SANDRA FETSCH, Die Michelsberger Kultur in Hessen. Eine Analyse chronologischer und räumlicher Entwicklungen. Johannes Gutenberg-Universität Mainz [2017] 2021. doi: https://doi. org/10.25358/openscience-6345. 4 PDF-files with 1340 pages and numerous illustrations, diagrams, and maps.

The work under review (*The Michelsberg Culture in Hesse. An analysis of chronological and spatial developments*) is the online accessible manuscript of a PhD thesis completed from 2011 to 2017 at the University of Mainz and the former *Römisch-Germanisches Zentralmuseum* (recently renamed *Leibniz-Zentrum für Archäologie*, LEIZA). This doctoral dissertation was part of the binational research project "MK-Projekt – Anfänge sozialer Komplexität: Erdwerke, Rohstoffnutzung und Territorialität im Neolithikum. Deutsch-französische Forschungen zur Michelsberger Kultur" (*Emergence of the social complexity: Enclosures, resources and territoriality during the Neolithic. A French-German research programme on the Michelsberg culture*) funded jointly by the *Deutsche Forschungsgemeinschaft* (DFG) and the Agence Nationale de la Recherche (ANR) from 2010 to 2014 (https://trajectoires. cnrs.fr/en/projects/completed-projects/mk-projekt-emergence-of-social-complexity/ [last access: 30.05.2024]).

The overall focus of both the general project and this research work is particularly relevant, as the so-called Michelsberg Culture (Michelsberger Kultur; hereafter MC) is – despite the attention it has received throughout the past 60 years - still poorly understood and hotly debated. In short, we mainly know that people associated with the MC gradually occupied grossly the region spanning the eastern Paris Basin (the assumed origin point of MC) in the west, Lower Saxony in the north, and Bohemia in the east, from c. 4300 to 3500 BCE. Monumental enclosures are virtually the only trace of built structures left by MC people, who practiced farming and animal husbandry, and produced characteristic tulip-shaped ceramic beakers (Tulpenbecher) and other vessels with generally little decorations, as well as flat ceramic discs traditionally referred to as "baking plates" (Backteller). They participated in the wide trading network of alpine jade axes, even producing similar ones out of local raw material. The widespread material repertoires include only a few shapes and decorations, and are generally described as homogenous through time and space, an aspect which has made it difficult to break down the relative chronological framework further reliably into sub-periods. As a result of the near complete lack of traces of houses and the scanty evidence of burials, the function of enclosures, the organisation of settlements, population dynamics, as well as the ideologies of death remain still today largely unknown. The author collected all MC sites in Hesse, Germany, a region at the centre of the MC expansion that had hitherto been only partially examined, with the intent to revisit existing typo-chronologies based on the analysis of ceramic assemblages of selected sites, admittedly a very challenging and enormous task. This also becomes apparent when one considers that this manuscript comprises a total of 1340 pages, which I can only summarise briefly while commenting single aspects of the main volume.

The manuscript is divided into four volumes: the main text (volume 1:450 pp.) includes the presentation of research questions, the description of materials and methods, as well as the analytical results and interpretations; volume 2 contains the inventory of finds, structures and features, and the lists of objects used for correspondence analysis (hereafter CA), as well as 86 plates showing the finds of selected sites (351 pp.); eight annexes including site plans, distribution maps, stratigraphies, and seriation tables constitute volume 3 (8 pp.); finally, the CA datasets are included in volume 4 (531 pp.). The book is written in German, but does not include summaries in other languages. Although a minor detail, I consider the lack of an extensive summary in English or French quite unfortunate, not only in view of the international relevance of the topic, but also with regard to the fact that this project was funded and carried out in the scope of a German-French research project.

Sandra Fetsch describes concisely what she sets out to do in the introduction of her research work (chapter 1, pp. 1-8). In a first step, the author intends to provide a large-scale, systematic assessment and classification of all archaeological sites associated with material remains of the MC in Hesse, which had been identified by 2013. This assessment includes finds, features, radiocarbon dates and GIS-data that were either generated by smaller field projects (p. 1), by collecting all published MC-related finds, or by the re-examination of selected, hitherto unpublished, or only partially published sites, which allow for more detailed insights into the spatial distribution of finds. In a second step, this corpus is examined at different scales by means of quantitative and qualitative analyses in order to test hypotheses that had been formulated in previous research (cited on p. 8). To summarise the latter: 1) the ceramic typology of Hesse does not allow to differentiate five or more reliable chronological phases and sub-phases, 2) ceramic assemblages included groups of vessel shapes that could have been used/treated differently, 3) only very few sites in Hesse attest for settlement activity, 4) settlements are used only for short periods of time, 5) a settlement hierarchy is noticeable, 6) different regional MC-groups are differentiable in Hesse, 7) the building of enclosures is limited to some specific phases of the MC, 8) the earliest settlement activities of the MC phase II in Hesse did not include the building of enclosures, and 9) migrations from west to east took place throughout the MC-era. The selected hypotheses are well-chosen, and setting them up so clearly shows that the author does not intend to deliver a pure collection of data, but to sensibly interrogate the latter regarding some of the more recent assumptions connected to the development, spread and lifeways of the people associated with the MC.

The author proceeds with the general presentation of MC-sites in Hesse (chapter 2, pp. 9–99), which is segmented into two parts, the order of which could perhaps have been exchanged: a first unit comprises the systematic and detailed description of six selected sites (i. e. Ranstadt-Dauernheim "Auf der Altenburg"; Limburg a. d. L. "Greifenberg"; Bad Nauheim "Siechenhaus"; Hattersheim a. M. "Schokoladenfabrik"; Niederweimar "Kiesabbau"; and Glauburg-Glauberg), which yielded the most extensive (albeit still fragmentary) information and that the author has reappraised and completed with her own analyses. This presentation is then followed by an empirical analysis and geographical distribution of all finds and features considered to have been associated with the MC. These, however, were assessed based on all accessible information in literature and local archives – the author did not re-examine the material as it would have been, understandably, too laborious. The collection resulted in a total of 522 sites, of which nearly half are represented by single (stray) finds of axes or typical flint tools. Only 8% of the sites included both features and finds of MC-affiliation. In this analytical section, the author mainly quantifies the different categories of features and finds, and then compares the geographical distribution of selected categories against different aspects of the landscape. To briefly summarise in case some readers were to search for specific contents: Feature categories include causewayed enclosures (eleven sites), single building features (three sites), pits (39 sites, cautiously considered 'trash' pits), and potential burial structures (two sites). The categories of finds include mainly ceramic sherds and stone tools (polished stone axes, grind stones and flint blades) and to a much lesser extent animal bones (mainly of domestic animals compared to wild animals, incl. cattle, pig and deer), human bones, and plant remains. Based on her results, which allow only for a general insight into the presence of people associated with the MC and which may also to some extent be biased by the nature of their discovery, S. Fetsch draws broad preliminary inferences, such as a correlation of site density within areas with favourable climatic and geographical conditions for agriculture (e.g. fertile loess lands), or that most sites usually ranged within 100 and 200 m above the mean sea level, and were preferably located in river valleys. The distribution of single stone tools may further suggest that the red sandstone range hills in eastern Hesse were more frequently visited than the slate mountains in the west. Chapter 2 ends on a rather deceiving note, by the author's own admission (p. 98): there is

an overwhelming amount of evidence that attests the presence of people associated with the MC, but only very scarce amounts of exploitable evidence. Therefore, and based on this rich collection of sites in Hesse, Fetsch urges to follow-up with solid field research in the future. This is a recommendation that I would definitely support.

The following chapters 3, 4, and 5 form the centrepieces of Fetsch's book, and contain the more detailed descriptions of the typological classification of the ceramic assemblages from the six selected sites yielding features (chapter 3, pp. 100-188), the chronological modelling of the latter by means of correspondence analyses and radiocarbon data (chapter 4, pp. 189-249), and inferences regarding the chronology of the MC occupations altogether (chapter 5, pp. 250-301). In sum, the author examined an impressive total of 408 kg of ceramic finds (or 24,574 sherds) from the six sites introduced in the previous chapter which she examined and quantified in regard to types, shapes, decorations, manufacturing techniques, temper, surface treatments, degree of firing, traces of usewear, association of ceramic types, and association of types per feature within six subchapters. As an overall result, Fetsch identified a total of 902 vessel units of which more than half, however and due to high fragmentation degrees, only at a level of broad vessel type (e.g. tulip-shaped beakers and other beakers with flat or spherical bottoms, bottles/flasks, bowls, pots, scoops, and ceramic discs). Fetsch proceeds by presenting the build-up of a typo-chronological framework by means of CA and seriations, coupled with contextual information and sum calibrations of 14C-data. The complex and meticulous analyses result in a total of three, according to the author, reliable typochronological phases which she designates as "older" (*ältere*; c. 4340/4200–3960 calBC), "younger" (jüngere; c. 3950-3800/3700 calBC), and "youngest" (jüngste; 3800/3700-3500 calBC) MC in Hesse. This roughly confirms the previous, approximate chronological frameworks of Hessen sites of e.g. Jens Lüning and Birgit Höhn (cited in vol. 1), but at the same time also clearly deviates from the latter in the number of phases and sub-phases. According to Fetsch, the existing absolute dates associated with ceramic material included in the CA are not sufficient for the reliable identification of further typo-chronological sub-phases (p. 262). Equipped with a new three-phase relative chronological framework and 14C-data, Fetsch goes on to reassess all sites that allow for such a procedure (79 sites), in order to approach the chronology and duration of MC-settlement dynamics throughout Hesse. The chapters 4 and 5 are particularly dense and challenging to read, due to their length, the offset position of text and tables, and the interruptions of the reading flow with occasional – albeit very interesting – digressions concerning the potential biases and limits of previous classifications, as well as concerning the general limits of CA for the creation of relative chronological frameworks. These are, however, rather cosmetic flaws. A chronological table including the periodisation of previous works, the existing chronologies of other MC-regions, and perhaps even the outlines of the most common ceramic vessels per phase, would have greatly helped grasping the essentials to non-ceramic experts. Although the content of these chapters is not easily accessible for non-specialists, readers with experience of MC-related topics will find a detailed and critical account of a large amount of data.

In the final chapter (chapter 6, pp. 302–371), Fetsch sums up the various observations she drew from her analyses to obtain a better picture of MC settlement dynamics in Hesse. For example, the author deduces based on the object assemblages of pits that most MC-sites including ceramic finds would generally have served as settlements (260 sites), while those comprising stone tools only would represent areas exploited for resources (255 sites). The fragmentary information, however, does not allow to draw further insights into the individual function and duration of most sites. In view of the total surface of Hesse, this figures suggest a generally low density of sites, which seems to vary from one sub-period to the other. Fetsch observes only scarce settlement activity in the older MC, an increase in the younger MC (even when considering the longer duration of this phase), and again, as far as this phase can be differentiated from the younger MC-phase, a decrease in the youngest MC. Many older MC-sites are generally located in proximity of saline waters, which may support previous assumptions that people of the MC-era exploited salt. However, direct evidence of tools connected to such activities remains absent. Fetsch goes further and suggests the possibility that people may have been partly nomadic in the older MC, and became more focused on farming subsistence at the transition of the older to the younger MC. This is certainly possible but must remain hypothetical for now. The "million-dollar" question regarding the function of causewayed enclosures (usually discussed as refuge, marketplace, central location, or cattle kraal) must also remain unsettled as the information is not sufficient. Nonetheless, the variability of the causewayed enclosures in Hesse regarding size, shape and construction types would make a single function rather unlikely. What Fetsch can state with certainty is that causewayed enclosures were built throughout all three MC-phases in Hesse (including the older MC). Beyond this, the data neither allows to determine a hierarchisation of sites, nor are regional groups securely identifiable based on object typology. Moreover, the homogenous appearance of the ceramic assemblages with regard to shape, temper and firing techniques for such a long time would suggest that they were produced according to standardised procedures within a stable societal context, in which people were likely bound in intensive communication networks. And finally, settlement activities in the older MC can be identified in the southern, as well as in the northern parts of Hesse so that a progressive unidirectional west-east expansion of the "MC" is unlikely. Fetsch finds it rather conceivable that the different regions were reached from different points: southern Hesse by settlers coming from the south, central Hesse from the west, and northern Hesse by people coming from the north.

Future research could, following the author, focus on the full excavation and analysis of one of the sites presented (p. 370), or on the assessment and examination of other, hitherto unexplored regions (e. g. Rheinhessen, p. 373), or yet, in my point of view, on the parallels and variabilities that may connect or disconnect the various MC-regions at different levels. On a methodological level, the development of more objective classification methods of ceramic vessels may further facilitate future cross-regional comparisons. Fetsch finds that the metric approach (i. e. based on the proportions of ceramic types) used by other authors for the classification of pottery types from French sites (p. 100) is not applicable to Hessian materials (pp. 101–102). Unfortunately, it is not easy for a reader to assess these conclusions, as the methodology referred to by Fetsch in note 435 is unpublished. Fetsch, however, advocates for the revision of regional relative chronological frameworks based on ceramic assemblages originating from 14C-dated, closed contexts only (p. 370).

Even though the reader might get the impression that "not much can be said", despite such huge amounts of material and data, I believe that S. Fetsch exhausted the material to the farthest possible extent, making this book a go-to reference for the formulation of future research endeavours within and beyond the MC-context. I finally commend the author for not only making a vast amount of data accessible for the future, but also and foremost for her well-balanced and meticulous argumentation which tests existing assumptions based on quantifiable variables without stretching the interpretations beyond the limits of reliability.

DE – 04103 Leipzig Deutscher Platz 6 eleonore_pape@eva.mpg.de pape.eleonore@gmail.com https://orcid.org/0000-0001-7439-061X Eleonore Pape Max Planck Institute for Evolutionary Anthropology Department of Archaeogenetics