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Unreviewed Mixed Matters Article:

Book Review: Experimental Archaeology and Fire. The Investigation of a Burnt Reconstruction at West Stow Anglo-Saxon Village by Jess Tipper

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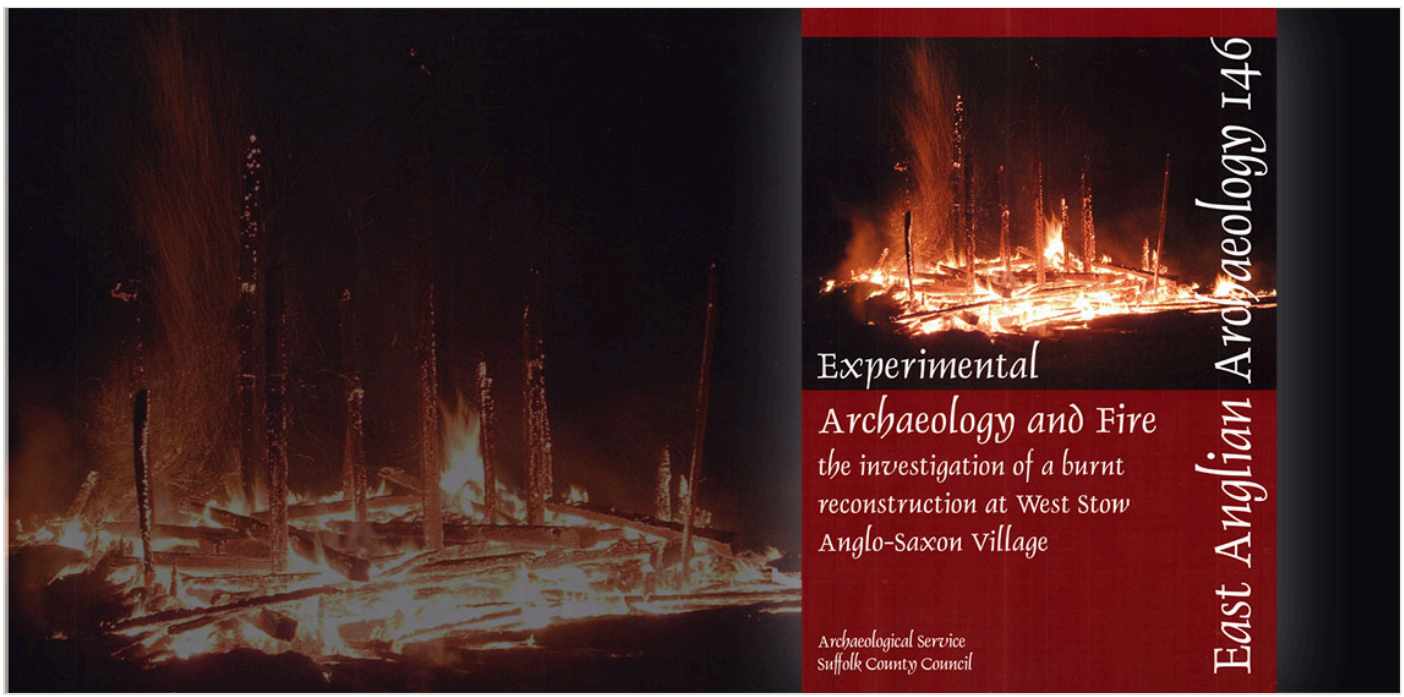

What should an archaeologist do if one of the reconstructions of an experimental village is accidentally burning during the night? Simple: pick up a camera and start taking pictures. And

then, of course, plan the excavation to record as much information as possible followed by an analytical and detailed publication on the results.

> The book is divided into 7 chapters to give not only an excavation report, but also to give all the results from the study of the effect of fire on metal works, geoarchaeological evidence, insect and plant remains and the application of fire investigation techniques. It is also enriched by a high quality plates, pictures and figures.

This is more or less what happened at West Stow Anglo-Saxon Village, Suffolk. An accidental fire destroyed the 'Farmer House', one of the sunken-featured buildings (SFB or *Grubenhaus*), during the early hours of 19 February 2005. The unfortunate event was immediately transformed into a unique opportunity: a few hours later, while the structure was still smoking, Jess Tipper – the author of the book – and her staff, with the support of the Suffolk County Council Archaeological Service and of English Heritage, started to record the last phases of the fire; the excavation would have taken place some months later, during the summer, applying the conventional excavation procedure associated with the techniques of forensic fire investigation. Main objectives of the research were to investigate the site formation processes and understand the nature and dynamics of a fire.

The experimental village was built during the 70's, the same years of John Coles's first edition of *Archaeology by experiment* and of several excavations of Anglo-Saxons villages. In particular, Stanley West, who had proposed some of the reconstruction models for the structures, investigated the site of West Stow between 1966 and 1973. He was actually the first one to suggest the use of planked floors over the pit, rejecting the other interpretation as belowground houses. Six structures in total were re-constructed in different ways, in order to test and verify how the houses were built and used.

The Farmer House was the latest structure (1992-1998), born as a 'viable reconstruction' of the SFB 12. It consisted of a sub-rectangular sunken feature or pit, measuring 6.50 m x 5 m; the sunken area, measuring 1.60 m in depth, was about 4.00 m x 3.00 m in area; slots were used for the plank lining. The height at the ridge was 5.00 m. Mainly oak was used for the six posts (6.25 m) aligned on the sides, the ridge-posts and the long ridge beam, but also for the tie beams, the joists, the plank floor and the cellar walls, with no use of nails or other metal fixings. Inside, objects and furniture were distributed on the surface or hanging on the walls.

The investigation, as stated above, was conducted as a normal archaeological excavation. From the post-fire status some months before, part of the structure was destroyed and a lot of details were lost because of natural decay and bioturbation. Most of the timber architectural elements disappeared. Only the outer joists and the cellar linings were preserved (50 % with no great displacement), while posts – mainly the lower parts – were preserved for less than 40%. 11% of the wall boards were recognized, fallen outwards and

away from the building. Only 3 % of floor planks were located. No timber remains of the roof were identified, while two large heaps of burnt thatching straw was found on the long sides of the building.

An accurate documentation was made of deposits below the suspended floor in order to analyze the accumulation of objects that fell through the planks (especially the pencils lost by children during their visits). The Farmer House excavation also facilitated a view of the potsherds scattering compared to their original position. A novel approach was used to analyze the ironwork and copper alloy, to have a comprehension on the effects of fire on metal objects and their oxidation.

The micromorphological and geochemical analyses had three main aims: first, to investigate the effects of burning on construction materials and the fills. Second, to compare these fills to the ones from archaeological contexts and to evaluate the use of geoarchaeological techniques (determination of pH, magnetic susceptibility and multi-element analysis). Important results include high magnetic susceptibility for the samples where the timbers burnt for a long time and high phosphorous values for all the samples associated with the burnt structure. This study also points out how post-depositional processes can influence geoarchaeological soil analyses, which can lead to erroneous interpretations of the archaeological record.

A lot of charred and uncharred plant and insect remains were found. As expected, oak was the most represented species, but even the straw of the thatch roof was identified, sometimes partially silicified (it happens above 800° in oxygenating environment). The presence of the vegetation around the building also affected the deposits. One year after the excavation a relatively high number of colonizing plants developed in the area. Charred insects were found, especially species living inside the structures and low-grade buildings; however, no answers were given about the almost total absences of insects in archaeological contexts.

Principles of fire investigation were very useful for the reconstruction of the archaeological context. One of the main questions was the individuation of 'suspected' seats or points of origin of the fire and where the structure had intense degrees of burning. Another important aspect was the sequence of the collapse. To do this, it was also necessary to evaluate the total amount of fuel available from the structural timber – pictures taken during the fire and right after helped in the comprehension of the combustion dynamics. The fire started probably on a corner of the planked floor and then spread rapidly, burning the roof and then the cellar.

Finally, the authors present some of the archaeological case studies of burnt structures – both ground-level and SFB buildings - and compare the Farmer House results with the ones from two of the SFBs at West Stow (SFB 3 and 15) burnt down probably in the same accidental

event. They were able to shed new light on some of the archaeological data – such as the percentage of preservation of the building, the surface evidence and its significance, the dispersal of the fittings, the possible building re-constructions (in particular the suspended floors), the nature and the disposal of the deposit in the pit and many other suggestions.

This work is definitely a very good example of how an accident – inside an already well-known and documented context - can become a valuable scientific contribution. The use of standard excavation techniques progressed simultaneously with an experimental comparison, but also with brand new points of view such as the fire investigation approach. This book is not to be missed and it can be set in the not-so-long list of published investigations into fire and archaeology.

Book information:

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