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Unreviewed Mixed Matters Article:

Book Review: Experimentelle Archäologie in Europa, Bilanz 2011

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Author(s): Sina Lorbeer-Klausnitz [1] ✉

[1] Independent researcher, address withheld by the editors (GDPR), Germany.

Bilanz 2011 once again supplies an exciting, diverse and interesting view into the world of experimental archaeology. Published by EXAR in cooperation with the Pfahlbaumuseum Unteruhldingen, Isensee Verlag, Oldenburg 2011, 270 pp, ISBN 978-3-89995-794-5

In the prelude Wulf Hein honours Harm Paulsen, who recently retired (pages 9-13). There is also a review of the EXAR Conference 2010 in Berlin (pages 13-15).

> As with the previous Bilanz 2010, most projects concentrate on prehistory, although a few articles look at the Greek and Roman eras. Only the (re)construction of a strap from ancient Peru and the report on leaf fodder economy point to a more recent past. It would be wonderful if this tendency moves on into the future and the bandwidth in time is enlarged even more.

In its predecessor, Bilanz 2010, there were some complaints that there is little room for experimental archaeology at universities. In this 2011 volume there are at least three articles describing the way experimental archaeology is developing at universities in Vienna (pages 17-34) and Berlin (pages 34-42 and 43-50). All three articles refer to the, often complicated, integration over a long period of years of experimental testing of archaeological hypotheses and results into academic teaching. These articles make it clear that this is only possible following personal interest and engagement.

A special mention is in order for the Children's University at Tübingen University (Germany) (pages 50-62). Following a long tradition of the institute, in 2011 there was a strong focus on experimental archaeological themes using different workgroups and various methods.

The museums of Oldenburg (Germany) (pages 15-16) and Biskupin (Poland) (pages 62-74) have taken the opportunity to present experiences with experimental archaeology in their museum work. Although the Museum für Natur und Mensch in Oldenburg has a mere 20 years' experience in this field, experimentation and sharing the results with the interested public is focus here. As a contrast, in Biskupin an interest in experimental testing of archaeological results from the local excavations has been high since the 1930s. With the first (re)constructions of buildings before WWII, education programs for a wide audience were developed and were equally important as the research itself. At Biskupin it was possible to reach a connection between experimental (re)construction and educational work which should also work out in the future, despite of the fact that initial research and interpretation was politically influenced.

The Archäotechnisches Zentrum in Welzow (Germany) takes a special position with its diverse expectations and, following on these, diverse functions (pages 74-88). The main objectives are the support of the archaeological excavations of the nearby open-cast mining, conservation of archaeological wood in the nearby Lake Clara. They also offer education programmes on ancient wood working and use. There is an exhibition and museum pedagogic programmes for those people interested in this last topic. This is completed with a scientific (re)construction programme for the site Klein Görig.

The paper by Gregory Aldrete, Scott Bartell and Alicia Aldrete (USA) about the (re)construction of a Linothrax (pages 88-95) presents the focus of Bilanz 2011. Although plenty of antique texts refer to body armour made of linen, so far no archaeological textile finds linked to this

use have been identified. In the past this has led to many doubts about the effectiveness of textile armour. The goal of this project, initiated at the University of Wisconsin-Green Bay, was to recreate historically plausible linen armour and to judge their construction and function as body armour. Based on historic images on antique ceramics a (re)construction of a Linothorax was designed made of linen sheets glued to each other. It was convincing when tried out as protection.

The article by Michael Siedlaczek (Germany) (pages 109-120) is about the experimental casting of Bronze Age swords. The starting point of this experiment was the observation of production traces on a high number of Bronze Age swords. In order to cast swords, moulds were made of stone and clay and cast with an alloy of copper and pewter. These raw casts were then worked with hammer and chisel and, more importantly, they were ground with different types of stone. The casts were hardened while cold. Once the holes for the rivets were made and the wooden handles were added, the experiments were completed by checking how the swords were handled. It became clear that, following a short bit of practice, short and light swords were easier to manage.

The project of the association ExperimentA (Switzerland) and the Kantonsarchäologie Zürich also addressed questions about metallurgy (pages 120-130). The project aimed to answer several well-defined questions on the production of late La Tène Period subareate coins through experimentation. Besides presenting the results of the study into the sources, the analysis of the original coin finds and the dotted plates, which are needed in the production, the article also describes the first results of the test before the actual experiment, as well as the further steps.

The article by I. Staevnes (Germany) (pages 130-138) is about certain aspects of the construction of Bronze Age houses. The starting points for the thoughts described in this article were the results of the excavation of a settlement near Langenselbold (Main-Kinzig-Kreis), where 100 kilos of daub was found. This was the source for a (re)construction of the structure of the walls of the Bronze Age house. Impressions and traces of the wattle construction in the daub made it plausible that the wall existed of two shells of wattle and the middle of the wall was filled with grass. The advantages would be that the daub would be easier to apply, the wall would be more stable and the wall would have a much higher heat isolation value.

The long period experiment with the ‘Hornstaad House’ at the Pfahlbaumuseum Unteruhldingen (Germany), which was already mentioned in Bilanz 2010, receives some attention as well in 2011 (pages 138-143). The (re)construction of a Neolithic house that had collapsed in a storm in 2009 is being observed, with all kinds of methods, in its natural decay and documented while it turns into an archaeological find. The long term monitoring has

already supplied new results for the interpretation of excavated lake dwellings that are of special interest for future excavations in wetlands.

Another project about house construction is presented by W. Lobisser and U. Braun in their article about the (re)construction of a Bronze Age house at the Archäologisches Zentrum Hitzacker (Germany) (pages 143-162). The old excavations at the Lake Hitzacker contained a house plan that could be re-interpreted in cooperation with the University of Vienna. It proved possible to use this house for a new (re)construction. When selecting the construction site, the choice of the raw material (alder wood from nearby) and the tools used, made of wood and bronze, the construction team attempted to approach the Bronze Age as much as they could. Besides pure technical ideas about house construction, it is worth mentioning the thoughts concerning a counting and calculation system with defined length dimensions in modules, as well as thoughts about processes regarding the organisation of work and time.

A. Nemcsics describes another problem from the world of construction techniques (Hungary) (pages 162-178). The focus is on experimental research of the 'fishbone' method of sorting of bricks during construction. This mason technique, which was applied from the antique days up into the Middle Ages, was long regarded as decoration or ornamental element of the visible part of a brick building. Following a very extensive introduction into the theme Nemcsics could, by referring to theoretic considerations, look into different versions of the fish bone structure in regards to their stability. His results regarding the stability of the brick work support the considerations that this technique has a pure technical function.

A very special group of archaeological and ethnological artefacts is discussed by M. Klek in his article about bone tools with a working edge on the long side (Germany) (pages 178-188). The bone tools he looked at were compared with tools that were used by the indigenous people of North America, as well as other groups worldwide. Following a presentation of the artefacts from the sites Bilzingsleben, Meiendorf and Endingen the author moves on to the experimental part. This is looks at the making of a bone scraper with fitting stone tools, as well as the use of the scraper to work skins in the process of tanning. A special emphasis is on the reproduction of use wear comparable to the excavated artefacts. Klek concludes that the bone scrapers he made can be used over a long time effectively for hide working. It actually is irrelevant if the ribs are prepared or not before they are used.

J.-L. Ringot attempts to explain whether aerophones (a type of musical instrument that produces sound primarily by causing a body of air to vibrate) were used as flutes or as reed pipes (pages 188-199). He starts of by presenting all kinds of aerophones. He sorts them according to how the air runs through the instrument. A problem when looking at archaeological musical instruments that need to be blown is that these are excavated in fragments only. Almost all finds have in common that the labium, the sharp edge needed to create a tone, is missing. Although ethnological comparisons with South American Quena

flutes show that it is possible to play those finds, it is hard to prove this. A 2008 find of an almost complete aerophone in the Hohle-Fels Cave enabled the construction of a blowing instrument with reed, comparable to the modern clarinet. The (re)construction based on the Hohle-Fels find made of a vulture bone and a birch bark reed was playable by the author and could also be tuned by making changes to the reed.

Birch pitch must have been very important for prehistoric people. That was the reason R. Meijer and D. Pomstra looked at possibilities of production of this glue and sealing material (the Netherlands) (pages 199-205). Their idea was to not use any piece of pottery in the actual process. Two of their tests brought satisfying results. The first method was more complex but led to a more pitch, the second more simple method was much faster.

Despite the difference in time between their production and modern scientific analysis, teeth prints in Stone Age pitch remains are always a connection to individuals of days long past. The starting question of the work by D. Todtenhaupt and T. Pietsch (Germany) (pages 205-213) was how these very distinctive traces remain over long periods of time in the pieces of pitch. The pitch, which is made with the double container process, has a very clean structure and no stability of its shape; prints disappear after short time. However, test pieces made in non-ceramic processes have a much higher stability due to the inevitable contaminations. Both authors could prove with their research that pitch keeps prints and deformations best when it is functioning as cement and has a high amount of additives, such as pieces of charcoal for example.

Two very interesting articles in the volume cover textile handwork. The (re)construction of the Vaaler Bändchen, a textile fragment found in 1888 in the Vaaler Bog is the theme of the short article by R. Neumann, B. Freudenberg and M. Siwek (Germany) (pages 213-219). Their mission was to make a (re)construction of this strap and collect information about the material and its use. Following the spinning of the warp and weft with a hand spindle was the process of dyeing using pickling and a red wood bath. With the material resulting from this process, a total of five weaving tests were conducted, of which the last one brought the best results.

A Peruvian woven strap in a fish pattern is at present is in the prehistoric collection of the University Erlangen-Nürnberg. This strap is the starting point of a (re)construction project that has been running since 2009. The most important steps of this project are described in an article by C. Merthen (Germany) (pages 219-232). Following a culture historical classification of the strap, the author describes the different results from the analysis of the production process and the steps towards the actual (re)construction. Here too, ethnographic knowledge played an important role in researching the way of weaving and the weaving tool. Knowing that the strap came from Peru, the tool used could be identified as a back-strap weaving loom. This was then also used for making the (re)construction. The project is very elaborate

and diverse in its cultural historical and weaving technique aspects, and the results of the first far reaching steps are convincing.

T. Martin presents experiences with Roman cookery following the cooking book of Apicius (Germany) (pages 232-243). The 2010 newly established cultural scientific Hochschulgruppe at the University of Saarland had its first project into the problems of Roman cookery. Besides an extensive study of the sources, the practical testing of the passed down recipes was also in the foreground—in the fitting place of the kitchen rooms of the (re)constructed Villa Borg. For these purposes the students could use the relevant tools. Different processes, for example making sausages or spiced wine, were under research and had different results. One important result of the project was the high amount of added experience for those involved, not necessarily the 'scientific experiment'.

The second article by T. Martin looks more deeply into the results of experiments concerning the conserving methods following Columnella (Germany) (pages 243-249). Following a presentation of the source and the tools, in this case especially ceramic vessels and glasses, the author extensively describes the process of putting the hints from Columnella into practice. Over the following five months of storage the glasses were periodically examined and finally opened for a taste test. Altogether Martin's conclusion is that the experiments were successful. Conserving vegetables and fruit was feasible following the conditions described by Columnella.

The concluding paper of the interesting and diverse series of articles is about the undertakings of J.-J. Penack on leaf fodder economy (Germany) (pages 249-264). Following an introduction into the history of foddering with leaves and the importance of the forest for agriculture, he describes the different systems of leaf foddering trees. By using different kinds of trees for leaf foddering, a distinct cultural landscape evolved. As a result of the changes in agriculture over the past century leaf foddering has completely lost its importance in Germany, which means one can now only witness relicts of this type of old cultural landscape. As documentation of this technique, the author refers to the Reinhardtswald and its environment in Nordhessen. It is an important example of the disappearing relicts of an agricultural system which existed for millennia and it would be worth keeping it for the future.

The last part of the book consists of two short papers on the temper of early German ceramics and the change in workability of deer antler by soaking in water (page 264) and the report of the EXAR association for the year 2010 (pages 265-270).

Conclusion

Those responsible for the book Bilanz 2011 have succeeded once in giving an exciting view into the world of experimental archaeology. An important part of this year's book is the

reports of activities at universities and in museums showing the very practical orientation of the projects and the clear visibility of the fertilization of museum pedagogic work by experimental archaeology. Unfortunately, there are only few contemplations about the theoretical base of the field; hopefully this is purely coincidental and not the end of the discussion about experimental archaeology.

As contrast to this, the bandwidth of the projects focused on practical experiments is impressively large. It is also exciting to see how hypotheses and questions to current interpretations in archaeology emerge from a personal interest and engagement and how researchers try to answers these with experiments or practical testing.

As with the previous Bilanz 2010, most projects concentrate on prehistory, although a few articles look at the Greek and Roman eras. Only the (re)construction of a strap from ancient Peru and the report on leaf fodder economy point to a more recent past. It would be wonderful if this tendency moves on into the future and the bandwidth in time is enlarged even more.

With a few exceptions all articles are quite extensive; in almost all cases the sources are presented in full. The images are mostly in colour, produced in the quality we know form these series of publications, in good size and always fitting with the text. It is pleasant to find the clear identification of the captions in between, enabling a good orientation throughout the text.

Again a worthwhile year of the *Experimentelle Archäologie* that clearly shows the bandwidth of the subject, its possibilities in science, but also its limitations. What remains is to wish the anthology an interesting and inspired group of readers far beyond the circle of archaeologists.

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Corresponding Author

Sina Lorbeer-Klausnitz
Independent researcher
Address withheld by the editors (GDPR)
Germany
E-mail Contact