

# The archaeology of Alderley edge

**This book presents the archaeology of an area rich in copper mining of various periods from the early Bronze Age to the early Industrial in Yorkshire, England.**

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This BAR report covers the landscape study of Alderley edge which aside from surveys and excavations of selected sites which is normal for such landscape studies included a short programme of experimental demonstrations held on open days in order explain the work of the archaeologists to the public.

Two elements of the actual mining techniques were

explored. The first was the use of fire setting, held over a period of two days. This is a widely known but often misunderstood technique especially as it fell out of use with the introduction of steel mining tools and more importantly the introduction of explosives. The basic source used in fire setting experiments is Argricola's 'De Rea Metallica'. In the case of the Alderley edge experiments this source was supplemented by experience gained by one of the participants (S. Timberlake) in similar experiments on other sites. In general the experimenters concluded that the effects of fire setting occur in the first few hours of the burn with rock shattering caused by to the expansion of water held

within the rock and that the only reason for dousing the area with extra water is to cool the area quickly and remove a lot of the waste.

The second mining technology looked at was the construction of stone hammers as they are thought to have been used during the Bronze age. This consists of two elements, the Hammer stone itself and the binding or handle. Alderley edge has produced many examples of Hammer stones and it was these that were reconstructed, particularly those with a distinctive groove which, it is presumed, was used to help secure the handles. The handles' form though is more problematic, in general the model used is that of the

Chuquicamata hammer, held in the British Museum, from South America. Although an alternative style was used that had been developed during experiments at other sites, but which lacked either ethnographical or archaeological parallels. The hammers were then used in conjunction with antler picks to break up and remove rock in and around the areas that had been fire set.

The third area of experimentation in this study was the smelting of ore obtained from the locale in kilns modeled on those used in the early Bronze age. The aim of these experiments was to explore the temperatures possible with this technology and the likely achievable yield from the local ore. In addition

the experiments would cast some light on the problems that the early metalworkers would have encountered. The type of kiln used was of a simple bowl form which was preloaded with fuel and ore. The ore was formed into distinct balls containing ore, sawdust and charcoal, the aim being to produce an increase in the likelihood of at least localised reducing conditions and ensure that any resulting melting would be retained within distinct and easily found locations. Aside from the main bowl furnaces a pit-hearth and a shaft furnace (using a tree trunk to form the shaft) were also tested.

These experiments formed a valuable part of the overall study in that they allowed the archaeologists to gain new insight into the mate-

rial remains and features with which they were working. This is particularly so with the fire setting experiments in that they became more aware of the distinct patterns which this technique leaves on the rock. In addition, the later mining of the fire set rock with antler picks and stone hammers highlighted the fact that these same patterns can be quickly lost through later activity.

The only possible criticism that can be leveled at these experiments is the lack of time available and the limited numbers of direct linkages with the archaeology of the area. Both these points though are merely reflections of the limitations under which they took place and are neither a reflection on the experimenters or the results of

the experiments themselves. Thus within the context of the survey and also public awareness created, the experiments were well thought out, planned and executed.

**The Archaeology of Alderley Edge: Survey, Excavation and Experiment in an Ancient Mining Landscape**

by Simon Timberlake, A.J.N.W.  
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### Summary

Das Buch beinhaltet die Landschaftsstudie einer Region in Yorkshire, England, und setzt seinen thematischen Schwerpunkt auf die Archäologie des Kupferbergbaus verschiedener Perioden von der frühen Bronzezeit bis zur Zeit der begin-

nenden Industrialisierung. Die Arbeit umfasst auch einen kleineren Abschnitt zur experimentellen Archäologie, in welchem zwei Elemente der Bergbautechnik untersucht werden: Die Herstellung von steinernen Hämmern und den Schmelzprozess lokaler Erze in Öfen, die den Anlagen der frühen Bronzezeit nachempfunden waren.

Le livre met au jour une étude sur le paysage de la région de Yorkshire (Angleterre), apportant de l'attention aux vestiges archéologiques de l'extraction de cuivre, situés depuis l'Âge du Bronze ancien jusqu'à l'époque post-médiévale. Cette étude implique encore le petit programme de démonstrations archéologiques qui ont expérimenté deux aspects de la technique d'extraction, celui de la fabrication des marteaux en pierre et de la réduction de minerai local dans des bas fourneaux construits d'après des vestiges datés de l'Âge du Bronze.