ADDITIONAL MOTIVATION FOR EXPORT

The reasons for requesting the export of small samples of soil and sediment from layer 2WA of Border Cave (dated to 60 ka) are as follows:

-there is, stored in one of the Museum BC boxes, a sample taken during the excavations of 1970's (illustrated in Peter Beuamont's 1978 thesis) from the 2WA layer, which is a lump of soil containing an unusual concentration of salts that has no equivalent in the cave sediments, interpreted at the time as a possible accumulation from human urine, but without any definitive identification. The salt concentration is near an area of grass bedding. Preliminary analysis done by WS Rapson of the Chamber of Mine Research Lab in 1972 suggested that a major chloride source could be human urine, at 5 - 15 g per person per day. Such an ascription was supported by J. Bada, who noted that the large crystals pointed to saturated solutions. indicated that is not marine salt and it is not a natural component of sediments. However no final report and definite identification was received.
Peter Beuamont notes that the cave abutts on a cliff face, with the only viable entrance a narrow ledge on its north side, which leads to a more gentle slope. Leopard and giant snake tracks seen in the 1970's on the cave entrance floor suggest that going outside at night would have been hazardous in MSA terms. It is in that context, barricaded in at night, that the possibility of a urinal area gains some credence.

-I would like to have it analyzed by gas chromatography and mass spectrometry for organic components by Ilaria Degano of the Department of Chemistry and Industrial Chemistry of the University of Pisa via Risorgimento 35, University of Pisa, Italy. Ilaria Degano has expertise in organic chemistry analysis and has the equipment and experience to do such analyses. Only an analysis and identification of organic (human) components would confirm the preliminary hypothesis of a urine concentration, in the vicinite of an area of grass bedding.

-Ilaria Degano has already collaborated with Paola Villa and published her analyses and identification of organic materials by gas chromatography and mass spectrometry from Border Cave in the two PNAS papers published by Villa et al. and d'Errico et al. 2012 (pitch glued to microliths from bark of Podocarpus elongatus, beeswax);

- a sediment sample from layer 2WA, is necessary for comparison with the salt sample.