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Unreviewed Mixed Matters Article:

Interview: Dr Rosemarie Leineweber

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Dr Leineweber (1951) has an impressive track record in German experimental archaeology, reaching over two decades back. She worked with metals, cremation experiments and much more, with museum colleagues, university students and researchers and inspiring many people in how to experiment in a way which is not only fun, but brings progress. Finally she was not only active in the field but also published what she practiced. Time to find out more.

From 1974, you worked as an archaeologist in Saxony-Anhalt, (then East) Germany; your first steps in experimental archaeology date to 1990, in the middle of the so called 'Wende'

> Experimental archaeology is a method that attempts to test in practice those theories that emerged from the writing tables and ex cathedra proclaimed opinions – often with surprising results!

(Change) Period. Was there a direct link?

No, at least not at the beginning. It was coincidence that our first trials happened exactly during this period. The confusions, chances and changes of the year 1990 however made a lot of things, in practice, easier. It, for example, became possible to get in touch with colleagues in the now accessible neighbouring old states of Germany, especially in the Hannover Wendland, in Hitzacker and other regions of Lower Saxony. It is there that I met Mamoun Fansa from Oldenburg, and, as a result of this meeting, the travelling exhibition Experimental Archaeology in Germany made its first stop in the Salzwedel Mönchskirche. This meeting was decisive for the period that would follow.

Were these changes, the new possibilities for you, the reason to try out 'something new'?

In brief: no. Up until then I had not planned to get involved with experimental archaeology. The 'new' bit emerged de facto from my growing interest, since the 1980s, in the prehistoric iron smelting process.

Why exactly metallurgy?

At excavations in Zethlingen/Altmark (in the north of Saxony-Anhalt) we hit the remains of eleven smelting furnaces. I got interested in their functional principles, of course, as well as to be better able to understand and classify the finds. I followed some leads via Radomir Pleiner (Prague) and Arne Espelund (Trondheim) and finally got in touch with metallurgists at the TU Bergakademie Freiberg. Following from that, in 1989 I planned the first iron smelting experiment with young ironworks engineers; we realised the project at Pentecost 1990.

A successful first attempt in experimental archaeology…

Well, not really. We knew the process from construction of the bloomery furnace down to the extraction of the bloom actually only from literature. It may be worth mentioning that we named the furnace 'bastard'…. But we learned fast, and my metallurgic companion from the first hour, Bernd Lychatz, is now an appointed specialist and has a postdoctoral qualification for archaeometallurgy about this iron smelting process.

A good one-third of your experiments in the following two decades dealt with (iron) metallurgy: why? There were no metallurgical centres in the area of present-day Saxony-Anhalt. What attracted you to this specialism?

I wanted to know how exactly iron has been made. The finds from Zethlingen were the cause, and each experiment led to the next questions. With a comprehensible effort for each experiment, we could adjust single parameters and check the results each time – this was experimental archaeology at the scientific level. A lucky coincidence was the parallel interest from TU Bergakademie Freiberg in such field experiments.

At the Saxony Anhalt Office for Archaeology (at present: Landesamt für Denkmalpflege und Archäologie – LDA) the iron metallurgical experiments were added to similar experiments on non-ferrous metals. However, whether it would be copper smelting experiments or a 'bronze workshop': I always followed the path from original find to hypothesis. I would have liked to have done the other experiments more often and as extensive as the iron smelting experiments in order to answer new questions which popped up during the process of experimenting.

The Zethlingen Workshop followed on the excavations at the Zethlinger Mühlenberg, the discovery of the widely known royal grave of Gommern was followed by experiments with the grave room, the clothing and weapon technique. Do you think that a scientific, experimental reconstruction is a necessity for archaeological research? – Also compared with the museum educational aspect.

The experiments, as small as they often may seem, are time consuming. What also many colleagues do not see is the time that an adequate evaluation requires. This needs to be calculated together with the material expenses. With that it becomes clear that archaeological experimentation stands for tough scientific labour – they contribute to resolving existing questions and do not serve their own goal.

So you see the primary reason for experimental archaeology more in the verification of archaeological theories rather than in museum educational impartation?

Absolutely, but I like to add that with help of scientific experiments we can reduce the bandwidth of interpretation of archaeological finds. I also like to emphasise that museum education is necessary in this context and cannot be done without; its quality lies in processing results of research and impart those in a way all can understand.

It was your initiative to found the Langobardenwerkstatt Zethlingen. Do you review your first large experimental project in Zethlingen (1990 – 1993) as a pure educational impartation project?

Now yes. Originally it should have run on two tracks. Primarily we imagined ourselves as conducting experimental archaeological research with reconstructions on solid science: houses, wells, technical equipment…. We planned to complete these with museum pedagogic activities that would impart it, to get the results closer to the public with

weaving, cooking, baking et cetera. We wanted to offer the visitors an area where they could experience.

This dualism did not work. Do you regret the missed chance?

It was appealing and would have been nice. Now it is above all an experience – in every regard. The Langobardenwerkstatt Zethlingen nowadays is a part of the museum of the Landkreis. Thanks to those running the place it actually still exists, they are highly praised.

Let's go once more 20 years back in time: I remember when we were excavating at the Zethlinger Mühlenberg, we were securing hundreds of cremation graves. You repeatedly painted a vision to construct a funeral pyre yourself, to do research into the actual stages of cremation. We found the thought pretty funny…

… And I turned it ten years later into something serious. This long preparation time was needed in order to clarify the complexity of the connected hypotheses. To me, the cremation experiments at LDA Halle are a prime example of the effort needed in experimental archaeology. The main publication of the experiments was the most extensive and time consuming of all I was involved with in respect to experimental archaeology. It was our goal to find out the stages in the incineration of a body, as base for the burial of the cremation remains. The practical tests were meant to show whether the archaeological finds spectre from cremation graves was in any way representative. We also intended to find out how well the methods we apply are fit to recover singular stages. The results of our studies shed another light on the finds so far excavated from cremation graves.

This seems to have already answered the question: what is your most important archaeological experiment?

For sure these are the four interdisciplinary cremation experiments. They could explain the formation of a cremation grave in its essential areas and could clear away many often and rash accepted statements and methods of research in cremation graves – and this also happened to my own two monographs and other articles! I summarised the corrections I needed to make about my archaeological conclusions in a following publication. I like to add that these experiments were, from a methodical point of view, a valuable experiment, as well as 'interdisciplinary'. It showed to be of vital importance that, in order to get the best out of your experiments, the experimental archaeologist must move around in many professional worlds from the point of a coordinator: metallurgists, ceramists, goldsmiths, anthropologists, botanists et cetera. Only with this large variety of professionals we could get the best results from these complicated cremation experiments.

I hear the word 'effort': how much work does one accept to check hypotheses?

> With all the preparations and the work following form the experiments themselves, the cremation experiments surely cost the largest effort and the conclusions reached further than in any other experiment I did. However, the keyword 'effort' makes me especially turn back to the construction of the 'Stroke-Ornamented Pottery Culture' circular palisaded enclosure. Over the years 2001 – 2002 we processed about 2,700 posts in order to place them into palisade rings as it fitted with the original find. This way we could determine the effort needed to build up such a construction. We realised that the preparatory work were much more intensive than the actual construction and probably this was the result of a tough organisation of the work.

The cremation experiments and the construction of the circular palisaded enclosure took place at the Centre for Experimental Archaeology and Museum Education (ZEAM) in Mansfeld (in the south of Harz Mountains) – how is this site nowadays, which you have built up and managed?

> This experimental archaeological centre in Mansfeld was a source of interest for the former archaeological director of LDA. We had two clearly separate areas: the scientific experiments were under my management and the museum education by a specialist in that field. When there was a change of management, priorities also changed. The centre was not that well established to survive this change in structure and was closed. This meant for me that I had to leave institutionalised experimental archaeology and take up challenges in the excavation world.

Do you think that centres that only focus on experimental archaeology stand a chance?

> They are scientific research centres and have, from an archaeological point of view, a chance. However they exist in dependence of finances. There is the breaking point. If I think of the economic trends I should rather answer the question with a "no" or if there is a private sponsor…

And those are seldom. Do you see a future for such centres that connect experimental archaeology with a clever impartation?

> Because I am still a bit involved, I can see new museums and a few new scientific centres time and again. There seems to be a need for those at present. The big advantage of both experimental archaeology and the museum education practice is the involvement of all senses, this in contrast to most offers in this digital networked era. The interest in an impartation where one can participate as well in a haptic way is large. Interestingly I always had three times as many participants in seminars that included a practical part in contrast to those with only papers presented!

And vice versa: are museum educational 'archaeo parks' authentic enough?

In general they are not – here is where commerce works the wrong way around when it, for example, dictates too much about the themes and contents of what is presented. This also depends on who is running it. For these last questions there are always tough discussions between scientists and the hobby people, who of course are of vital importance to the parks, but who don't want to get everything they do in their free time dictated by somebody else. This is a wide field where the rational scientist is not a welcome guest. But at the other hand there are also better and approved examples: Lejre (Denmark), Eindhoven (the Netherlands), Biskupin (Poland) and so on.

Experimental archaeology is a method that attempts to test in practice those theories that emerged from the writing tables and ex cathedra proclaimed opinions – often with surprising results! It enables students to convert theoretic knowledge into practice and this way offers them an indispensable tool for their professional career. I like to encourage all prospective archaeologists to remain eager to learn because there is so much we still can question!

Dr Leineweber, many thanks for this talk!

Link(s)

A comprehensive bibliography of Dr Rosemarie Leineweber can be found on the EXA...

Keywords experimental archaeology
iron
smelting
bronze
casting
metallurgy
cremation

Country Germany

CV of Dr. Rosemarie C. E. Leineweber

1951: Born in Eisenach (Thüringen)
1970 – 74: Studied in Berlin and Halle (Saale)
Dissertation on the Roman Era in the Altmark
1974 – 1993: Archaeologist in Museums of the Altmark
1993 – Present: Works at the Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt (LDA) (until 2002 in the area of experimental archaeology, 2002 - 2012 at the excavation department)

Married, with two children

Professional specialisations:
From 1972: Roman Era, Inner Germania
From 1980: iron metallurgy
From 1989 : corresponding member of the Comité pour la Sidérurgie ancienne de l'Union Internationale des Science Préhistoriques et Protohistoriques
From 1983: Roman import into the Barbaricum
From 1990: experimental archaeology
From 2001: corresponding member of the Römisch-Germanische Kommission of the Deutsches Archäologisches Institut
From 2004: vessels and underwater archaeology

Experimental archaeology:
1990: first iron smelting attempt in Zethlingen
1990: Founding of the Langobardic workshop Zethlingen; until 1993 setting up and management (reconstructions and experiments, museum education)
1993 – 2002: Landesamt f. Archäologie Sachsen-Anhalt (at present: Denkmalpflege und Archäologie Sachsen-Anhalt - LDA); responsible for experimental archaeology, of the LDA in Mansfeld (Südharz); reconstructions and experiments: 1999 -2001 interdisciplinary block seminars with participants from all over Germany: iron smelting, burning ceramics / building kilns, cremation experiments
1995-2004: Lecturer in experimental archaeology at the universities in Berlin, Leipzig and Magdeburg
1996: Organisation and running an international bronze workshop (LDA) in Halle /S.
2002: founding member of EXAR (European Association of Experimental Archaeology; www.exar.org) and member of the Board (2003 – 2006).

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FIG 1. COMBING OF A SO-CALLED SCHWEBENKNOTE AT THE LANGOBARDENWERKSTATT 1992. PHOTO V. HELD (LINZ).

FIG 2. INTERNATIONAL YOUTH WORK CAMP (IJGD) 1993 AT THE LANGOBARDENWERKSTATT ZETHLINGEN. UNDER GUIDANCE OF A CARPENTER, ADOLESCENTS RAISE THE POSTS OF THE HOUSE. PHOTO R. LEINEWEBER.

FIG 3. INTERNATIONAL BRONZE WORKSHOP OF THE LDA IN HALLE (SAALE) 1996. THE PICTURE SHOWS PARTICIPANTS FROM FRANCE, AUSTRIA AND THE NETHERLANDS. PHOTO LANDESAMT FÜR DENKMALPFLEGE UND ARCHÄOLOGIE SACHSEN-ANHALT, E. HUNOLD.

FIG 4. IRON SMELTING ZEAM 1999. DECONSTRUCTION OF THE FURNACE SHAFT IN ORDER TO EXTRACT THE IRON BLOOM. PHOTO LANDESAMT FÜR DENKMALPFLEGE UND ARCHÄOLOGIE SACHSEN-ANHALT, E. HUNOLD.

FIG 5. TEMPORARY EXHIBITION OF THE LANDESAMT FÜR ARCHÄOLOGIE IM LANDESMUSEUM FÜR VORGESCHICHTE HALLE 2000, ENTITLED GOLD FOR ETERNITY: THE GERMANIC ROYAL GRAVE OF GOMMERN. DECORATION OF THE RECONSTRUCTED GRAVE ROOM. PHOTO LANDESAMT FÜR DENKMALPFLEGE UND ARCHÄOLOGIE SACHSEN-ANHALT, A. HÖRENTRUP.

FIG 6. THE FIRST PLATE OF A CORDED WARE CULTURE STONE COFFIN IS BEING PLACED USING ROPES AND ROLLERS (ZEAM 2000). PHOTO LANDESAMT FÜR DENKMALPFLEGE UND ARCHÄOLOGIE SACHSEN-ANHALT, R. LEINEWEBER.

FIG 7. RECONSTRUCTION OF THE LAYING OUT OF A DEAD PERSON ON A CREMATION MOUND AT THE ZEAM IN 2001, EQUIPPED WITH REPLICAS FROM CREMATION GRAVES OF THE ROMAN ERA. PHOTO LANDESAMT FÜR DENKMALPFLEGE UND ARCHÄOLOGIE SACHSEN-ANHALT, A. HÖRENTRUP.

FIG 8. BUILDING OF A CORDED WARE CULTURE PALISADE RING SYSTEM AT ZEAM 2002. AERIAL PHOTO LANDESAMT FÜR DENKMALPFLEGE UND ARCHÄOLOGIE SACHSEN-ANHALT, R. SCHWARZ.