

Prehistoric Body Rituals in Franconian Vertical Caves

Documentation of Finds and Cave Structures with the Help of Terrestrial 3D Laser Scanning

Introduction

The Franconian Alb in Northern Bavaria, Germany as a low mountain range region has a high number of narrow vertical caves, which were used in numerous prehistoric epochs to deposit human and animal bodies or their parts and other artefacts such as pottery or metal. At the current state of research, the processes and motives behind these practices, which are referred to here as body rituals, are still completely obscure, as the caves investigated in the first half of the 20th century were all extremely poorly documented (Burgdorf et al., 2020; Seregély et al., 2015).

Material / Data

The discovery of new vertical caves between 2010 and 2022 in this region offers an outstanding opportunity to address the many unanswered questions with new technological methods. The lecture will present results from the Kirschbaumhöhle (Cherry Tree Cave) and the Mauslochhöhle (Mousehole Cave), where initial preliminary investigations have already taken place (Seregély et al., 2015). Both caves have narrow entrances leading vertically into the depths. The Cherry Tree cave in particular is extremely narrow and difficult to document. After recording the surface finds and the first small-scale exploratory excavations, a large number of finds, especially human and animal bones, but also pottery, chert and metal artefacts, were recovered and preliminarily examined.

Methodology

The cave structure, the ground surface above the cave and the finds lying on the surface or uncovered in the exploratory excavations were recorded in three dimensions using a small, terrestrial Faro Focus laser scanner. In the fully georeferenced cave systems, this made it possible to determine the exact position of the finds. Additional software, e.g. PointCab or ArcGIS (ArcMap and ArcScene), was used for further documentation, e.g. the creation of cave floor plans and sections and the three-dimensional analysis of the finds.

Results & Conclusions

The previous recording and dating of at least 25 human individuals and numerous other animals found in the Cherry Tree Cave so far indicates that it was used for at least three, perhaps even four millennia. Characteristic periods are the Final Neolithic, the Early Bronze Age and the Iron Age. Continuity over long periods of time, centuries or even millennia, cannot be established at the present time. The oldest human individual from the Mousehole Cave dates back to the early fourth millennium BC and the Younger Neolithic. In addition, the presumably first ever conscious laying down of

a human in a crouched position in a vertical cave has been proven. This dates back to the Early Bronze Age. There are already indications of differences in the position of the human individuals, their relationship to animal bodies and their age and gender composition. This may also suggest different backgrounds for body rituals in different epochs. Due to the calcareous subsoil, ancient DNA is excellently preserved and allows conclusions to be drawn about population genetics and kinship structures over thousands of years at a single location (Botigué et al., 2017).

Discussion

The presentation is intended in particular to stimulate discussion about the documentation methodology in order to achieve possible improvements in the future, whether in 3D scanning itself, in post-processing or analysis. A complete investigation of the Cherry Tree Cave planned for the near future should, for the first time, lead to more comprehensive and better interpretable results for this complex type of archaeological monument using this documentation methods.

References

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