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Further reading:

- Bentley, Joseph, 1840. *History, directory and statistics of Worcestershire. Vol.2, Bentley's history and guide to Dudley, Dudley Castle and the castle hill, and alphabetical and classified directory of the borough of Dudley.* [Birmingham.]
- James, P M, 1832. *Lord Dudley's Limestone Quarries. From Aurora Borealis. Dudley Library Archives Reference LD 622.368.*
- Miller, Hugh. 1847. *First impressions of England and its people.* [London: John Johnstone.] [Chapters 4 and 5].



Speleobiology in the Cantabrian Mountain karst massif of northern Spain

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The Matienzo karst entomology project is an independent research initiative working within the international caving community that is supported by the BCRA, the Natural History Museum, London, and the University of Plymouth. The aim is to study the fauna of the caves in the Matienzo basin of the central Cantabrian karst, there having been minimal work to date on the invertebrate life within these cave systems. Additionally, no formal scientific work has been carried out to study this specific karst massif or collect enough specimens to create a checklist of species. Only very select data exists for the wider region, and this is only on specific groups. This larger Iberian karst region includes the Picos de Europa and the Spanish Pyrenees. However, whereas both these areas are rich with speleological interest, they differ environmentally from the study area. Personal observations in the course of exploration suggested that the fauna are also significantly different, as supported by the first season of fieldwork. The study is being continued in a variety of environments and karst habitats by voluntary inputs from visiting speleologists throughout the year. This should supplement a first draft checklist of species for each locality. The initial phase of work was focused on testing of trapping methods, distribution linkages and cohabitant relationships between species. More tentatively, the project will study relationships at a higher level between taxon groups and also the distribution of arachnid species in cave entrance zones. This will enable an investigation into the relationship of species distribution and population density under two key sets of variables: (a) cave topography in terms of size, shape and availability of refuges for web building and shelter, and (b) environmental factors of air flow, temperature, humidity and illumination.



“Beware of the Dark Side!” Exploring the cave use strategies in the Neolithic Balkans

POSTER

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This project, partly funded by BCRA, studies the ways of cave use by humans during the Neolithic period (7th – 4th millennia B.C.) in the Western Balkans. Particularly, the objectives of the project are: 1. To investigate how the cave space was organized according to the distribution of artefacts found in cave deposits 2) To study if the caves had been used for utilitarian purposes (e.g. shelter for herds and herders, storage due to constant temperature, specialized craft activities) and/or for ritual / ceremonial purposes (e.g. burial ritual and ceremonies, initiation ceremonies) 3) To clarify which were the differences between Neolithic cave deposits and contemporaneous open-air sites 4) To research what was the economy of cave users in those areas, where caves had been close to coastal zones with available marine resources or freshwater resources and how this changed during the Neolithic. Most importantly, this project aims to explore how people used the caves in the complex social structure of the main Neolithic sites, the importance of the caves for the period's societies and how the caves had been associated with the rest of the urban and rural sites of the Neolithic.

I will attempt to achieve these four goals by adapting a pioneering methodology in the field of spatial analysis in the cave environment. I would like to move from a classical geographical interpretation of the spatial data to a geospatial approach, which encapsulates the geographical information in a more phenomenological way of thinking (Gillings, 2011 and 2012; Rennell, 2012). More analytically, I will collect in the field not only the spatial data from the cave artefacts but also the spatial data from the cave micro-environmental characteristics (light zones, humidity and temperature areas, cave decorations, sounds from cave fauna and water-dripping). Through the micro-special analysis and spatial distribution of the above parameters in a particular intra-site area (vertical and horizontal), I will try to outline which areas inside caves share common characteristics. Furthermore, I will try to investigate if the areas with the same characteristics are those areas whose specific clusters of artefacts present the high densities.

During the summer of 2014, I have collected bibliographical data from 72 already-excavated caves in seven different countries (Greece, Albania, Serbia, Croatia, Montenegro, Bosnia, FYROM), which will be available on line soon at www.balkancavearchaeo.org. Moreover, I undertook pilot field research in three caves (Spila Cave, Montenegro, and Koromilia and Sarakinos, Greece), where I gathered spatial data of the micro environmental characteristics of the caves. The goals for next year are to evaluate and present the data from the bibliographical research and to do a more deliberate field research in the rest of the Neolithic caves of the Western Balkans.

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Gillings, M, 2012. Landscape Phenomenology, GIS and the Role of Affordance. *Journal of Archaeological Method and Theory*, Vol.19(4), 601–611.

Rennell, R, 2012. Landscape, Experience and GIS: Exploring the Potential for Methodological Dialogue. *Journal of Archaeological Method and Theory*, Vol.19(4), 510–525.



Quaternary Climatic Instability in South-East Australia from a Multi-Proxy Speleothem Record

POSTER

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For the past 400–350ka, there has been an overall shift in the climate of Australia towards increasingly arid and variable conditions (1). This shift is largely responsible for the Australian climate experienced today. For the prediction of future environmental change the study of Quaternary Australia is therefore critical, though Australian palaeoenvironmental terrestrial records are rare. The vast majority have been retrieved from fluvial, lake and dune sediments and pollen sequences (e.g.: 2; 3; 4). Although highly useful, these techniques are prone to data loss by erosion or the redistribution of sediments. Speleothems represent an underused alternative archive of environmental change. In particular, no high-resolution speleothem records from Australia have covered the Marine Isotope Stage (MIS) 5–3 period. This is a critical point in the continent's history marking the arrival of humans and loss of the megafauna (1; 5; 6). Flowstone YB-F1, dated to between 99 and 37ka, from Yarrangobilly Caves, represents the first high-resolution, multi-proxy speleothem record from south-east Australia to cover this period. Oxygen isotopes, trace elements and UV fluorescence were obtained for YB-F1 and used to build an environmental interpretation of this critical time. Within central and south-eastern Australia, climatic oscillations throughout the Quaternary were characterised by relatively wet or dry conditions corresponding to interglacial and glacial periods respectively (2). The palaeoenvironmental proxies retrieved from YB-F1 reflected these oscillations. The oxygen isotopic composition of YB-F1 calcite ($\delta^{18}\text{O}_{\text{calcite}}$) was taken to represent rainfall amount and used as an aridity index. Interpretations based on $\delta^{18}\text{O}_{\text{calcite}}$ were supported by trace elements and UV fluorescence, allowing periods of relative aridity and moisture excess to be identified. A hiatus of approximately 37ka divides the record into two key growth phases which can be mapped onto MIS 5c–a and 3 respectively. Increasing aridity in the latter half of MIS 5 led to termination of calcite deposition for the duration of MIS 4. Growth recommenced during MIS 3, associated with greater moisture availability, enhanced vegetation and augmented biogeochemical cycling. YB-F1 provides a unique context of terrestrial environmental change highlighting the high degree of climatic instability and intense aridity experienced during this time of irreversible change to the continent's biodiversity.

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