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NEW INSIGHTS INTO THE INVENTORY OF ALBERNDORF (LOWER AUSTRIA) AND SOME REMARKS ON THE “EPI-AURIGNACIAN” CONTROVERSY

Leif Steguweit

Abstract

The Aurignacian lithic inventory and faunal remains from Alberndorf represent a short-term butchery camp, newly dated by ^{14}C to ca. 28–0 ka BP. Aspects of raw material procurement, refitted lithics which provide information about the site formation, and technological features of the stone implements are first introduced. The regular blank production from unipolar cores, carinated tools and burins display features of the Evolved (Typical) Aurignacian. Outstanding finds from Alberndorf include some worked tusk fragments. One of them can be identified by use-wear traces as a soft hammer, probably for flint-knapping. Comparing this hammer with similar objects from other sites shows that continuing traditions or interactions with the Gravettian are significant.

The second part of the paper offers a short discussion on the earlier assessment of the Alberndorf inventory as Epi-Aurignacian. The author questions the suggested classification patterns in the lithic inventory and advocates a stringent geochronological approach to this problem. Focus on other East European regions with claimed Epi-Aurignacian inventories shows that their typological features are not clearly distinguishable from those of Alberndorf. As such, Alberndorf can reopen a discussion on evidence for the Epi-Aurignacian based on lithic tool production.

1. Introduction

Salvage excavations were carried out at the Upper Palaeolithic site of Alberndorf (1) from 1990 to 1995 under the direction of the University of Vienna, Institute of Prehistoric Archaeology (BACHNER et al. 1996; TRNKA 2005). The site is situated on the southern slope of the river Pulkau, which flows from west to east through the northernmost part of Lower Austria (Fig. 1). Flowing into the river Thaya, the Pulkau is the

confluence of a valley system which extends from the Moravian gates in northern Moravia down to the Danube system in the south. This geo-morphological unit must have played an important role for Palaeolithic large mammal hunters with their periodic migrations and exploitation of natural resources. The site of Alberndorf probably represents just a single butchery episode, as displayed by the small number of hunted individuals. According to the faunal remains and the anthracological determinations, the site represents a cold steppe environment (BACHNER et al. 1996, 115–118). The extensive lithic blank and tool production together with some pieces of worked antler and ivory is remarkable, but not in contradiction to the assessment of a short-term occupation (BACHNER et al. 1996; TRNKA 2005; STEGUWEIT 2005).

There was uncertainty about the chronological position of the inventory until the end of the 1990's. While the solifluvial redeposition of all the archaeological finds in a Pleistocene erosion channel was obvious from the beginning, the first set of seven ^{14}C dates ranged from ca. 28–19 ka BP. In addition to the technical limits of these dates determined on very different bone and antler samples, the high deviation seemed to reflect a chronological depth for the inventory and a more complex site formation. In contrast, the short-term character of the deposited sequence could clearly be seen in the sediments, and was validated by the preservation, fracture patterns and refittings of faunal remains (BACHNER et al. 1996, 116–117). Even if there was uncertainty about mixed human occupation episodes (BACHNER et al. 1996, 100), the ^{14}C record was taken seriously as a representative mean value: six of the seven dates are lower than the youngest Aurignacian *sensu stricto*, which is estimated for the region at about 28 ka BP (BACHNER et al. 1996, 116). Based on the radiocarbon range of the Aurignacian *s. str.*, the lithic inventory was attributed to the “Epi-Aurignacian”, as were a number of poorly stratified Moravian sites (OLIVA



Fig. 1: Geomorphological map of Czech Republic. (Kurbjuhn, NESPOS Society).

1996). The apparently younger determination of the Alberndorf inventory was taken over by other archeologists, mainly because of the expected age (see discussion in TRNKA 2005, 206). Only four new AMS datings on charcoal (Groningen 1998) could convince the team that the technically more reliable age is between ca. 27–29 ka BP (TRNKA 2005, 205–206). If one argues that there is no evidence for the contemporaneity of the burning of the charcoal and the archaeological sequence (i.e. natural fires ...), there are more arguments for a relative synchrony: the preservation of the widely spread charcoal is very good, and it was distributed in all stratigraphic layers (from spit 1 to 7). The four dated fragments come from sands near the surface as well as from the basal erosion channel. They provided a practically identical radiometric age (TRNKA 2005, 205–6). As such, the charcoal must at least date the moment of redeposition of the whole sequence. Plenty of burnt silicious artefacts indicate man-made fireplaces which provide a direct connection between the charcoal and the stone implements. Finally, two new AMS dates on a bone and an reindeer antler tool (2007, with resampling) could confirm the authentic Aurignacian age (information by G. Trnka, October 2007).

Besides presenting arguments for the Aurignacian *s. str.* age from the lithic technology, this paper also focuses on some other aspects and questions:

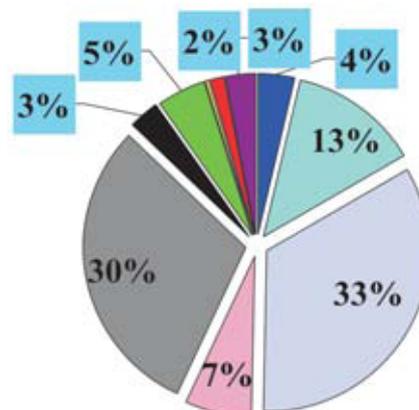


Fig. 2: Alberndorf 1 – Raw material (randomised sample, A. Přichystal, Brno).

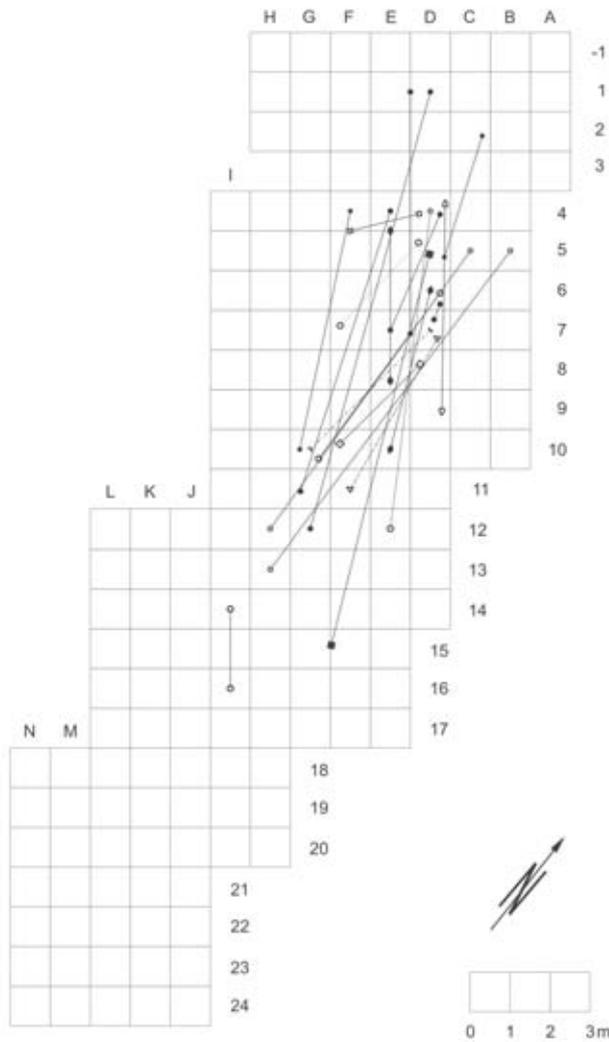


Fig. 3: Alberndorf 1 – Refitting of lithic artefacts (3 pieces or more).

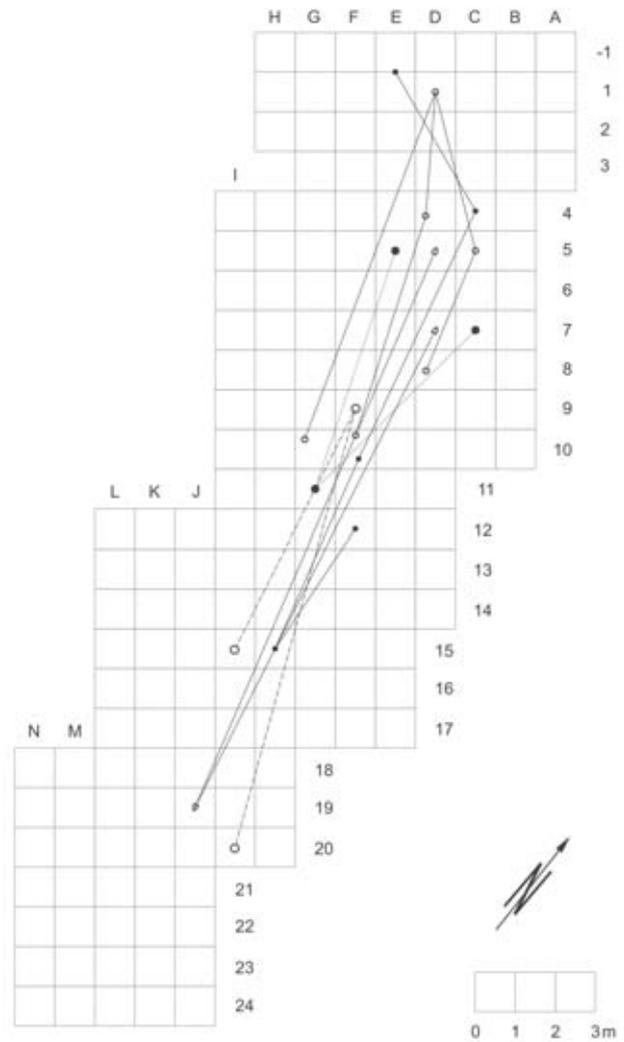


Fig. 4: Alberndorf 1 – Refitting of lithic artefacts (2 pieces).

1. Evaluation of the site formation process by the horizontal and vertical distribution of refitted lithic implements.
2. How definite is the chronological position of the inventory within the Aurignacian as opposed to the following Early Gravettian?
3. If an “Epi-Aurignacian” is taken into consideration, what are its technological/ typological features? Can any of the arguments for an Eastern European “Epi-Aurignacian” be proven?

2. Site formation – reflected by refitted lithics

The lithic inventory of Alberndorf (1) contains about 20,000 artefacts (TRNKA 2005, 198). The majority of the raw material (90%) was imported from Southern Moravia and is presently only known from the forest region of Krumlovský les (Fig. 2). From a geological point of view, Alberndorf is situated in the Carpathian Foredeep which is filled by Molasse rocks of Tertiary (Miocene) age. In places these rocks are covered by pre-

dominantly Quaternary Würmian loess sheets or sandy gravels on valley terraces. So far no local sources of silicious rocks are known; it is assumed that all the worked lithics were imported into the site. The researchers suppose a transport of the prevailing cherts (nodules and pre-cores) from a distance of about 45 km in the Krumlovský les Upland (BACHNER et al. 1996; TRNKA 2005; PŘICHYSTAL in prep.). The largest concentration of these cherts has been found in the Miocene (Ottngian) sandy gravels in the Krumlovský les Upland between the village of Vedrovice in the south and the Jihlava River valley in the north.

The Krumlovský les hornstones are subdivided into three main types: a coarse-grained, dark grey “type 1”, a fine-grained light grey or brownish “type 2” and a fine-grained, dark grey to black “type 3” with a black secondary cortex (TRNKA 2005, 198; PŘICHYSTAL in prep.). Nodules of “type 3” can be found in the central Moravian region of Brno where the gravels have

been determined as Jurassic. Because of its rare appearance in the Krumlov forest region, but its major portion (70%) in the inventory, G. Trnka recently labelled it “type Alberndorf”. It is possible that more raw material sources existed, if we consider a Jurassic or Cretaceous genesis of the “Krumlovský les types” and a secondary redeposition into the Miocene Molasse sands. These sands are widely spread in Southern Moravia and northern Lower Austria. Viewed from this standpoint, the known locations are first of all linked with excavations or accidental exposures and not a result of systematic prospection.

A randomised sample of 2659 artefacts from Alberndorf 1 produced the following determinations (PŘICHYSTAL in prep.):

- a) 90% hornstone, type “Krumlovský les”;
- b) 5% Moravian Jurassic hornstone, type “Stránská Skála” (near Brno) or local type, c) 1.5% radiolarite (source in the West Carpathians or Jurassic limestones of the Eastern Alps near Vienna);
- d) 0.5% white-blue patinated flint (possibly Baltic flint from Northern gravels, sources in Northern Moravia or Silesia);
- e) 3% misc., unidentifiable.

During the technological analysis of the collection, ca. 100 units of 2 or more (maximum 8) pieces (Fig. 3, 4) could be refitted. All the main lithic sources are represented in the refitted nodules, i.e. “Krumlovský les” hornstone, Moravian Jurassic hornstone and radiolarite. The refittings strengthen the hypothesis, that the basic production of blanks played an important role at a nearby site, where the human activities also took place. The horizontal redeposition patterns exactly follow the north–south elongated fluvial erosion channel. Even more important is the observation, that several cores could be refitted between six excavation spits (at a depth of approx. 1.5 m), confirming the sedimentological interpretation of a massive debris flow in one single event. While all flint implements are redeposited in the erosion channel, the refittings from the bottom to the top of the solifluidal sequence give a high probability for the scenario of only one mass flow during or after a heavy rainfall episode or the melting of masses of snow.

3. Technological and typological features of the inventory

The lithic assemblage was described earlier in some short notes by the excavator (TRNKA 1992; TRNKA 2005, 198) and one overview shortly after the end of the fieldwork (BACHNER et al. 1996, 100–115). While a comprehensive description is still in process (STEGUWEIT in prep.), some of the observed details already provide arguments for the Aurignacian character of the inventory.

3.1 The lithic assemblage

From the start, the tool assemblage left no question about its Aurignacian character, as seen by the typical and atypical carinated end-scrapers, double scrapers, truncated blades, dihedral and multiple burins, angle dihedral burins and burin-scrap-



Fig. 5: Alberndorf 1 – Core with refitted core tablet (inv.-no. AL 1355 + AL 1576a).

ers. The raw material procurement (i.e. mainly the import of “Krumlovský les” hornstone) seems to be “Aurignacian-like” as well, because in the near Gravettian sites of the Pavlovian hills there was almost no use of these sources, but an extensive use of moraine flint imported from Northern Moravia and Southern Poland. “Krumlovský les” and other local hornstone sources are typical for the Moravian surface finds with Aurignacian character.

The 260 cores and core blanks show the typical unidirectional reduction. Only very rarely have they been turned and worked from another platform. When negatives run in opposite directions, they result from core keel rejuvenation. Many of the cores are intensively exhausted, as displayed by the removal of core tablets to rejuvenate the platform angle. Obviously the main aim was to produce bladelets, if we assume the most common size index (length < 30 mm, width < 12 mm) for the distinction between bladelets and blades. The bladelets display a dorsal ridge indicating regular/ serial production. A second interesting fact is the controlled knapping technique aimed at bladelet production. The majority of the butts (platform remnants) are not wider than 5 mm and thicker than 2 mm. 325 of the 486 investigated blanks were reduced dorsally. None of them has other forms of platform preparation like edge rounding or faceting.

A special focus in the Alberndorf inventory is on 39 re-touched microliths. The definition for “microlith” is a length < 30 mm (see HAHN 1993, 255). Some researchers would probably use the general term “Dufour bladelets” for them, even if

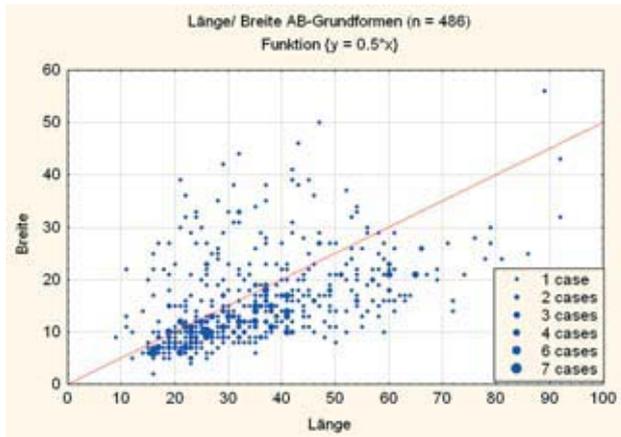


Fig. 6: Alberndorf 1 – Length/ width – scatterplot of blanks with dorsal ridge (randomised sample).

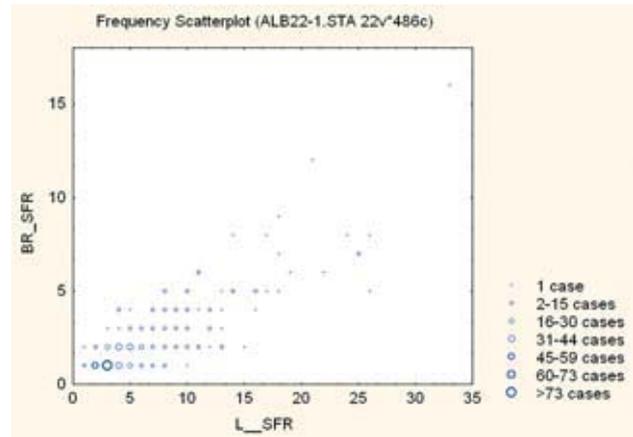


Fig. 7: Alberndorf 1 – Length/ width scatterplot of butts: sample like fig. 6.

this definition requires alternate retouch. The retouch on the Alberndorf micro-bladelets varies: 26 specimens have unilateral dorsal retouch, 11 bilateral dorsal (“Font-Yves type”) and 2 ventral. With only three exceptions their length is between 10–25 mm, with a mean of ca. 20 mm. The width has a mean of about 4–5 mm. The small medium size of the Alberndorf micro-bladelets (about 20 mm) is surprising, but can nevertheless be seen as a typical case for the Evolved Aurignacian (*s.str.*). I see the mostly straight microblades as a possible variant of the “Roc de Combe sub-type” of Western Europe, today accepted as a differentiated stage of “Evolved” or “Recent” Aurignacian industries in Western Europe (BORDES 2006). A prominent example of extreme bladelet microlithisation is found at Abri Pataud, level 7 and 8 (MOVIUS 1977, 118). The underlying Aurignacian level 9 was dated at a mean of 30.5 kyr BP, while the covering Aurignacian level 6 provided 29.5 kyr BP (MANSOURI et al. 1996, 803). The chronostratigraphic position of all the evolved Aurignacian layers is above the Arcy Interstadial, which is dated in Abri Pataud to 33–34 kyr BP (MANSOURI et al. 1996, 804). This Western example is stressed to demonstrate the unproblematic subsumption of both straight and twisted microlithic retouched bladelets in the time horizon of the Evolved Aurignacian. In Alberndorf most of them are straight, only a few specimens can be seen as the “Roc de Combe sub-type” (by definition twisted or laterally turned, mainly with ventral retouch). So-called “microblades” (bladelets) are under discussion as being a typical feature for the Epi-Aurignacian, while different researchers seem to have different ideas about their features: J. SVOBODA (2006) mentions backed microblades, while Y. DEMIDENKO (2007) sees a clear difference to the backed retouch of the Gravettian and denies any backed retouch for that group. The latter description will be discussed below for the Epi-Aurignacian of the northern Black Sea region.

For Abri Pataud, a connection between the negative scars on the carinated end scrapers and the size of the microlithic

bladelets was recently suggested (CHIOTTI 2000). Carinated tools are interpreted as cores for bladelet production. Taking into account the dry and relatively rough screening of the Alberndorf inventory, the same could be possible there, but cannot be proven because there was probably a large loss of microlithic blanks.

3.2 Ivory working

Interesting details of anthropogenic manipulations were found on four worked pieces of mammoth tusks from Alberndorf (STEGUWEIT 2005). The removal of the tusk sections was done with the typical method of cutting a concave ring through the outer part of the tusk. This technique was also observed on ivory in the Swabian Jura (HAHN et al. 1995, 30). Because of the significant traces of use at the distal edge, one of the fragments was recently identified as a soft hammer for flint-knapping (Fig. 8). Experiments with a replica made of elephant ivory showed the excellent characteristics of the ivory for flint-knapping, due to its hardness and heavy weight (Fig. 9). Comparing the percuteur from Alberndorf with objects from other collections, I could identify similar convincing traces of use on other tusk artefacts from the Gravettian sites of Předmostí Ia (13 objects), Pavlov (5 objects) and Dolní Věstonice (1 object), recently published with a catalogue of the investigated objects (STEGUWEIT 2005). More probable ivory hammers for flint-knapping can be identified, although I have not examined them personally (by photos or descriptions of the authors) from Eastern European sites, such as Avdeevo, Kostenki IV, Mezin, Suponevo, Sungir, Timonovka and Eliseevichi (*for details see Steguweit 2005*). Based on this innovative use of ivory, there seem to be continuous traditions from Late Aurignacian to Gravettian and the cultures after the Last Glacial Maximum, showing patterns of exchange, trade or at least continuous interactions.



Fig. 8: Alberndorf 1 – Ivory hammer (inv.-no. AL 775).

4. The question of an Eastern European “Epi-Aurignacian”

While large parts of Western and Central Europe provide a time span of about 30–28 ka BP for the introduction of Gravettian inventories and a practically complete disappearance of the Aurignacian (excluding the “Aurignacian V problem”), the situation for Eastern Central Europe, Southeast Europe and the Northern Black Sea region has been viewed quite differently for the last three decades. Even if the differences are artificially enlarged by methodological problems with radiocarbon datings and the different status of their re-evaluation, it is useful to divide several geographic regions as has been done before (HAHN 1977; KOZŁOWSKI 1999; DEMIDENKO, NUZHNYI 2004).

4.1 Middle Danube region and Southern Poland

The introduction of the Gravettian is identical in Central and Western Europe, while the time range of the Evolved (Typical) Aurignacian is 34–29 ka BP (SVOBODA 2006, 266). “Epi-Aurignacian” inventories are culturally defined by “a persistence of typically Aurignacian endscrapers and burins, accompanied by microblades and backed microblades” (SVOBODA 2006, 267). Unfortunately, there is no documented stratigraphy or data for the majority of the discussed material (OLIVA 1996). In fact, only



Fig. 9: Replica of an ivory hammer (recent elephant ivory), flint knapping experiment Erlangen 2006.

Langmannersdorf in Lower Austria (TRNKA 2005, 206), Horn-Raabstrasse (NEUGEBAUER-MARESCH 1993) and Dolní Věstonice II-A (SVOBODA 2006, 267–268) remain as dated sites with Aurignacian character. Langmannersdorf has been newly dated on 4 burnt bones and 1 bone fragment, with a mean value of about 20 kyr BP (VERPOORTE 2003). One can argue whether the sampling material was still of sufficient quality after decades in a carton box. Horn-Raabstrasse provided a single mean age of 23.2 kyr BP (NEUGEBAUER-MARESCH 1993) and Dolní Věstonice II-A – in contradiction to earlier dates – of 23.5 kyr BP (SVOBODA 2006, 267). In so far as prominent inventories like Předmostí I are a typological cocktail of different cultural layers (ZOTZ, FREUND 1951; KLÍMA 1990) or Borsice A can be seen as mechanically mixed (SVOBODA 2006, 267), there is no evidence for an Aurignacian tradition synchronous with the Gravettian (TERBERGER 2003). In conclusion, a general determination of an “Epi-Aurignacian” between 26–21 kyr BP for that region looks a little “coarse grained” and only Langmannersdorf remains as a more or less acceptable candidate for an “Aurignacian V” equivalent in Eastern Central Europe.

4.2 The Balkan Peninsula

Aurignacian inventories are today known from all countries of the Balkan except Albania, which is probably a research bias (KOZŁOWSKI 1996; 1999). The distribution of significant stratigraphical deposits containing evolutionary information of a possible transition time span is mainly concentrated in two types of geological archives: the Eastern Balkan loess deposits with several open-air sites and the Carpathian karsts with their cave deposits. Without doubt, radiocarbon-dated loess deposits (charcoal) are the qualitative better source for a chronological framework (HAESAERTS et al. 2003). The phenomenon of contemporary data for both Gravettian and “Late Aurignacian / Epi-Aurignacian” was observed in several sites from Romania, Bulgaria, Greece and the former Yugoslavia over the last

decades (KOZŁOWSKI 1996; 1999). Especially in Romania in the 50's and 60's, several sites with Aurignacian character – at least without any Gravettian implements – were recovered providing ¹⁴C-dates from 25–21 kyr BP (HAHN 1977, 11–28/298–304; PĂUNESCU 1998).

One of the key regions in this context is the Bistrița Valley in the East Carpathian region with some very late Aurignacian sites (CÂRCIUMARU et al. 2006; CÂRCIUMARU et al. this volume; STEGUWEIT in press). In contrast to the known record, new data on three East Carpathian sites with a long Upper Palaeolithic sequence span the Aurignacian/ Gravettian transition, which is compatible to Central and Eastern Central Europe. The AMS data series is consistent in all cases and fits together with geological observations concerning the expected loess accumulation rates and soil formations (STEGUWEIT in press). The new data from the Bistrița Valley also confirm the recently investigated Aurignacian/ Gravettian time span from Mitoc and Molodova (HAESAERTS et al. 2004). The assumption of a “Late Aurignacian” contemporary to the Gravettian in the Bistrița Valley can now be rejected. At least there is no indication for an overlapping of technical traditions, which would have been a period of about 5,000 years. While the circulation of lithic raw materials (Prut and Dniestr flint sources) displays connections to the Moldavian-Ukrainian plains and the Northern Black Sea region (CHIRICA et al. 2003), a similar false conclusion based on radiocarbon data seems possible there.

4.3 The Northern Black Sea region

No Gravettian sites are known in the dry steppe region north of the Black Sea before and during the LGM (DEMIDENKO 2008). Some researchers consider an Epi-Aurignacian from 22/21 to 18/17 kyr uncal. BP, with a total of four inventories: the sites of Muralovka and Zolotovka in Lower Don River region (PRASLOV, FILIPPOV 1967), and near the southern Bug River in the Ukraine, with the sites of Sagaidak I and Anetovka I (DEMIDENKO, NUZHNYI 2004; DEMIDENKO 2008). Unfortunately, all these sites were excavated early (in the 1960's and 70's), when standards of measurement and documentation were very low (DEMIDENKO 2008). Secondly, no samples for new radiocarbon datings were preserved. The site of Anetovka I was recently reopened by Yuri Demidenko. He found that the site has a completely redeposited stratigraphy.

Although the basis for technological/ typological interpretations does not seem very secure, the four inventories served to define the “Epi-Aurignacian” in Eastern Europe. In this way small retouched microliths associated with atypical carinated endscrapers became a significant attribute: “...*One of the most indicative typological features of the industry is so-called tiny pseudo-Dufour microliths on chips and shortened microblades with dorsal marginal abrasion retouch and flat / incurvate, but no twisted profiles*” (DEMIDENKO 2007). These specific Epi-Aurignacian microliths have neither a backed nor an alternate or ventral retouch. The

retouch is very weak and serves only to stabilize the edge. This would at least be a significant feature for dividing inventories from both backed Gravettian implements and the typical Dufour- or Font-Yves bladelets. Practically, I must admit that I am doubtful about this type of “Leitfossil” division. Yuri Demidenko himself considered the Alberndorf bladelets as a pretty good example of the “Epi-Aurignacian-like” bladelet industry before we discussed the new insights of the refittings and data. All in all, the question of a refugium of Aurignacian toolkits in the Northern Black Sea region (which had no Gravettian, but only Epigravettian occupations) must be left for future investigations.

5. Conclusions

Based on new insights from the recent investigation, the site of Alberndorf 1 displays all the features of an Evolved (Typical) Aurignacian inventory. Interesting details of ivory working can provide a basis for a future discussion of continuous cultural traditions from the Aurignacian to the Gravettian. No indications of an “Epi-Aurignacian” remain for the site of Alberndorf. There is an increasing tendency to negotiate the meaning of the term “Epi-Aurignacian” to suggest a relationship with the Aurignacian in Eastern Central Europe, due to new chronological data and the lack of discrete patterns in the material culture. Recent data from Romania may offer a new point of view on this cultural phenomenon.

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Bibliography

- BACHNER et al. 1996
 BACHNER M., MATEICIUCOVÁ I., TRNKA G., Die Spätaurignacien-Station Alberndorf im Pulkautal, NÖ. In: SVOBODA J. (ed.), *Paleolithic in the Middle Danube Region (Festschrift für B. Klíma)*. Brno, Archeologický ústav AV ČR, 1996, 93–120.
 BORDES 2006
 BORDES J.-G., News from the West: a reevaluation of the classical Aurignacian sequence of the Périgord. In: BAR-YOSEF, O., ZILHÃO J. (eds.), *Towards a definition of the Aurignacian*. *Trabalhos de Arqueologia* 45, 2006, 147–172.
 CÂRCIUMARU et al. 2006
 CÂRCIUMARU M., ANGHELINU M., STEGUWEIT L., NIȚĂ L., FONTANA L., BRUGERE A., HAMBACH U., MĂRGĂRIT M., DUMITRAȘCU V., COSAC M., DUMITRU E., CÂRSTINA O., The

- Upper Paleolithic site of Poiana Cireşului – Piatra Neamţ (North-Eastern Romania). Recent results. *Archäologisches Korrespondenzblatt*, 3, 2006, 319–331.
- CHIOTTI 2000
- CHIOTTI L., Lamelles Dufour et grattoirs aurignaciens (carénés et á museau) de la couche 8 de l'Abri Pataud, Les Eyzies-de-Tayac, Dordogne. *L'Anthropologie* 104, 2000, 239–263.
- CHIRICA et al. 2003
- CHIRICA V., BORZIAC I., VĂLEANU M., Structures d'habitat dans le Paléolithique supérieur (Aurignacien et Gravettien) entre les Carpates et le Dniestr. In: VASILEV S. A., SOFFER O., KOZLOWSKI J. (eds.), *Perceived Landscapes and Built Environments: The Cultural Geography of Late Paleolithic Eurasia*. – B.A.R., International Series 1122, 2003, 139–143.
- DEMIDENKO 2007
- DEMIDENKO Y. E., Aurignacian and Epi-Aurignacian with re-touched microliths of North Black sea region: what is hidden behind the archeological terms? Unpubl. manuscript for the Meeting “UP Palaeolithic and its loess deposits in Eastern Central Europe”. Krems, Sept. 11th, 2007.
- DEMIDENKO 2008
- DEMIDENKO Y. E., The Early and Mid-Upper Palaeolithic of the North Black Sea region: an overview. *Quartär* 55, 99–114.
- DEMIDENKO, NUZHNYI 2004
- DEMIDENKO Y. E., NUZHNYI D. Y., Upper Palaeolithic Problems in the North Black Sea Region and I. V. Sapozhnikov's Book “Bolshaya Akkarzha. Upper Palaeolithic Economy and Culture of the Ukrainian Steppe”. *Stratum plus* 1, 2003–04.
- HAESAERTS et al. 2003
- HAESAERTS P., BORZIAC I., CHIRICA V., DAMBLON E., KOULAKOVSKA L., VAN DER PLICHT J., The East Carpathian loess record: a reference for the Middle and Late Pleniglacial stratigraphy in Central Europe. *Quaternaire* 14/ 3, 2003, 163–188.
- HAESAERTS et al. 2004
- HAESAERTS P., BORZIAC I., CHIRICA V., DAMBLON E., KOULAKOVSKA L., Cadre stratigraphique et chronologique du Gravettien en Europe Centrale. In: SVOBODA J. A., SEDLAČKOVÁ L. (eds.), *The Gravettien along the Danube*. Brno, Archeologický ústav AV ČR, 2004, 33–56.
- HAHN 1977
- HAHN J., Aurignacien. Das ältere Jungpaläolithikum in Mittel- und Osteuropa. Köln & Wien, *Fundamenta A/9*, 1977.
- HAHN 1993
- HAHN J., Erkennen und Bestimmen von Stein- und Knochenartefakten: Einführung in die Artefaktmorphologie. – *Archaeologica Venatoria* 10. (2., überarbeitete Auflage). Tübingen 1993.
- Hahn et al. 1995
- HAHN, J., SCHEER A., WAIBEL O., Gold der Eiszeit – Experimente zur Elfenbearbeitung. In: SCHEER A. (ed.), *Eiszeitwerkstatt – Experimentelle Archäologie*. Museumshft 2: 29–37, Blaubeuren.
- KLÍMA 1990
- KLÍMA B., Lovci mamutů z Předmostí. *Památníky naší minulosti* 14. Praha, 1990.
- KOZLOWSKI 1996
- KOZLOWSKI J., The Latest Aurignacian and “Aurignacoid” Elements in the Epigravettian of the Carpatian Basin. In: *The Upper Paleolithic*, Forli 1996, 83–99.
- KOZLOWSKI 1999
- KOZLOWSKI J., The Evolution of the Balkan Aurignacian. In: DAVIES W., CHARLES R. (eds.), *Dorothy Garrod and the Progress of the Palaeolithic: Studies in the Prehistoric Archaeology of the Near East and Europe*. Oxbow Books, London 1999.
- MANSOURI et al. 1996
- MANSOURI M., FOUIKAR A., SAINT-MARTIN B., Correlation Between ¹⁴C Ages and Aspartic Acid Racemization at the Upper Palaeolithic Site of the Abri Pataud (Dordogne, France). *Journal of Archaeological Science* 23/ 6, 1996, 803–809.
- MOVIUS 1977
- MOVIUS, H., Excavation of the Abri Pataud, Les Eyzies (Dordogne). *Stratigraphy*. Cambridge, MA, Harvard University Press, 1977.
- NEUGEBAUER-MARESCH 1993
- NEUGEBAUER-MARESCH C., *Altsteinzeit im Osten Österreichs*. Wiss. Schriftenreihe Niederösterreich 95/96/97. St. Pölten/ Wien 1993.
- OLIVA 1996
- OLIVA M., Epiaurignacien en Moravie: le changement économique pendant le deuxième interpleniglaciaire wurmien. In: XIII Int. Congress of prehist. and protohist. sciences, *Colloquia*, 6, The Upper Palaeolithic, 69–81. Forli 1996.
- PĂUNESCU 1998
- PĂUNESCU A., Paleoliticul și epipaleoliticul de pe teritoriul Moldovei cuprins între Carpați și Siret. *Studiu monografic*, Vol. I/1. Bucarest, Ed. Satya Sai, 1998.
- PRASLOV, FILIPPOV 1967
- PRASLOV N. D., FILIPPOV A. K., Perwaja Nachodka paleoliticheskovo iskusstva v Juschnorusskich stepjach. *Kratkije Soobschenija Instituta Archeologii* 111, 24–30.
- PŘICHYSTAL in prep.
- PŘICHYSTAL A., A Petrographic Study of Chipped artifacts from the Late Aurignacian Site of Alberndorf im Pulkautal, Niederösterreich. (Unpublished manuscript).
- STEGUWEIT 2005
- STEGUWEIT L., Gebrauchsmuster an „Elfenbein-Zylindern“ aus jungpaläolithischen Fundstellen in Niederösterreich und Mähren. *Mitteilungen der Kommission für Quartärforschung der Österreichischen Akademie der Wissenschaften* 14, 2005, 177–193.
- STEGUWEIT in press
- Steguweit L., Testing the Aurignacian/ Gravettian transition in the Bistrița Valley (NE-Romania). In: CAMPS M., CHAUHAN

P. (eds.), *Sourcebook of Paleolithic Transitions: Methods, Theories and Interpretations*. (Springer Press).

STEGUWEIT in prep.

STEGUWEIT L., Die Aurignacien-Station Alberndorf im Pulkatal: Ausgrabungen 1990–1995. *Mitteilungen der Kommission für Quartärforschung der Österreichischen Akademie der Wissenschaften*.

SVOBODA 2006

SVOBODA J., The Aurignacian and after: chronology, geography and cultural taxonomy in the Middle Danube region. In: BAR-YOSEF O., ZILHÃO J. (eds.), *Towards a definition of the Aurignacian*. *Trabalhos de Arqueologia* 45, 2006, 259–274.

TERBERGER 2003

TERBERGER T., Vom Gravettien zum Magdalénien in Mitteleuropa: Aspekte der menschlichen Besiedlungsgeschichte in der Zeit um das zweite Kältemaximum der letzten Eiszeit (From Gravettian to Magdalenian in Central Europe: Aspects of the Human Settlement History at the Time of the Second Glacial Maximum of the Last Ice Age). Summary of an unpubl. Habilitation th. *Archäologisches Nachrichtenblatt* 8/ 1, 2003, 55–62.

TRNKA 1992

TRNKA G., Eine Station des Epi-Aurignacien in Alberndorf. *Archäologie Österreichs* 3/1, 1992, 30–31.

TRNKA 2005

TRNKA G., Die jungpaläolithischen Stationen von Alberndorf im Pulkatal im nördlichen Niederösterreich (Weinviertel). *Mitteilungen der Kommission für Quartärforschung der Österreichischen Akademie der Wissenschaften* 14, 2005, 195–212.

VERPOORTE 2003

VERPOORTE A., Absolute dates for the Bohemian Middle Upper Palaeolithic. *Archeologické rozhledy* 55/ 1, 2003, 3–9.

ZOTZ, FREUND 1951

ZOTZ L., FREUND G., Die paläolithische und mesolithische Kulturentwicklung in Böhmen und Mähren. – *Quartär* 5, 1995, 7–40.

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