (Southern France), Basque Country and Catalonia (Spain), Neuchâtel (Switzerland)) has been undertaken. This should help discriminate between different Tertiary facies which show close resemblance. Indeed, other production centres of banded flint blades exist in Northern Spain and their diffusion area overlaps the Provençal one's, making it difficult to distinguish between the two facies. In this context, a novel approach which uses the potential of both Sr and Pb isotopes will be tested for fingerprinting flints provenance.

Trace element analyses were performed at the Max-Planck-Institut für Chemie of Mainz by LA-ICP-MS. Largue Valley flints show high Nb (2-15 ppm) and Zr (4-32 ppm) contents compared to any other Tertiary flints analysed. The latter can be distinguished by their higher Pb and Th abundances and the occasional occurrence of

negative Ce anomalies.

Comparison of the Largue Valley flints with artefacts from Switzerland, Northern Italy, Southern France and Catalonia demonstrates that there has been an export of the blades over great distances. This, in turn, allows to identify intercultural relationships amongst Southern Europe groups and the establishment of a trade network at the end of the Neolithic.