



PALEOLITHIC OCCUPATIONS IN THE LAHN VALLEY OF CENTRAL GERMANY NEW DATES FROM WILDSCHEUER AND WILDWEIBERLEI

Keiko Kitagawa^{1,2}, Daniel Burger-Völlmecke³, Felix Riede⁴

1. Senckenberg Centre for Human Evolution and Palaeoenvironment at the University of Tübingen

2. Prehistory and Archaeological Sciences, Department of Geosciences, University of Tübingen

3. Stiftung Stadtmuseum Wiesbaden

4. Department of Archaeology and Heritage Studies, Aarhus University

INTRODUCTION

The archaeological record in Central Europe is well-documented due to a long history of research (Bosinski 1967, Jochim 1998, Svoboda et al. 2013), yet evidence of human presence during the early Upper Palaeolithic remains rare in central Germany. The now destroyed Lahn Valley caves have yielded an occupational sequence from the Middle Paleolithic to the late Upper Paleolithic and beyond. We here revisit the legacy materials from these caves through redating slected faunal and human remains, as well as osseous artifacts that stem from the older excavations by von Cohausen (1874) and Mandera (1954). Our new dates complement previous studies, and assit in better understanding the chronology of prehistoric settlement in the region.

The Sites

The Wildscheuer (WS) and Wildweiberlei (WW) caves have yielded relatively rich archaeological assemblages. Wildscheuer is located in the limestone outcrop near Runkel-Steeden and Wildweiberlei is located outside of the Leerbach Gorge roughly 15 km away (von Cohausen 1874, Terberger 1993; Fig 1), in the Federal State of Hessen . Both are close to the Lahn River, a tributary of the Rhine River. They are situated at a slightly higher elevation, providing a good view of the floodplain (Terberger 1993). The sites were initially excavated and studied by von Cohausen in 1874, providing critical evidence of mammoth-human association in Germany. This was followed by a number of other research endeavors. Mandera (1954) was the last to systematically investigate the caves before their complete destruction the 1950s (Fig. 2).





Fig 1. Map of Wildscheuer (WS, left) and Wildweiberlei (WW, right) along the Lahn River, Germany. Hessian Administration for Land Management and Geoinformation, © HVBG 2015

RESULTS

- The earliest Upper Paleolithic dates from WS range between 39,759 35,229 calBP while the two dates from WW are older: 42,114-40,728 calBP.
- AAR-33414 dating to 36,196-35,229 cal BP is a mammoth rib which exhibits several cutmarks.
- One specimen from the supposed loess layer dated to 27,869-27,191 calBP points to the Gravettian occupation.
- Human remains from Wildscheuer range between 5316-4872 calBP, i.e. Neolithic. There are also three cervid remains that date to the 6605-6190 calBP.
- The osseous artifacts, which included the engraved antler with fish motif as well as a smoother made from a large herbivore rib did not result in satisfactory C:N ratios and are therefore not dated.





PREVIOUS WORK

Terberger's (1993) study reviewed the excavation materials from Wildscheuer and the neighboring sites including their research history, stratigraphy and lithic assemblages. Her study provided detailed and crucial background information on the sites, as well as the description of past excavations as well as correlations of stratigraphic observations described by previous excavators. For the lithic material, Terberger demonstrated a stark contrast between the Middle and Upper Palaeolithic assemblages. Others have since revisited the Upper Palaeolithic assemblages, which were dominated by endscrapers and burins (Pastoors and Tafelmaier 2012, Terberger 1993). The fauna has also been studied by multiple researchers, including Schaaffhausen (1874) and Street, which accompanied the lithic study of Terberger (1993). Turner revisited the assemblages with detailed taphonomic observations and interpretations, with a particular focus on the MP (2004). Turner et al. (2000, 2004) could refute the presence of Neanderthal fossils at the site.

New Investigations

From the collection at the Sammlung Nassauische Altertümer in Wiesbaden, we selected 17 specimens for AMS dating. They consist of faunal remains with fresh breaks, osseous artifacts (antler fragment with engraved fish motif, antler hammer and smoother) and human remains. The samples were analyzed, photographed and scanned using an Arctec Scanner to obtain 3D data of the original pieces; samples of ~0.5-1 g were sent to the AMS 14C Dating Laboratory at Aarhus University for further treatment and processing. FTIR analyses was also conducted to ensure that no contamination such as curatorial adhesives affected the analysis. We calibrated the resulting dates using IntCal20, as implemented in OxCal v4.4.4 (Reimer et al. 2020).

DISCUSSIONS AND CONCLUSIONS

The context of the human remains is still not well defined and future bioarchaeological studies may reveal more about their origin as well as the reasons why they became associated with the two caves in the Lahn Valley. For the Pleistocene samples, we also lack robust contextual and stratigraphic information except for AAR-34419, which dates to 42,114-41,174 calBP (WW, D/red yellow layer or layer G) and AAR-34420 which dates to 27,869-27,191 calBP (WS, loess layer). The current results from the Lahn Valley largely align with previous findings of WS, which focused on layer III or the Aurignacian layers; old and new dates overlap within the range of c. 28,340-34,200 calBP (Pettitt et al. 1998, Street 2011). Together, these dates suggest that Wildscheuer III represents occupations during the Aurignacian beginning at around 39,759 calBP. In this context, it is intriguing that the WW produced older dates. Several scenarios are possible:

WW has an early Upper Paleolithic component not previously documented.

The two specimens show fresh breaks without clear anthropogenic modification; they represent fauna originating from natural deaths.

Table 1. The succesful samples and their associated laboratory documentation. All dates were obtained at the Aarhus AMS Centre.

Site	Year/context	Species	Element	AAR ID	¹⁴ C Age (BP)		%Yield	%C	δ ¹³ C	δ ¹⁵ N	C:N ratio	Calibrated Age (calBP) 94.5%	
Wildscheuer	1953	ibex	humerus	34417	33982	257	3.1	41.4	-19.5	5.5	3.3	39759	38045
Wildscheuer		horse	mertapod	34421	32838	271	1.0	22.5	-20.6	5.2	3.3	38445	36469
Wildscheuer		mammoth	rib	34414	31293	244	4.1	33.1	-20.2	5.2	3.4	36196	35229
Wildscheuer	1905 / Loess layer	reindeer	antler/cranium	34420	23299	242	3.6	43.5	-18.8	2.3	3.4	27869	27191
Wildscheuer	1874	red deer	metatarsus	34415	5510	41	0.9	26.8	-23.4	5.8	3.2	6397	6211
Wildscheuer	1874	red deer	metacarpal	34416	5452	37	6.2	39.1	-23.5	6.1	3.3	6308	6190
Wildscheuer	1874	cervid	metacarpal	34422	5684	36	4.4	40.8	-21.7	7.5	3.3	6605	6352
Wildscheuer		human	humerus	34406	4432	38	4.3	24.1	-20.3	11.4	3.1	5280	4872
Wildscheuer		human	humerus	34407	4536	37	0.6	19.7	-20.4	10.2	3.2	5316	5050
Wildweiberlei		cervid	cranium/parietal	34418	36205	319	4.0	43.0	-21.9	3.8	3.3	41846	40728
Wildweiberlei	D/Red- yellow layer	medium ungulate	mandible	34419	36781	354	1.2	31.7	-21.1	1.2	3.2	42114	41174

III. The specimens originate from the WS and were falsely labelled. Unless scenario II is true, these dates would still index the oldest evidence for modern human occupation in central Germany.

Our new dates enable a direct comparison to other sites on an inter-regional level such as the neighboring core area, the Swabian Jura of southwestern Germany, but also the Meuse Basin of Belgium and the Moravian Karst of Czechia. Future studies of the Lahn Valley caves will contribute to our understanding of the earliest Upper Palaeolithic occupation in Central Europe, its land-use and settlement patterns.

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