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The Upper Palaeolithic Sites at the Kargl Brickyard in Langenlois (Lower Austria)

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Zusammenfassung

Der Artikel präsentiert die Ergebnisse der Ausgrabungen in der Ziegelei Kargl in Langenlois (Niederösterreich) von 1961-1963. Am östlichen Rand eines Beckens liegt eine Reihe von paläolithischen Fundstellen. Lediglich die Dokumentation von Fundplatz A erlaubt eine Interpretation als Jagdplatz. Die Arbeit beschäftigt sich vor allem mit der Schlagtechnik und den Steingeräten sowie der Herkunft der Rohmaterialien. Die Siedlungsstrukturen deuten auf ein Jagdlager eines kleinen Familienverbandes, der sich hier für einige Wochen im Spätsommer oder Frühherbst aufhielt, um Steinbock, Rentier and Pferd zu jagen.

Abstract

The article presents the results of the excavations in the Kargl brickyard in Langenlois (Lower Austria) in the years 1961 to 1963. A series of Palaeolithic sites were situated on the eastern slope of an extensive „basin“. Only the documentation of site A allows an interpretation of the function of the site as a hunting camp. There is a special focus on flint knapping and stone tools as well as on the provenience of the raw materials. The settlement structures point to a hunting camp of a small family group, who stayed there for several days or weeks in late summer or early autumn to hunt ibex, reindeer and horse.

Keywords: Gravettian, Aurignacian techniques, hunting site, dwelling structres, flint knapping

From 1961 to 1963 several Palaeolithic sites were discovered on the ground of the Kargl brickyard in Langenlois (Lower Austria). In the meantime the brickworks are closed down. First excavation campaigns were headed by F. Felgenhauer and later by E. Lucius and A. Rothbauer. Today the sites are referred to as Langenlois A-C (Einwögerer 2004, 21-31).

They are situated on a Tertiary terrace, at the transition of two geological units:

the Bohemian Massif and the Molasse Zone (THENIUS 1962, 5). The loess deposit on top is up to 10m high. (FELGENHAUER 1962/63, 61).

The Palaeolithic camp sites are situated on the eastern slope of an extensive „basin". The nearby Loisbach flows into the river Kamp which is at a distance of about 1,1 km from the sites.

Langenlois Site A

In the course of clay quarrying the driver of a mechanical excavator of the brickyard discovered dark spots in the loess on April 25th 1961. Several days before the remains of mammoth tusks had been noticed there. The director of the local museum ("Heimatmuseum Langenlois"), A. Rothbauer, informed the Museum of the Country of Lower Austria ("Landesmuseum Niederösterreich"). On April 28th 1961 F. Felgenhauer was commissioned to undertake archaeological excavations in the brickyard. The fieldwork was carried out with employees of the Institute of Prehistory, University of Vienna, and the "Fundbergedienst der Österreichischen Arbeitsgemeinschaft für Ur- und Frühgeschichte", a team of the Austrian Working

Fig. 1: Kargl brickyard with site A

Group for Pre- and Protohistory, while clay quarrying continued. Approximately 80 m² of the cultural layer were uncovered in two steps (Fig. 1). Even though the archaeological layer continued beyond this area it was not possible to enlarge the excavation trench due to the running clay quarrying (FELGENHAUER 1961-1965, 2-3). The cultural layer could not be excavated further until October 1962, this time under the direction of E. Lucius.

Fig. 2: Langenlois A, documentation of the archaeological layer

It can be assumed that a single archaeological horizon prevails at site A. (Fig. 2). All documented geological and archaeological layers are inclined to the northwest towards the valley of the river Kamp, descending on an average of 5 cm per metre. Interruptions and thrust faults of the cultural stra-

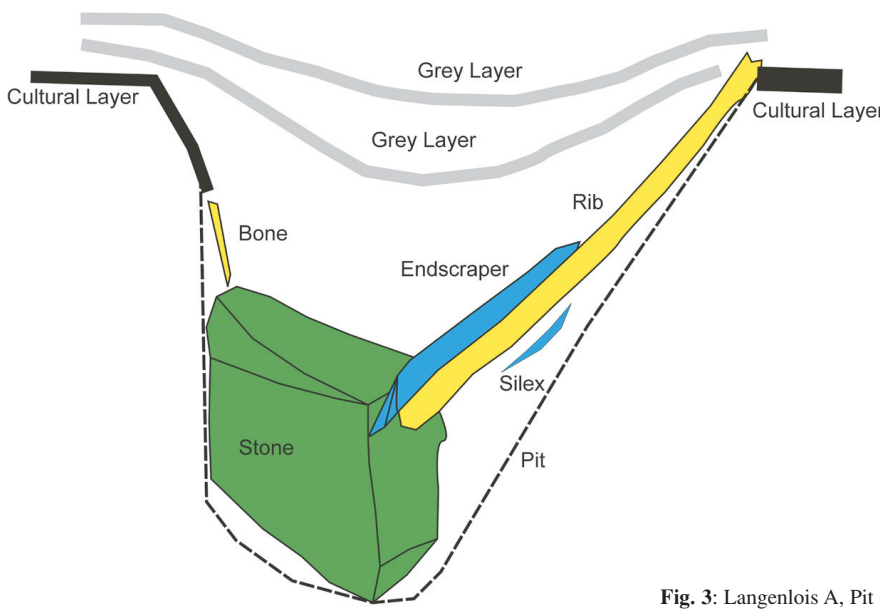

Fig. 3: Langenlois A, Pit 9

tum hint at small-scale disturbances and re-depositions.

In the centre of the excavated area a large almost round hearth (Hearth 1) with a diameter of 85 cm was uncovered. Hearth 1 established in a shallow pit was used repeatedly. Only two metres to the southeast there was a smaller, slightly oval shaped hearth (Hearth 2) on even ground with a diameter of a little more than 30 cm. Less than 4,5 metres to the west of the larger hearth, a third hearth (Hearth 3) was uncovered. Just like Hearth 2, it is interpreted as a peripheral hearth.

Several pits of varying sizes and forms are also noticeable. Differing morphologies and locations imply various functions. While some can be interpreted as cooking pits, others could be postholes.

Of special interest is a pit with a stone plate of quartzite (Fig. 3) and an endscraper which was situated on top of a rib. An organic substance which was detected between the two, led to the interpretation of the piece as a hafted stone tool (FELGENHAUER 1962/63, 61-69).

Stone artefacts

The material comprises 1447 stone artefacts. The lithic industry is dominated by variants of chalcedony, originating from the central and northern Waldviertel (55%). A few pieces of chert hint at sources in southern Bohemia. Besides, local raw materials from the gravels of the Danube and the Kamp were used. While the different chalcedonies were brought into the site as a tool kit, local raw materials were reduced on site. The cores were prepared carefully. In most cases the reduction is based on nodules, only in a single case a flake was used. The reduction was mostly unipolar. Bipolar reduction and cores with various platforms are not common. There are almost as many blade cores as flake cores. In most cases the small dimension or knapping accidents led to the rejection of a core.

The production aimed mostly at blades, which in some cases were intentionally broken. The blade technology does not resemble the Gravettian tradition as defined for southern Germany (OWEN 1988), but seems to follow Aurignacian techniques. There is no evidence of a specialized production of bladelets.

The lithic inventory includes 214 modified stone artefacts (14,8%). Almost half of these are simple laterally retouched pieces. Burins and end scrapers are much rarer. For a Gravettian inventory backed pieces are relatively scarce. While truncations and splintered pieces are under-represented, scrapers, which are rare in Upper Palaeolithic inventories, are represented with 6 pieces. There are only very few combination tools.

Table 1: Langenlois A, modifications

	n	%
Endscrapers	25	11.7
Truncations	9	4.2
Dihedral burin	15	7.0
Burin on truncation	11	5,1
Burin on a break	16	7.4
Point	1	0.5
Backed bladelets	11	5.1
Backed point	1	0.5
Laterally retouched pieces	105	49.0
Notched pieces	4	1.9
Splintered pieces	8	3.7
Combination tools	2	0.9
Scrapers	6	2.8
Total	**214**	**100.0**

Table 2: Langenlois A, raw materials of the modified pieces

	n	%
Indeterminable	2	0.9
Chert	113	52.8
Radiolarite	8	3.7
Chalcedony	90	42.1
Siliceous limestone-to-chert	1	0.5
Total	**214**	**100.0**

Table 3: Langenlois A, function of pebbles

Function	**n**	**%**
Hammerstone	3	37.5
Hammerstone /retoucher	3	37.5
Hammerstone /retoucher/ grinder	2	25.0
Total	**8**	**100.0**

More than 50% of the modifications were applied on chert, followed by a little more than 40% on chalcedonies. More rarely blanks of radiolarite or siliceous limestone-to-chert were processed.

With only 1,4% the percentage of cores in the inventory of Langenlois A is rather low in relation to the supply and the exploitation of different raw materials. Of a total of 1447 artefacts 75 could be refitted in 30 sequences (Fig. 4). Pieces of the variant yellow chalcedony were refitted most frequently. These were exclusively refittings of broken blades. 11 artefacts of light-coloured chalcedonies were refitted, among them mainly broken blades and a sequence of three flakes. The biggest sequence of 8 flakes has been proved for the raw material variant yellowish-brown granulite. Furthermore two broken pieces were refitted.

Among the pebbles there are many pieces with working traces. Approximately half of them show a more flat morphology; less common are round forms. Alterations of the surface (scars) are most common. Modifications of the fine relief (grooves and polish) occur less frequently. Combinations of modifications of the fine relief and the surface, or the surface and the form occur. In most cases, the pebbles can be interpreted as hammerstones or retouchers due to their distinct scars and splintered surfaces. Combinations of characteristics point at a multifunctional use of pebbles in the sense of G. Schulte-Dornberg (SCHULTE-DORNBERG 2002, 497).

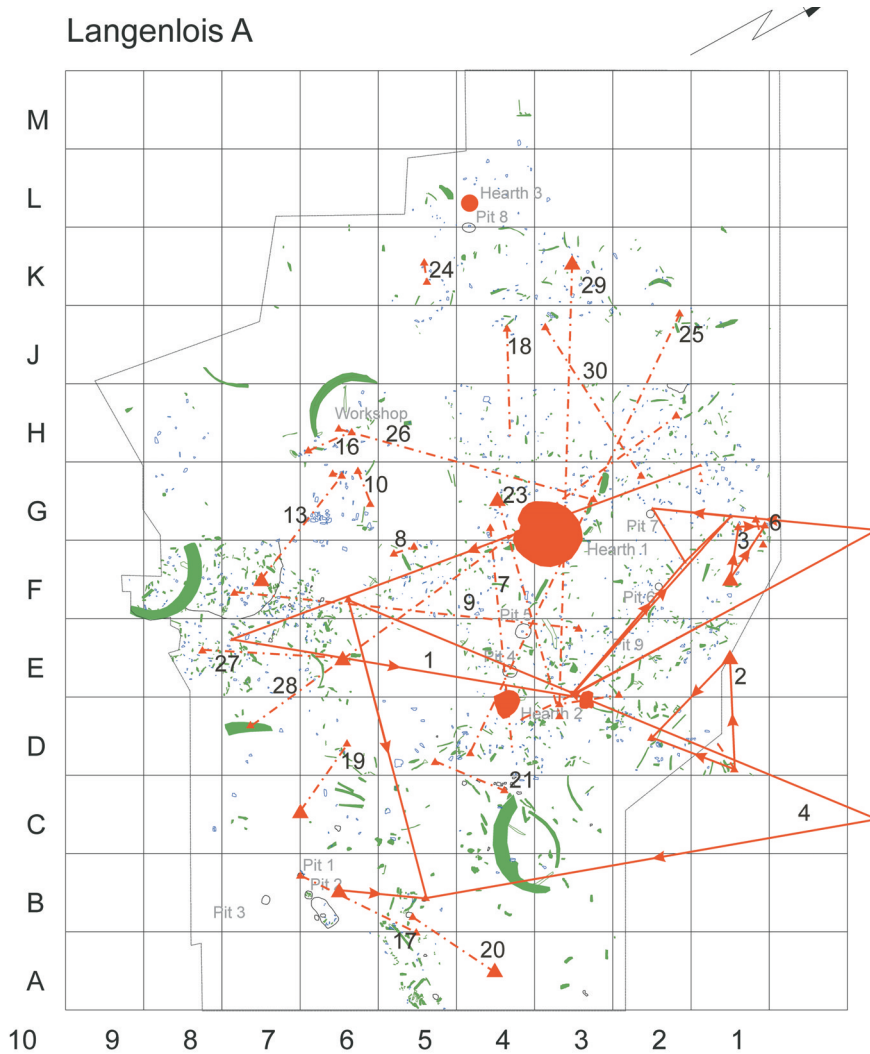

Fig. 4: Langenlois A, refittings

The probable source of the colour material is remarkable. While graphite occurs locally, the haematite comes from a distance of 115 km from the northern limestone Alps. The binder was transported almost as far, the nearest source also in the northern Alps being more than 60 km away.

Regarding mobility there are two main directions (Fig. 5). While the majority of the lithic raw material originates from the Waldviertel and southern Bohemia,

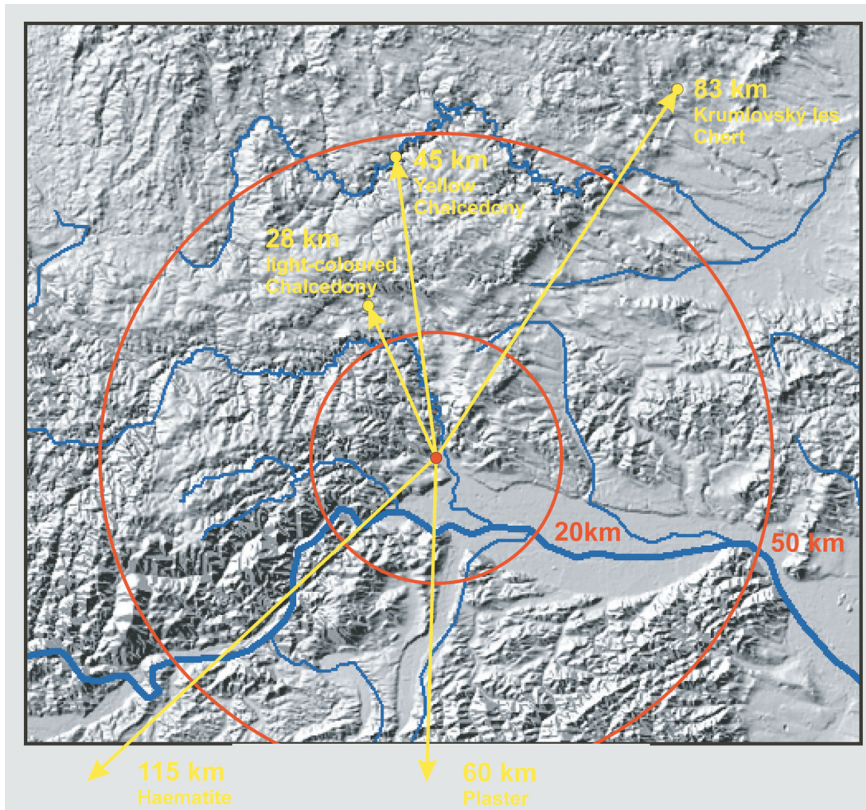

Fig. 5: Langenlois A, origin of raw materials

the colour materials seem to come from the south. Given that the lithic raw material was brought into the site with migration, it can be assumed that the colour materials came to the site in the course of an exchange action.

Most of the wood used for fuel originates from meadows, like willow and poplar. Some spruce is also present. Apart from ibex, the game includes reindeer, horse and deer. There are also remains of hare, fox and mammoth. Presumably the mammoth remains (tusks and several ribs) were only collected.

Quantitative mapping of finds shows four distinct areas A-D (Fig. 6).

In the centre of the excavated area there is a latent tent feature (structure latente) with a round outline and a diameter of about 4 m. The main hearth (Hearth 1) is located in the centre of it. An area with very little find material in the south probably marks the entrance.

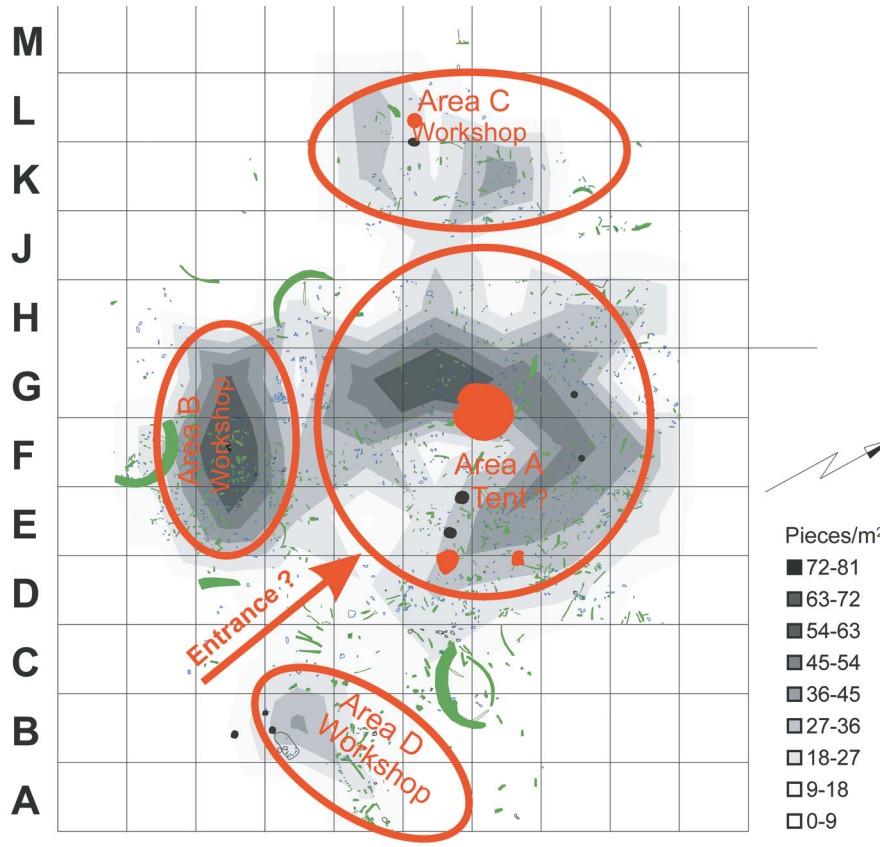

Fig. 6: Langenlois A, *structures latentes*

Another hearth and a fire area are located in the southeast of the tent-like structure. Two pits which were most probably used for cooking are located between the two hearths. Three smaller ones in the northeast could have been part of the tent construction. Besides other raw material variants, especially the light bone-coloured chalcedonies were reduced and used here.

Three activity zones are arranged around this latent feature. The zone in the southeast is a knapping place, where exclusively yellow chalcedony was reduced. The central element is a large stone plate which is interpreted as a support.

The activity zone in the southwest represents a workshop where primary production was further reduced and finished tools were used. The large amount of faunal remains points at the butchering of introduced parts of game.

Another activity zone is located in the west of the latent tent structure. Here is another small hearth with a pit, which was probably used for cooking. No production of blanks took place there. The high percentage of tools suggests the modification of blanks or just the use of tools.

Following the excavations 1961-1963 several ^{14}C-dates have been processed and published.

Table 4: Langenlois A, published radiocarbon dates before 2000

Sample No.	Date	Literature
KN-10b	26,560 +/-1600 y BP	SCHWABEDISSEN & FREUNDLICH 1966, 243
KN-10c	26,960 +/-1200 y BP	SCHWABEDISSEN & FREUNDLICH 1966, 243, NEUGEBAUER-MARESCH 1993, 78
H-2218/1537	25,480 +/-880 y BP	NEUGEBAUER-MARESCH 1993, 78
KN-10	24,950 +/-800 y BC	OTTE 1981, 318
KN-10/236	25,090 +/-245 y BC	OTTE 1981, 318
H.	23,530 +/-880 y BC	OTTE 1981, 318

In order to check the old radiocarbon dates of site A and to establish a connection to site B, two more samples were dated in 2000.

Table 5: Langenlois A, radiocarbon dates 2000

Sample No. / Material	Date	Literature
GrN-25603 / charcoal	25,700 +/-400 y BP	VERPOORTE & EINWÖGERER 2002, 31-32
GrA-16564 / bone	25,340 +/-170 y BP	VERPOORTE & EINWÖGERER 2002, 31-32

Altogether we can assume a hunting camp of a small family group, who carried their light pole tent (tepee) with them. Presumably they came from the north and stayed for several days or weeks in late summer or early autumn at the lower Kamp to hunt ibex, reindeer and horse.

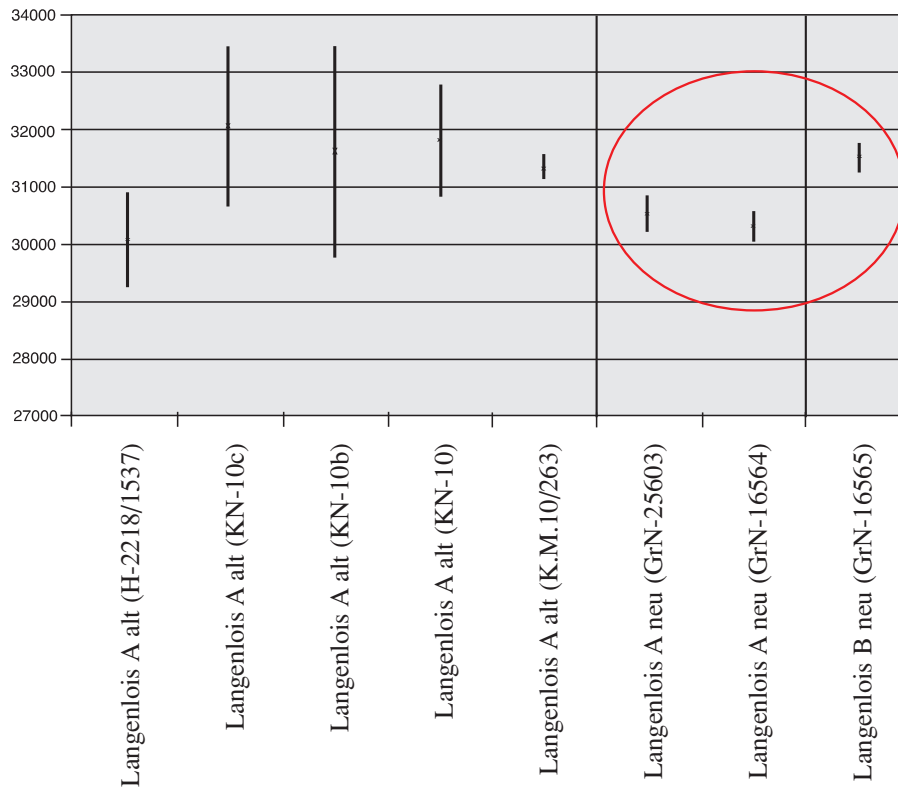

Fig. 7: Langenlois, published ^{14}C-dates cal y BP (calibrated with CalPal online). The new dates for Langenlois A and B are encircled.

Site B

Site B was discovered in May 1962, located 4,8 m deeper and about 18 m north of site A. The archaeological deposits were excavated in less than two weeks by only three people under the direction of E. Lucius. Accordingly, the documentation is rather poor.

The evaluation of the section drawings showed that the cultural layer partly fans out very much. This horizon slopes unevenly but strongly towards the northeast to the Kamp. The cultural layer was well-developed in the north; in the southwest only faint traces of it were left. In some areas thrust faults within the stratum lead to the assumption that there were considerable displacements towards the northeast. In spite of these displacements various structures are still identifiable.

Apart from a 60 x 50 cm large hearth with a clearly burned reddish base, a much smaller displaced hearth was observed. At least one large and distinct pit was documented in a section drawing. Unfortunately the insufficient documentation does not allow extensive interpretations of the settlement structures.

The 325 stone artefacts represent the biggest group of recovered finds. The dominant raw materials are different variants of chert. Most raw materials can be found in the nearby gravels of the Danube.

Although there are scarcely any backed tools, the inventory can be assigned to the Gravettian. In contrast to site A, the blades of site B are more often characterized by bulbar scars and less by lips. The majority of the primary production was reduced from only one platform. Bipolar reduction does not often occur. Only seven blanks were modified. Apart from three small backed bladelets, there is one burin, one laterally retouched piece, one splintered piece and one combination tool of a burin and an endscraper. Of the complete inventory, only one sequence of two blades could be refitted. Since their position was not recorded, no further statement is possible. There are no pebbles, other stones or colour materials. Only very few remains of reindeer and red deer exist.

A new ^{14}C-date (Verpoorte & Einwögerer 2002, 31-32) produced an age of 27,250 +/-200 y BP (GrN-16565). Langenlois B is more than 2000 years older than Langenlois A and therefore comparable with the Palaeolithic sites of Krems-Wachtberg 1930 (Einwögerer 2000), Krems-Hundssteig 2000-2002 (Neugebauer-Maresch 2008) and Krems-Wachtberg 2005 (Einwögerer 2005 & Einwögerer et al 2006).

Site C

In February 1963 yet another site was hit by the mechanical excavator approximately 14 m south of site A. Under unfavourable weather conditions A. Rothbauer recovered the heavily destroyed findings. A layer of bones and tusks about 4,5 m long and 0,5 m thick was observed. Some of the mammoth remains were wedged inside each other, so that the impression of a meaning- and useful order was given. Unfortunately most of the bones had been destroyed by the mechanical excavator. Other finds like charcoal or stone artefacts have not been recovered. The finding reminds of the Upper Palaeolithic mammoth bone dwellings of the Ukraine. Due to the poor documentation other interpretations remain possible, e.g. the remains of naturally perished animals or the rubbish dump near a campsite.

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