

achieved by migrating groups. Yet, this prior knowledge is necessary for an information transfer at a much later stage. Common mechanisms are mentioned which all contain this triggering effect such as a favourable situation leading to demographic increase. Also, climatic circumstances can foster the process. The ways of innovation transfer itself can be varied in terms of how and when they become daily practice, but in all the cases the outcome influences the society at large and leads to a certain transformation of the innovation itself (p. 214).

The volume is illustrated with several maps; some of these are very informative (e.g. fig. 8, pp. 66–67). Yet, it must be noted that some of these seem to be far from being correct. For example, Figure 4 (p. 46) is supposed to show the oldest copper finds in Central Europe and Italy; in the text in the given section mentions ample and justified examples of finds from western Hungary, Czechia, and Slovakia (pp. 46–52), yet these are completely missing from the map (and from the tables, although latter with right, since the table claims to contain only finds from the northern and southern Central Europe). Figure 7a and b is essential, if interpreted the right way, since it shows the Kernel density estimation of copper mining centres in southeast and Central Europe before and after 4200 BC. Alas, the figure caption is not aware of the map cut and claims to show Eurasia. Figure 11 (p. 70) showing cultural formations of the early 5th millennium cal BC has a legend that does not fully correspond with the depicted distribution areas. A thorough checking of the orthography would have done good to the text.

Despite some factual uncertainties and uncertain inferences drawn, this approach, i. e. comparing cases of different innovations, taken from different temporal and chronological backgrounds, seem to be innovative itself. Thus, details may be argued, but the frames are rightly drawn and, in most cases, thoroughly underpinned with relevant literature. In the end, the reader may have more questions than answers, but as I am sure, Silvine Scharl would take these questions as exciting and triggering effects for further research. Hopefully including her own further research.

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NICO FRÖHLICH, Bandkeramische Hofplätze. Artefakte der Keramikchronologie oder Abbild sozialer und wirtschaftlicher Strukturen? Frankfurter Archäologische Schriften Band 33. Verlag Rudolf Habelt GmbH, Bonn 2017. € 129.00. ISBN 978-3-7749-4012-3. XIX + 682 pages with 412 figures, 1 CD-ROM with 2 appendices and 3 inserts.

This massive volume is in the author's words a "slightly edited" version of his 2016 Frankfurt dissertation. The driving force behind the work is the *Hofplatz* model and its relevance for our understanding of Neolithic *Linearbandkeramik* (LBK) settlement and socio-economy, a theme succinctly expressed in the book's subtitle. Indeed, ceramic chronology and social interpretation are closely intertwined in this model, since it was originally devised – on the basis of presuppositions about the organisation of domestic space and residence practices – as a procedure for working out internal settlement chronology. Ideally, a LBK house is dated through the decorated ceramics from its lateral pits (*Längsgruben*), enabling a relative chronology of houses to be established through seriation of the various house assemblages. The *Hofplatz* model, however, dates houses with few or no finds from lateral pits by assigning other more distant pits to these houses. It also provides a convenient way of fitting completely undatable houses into a site sequence, since the model stipulates that a

household always built a new house on the same plot of land, forming through time the distinct groups of houses called *Hofplätze*. The next logical step is to look for household-specific traditions attached to these groups, and this is the main goal of Nico Fröhlich's study. Such traditions could be visible in the characteristics of the buildings themselves or, more particularly, in finds distributions within the settlement. In short, can the groups of houses defined by applying the *Hofplatz* model produce information that goes beyond the simple chronological ordering of features? The author addresses these issues by presenting a detailed analysis of two major LBK sites: Schwanfeld in lower Franconia and Langweiler 8 in the Rhineland (both DE). Already well known from a long series of publications, the two settlements were chosen because they cover most of the timespan of the LBK. Nevertheless, the sites are 300 km apart and exhibit considerable differences in size, duration, and layout, rendering their comparison difficult.

With more than 600 pages of text and around 1500 footnotes, "Bandkeramische Hofplätze" is a challenging read. There are also over 400 figures, mostly tables and distribution plans, the latter notably without any illustration of the finds themselves. Some further tables listing finds and statistical data are provided on CD-ROM, together with digitised versions of the two site plans. After a short introduction (I, pp. 1–9) discussing the premises, methods, and drawbacks of the *Hofplatz* model, the author proceeds to the main section (II, pp. 11–662) dealing with the analysis of the settlements, first Schwanfeld and then Langweiler 8. This section is split fairly evenly between the two sites, with around 300 pages devoted to each. The last section (III, pp. 663–668) offers some concluding remarks.

Schwanfeld dates to the earliest LBK and was excavated in the late 1970s and early 1980s as part of a research project. The estimated surface area of the site is just over 1 ha, at least half of which was investigated, producing seven complete and four incomplete houseplans, mostly grouped into two closely spaced and slightly staggered rows. Following previous studies of the site, each row is interpreted here as a *Hofplatz*. The houses are clearly associated with lateral pits, although there are also six other pits in the areas between the houses, seen as "west" pits. An initial assessment of the occurrence of the main finds categories (flint, stone, ceramics, and fauna) in features reveals no significant spatial variation and mainly shows that a large majority of the material comes from the lateral pits, including here the so-called *Vorbautengruben* (p. 35 fig. 5).

The more detailed study of finds distribution is first approached through the ceramics, extremely abundant on this site, with a total weight of 209 kg, representing an average of 19 kg per house. Using a wider selection of decoration motifs, N. Fröhlich builds on previous studies, mainly by Maria Cladders, to undertake new seriations of the house assemblages and define the most likely building sequence. This is divided into five "house generations" (phases), with one house in use per phase and per row. In the southern row the houses generally shift westwards, whilst the pattern is more irregular in the northern row. In addition, an attempt is made to relate the decorated material to two supra-regional groups within the earliest LBK, termed A and B. The reasoning behind this classification is not easy to follow, especially in the absence not only of illustrations of decoration motifs but also of distribution maps. There follows a lengthy study of the distribution of decoration types within the settlement, for both coarse and fine wares. Figure 74 (p. 136) summarises the main results, listing types varying in time and types possibly of social significance, either related to house rows or the supra-regional groups. In terms of the proposed *Hofplätze*, no clear picture emerges here, although some individual preferences can be identified. For instance, graphite surface treatment is not attested in the southern row and occurs in four out of five houses in the northern row. Vessel shape is also examined in the same perspective. Here again, no significant differences emerge between the two house rows. The spatial distribution of potsherds in terms of varieties of temper and natural inclusions in the clay reveals no clear patterning on a long-lasting basis. Interestingly, correspondence analysis of

these technological attributes tends to group together pits belonging to the same house (pp. 189–190 figs. 108–110). This raises the question of modes of discard round the houses, an aspect briefly dealt with in the following section on refitting sherds (see especially p. 196 fig. 113). The author notes that only two house assemblages were intensively searched for refits. In his opinion, the fact that sherds from some vessels are found quite widely scattered in and between lateral pits on either side of a house is evidence in support of the idea that the pits filled in quite slowly.

Fröhlich then turns to lithic finds, dealing first with flint artefacts (pp. 197–281). The total weight here is only 2.5 kg, indicating that the settlement was not intensively involved in flint processing activities. This is probably why there are no clear results from the various distributional analyses of raw materials and production techniques, although house 15 does appear to stand out from the rest. Aspects such as the dimensions of flakes and blades are examined in detail with the help of statistics, but no patterns emerge. The discussion here of possible Mesolithic blade production techniques, relying heavily on previous work on the earliest LBK by Detlef Gronenborn and Inna Mateiciucová, will be of interest to lithic specialists. Lastly the spatial variation in distributions of tool types on the site is difficult to interpret, given the small sample size. One can refer here for example to the distribution of arrowheads (p. 279 fig. 170), more frequent in the southern row. Stone artefacts include grinding, polishing or abrading equipment in sandstone, as well as polished adze blades in other materials. The primary study of these finds was undertaken by Britta RAMMINGER (*Zur wirtschaftlichen Organisation der ältestbandkeramischen Siedlung Schwanfeld, Landkreis Schweinfurt am Beispiel der Felsgesteinsversorgung*. In: J. Lüning [ed.], *Schwanfeldstudien zur Ältesten Bandkeramik*. Univforsch. Prähist. Arch. 196 [Bonn 2011] 219–221). The quantitative data summarised in figure 171 (p. 285) reveal no obvious patterning related to house row. The overall conclusion on the lithic artefacts is that households were basically autonomous as regards activities involving these materials. Reference could have been made here to recent work on LBK sites in the Aisne valley, where smaller houses appear more involved in abrading activities, as well as hunting (L. HACHEM / C. HAMON, *Linear pottery culture household organisation. An economic model*. In: A. W. R. Whittle / P. Bickle [eds], *Early Farmers, the View from Archaeology and Science*. Proc. British Acad. 198 [Oxford 2014] 159–180).

This comment leads us to the following section on faunal remains (pp. 318–337). Unlike the other finds categories from Schwanfeld, these are published here in detail for the first time, using the identifications originally made by Marion Uerpmann. The site is broadly characterised by a high percentage of wild animals (c. 42%), with a clear predominance of caprines over cattle in the domestic fauna. Although the assemblage is small (815 identified bones), Fröhlich wisely looks for variations within the settlement. One notes that two small and early houses (18, 19) were possibly engaged in more hunting activities than others. The paucity of faunal remains in the pits of house 11 is also intriguing, given the size of the building and the large numbers of other categories of find. This is seen as possible evidence for food sharing between households at an early stage of the settlement's development. These new data from Schwanfeld recall the huge potential of faunal remains for investigating different focuses in LBK household economies, as has already been shown for Cuiry-lès-Chaudardes. Surprisingly in this context, no reference is made here to the monograph on the faunal remains (L. HACHEM, *Le site néolithique de Cuiry-lès-Chaudardes – I. De l'analyse de la faune à la structuration sociale*. Internat. Archäologie 120 [Rahden 2011]).

After a brief mention of plant remains, the section on Schwanfeld closes with a chapter summarising results (pp. 341–362). This starts with an assessment of relations with other regions, analysed in terms of eight “contact directions”, ranging from Transdanubia to Württemberg, with some discussion again of possible interaction with unidentified Mesolithic groups. The various lines of evidence, summarised in figures 211 and 212, do not show clear patterning in the house rows and

the overall picture is one of a settlement integrated in multiple interacting networks. The remainder of this chapter is a long overview of the observed variations in finds distribution within the settlement, with some additional interpretation of the settlement's history. Ultimately, in view of all the evidence presented for Schwanfeld, one concludes that the most relevant unit for study is the house itself and not the supposed *Hofplatz* rows.

Langweiler 8 is the largest of the seven LBK settlements located along the Merzbach valley on the Aldenhovener Platte. Covering around 10 ha, the site was extensively investigated in the early 1970s in advance of opencast mining. Just over 100 houseplans were identified, as well as a ditched enclosure on the southern edge of the settlement. As Fröhlich underlines, the general context is quite different from Schwanfeld, since Langweiler 8 starts later but has a much longer occupation sequence, producing extensive and often dense clusters of buildings with no obvious spatial organisation. Furthermore, we are reminded that many features were badly eroded and that only relatively small numbers of pits were completely excavated, through lack of time under rescue conditions.

The *Hofplatz* model played a key role in previous work on the structure of the settlement, since the dating of many houses is based on ceramics from pits other than lateral pits and the numerous (40!) undatable houses simply attributed to phases in their respective *Hofplätze*. The site is divided spatially into twelve *Hofplätze* and chronologically into fourteen phases. This scheme, based on Petar STEHLI's 1988 seriation (*Zeitliche Gliederung der verzierten Keramik*. In: U. Boelicke / D. von Brandt / J. Lüning [eds], *Der bandkeramische Siedlungsplatz Langweiler 8, Gemeinde Aldenhoven, Kreis Düren. Rheinische Ausgr. 28,1 [Köln 1988] 441–482*), with later modifications by Ulla Münch, provides the main framework for the study. However, reference is made to two further possible divisions of the site, either into seven *Lagegruppen*, which are larger groups of houses than the *Hofplätze*, or into four quadrants (p. 389 fig. 225).

The quantity of houses at Langweiler 8 naturally leads Fröhlich to search initially for spatial patterns in house type and orientation. No correlation is observed with the *Hofplätze*, but there are chronological trends, notably with the occurrence of most of the trapezoidal houseplans in the southern quadrants (p. 405 fig. 236), as well as a slight shift in orientation westwards after the early LBK. This architectural section is followed by a series of analyses of the number, weight, and proportion of the major finds categories (see also annexe 1d on CD-ROM). The average weight of ceramics per house is 5 kg, substantially less than the amount already mentioned for Schwanfeld. No clear results emerge at this stage.

The next chapter (pp. 421–520) is devoted to ceramics, dealing successively with decoration and shape and then briefly with “foreign” (i. e. non-LBK) types. The question of tempering materials is not addressed. Many decoration motifs reveal interesting distributional patterns, although Fröhlich acknowledges that most of these relate to the chronological development of the settlement. One possible exception is Bandtyp 37 (band motif filled with short incised lines), mostly linked to *Hofplatz 1* (p. 459 fig. 277). The distribution of variants of V- or U-shaped secondary motifs (p. 471 fig. 281) is perhaps significant, too. Characteristic of the early phases, these seem to divide the settlement into two sectors. Yet there are no truly *Hofplatz*-specific motifs, apart from rare types that only occur once. As regards vessel shapes and sizes, the author concludes that there is no evidence for spatially delimited ceramic traditions. One might add here that this is hardly surprising, as recent studies on the LBK have shown that such traditions are more likely to be detected in technological attributes, in particular forming techniques (L. GOMART, *Traditions techniques et production céramique au Néolithique ancien. Étude de huit sites rubanés du nord est de la France et de Belgique* [Leiden 2014]). Lastly, very few sherds can be attributed to “foreign” types. These include one probable La Hoguette vessel, four sherds of Limburg pottery and two or three sherds attributed in earlier studies – quite mistakenly, this reviewer emphasises – to the Blicquy group.

The following chapter (pp. 521–624) deals in turn with flint and stone finds, originally studied by Andreas ZIMMERMANN (Steine. In: BOELICKE et al. 1988, 569–787). The flint assemblages from pits represent a total of about 126 kg, which signifies that the average per house is five times greater than at Schwanfeld. However, this relative abundance does not apparently lead to more conclusive results in terms of recurrent spatial patterns within the settlement, whether involving raw materials, production, or tool categories. Although differences between house assemblages are observed, relating for example to aspects of procurement and production, no uniform picture emerges for the various *Hofplätze* (see notably p. 580 fig. 371). These remarks also apply to the distributional analyses of stone finds. The most common raw material here is a local sandstone, mostly used for grinding equipment. Fragments are particularly abundant in the enclosure ditches (p. 600 fig. 384). The numbers of abrading and polishing tools are relatively small, throughout the settlement.

Lastly, the botanical and faunal remains are mentioned (pp. 625–639). The site was extensively sampled for carbonised plant remains and charcoal, analysed respectively by Karl-Heinz Knörzer and Lanfredo Castelletti. In particular Fröhlich takes a fresh look at the distribution of plant remains, applying correspondence analyses to the data. No patterning emerges at *Hofplatz* level, although there is a hint that the larger spatial divisions (*Lagegruppen* and quadrants) may be more relevant here, at least as far as cereals are concerned (p. 630 fig. 405). Preservation of faunal remains on the site was poor and no conclusions can be drawn from the very small sample.

The final chapter on Langweiler 8 is a long overview of results (pp. 640–662). Of special interest here is the author's "contact directions" approach, again applied to assess possible relations with other regions. Eight such directions are proposed, either pointing westwards or to the south-east and integrating a variety of ceramic and lithic data (p. 643 fig. 410; p. 648 fig. 411). Flint raw materials are a major component of western contacts at all times, reflecting sources in Dutch Limburg and to a lesser extent in Belgium. South-eastern contacts are attested by ceramic decoration motifs and stone adze raw material, particularly in the early LBK phases. The appearance of comb decoration is understood as a sign of western contacts in the later phases. This is not altogether correct, since comb decoration is particularly common to the south in the Moselle basin, and Bandtyp 90 (Leihgestern style incised comb decoration) is typically found to the east in Hesse. Even more contentious is the author's integration of the "foreign" La Hoguette, Limburg and Blicquy ceramics, speculatively associated here with lithic data. In this reviewer's opinion, the rare Limburg sherds at Langweiler 8 are much more likely to represent contacts with other LBK settlements using this pottery than with late Mesolithic groups. The Blicquy group is seen as a potential western contact with the late LBK, but the author's references here are not in line with current research that firmly places the Blicquy group after the LBK (e.g. V. BLOUET et al., *Le Néolithique ancien en Lorraine*. Soc. Préhist. Française, Mém. 55 [Paris 2013]). All in all, however, the "contact directions" proposed for Langweiler 8 are more linked to chronology than to the *Hofplatz* units.

Yet Fröhlich is able to provide a plausible narrative for the Langweiler 8 settlement, despite the unsuccessful search for long-lasting social units related to the proposed *Hofplätze*. He suggests that households were self-sufficient in terms of economic activities and although certain households at various times may have been more actively engaged in particular activities, no consistent patterns emerge. There are indications that an analysis using larger spatial divisions would in some respects have been more relevant. Thus the four quadrants reflect to some extent the chronological structure of the settlement, since the built-up area gradually shifted from the northern to the southern quadrants. One suspects that this shifting pattern would be even clearer if one eliminated or re-attributed some of the undatable houses that were assigned to phases by the *Hofplatz* model, since in their current temporal positions they may well artificially extend the duration of occupation of certain parts of the site.

In the last, concluding section (III, p. 663–668), the author reiterates that neither Schwanfeld nor Langweiler 8 provide clear results for distribution patterns, but at the same time considers that the *Hoffplatz* model can still be a useful tool for the spatio-temporal analysis of LBK settlements. Long-lived settlements with dense clusters of features are always going to be difficult to analyse, especially in the absence of sufficient finds from lateral pits. The longer a site is occupied, the greater the risks involved in using finds from other kinds of pit to search for spatial patterns. One might also add that, on LBK sites with few or no faunal remains, there is little chance of detecting meaningful patterns relating to household economic practices.

Nico Fröhlich has left few stones unturned in his painstaking search for spatial patterns in the finds from Schwanfeld and Langweiler 8. When such a wide range of material is examined, there are inevitably some shortcomings in references to recent research. Many readers will be discouraged by the sheer length of the text. All but the most hardened specialists will be put off by the total absence of illustration of the decoration motifs and flint artefacts that feature in so many of the distributional analyses. And on the whole, readers who are fundamentally sceptical about the *Hoffplatz* model are unlikely to be persuaded by Fröhlich's study to think otherwise. Nevertheless, "Bandkeramische Hofplätze" is a remarkably versatile achievement and will surely be a landmark for many years in the field of LBK settlement studies.

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FRITZ JÜRGENS, Der bandkeramische Zentralort von Borgentreich-Großeneder (Kr. Höxter).

Universitätsforschungen zur prähistorischen Archäologie Band 340. Aus dem Institut für Ur- und Frühgeschichte der Universität Kiel. Verlag Dr. Rudolf Habelt GmbH, Bonn 2019. € 83.00. ISBN 978-3-7749-4199-1. 260 pages with 80 figures, 75 tables and three plans as supplements.

This book presents traces of the Linear Pottery Culture (LBK) occupation discovered at Borgentreich-Großeneder, in the region of Warburger Börde in Eastern Westphalia (DE). This peripheral region of the LBK *oecumene* has not been the focus of intensive archaeological research so far. The work is a printed version of a PhD thesis prepared at the University of Kiel under the supervision of Johannes Müller.

The book is divided into eight chapters of very various length. Chapter 1 (pp. 17–26) is a broad introduction to the subject. After a presentation of the state of research on the LBK, especially in Eastern Westphalia, the complicated history of the research on the site itself is outlined. It was discovered in the 1940s and since that time numerous surveys have been conducted there which yielded thousands of finds. In the 1990s small rescue excavations due to a road construction took place; unfortunately, the entire documentation was lost. In 1993 the MIDAL (*Mitte-Deutschland Anbindungs-Leitung*) gas pipeline project led to larger rescue excavations. Altogether an area of 14,700 sqm was uncovered; it was divided into two sections of a total length of ca. 300 m and a width of 20 m, running from the northwest to the southeast. The northern MIDAL 30 and the southern MIDAL 31 areas were divided by the Ederbach valley. In preliminary reports each of these areas is interpreted as a separate LBK settlement (H.-O. POLLMANN, Frühe Ackerbauern und Viehzüchter in Westfalen. Borgentreich-Großeneder und das Gräberfeld von Warburg-Hohenwepel. In: T. Otten et al. [ed.], *Revolution Jungsteinzeit*. Archäologische Landesausstellung Nordrhein-