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Zusammenfassung

Der vorliegende Beitrag behandelt zwei Aspekte: Erstens wird die absolutchronologische Bau- und Nutzungsgeschichte der Fundstelle Flintbek LA 3 unter besonderer Berücksichtigung von stratigraphischen Überschneidungen einzelner Bauphasen vorgelegt. Unter Einsatz eines auf Bayes'scher Statistik beruhenden Datierungsmodells, in dem die neuen AMS-Daten der einzelnen Phasen in eine Sequenz gebracht werden, war es zudem möglich, die Wagenspuren, die unter der jüngsten Hügelweiterung konserviert blieben, absolutchronologisch präzise in die Zeit zwischen 3460–3385 v. Chr. Einzuordnen. Dieses vergleichsweise junge Alter wird diskutiert und nach wie vor zu den ältesten Hinweisen der Welt auf den Einsatz von Rad und Wagen gezählt.

Ein anderer Teil des Artikels widmet sich einigen Gedanken zur Bedeutung des Begräbnisplatzes Flintbek LA 3 und den sich im Lauf der Zeit verändernden Konnotationen. Dazu wird ein Untersuchungsansatz gewählt, der als „cultural biography“ bekannt ist.

Abstract

The article consists of two main parts. First, the development and absolute chronology of the site Flintbek LA 3 is presented with a particular focus on the stratigraphical situations and the building sequence of this monument. A model, based on Bayes' – statistics has been chosen to calibrate the new AMS-dates within a sequence. Thereby, the well known cart tracks preserved under the last tumulus could be dated accurately to 3460-3385 cal BC. After a discussion of this quite young age, it is argued that the Flintbek traces still belong to the oldest evidence of the innovation of wheel and wagon in the world. Another part of the article concerns the meaning of the burial site Flintbek LA 3 and the shifts of its connotations through time. This is done by developing a model of a "cultural biography".

Introduction: Megaliths in Flintbek

Next to the modern village of Flintbek more than 80 sites have been excavated between 1976 – 1996 in rescue excavations by the archaeological state department of Schleswig-Holstein. The sites date mainly to the Neolithic and Early Bronze Age (Fig. 1). They had been heavily destroyed, probably in modern times, by farmers or professional stone dealers. But nevertheless, these excavations keep a lot of helpful informations to our understanding of the former societies, their lives and comportment within their environment and thus not only because of the relative completeness of the excavated settlement region ("Siedlungskammer").

This paper focuses on two main aspects: The development of one of these graves (labelled Flintbek LA 3) using the time frame built by several new AMS-dates connected to its construction sequence in a Bayesian Model. Flintbek LA 3 is mostly known because of its preserved traces of a wheeled vehicle underneath its tumulus. Precise scientific dates for these cart tracks are discussed in this article as well.

Some thoughts concerning the meaning of the burial site Flintbek LA 3 and the shifts in its connotations through time are described. This is done using the concept of a "cultural biography".

A Cultural biography

One approach to study a monument, its historical construction and its context in the former societies and later on can be labelled "cultural biography" (Kopytoff 1986; Roymans 1995; Kolen 1995) or "Radiography of a site" (Mohen 1989, 96) meaning the structural development of the monument and today's reflection of the integration of the monument in the living sphere of the former societies, thus a consideration of temporal shifts in the connotation and perception of the site.

Or to describe it with other words: What can be said indirectly, based on these neolithic monuments on the former societies and their day to day living sphere. Therefore these grave monuments are seen as mirrors through which it can be tried to look into the past and through which it can be tried to get some informations of former identities.

A biography originally describes the life of a human being. The concept has been adopted by Kopytoff (1986) for material objects and commodities. Starting from slavery where humans become commodities to material objects in the classical meaning. For our purposes the description of his method is helpful:

"In doing the biography of a thing, one would ask questions similar to those one asks about people: what, sociologically, are the biographical possibilities inherent in its "status" and in the period and culture, and how are these possibilities realized? Where does the thing come from and who made it? What has been its career so far, and what do people consider to be an ideal career for such things? What are the recognized "ages" or periods in the thing's "life", and what are the cultural markers for them? How does the thing's use change with its age, and what happens to it when it reaches the end of its usefulness?" (ibid. 66-67).

Since this first article in 1986 a lot of literature on the "social life of things" has been published focussing mainly of the cycle of birth, different age functions, the death and burial of objects (e.g. Fontijn 1996; Fontijn 2002; Gosden / Marshall 1999; O'Sullivan / Van de Noort 2007).

But already Kopytoff goes further when he mentions the observation of the "life cycle" of a hut of the Zuku in Zaire over the time span of about 10 years (ibid. 64 – 65). This hut was in the beginning inhabited by a family or a mother and her children, in a second phase it was used as a guest house or as small hut for a widow. Later the hut acts as a meeting point for adolescents or as a kitchen, in a fourth phase as a stable for goats or chickens and at the end it is destroyed by termites.

The condition of the hut itself transmits information to the people living in or next to it and to visitors coming into the village. This information concerns of course the actual use, but also the wealth of the family owning it or the hospitality of the villagers, the organization of the village, the accurateness of the inhabitants and so on.

Nico Roymans (1995) used this idea of cultural biographies for the landscape in his diachronic study on landscape archaeology of the

Meuse-Schelde-Demer region in the border area of Holland and Belgium. He tries to work out a persistent tradition to bury the death next to older burials, especially focussing on urnfields of the Late Bronze Age and Early Iron Age. The connotation of the urnfields as sacral places changes from the Bronze Age to the Middle Ages. Roymans connects myths and legends of sites and the influence of Christianity for example to the perception of prehistoric graves and graveyards.

Roymans is highly influenced by Jan Kolen (1995), who is mainly engaged in the topic of cultural history and the concepts of nature reserves and cultural parks. Kolen has demonstrated for Geuenich, a place ("Flurname") in the Rhineland between Aachen (Aix-la-Chapelle) and Cologne, the long-term cultural history of this place in connection to the oral traditions and subjective experiences of the inhabitants of the circumjacent recent villages of Inden and Altdorf, their activities at the place and with the shifts in the meaning of the site through time (Fig. 2).

The topographically exposed place of Geuenich lies between the modern villages of Inden and Altdorf. Just to mention a few points on the cultural historical development at Geuenich described by Kolen: In Roman times a five-way junction constituted a nucleus for settlement activities. A Merovingian cemetery was excavated there ten years ago and in the Middle Ages, probably already in the 8th century AD, a small chapel of St. Remigius was built there and rebuilt in stone in the 11th century when Geuenich became the center of a parish. After a serious conflagration in 1678 the small settlement was destroyed and the significance of Geuenich decreased, it became a deserted village ("Wüstung"). In more recent times a memorial monument has been erected for the dead soldiers of the First and later of the Second World War as well. Three cemeteries are grouped around Geuenich, one from the end of the 19th century and one for the villages of Inden and Altdorf. Kolen worked out the different connotations of Geuenich as communication spot in the road network, as a settlement with a more or less important influence on the neighbouring villages, an orientation point for the field system organization, a meeting point, a religious center, a war memorial, the modern cemeteries and so on. But additionally he points out the different oral traditions and legends which came up during the life span of the site, with activities like processions, ceremonies for the dead or the avoidance of the place because of legends of supernatural beings. Geuenich can therefore be seen as a collective memory and as a nucleus for the reproduction of cultural identity (Kolen 1995, 147 – 148). The second important point for our purpose can be seen in the fact, that there are always activities taking place at such sites and therefore *"...the thought that the historical landscape is solely historical: a fossilized, rigid monument that reminds us of a passed point in time, a bygone period of a single historical fact"* (Kolen 1995, 148) is simply wrong. These kinds of monuments or places are *"not rigid phenomena but show changes in their cultural meanings, and they play productive social roles"* (ibid. 148).

Places like Geuenich and Flintbek¹, as it will be demonstrated in the following, play an integral part in the living society, they are transformed and changed permanently and their meanings can shift through time. Therefore in a first step the construction of the monument will be described as well as the time frame in the second step. Thirdly, some considerations on the landscape of the Funnel Beaker period are put forward. Thereafter the different connotations of Flintbek LA 3 are investigated, as far as they can be concluded from the currently known facts.

1 For other archaeological examples see e.g.: O'Sullivan/Van de Noort 2007.

Flintbek LA 3

The construction sequence

The construction history of Flintbek is quite long and complex (Fig. 3). LA 3 is famous because of its cart tracks, which are discussed to belong to the oldest evidences of wheel and wagon use in the world (Bakker et al. 1999) and they can now be dated very precisely to about 3400 cal BC (see below). The sequence starts with several non-megalithic graves being established on the site. These are followed by four successive megalithic grave constructions.

Grave A: (Fig. 4–7)

The oldest grave at the site is labelled “Grave A” and is of the so called Konens Høj-type (Madsen 1979, 309; Liversage 1992, 23–24; 79–81; Zich 1999, 19). It consisted of a wooden construction with two enormous posts at the narrow ends, a wooden frame construction and probably a wooden roof, which was covered by pebbles. The inner part has been carefully plastered with plaques of stones, slab stones to place the body of the deceased upon. The whole construction has been buried underneath a small oval-shaped tumulus. The sediment for the embankment was directly dug out from both long sides of the grave. The grave goods consist of a flint axe and five transverse arrowheads (Fig. 42). The slope of the tumulus is quite steep. The lack of erosion on the steep slopes suggests that the later tumuli were built in rapid succession (Fig. 8).

Grave B: (Fig. 9–11)

The second grave is built in the same technique as Grave A. The tumulus is slightly overlapping the former one and the soil for the tumulus was also taken from the lateral ditches. In this state, the monument gives the impression of a narrow but elongated 8-shaped mound. Within the Grave B a flint axe was found. At the northeastern end of the tumulus some heated stones and a destroyed pot have been discovered which could belong – hypothetically – to the plastering of the inner grave because of the similarity of the stone material.

Grave C (Fig. 12–14)

Connected to Grave A at the opposite position to Grave B, Grave C has probably been built as a coffin grave indicated by a slightly concave grave pit. The small ends are shaped like an apsis and a row of pebbles lies all around the inner part of the construction. Probably at the endings enormous posts were erected like at the Graves A and B before.

Grave D (Fig. 12–14)

Grave D seems to be a coffin-grave like Grave C. The construction of this grave involved the incorporation of one of the pebble „walls“ of Grave C. This indicates a close temporal connection between these two graves. Inside the grave a shadow of a human corpse could be discerned. The body is more or less in an extended position with the head pointing in a southwestern direction. A flint axe and eight arrowheads, possibly with an additional one in the early stage of manufacture accompanied the dead. In the stone row one of the stones was depicted with cup-marks.

Grave E (Fig. 15 – 19)

The construction of the Konens Høj-type Grave E resulted in the prolongation of the already existing, very long but narrow monument to the north-west. Interesting is the changing of the preparation of the room for the deceased, which shows no stone plaques anymore but a plastering with burnt flint as it is often to be observed in the Dolmen chambers. All slots between the small end posts and the boards at the longitudinal parts have been closed carefully with a mass of loam and burnt flint. The pieces of grave furniture consist of a thin butted flint axe and five transverse arrow heads.

Grave H (Fig. 15, 20 – 22)

Exactly above Grave D another grave has been dug into the tumulus, therefore it has to be of a younger date. No charcoal or other organic remains could be recovered for scientific dating and no other finds could be consulted, therefore the positioning of this grave, as well as Grave G, are up for discussion.

Grave G (Fig. 15, 20 – 22)

Just next to Grave H and just above Grave C, another grave was found with a small stone packing. It is the first grave orientated in a transverse direction to the other graves and the axis of the overall tumulus. As mentioned before, this grave could also be dated to another time.

First plough marks (Fig. 15, 23)

Plough marks are to be placed, as they survived under the tumulus subsequently constructed. Because of their orientation and coverings by different building phases of the monument, they must belong to two phase. The older ones slightly converge on the graves and the terminus ante quem for the dating is a pebble line at the northeastern end of the tumulus which could have belonged to the wall construction of frame 1 which is bordering the tumulus.

Dolmen chamber II (Fig. 24 – 26)

The first implementation of megalithic stones occurs in Dolmen chamber II on the opposite end of the tumulus to Grave E. It is a very important circumstance that one of the orthostats of this grave fall into the still nearly empty chamber and buried all of the burials underneath.

The building sequence of the Dolmen in Flintbek LA 3 is nearly equal in all four cases:

- 1 a pit has been dug into the ground
- 2 a firing took place inside the pit so that the ground is burnt red and a thin charcoal layer rests on it
- 3 the orthostats have been erected into building pits, whose size depends upon the shape of the standing stone, and with pebbles used as packing
- 4 fitting of dry-stone walling (Zwickelmauerwerk)
- 6 loam-coating to close the tomb from outside, often with a mass of loam with burnt flint insight
- 6 Finally the interior of the chamber is prepared with a plastering of pebbles and several centimeters of burnt and sometimes unburnt flint debitage on top

The entrance of Dolmen II was probably in the southeastern corner. In Dolmen II an axe made of hard rock has been found with a more pointed butt.

Dolmen chamber I (Fig. 24, 28 – 30)

Dolmen I is probably erected contemporaneously to Dolmen II because of the excavated material from the grave-pit which interleaves. One thin butted flint axe could be excavated in the filling.

Frame 1 (Fig. 24)

Probably together with Dolmen I and II, the tumulus is bordered with a first small wall of pebbles, frame 1, for the first time. It is not possible to clarify if this limits only the long but also the small ends of the tumulus of that time.

Second plough marks (Fig. 24)

The new traces are parallel to the tumulus. They are stratigraphically buried under the next tumulus and therefore probably of the same age as the first megalithic phase of Flintbek LA 3.

Grave F (Fig. 24, 31 – 33)

To the west of Dolmen II another earthen grave has been dug into the tumulus, probably to incorporate a wooden coffin with pebbles as covering. The burial contained a thin butted axe and should therefore probably be of neolithic date. Unfortunately there are no organic remains for Radiocarbon Dating. Like Grave G and the Dolmen I and II it is now orientated transverse to the longitudinal axis of the monument. If it is younger than the dolmen I and II, it could be that all the earthen graves are older than the megalithic ones but this cannot be proven.

Fireplaces for flint burning (Fig. 24)

Underneath frame 2 a small elongated flat pit has been excavated which probably has been used for flint burning, probably to provide materials for Dolmen I and II which lay next to it. For Dolmen III the flint for the plastering has been burnt directly on the outside of the chamber.

Dolmen chamber III (Fig. 34 – 36)

Another activity has been taken place at the opposite end of the Tumulus, where Dolmen III was built. It disturbs parts of the tumulus of Grave E. It is a developed Dolmen, like Dolmen I and II, and it is built in the same manner. A firing place for burning the flint has been connected directly to the Dolmen outside. A flint axe had been found above the chamber which could belong to the burial or to a secondary burial².

Frame 2 (Fig. 34)

Now a first megalithic stone border, labelled "frame 2", is erected around the whole tumulus with a rectangular shape.

Dolmen IV (Fig. 35 – 39)

A last Dolmen was built to the north of the tumulus and with an enormous effort it has been surrounded with another stone boundary, frame 3, and buried under a big tumulus. The developed Dolmen has an entrance from the northern side of the monument. Its construction scheme is the same as before. Probably already in neolithic time disturbances occurred in the chamber which destroyed the

2 The current location of this find is not clear.

floor plastering. The flask has not been touched, it was standing in an upright position in one corner, next to it a bone fragment and three lithic projectiles. This is the reason why this pottery could belong to a secondary burial. So this pot and its contents must be seen as a *terminus ante quem* for the dating of the famous cart tracks (Zich 1992/ 1993, 26 Anm. 13; Zich 2006 a; 2006 b) leading towards Dolmen IV. Until this study the dating of this important evidence for the first wheel and cart use in the world have been dated only via typology of this flask, which has been labeled as late Early Neolithic (EN II) or Fuchsberg Phase (Burmeister i. pr.; Zich 2006 a; 2006 b).

Cart tracks (Fig. 37; 40)

The cart tracks are leading to the Dolmen IV and have been conserved underneath the new tumulus. It may still be discussed if the interpretation of the traces is correct, but the width of the striations coincide with the width of (younger) neolithic wheels found in bogs, the distance between the traces coincides roughly with the width of the wheelbase reconstructed from Stare gmajne in Slovenia or from more recent neolithic or bronze age axels found in bogs in Lower Saxony or in the forelands of the Alps, the compression of the earth underneath the hypothetical wheels was strong enough so that iron pan (Ortstein) could arise which probably would not have been the case if a sledge had been used (Burmeister i. pr., Burmeister 2002, 128; Zich 2006 a; 2006 b). A thin layer of soil has been washed inside the striation so that it was conserved until its discovery during excavation.

Posthole (Fig. 37)

West of the Dolmen IV, buried under the tumulus, a posthole had been detected; the function of the post is unknown.

Frame 3 (Fig. 37; 41)

For the third frame of the monument the northern row of frame 2 has been extracted. The remaining holes have been filled with embankment from the tumulus. The whole arrangement has been incorporated. The soil for the tumulus was probably taken directly from the neighbouring north-western side of the long barrow where the old top soil was missing³.

Grave goods (Fig. 42 – 49)

The inventories of the graves are very similar. In the non-megalithic graves A, B, D, E and F thin butted flint axes and in three cases like in Grave A, D and E 4-8 transverse arrowheads accompanied the dead (Fig. 42 – 45; 48). In the Dolmen chambers I (Fig. 47) and a thin butted flint axe has been found and in Dolmen II (Fig. 46) one pointed butted hard rock axe. In the strong damaged Dolmen III no grave good was preserved but in Dolmen IV three more transverse arrowheads, a small bonefragment and for the first time pottery, an entire flask connected typologically to the Late Early Neolithic, the Fuchsberg phase has been recorded (Fig. 49).

The time frame

13 new AMS dates for the graves A, B, D and E and from all of the four Dolmen chambers are available at the moment (Fig. 51-52). Some dates are connected directly to the construction, others repre-

3 This has not been documented but described in the excavation report.

sent the use, however some may be the result of potentially intrusive material. The samples consists of four dates from human bones and eight are made from charcoal and one more belongs to the glume-base and organic food remains (Fig. 52).

Charcoal⁴

The main sample material of the Flintbek sites comes from charcoal. To use this material for the dating of archaeological features, a species determination for the tree and measurement of the diameter have been carried out. Samples were preferably taken from short lived branches or twigs instead of big trunks where probable old wood gives potentially problematic dates. The numbers of the tree rings selected for the dating have been counted even if this information cannot be analysed at the moment. Last but not least some waney edges, the outermost tree growth rings of the tree were detected in the material, so that a very accurate date for the constructions or use of the monuments is possible.

Hazel was sampled three times, ash two times and elder, birch and oak once for the dates. The sample from grave D (KIA41582) dates to the Mesolithic and probably entered the grave with the soil material. This sample has been excluded from the model of the neolithic development of the monument (see below).

Bone⁵

Four bones have been dated (Fig. 52). The measured data of ID 3-4 are about 100 years younger than the datings of ID 1 and 7. It is possible that these pairs of samples belong each to one individual. The $\delta^{13}\text{C}$ values leads to the hypotheses, that the individual(s) of sample 3 and 4 ($\delta^{13}\text{C}$ C: between -22 and -19) have had another diet than the individual(s) of sample 1 and 7 (with slightly more positive $\delta^{13}\text{C}$: between -18 and -15), probably with a marine component of fish, marine mammal or shell (Hüls 2010; Fischer/Heinemeier 2003). Therefore in the modelling of the ^{14}C dates, the older samples (ID 1 and 7) have been excluded (see below).

Two samples had been investigated for aDNA⁶ remains but unfortunately no DNA at all could be detected.

Modelling the data

A data model based on the implications of Bayesian statistics in Oxcal has been established for Flintbek LA 3. As mentioned earlier, three dates have been excluded, one from Mesolithic age which seems to be an older contamination which came into the grave with the sediment, and two of the bone samples (KIA40095-40096) because of an indication of another diet and therefore unsuitability at the moment for the absolute dating of the burials.

For the model, a sample sequence according to the stratigraphical observations of the excavations has been established:

Grave A > Grave B > Grave E > Dolmen II = Dolmen I > Dolmen III > Dolmen IV (where ">" means older than, "=" meaning more or less contemporaneous).

First, only the dates related to the construction of the graves are put into the model. Graves A and E as well as the Dolmen I, II and III could be considered for this purpose. The dates can be reduced to the timespan between about 3500–3425 cal BC, that is 75 years or three generations for these eight grave constructions (Fig. 53). The

- 4 The analysis have been carried out from Doris Jansen and Oliver Nelle from the Ecology Center in Kiel and I would like to thank them very much for their contribution.
- 5 Jessica Schmitz did the analysis of the bone material from Flintbek. I would like to thank her very much as well. Unfortunately the report isn't yet available.
- 6 Many thanks to Nicole von Wurmb-Schwark, University of Kiel, and her team for the measurements.

Dolmens I and III deliver very accurate dates of construction because charcoal fragments possess waney edges and come from the burning of the interior of the pit dug into the ground to contain the Dolmen.

In the next step we wanted to include the use of the structures. To do this the bone dates and the two dates of the filling of Dolmen IV were added into the model, after the construction of Dolmen III. Unfortunately there is no date connected directly to the building of Dolmen IV. One sample (KIA41583) comes from the interior filling of the chamber (feature 9030) but the second date (KIA39915 of feature 9012) is very closely connected to the actual use of the chamber. A base of a glume with a sticky organic substance was washed out of the sediment recovered in the interior of the decorated flask. This flask is very well preserved and not disturbed by probable prehistoric excavations into the plastering of the chambers and therefore it has been discussed by the excavator D. Stoltenberg if it belongs to a secondary burial, which can not be answered definitely at the moment.

The ^{14}C dates measured from the bones found in chamber II underneath the fallen orthostat are about 100 years older than the charcoal dates of the entire data series. If they are put into the model after the building of Dolmen II but before the building of Dolmen III poor overall agreement indicate problems in the statistical calculations. If they are instead integrated after the construction of Dolmen III which was probably built only a few years after Dolmen II, these warnings mostly disappear. For the model these bone dates have been put in a position before the use of Dolmen IV.

For the construction and use of the graves at Flintbek LA 3 there can be postulated an absolute date between about 3500–3360 cal BC, so a time span of about 140 years (Fig. 54). The dates nicely fit into the model and it was possible to limit the time span given by the sample measurements and the shape of the calibration curve with archaeological arguments to one tail of a “wobble” of the calibration curve after 3500 cal BC. Some more dates, mainly of fills, – so of the “use” character – are still in the laboratory.

One important note to mention is the precision of the dates of the cart tracks leading to chamber IV in the LA 3 long barrow. These tracks must have been generated after the Dolmens I-III (*terminus post quem*) and before the use of chamber IV or before their discovery with a tumulus. The youngest Dolmen with a date clearly connected to the construction is the waney edge date of the burning layer of the grave pit of Dolmen III therefore it gives us a *terminus post quem* and for the *terminus ante quem* the date of the grain remains from the interior of the lugged flask inside Dolmen IV can be taken into account. After the modelling of the dates for the cart tracks the time span can be limited to the range between 3460–3385 cal BC, around 3400 cal BC.

So far the tracks have been dated typologically to 3650–3335 (e.g. Bakker et al. 1999; Bakker 2004, 287; Burmeister i.pr.; Zich 2006a; 2006b). They are discussed as belonging to the oldest references for the knowledge of carts or wagons in world history together with the incision of a wagon on a funnel beaker pot found in Bronocice, Poland (Fig. 53) with a similar ^{14}C date (Bronocice 34-A1, GrN-19612: 4725±50 BP, 3629–3379 cal BC; standard dev. 1 sigma) made from a bone of a cattle associated with the pot in a small settlement pit (Bakker et al. 1999, 785–786).

A look at the shape of the calibration curve shows two big wiggles between 3650–3350 cal BC which makes it difficult to differentiate the dates falling into this time span. With the help of the new AMS-series and stratigraphical considerations, the cart tracks of the Flintbek LA 3 site can be considered at the moment as the best dated early evi-

dence of cart use in the world. It is another question of course, if they still belong to the oldest evidence, but after the newest critical résumé of the oldest evidences of wheels and wagons even the Near Eastern finds like the pictograms of wagons in Uruk have to be dated not earlier than 3400 cal BC. Perhaps they are even 200–300 years later (Burmeister i. pr.). And the Bronocice date is only one single date falling into the wiggle area between 3600–3350 cal BC and therefore they could also be of the same date or even be younger than Flintbek.

The depiction of a stone with a two-wheeled vehicle of the gallery grave of Züschen belonging to the Wartberg culture is difficult to date as well. The oldest possible date for the grave construction of 3500 cal BC can be discussed (Burmeister i. pr.; Raetzl-Fabian 2000, 197–199; 2002).

The pottery vessels from the Baden culture are also difficult to interpret and to date, typologically they could be older but also of the same age or even younger than Flintbek (Burmeister i. pr.; Maran 2004, 266). The finds associated to radiometric dated assemblages seems to belong more to the younger half of the time span between 3650–3350 cal BC (Furholt 2009, 238–240). The ¹⁴C dates of the 2002 excavated wooden wheel and of the axle of the Boleráz horizon in Stare gmajne in Slovenia indicate after calibration dates in the next wiggle area of the calibration curve between 3360 and 3030 cal BC (Burmeister i. pr.; Maran 2004, 269; Schlichtherle 2004, 299–301; Velušček 2002, 38–41). Nevertheless these findings have to be seen at the moment as the oldest proof for wagons of a functional size.

The landscape reconstruction (Fig. 56)

The pollen analysis on site from the archaeological layers and underneath the tumulus conducted by W. Groenman-van Waateringe⁷ showed no pollen remains for the site of Flintbek LA 3. The off site analysis from the Kirchenmoor and from the Kleinflintbeker Moor made by A. Alsleben⁸ are not ready for discussion, but at least the profile from the Kirchenmoor bog contains neolithic phases (personal communication A. Alsleben). So at the moment the landscape reconstruction of the time slice 3650–3350 cal BC is based only on the anthracological⁹ determinations and has to be seen as preliminary (Mischka / Jansen i. prep.).

In the time slice four of the first investigations of the charcoal which lie next to the wiggles around 3500 cal BC indicate a landscape with a mixed oak forest consisting of oak (*Quercus*), ash (*Fraxinus*) and lime tree (*Tilia*). After a first opening of the landscape in the preceding phase a quite big remarkable clearing for open land can be recognized. A lot of hazel (*Corylus*) has been detected among the charcoal samples as well as pomaceous fruit (*Pomoideae*), both plants growing often at the edge of the forest. Pomaceous fruits are normally not very common in pollen analysis because of their insect pollination. But, without the comparison with the *off site* pollen analysis it is difficult to decide if the branches of pomaceous fruits and hazel are taken more often for the firings connected to the burials than other plants so that the charcoal samples from the graves are not representative for the surrounding environment. Last but not least the wetland or pioneer vegetation has been reduced distinctly during the activities at the monument Flintbek LA 3.

The connotation of Flintbek LA 3 for former societies

After clarifying the building sequence and chronological frame and after the first ideas about the environment we can try to con-

- 7 I would like to thank W. Groenman-van Waateringe very much for her analysis.
- 8 Also A. Alsleben is contributing with pollen analysis to the understanding of the landscape in prehistoric times, therefore I would like to thank her very much as well.
- 9 For the anthracological analysis I have to thank D. Jansen very much, who determined more than 2000 charcoal samples from the Flintbek site so far.

sider the connotation of the graves at Flintbek LA 3. The landscape has been opened distinctively during the building and use of the monument. At the beginning of the monument the first five or possibly eight graves A – E and F – H have been built as single graves underneath tumuli. The grave goods indicate most probably male gender¹⁰ with axe and bow and arrow as standard equipment and some elaborate grave constructions (Konens Høj, tree coffins). It seems that one or two graves per generation were built there, so that not all people of one group (household, family, village etc.) have been buried in this way at the site LA 3 (c. f. Laux 1996, 50; 54).

With the Dolmens, provable for Flintbek LA 3 only for Dolmen II, starts the burial of several persons together in one grave. As we know from the bones, only a few adults and also children were entombed¹¹, and we may also hypothesise the presence of females alongside. So we can detect a shift in the meaning of the burial monument from single burials to group burials, perhaps of families, defined here according to Steuer as a social unit of relatives and non-relatives living together (Steuer 1982, 36–37). In Benzingerode the burial of close relatives could be worked out by aDNA-Analysis for a collective burial inside a non-megalithic mortuary house of the Bernburg Culture (Berthold 2008, 123–125¹²).

In the Dolmen, axes and arrowheads have also been found so perhaps the prior connotation of this equipment was overcome. Because of the children it can be speculated whether the burial place is now opened for families or if this phenomenon is the manifestation of some kind of heritable status. The $\delta^{13}\text{C}$ -dates¹³ of the bones of Dolmen II in Flintbek indicate differences in diet and it would be interesting to check the anthropological sex determinations to see if it is similar to Benzingerode where the $\delta^{13}\text{C}$ values of two male individuals indicate another diet component (Berthold 2008, 129–130) or in Trebur, where the men seem to have eaten more meat (Dürrewichter et al. 2006, 45), or like at the cemetery of Ostorf where greater shifts in the components of the diet appear in both sexes (Lübke et al. 2007, 323). Even if there are still some methodological questions to solve, these examples lead to the question if different parts of the society had different access to resources and if some kind of regulation should be supposed or, if this difference in diet may reflect (daily) movements and the mobility of the people in the landscape.

The Tumuli were visible in the landscape, not only as small artificial hills but the exact position of the graves must also have been known or perhaps been indicated for some time. It could be for example that the upper ends of the big posts at the small edges of the Konens Høj graves were higher than the tumuli. This can be said at least for the connection of the graves C/D and G/H which are built directly one on top of the other. It can be speculated whether there is some kind of relationship between the buried persons visible in this close connection.

Another observation can be seen in the sequence of the different graves. Mostly, the graves are always built on the opposite end of the oval tumulus. Grave B was built on the northeastern side of the tumulus of grave A, graves C and D, later E then on the southwestern end. Dolmen II and I were constructed on the northeastern end again and Dolmen III on the southwestern end and finally Dolmen IV north of all the other graves with an entrance probably facing to the north and therewith in the opposite direction to the other Dolmen. We can speculate about the significance of this observation, perhaps it reflects movements in the settlement patterns as well.

Another aspect is the observation that the works are carried out with increasing care over time observable for example at Grave E which is caulked properly with clay.

10 It cannot be excluded that the Konens Høj graves would have been built for several burials as it could be observed in some cases in Denmark or Great Britain (Madsen 1979, 311; Ashbee 1970).

11 Oral communication J. Schmitz.

12 In Benzingerode the $\delta^{13}\text{C}$ values of two male individuals indicate another diet component, similar to the observation in Flintbek, where as well one or two individuals have slightly different values than the others, mentioned above.

13 Unfortunately the stable isotope of nitrogen could not be measured so far for Flintbek. The $\delta^{13}\text{C}$ -values have been measured routinely by dating the samples in the AMS-Laboratory of Kiel.

An interesting insight into the significance of the graves and the grave construction are furthermore the plough marks. They are preserved directly next to the graves and therefore indicate a quite close integration of the monument with the economical background of the society. During the last non-megalithic phase and in the first megalithic phase of Flintbek LA 3 there was of course no “sacred wood” (“Heiliger Hain”) or separation between death and living in the landscape¹⁴. The only separation between the ploughing zone and the graves consists of a small wall of pebbles around the long barrow which was built up after the first recognizable ploughing activities.

Not mentioned so far are the often observed settlement finds or features like fireplaces among those two for burning flint for the floor plasterings, pits or postholes¹⁵ underneath or next to the monuments or integrated in the débris of the tumuli. But they can be taken hypothetically as indicators for a close interdependence between the different activities: Mortuary, agricultural and dwelling purposes.

Conclusion and further research

In this paper it was attempted to develop the cultural biography of the site Flintbek LA 3 for the first 150 years of its existence. It has been calculated, that the long barrows are not rigid monuments built once and for eternity, but that they are integrated and permanently changed elements of the living sphere. Their connotation differed across time, for example from possible single graves to collective graves. It may be expected that in the following centuries these meanings changed even more but this is not the focus of research at the moment, instead it will be interesting to compare the cultural biography of the site Flintbek LA 3 with the whole settlement region of Flintbek and to compare it with the biographies of the other barrows. Which ones are contemporaneous? Where were the other members of the society buried? Is the construction sequence reproduced elsewhere? What about the fields; are there plough marks close to the other monuments as well? And, what about the settlement remains?

Acknowledgement

I would like to express my gratitude to Dr. B. Gehlen for her fantastic drawings of the stone tools, L. Hermansen for the uncomplicated scanning of the pot from fig. 50 and G. Bischof-Hagel for the preparation of plans and section which I could take as a base for the digitization. I would also like to thank the excavator D. Stoltenberg for his excellent observations and the photos of the features shown here and Dr. B. Zich, Landesmuseum Halle and of course Prof. Dr. C. von Carnap-Bornheim, Landesmuseum Schleswig for allowing my to study this material. I am very grateful to D. Jansen and J. Schmitz for analysing the charcoal and bone remains.

14 This seems to be a difference for other regions like for example the Altmark with the megalithic graves at Lüdelsen (Demnick et al. 2008, 34).

15 One posthole has been excavated in the northwestern part of Dolmen IV (fig. 37). It is covered by the tumulus.

References

- Ashbee 1970: P. Ashbee, *The Earthen Long Barrow in Britain. An introduction to the study of the funerary practice and culture of the neolithic people of the third millenium B. C.* (London 1970).
- Bakker et al. 1999: J. A. Bakker / J. Kruk / A. E. Lanting / S. Milisauskas, *The Earliest Evidence Of Wheeled Vehicles In Europe And The Near East.* *Antiquity* 73/282, 1999, 778 – 790.
- Bakker 2004: J. A. Bakker, *Die neolithischen Wagen im nördlichen Mitteleuropa.* In: M. Fansa / S. Burmeister (Eds.), *Rad und Wagen. Der Ursprung einer Innovation. Wagen im Vorderen Orient und Europa* (Mainz 2004) 283 – 294.
- Berthold et al. 2008: B. Berthold / K. W. Alt / B. Bramanti / S. Drings / J. Kranzbühler / C. Meyer / O. Nehlich / M. P. Richards, *Die Totenhütte von Benzingerode. Archäologie und Anthropologie.* *Archäologie in Sachsen-Anhalt Sonderband 7* (Halle 2008).
- Burmeister 2002: St. Burmeister, *Straßen im Moor. Die befahrbaren stein- und bronzezeitlichen Moorwege in Nordwestdeutschland.* In: J. Könninger / M. Mainberger / H. Schlichtherle / M. Vosteen (Eds.), *Schleife, Schlitten, Rad und Wagen. Zur Frage früher Transportmittel nördlich der Alpen.* *Hemmenhofener Skripte 3* (Gaienhofen-Hemmenhofen 2002) 123 – 132.
- Burmeister 2004: S. Burmeister, *Neolithische und bronzezeitliche Moorfunde aus den Niederlanden, Nordwestdeutschland und Dänemark.* In: M. Fansa / S. Burmeister (Eds.), *Rad und Wagen. Der Ursprung einer Innovation. Wagen im Vorderen Orient und Europa* (Mainz 2004) 321 – 340.
- Burmeister i. pr.: S. Burmeister, *Innovationswege – Wege der Kommunikation. Erkenntnisprobleme am Beispiel des Wagens im 4. Jahrtausend v. Chr.* In: *Sozialarchäologische Perspektiven: Gesellschaftlicher Wandel 5000-1500 v. Chr. zwischen Atlantik und Kaukasus“ vom 15.-18. Oktober 2007 in Kiel.* *Universitätsforschungen zur prähistorischen Archäologie, i. pr.*
- Demnick et al. 2008: D. Demnick / S. Diers / H.-R. Bork / B. Fritsch / J. Müller, *Der Großdolmen Lüdelsen 3 in der westlichen Altmark (Sachsen-Anhalt) - Baugeschichte, Rituale und Landschaftsrekonstruktion.* *www.jungsteinSITE.de* 2008, 15. Dezember.
- Dürnwächter et al. 2006: C. Dürnwächter / O. E. Craig / M. J. Collins / J. Burger / K. W. Alt, *Beyond the grave - variability in Neolithic diets in Southern Germany.* *Journal of Archaeological Science* 33, 2006, 39 – 48.
- Fischer/Heinemeier 2003: A. Fischer / J. Heinemeier, *Freshwater reservoir effect in ¹⁴C Dates of food residue on pottery.* *Radiocarbon* 45, 2003, 449 – 466.
- Fontijn 1996: D. R. Fontijn, *Socializing Landscape. Second Thoughts about the Cultural Biography of Urnfields.* *Archaeological Dialogues* 3(1), 1996, 77 – 87.
- Fontijn 2002: D. R. Fontijn, *Sacrificial landscapes : cultural biographies of persons, objects and ‚natural‘ places in the Bronze Age of the Southern Netherlands, C. 2300-600 BC.* *Analecta praehistorica Leidensia* 33/34 (Leiden 2002).
- Furholt 2009: M. Furholt, *Die nördlichen Badener Keramikstile im Kontext des mitteleuropäischen Spätneolithikums (3650 – 2900 v. Chr.).* *Studien zur Archäologie in Ostmitteleuropa* 3 (Bonn 2009).
- Gosden / Marshall 1999: C. Gosden and Y. Marshall, *The cultural biography of objects.* *World Archaeology* 31, 2, 1999, 169 – 178.
- Hüls 2010: M. Hüls, *Laborbericht, Leibniz Labor für Altersbestimmung und Isotopenforschung, Christian-Albrechts-Universität zu Kiel vom 02.03.2010.*
- Jansen u. Mischka i. prep.: D. Jansen und D. Mischka, *Auswertung der Holzkohlefunde aus den Grabungen von Flintbek (i. prep.).*
- Jansen i. prep.: D. Jansen, *Prehistoric wooded environment and wood economy of Northern central Europe, investigated by archaeo- and geoanthracological methods (i. prep.).*
- Kolen 1995: J. Kolen, *Recreating (in) nature, visiting history.* *Archaeological Dialogues* 2, 1995, 127 – 159.
- Kopytoff 1986: I. Kopytoff, *The cultural biography of things: commoditisation as process.* In: A. Appadurai (Ed.), *The social life of things. Commodities in cultural perspective* (Cambridge 1986) 64 – 91.
- Laux 1996: F. Laux, *Großsteingräber zwischen Weser und Elbe.* In: W.

- Budesheim/H. Keiling (Eds.), Zur jüngeren Steinzeit in Norddeutschland. Einblicke in das Leben der ersten Bauern. Beiträge für Wissenschaft und Kultur 2 (Neumünster 1996) 42-63.
- Liversage 1992: D. Liversage, Barkaer. Long Barrows and Settlements (Kopenhagen 1992).
- Ludemann/Nelle 2002: T. Ludemann u. O. Nelle, Die Wälder am Schauinsland und ihre Nutzung durch Bergbau und Köhlerei. Freiburger Forstl. Forsch. 15 (Freiburg 2002).
- Lübke et al. 2007: H. Lübke / F. Lüth / T. Terberger, Fishers or farmers? The archaeology of the Ostorf cemetery and related Neolithic finds in the light of new data. Ber. RGK 88, 2007, 307 – 337.
- Madsen 1979: T. Madsen, Earthern long barrows and timber structures: aspects of the Early mortuary in Denmark. Proceedings of the Prehistoric Society 45, 1979, 301 – 320.
- Maran 2004: J. Maran, Kulturkontakte und Wege der Ausbreitung der Wagentechnologie im 4. Jahrtausend v. Chr. In: M. Fansa/S. Burmeister 2004, 429 – 442.
- Mischka i. prep.: D. Mischka, Chronology and Chorology of Flintbek (i. prep.).
- Mohen 1989: J.-P. Mohen, Le monde des mégalithes (Porto 1989).
- O'Sullivan / Van de Noort 2007: A. O'Sullivan u. R. Van de Noort, Temporality, cultural biography and seasonality: rethinking time in wetland archaeology. In: J. Barber / C. Clark / M. Cressy / A. Crone / A. Hale / J. Henderson / R. Housley / R. Sands / A. Sheridan (Eds.), Archaeology from the Wetlands: recent perspectives: proceedings of the 11th WARP conference, Edinburgh 2005. Society of Antiquaries of Scotland (Edinburgh 2007) 67 – 78.
- Pétrequin et al. 2006: P. Pétrequin / R.-M. Arbogast / A.-M. Pétrequin / S. van Willigen / M. Bailly (Eds.), Premiers chariots, premiers araires. La diffusion de la traction animale en Europe pendant les IVe et IIIe millénaires avant notre ère. Centre National de la Recherche Scientifique Monographies 29 (Paris 2006).
- Raetzal-Fabian 2000: D. Raetzal-Fabian, Calden. Erdwerk und Bestattungspplätze des Jungneolithikums. Architektur – Ritual – Chronologie. Universitätsforschungen zur prähistorischen Archäologie 70 (Bonn 2000).
- Raetzal-Fabian 2002: D. Raetzal-Fabian, Absolute Chronology and Cultural Development of the Neolithic Wartberg Culture in Germany. www.jungsteinSITE.de, article from 05.01.2002.
- Roymans 1995: N. Roymans, The cultural biography of urnfields and the long-term history of a mythical landscape. Archaeological Dialogues 2, 1995, 2 – 24 and 36 – 38.
- Schlichtherle 2004: H. Schlichtherle, Wagenfunde aus den Seeufersiedlungen im zirkumalpinen Raum. In: M. Fansa / S. Burmeister (Eds.), Rad und Wagen. Der Ursprung einer Innovation. Wagen im Vorderen Orient und Europa (Mainz 2004) 295 – 314.
- Schmitz i. prep.: J. Schmitz, Die menschlichen Knochen aus den Flintbeker Gräbern (i. prep.).
- Velušček 2002: A. Velušček, Ein Rad mit Achse aus dem Laibacher Moor. In J. Köninger / M. Mainberger / H. Schlichtherle / M. Vosteen (Eds.), Schleife, Schlitten, Rad und Wagen. Zur Frage früher Transportmittel nördlich der Alpen. Hemmenhofener Skripte 3 (Gaienhofen-Hemmenhofen 2002) 38 – 42.
- Zich 1999: B. Zich, Das Hügelgräberfeld von Flintbek nach zwanzig Ausgrabungsjahren. In: Jahrb. für das ehemalige Amt Bordesholm 1 (Bordesholm 1999) 7 – 58.
- Zich 1992/1993: B. Zich, Die Ausgrabungen chronisch gefährdeter Hügelgräber der Stein- und Bronzezeit in Flintbek, Kreis Rendsburg-Eckernförde. Ein Vorbericht. Offa 49/50, 1992 / 1993, 15 – 31.
- Zich 2005: B. Zich, Flintbek, Kr. Rendsburg-Eckernförde. Grabhügel LA 11 und LA 12. Megalithgräber, LA 56, LA 167 und LA 17/171. Flintglühplatz, LA 167A. Offa 59/60, 2002/2003, 258 – 276.
- Zich 2006a: B. Zich, Neolithic Vehicle Tracks Superposed by Long-Barrow LA 3, Flintbek, North Germany. Archaeologia Baltica 6, 2006, 22 – 30.
- Zich 2006b: B. Zich, Ornières de véhicule néolithiques à Flintbek (Allemagne du Nord). In Pétrequin et al. 2006, 215 – 224.

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Impressum

ISSN 1868-3088

Redaktion: Martin Furholt, Kiel
 Techn. Redaktion und Layout:
 Holger Dieterich, Kiel

Urheberrechtliche Hinweise:
 Siehe www.jungsteinsite.de, Artikel

December 20th, 2010

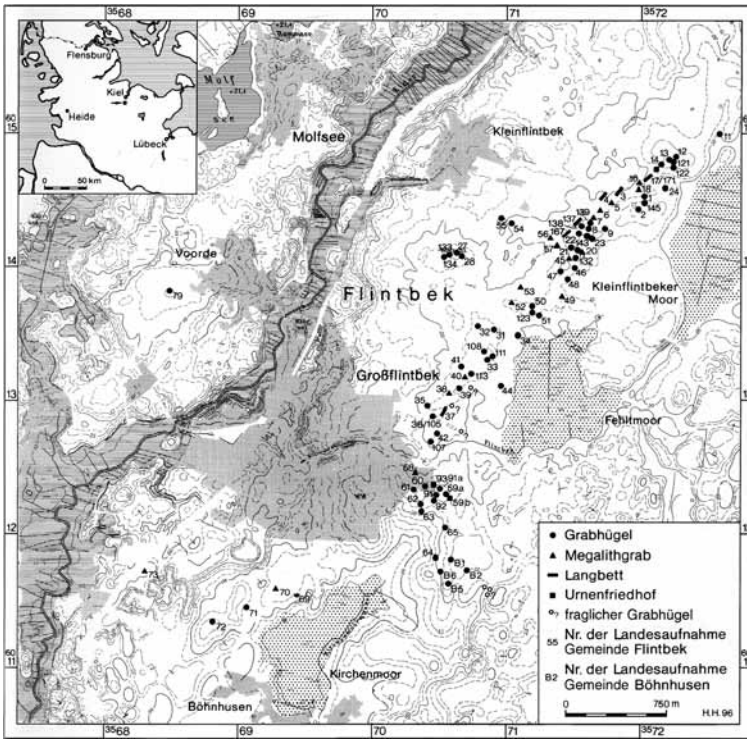


Fig. 1. Flintbek. Map of the sites of the Flintbek region with sites excavated between 1977-1996 and the position of Flintbek LA 3 in the northeast (Zich 2002/2003, 259).

Abb. 1. Flintbek. Lage der zwischen 1977-1996 ausgegrabenen Fundplätze mit Flintbek LA 3 im Nordosten (Zich 2000/2003, 259).



Fig. 2. Aerial photograph of the site ("Flurname") named Geuenich in the Rhinland which was taken as a case study by J. Kolen for a cultural biography of a site.

Abb. 2. Luftaufnahme der Flur Geuenich im Rheinland. Dieser Platz diente J. Kolen für eine Fallstudie zur „Biographie“ eines Ortes.



Fig. 3. Flintbek LA 3 Excavation plan with different features separated by colours. In the northeastern part the famous cart tracks, now AMS-dated to 3460-3385 cal BC are leading towards Dolmen IV.

Abb. 3. Flintbek LA 3. Grabungsplan mit Darstellung aller Befunde in verschiedenen Farben. Im Nordosten sind die berühmten Wagenspuren zu erkennen, die auf den jüngsten Dolmen IV zulaufen und die aufgrund neuer AMS-Daten in die Zeit 3460-3385 v. Chr. datiert werden konnten.

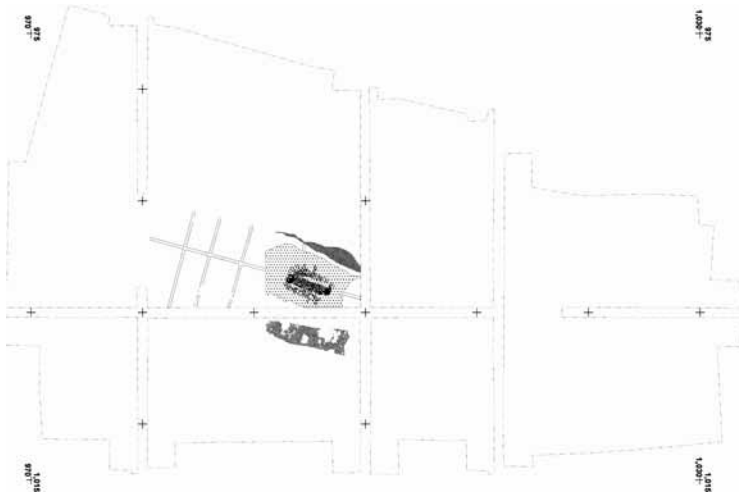


Fig. 4. Flintbek LA 3, Grave A. Position of Grave A in the excavation plan.

Abb. 4. Flintbek LA 3, Grab A. Lage von Grab A im Grabungsplan.

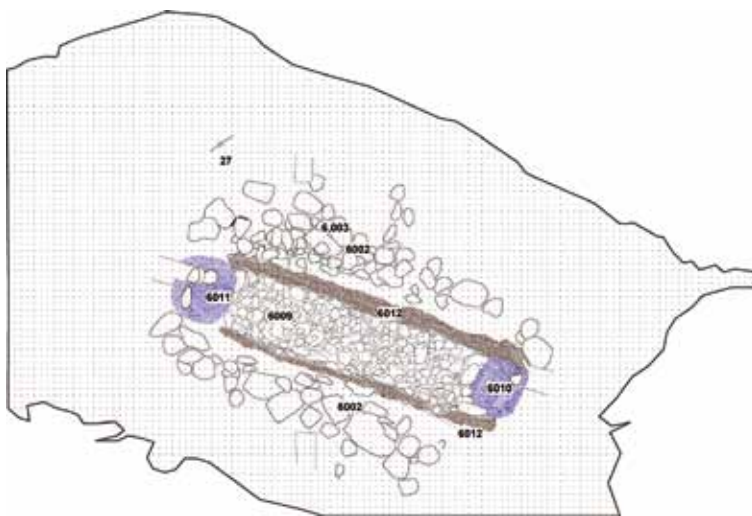


Fig. 5. Flintbek LA 3, Grave A. Excavation plan with feature numbers (scale 1:35).

Abb. 5. Flintbek LA 3, Grab A. Grabungsplan mit Befundnummern (Maßstab 1:35).



Fig. 6. Flintbek LA 3, Grave A. Photo of the Konens Høj grave with a floor of slabstones; view from westsouthwest (Photo D. Stoltenberg).

Abb. 6. Flintbek LA 3, Grab A. Photo des Konens Høj Grabs mit einer Bodenpflasterung aus flachen Steinplatten; Ansicht von WSW (Photo D. Stoltenberg).

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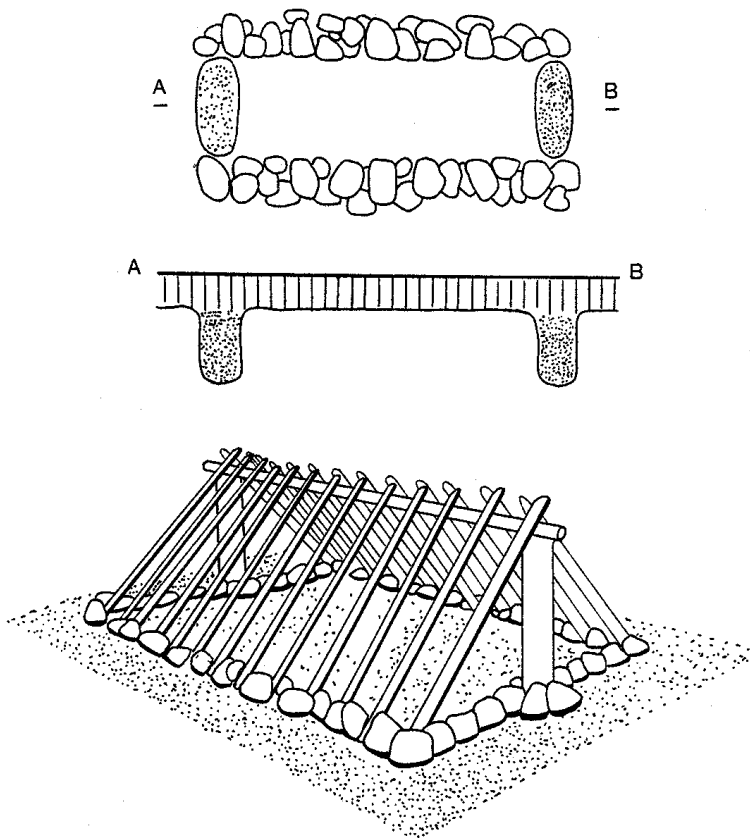


Fig. 7. Proposal of a reconstruction of a Konens Høj Grave after Liversage 1983 (Migdley 1992, 412, fig. 109).

Abb. 7. Rekonstruktionsvorschlag für ein Grabaufbau vom Typ Konens Høj nach Liversage 1983 (Migdley 1992, 412, Abb. 109).

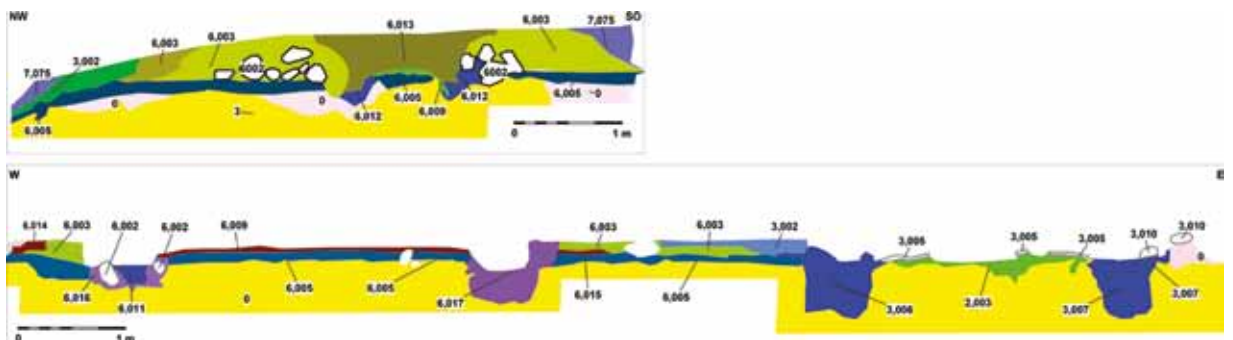


Fig. 8. Flintbek LA 3. Cross section through Grave A and longitudinal section through Grave A and B with feature numbers, showing steep slopes of the tumuli and the stratigraphical superposition of the tumulus of Grave B (3002) above the tumulus of Grave A (6003).

Abb. 8. Flintbek LA 3. Querprofil durch Grab A und Längsprofil durch die Gräber A und B mit Befundnummern. Erkennbar sind steil aufgeschüttete Tumuli und die stratigraphische Überschneidung der Hügel zu den Gräbern A (6003) und B (3002).

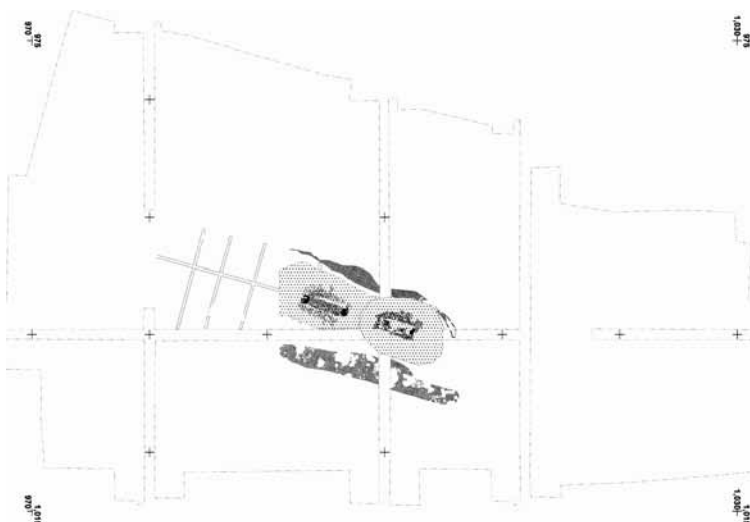


Fig. 9. Flintbek LA 3, Grave B. Position of Grave B in the excavation plan. The previous phase is marked in grey.

Abb. 9. Flintbek LA 3, Grab B. Lage von Grab B im Grabungsplan. Die vorherige Phase ist grau unterlegt.



Fig. 10. Flintbek LA 3, Grave B. Excavation plan with feature numbers (scale 1:35).

Abb. 10. Flintbek LA 3, Grab B. Ausgrabungsplan mit Befundnummern (Maßstab 1:35).



Fig. 11. Flintbek LA 3, Grave B. Photo of the Konens Høj grave with a floor of slabstones; view from eastnortheast (Photo D. Stoltenberg).

Abb. 11. Flintbek LA 3, Grab B. Photo des Konens Høj Grabs mit seinem Bodenpflaster aus Steinplatten; Ansicht von ENE (Photo D. Stoltenberg).

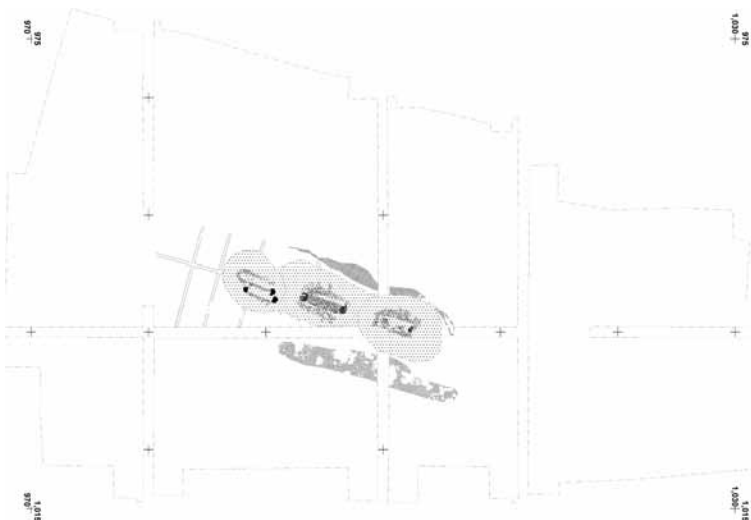


Fig. 12. Flintbek LA 3, Graves C and D. Position of the Graves C and D in the excavation plan. The previous phases are marked in grey.

Abb. 12. Flintbek LA 3, Gräber C und D. Lage der Gräber C und D im Grabungsplan. Die vorherigen Phasen sind grau schattiert.

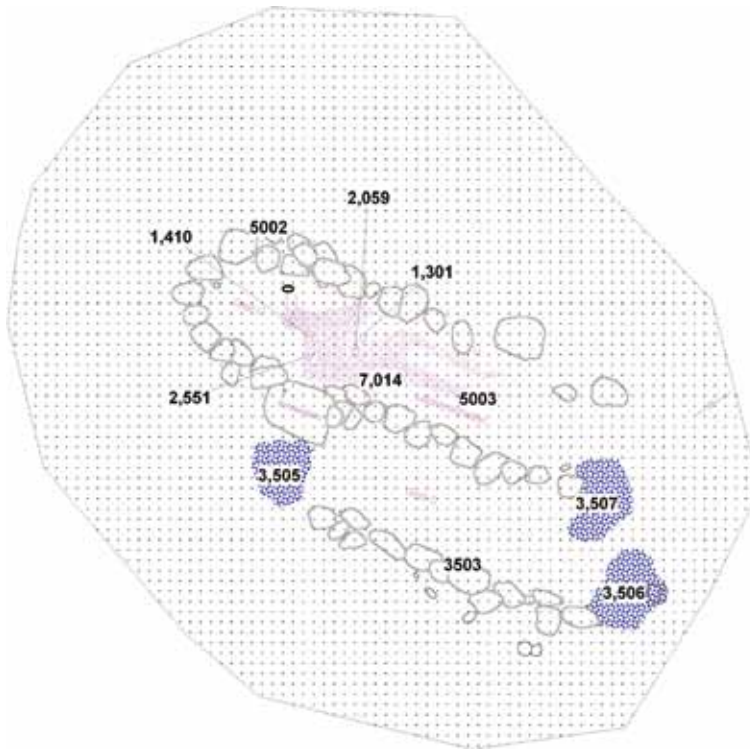


Fig. 13. Flintbek LA 3, Graves C and D. Excavation plan with feature numbers and shadow of human corpse in Grave D (scale 1:35).

Abb. 13. Flintbek LA 3, Gräber C und D. Ausgrabungsplan mit Befundnummern. In Grab D ist der Leichenschatten eines Menschen zu sehen (Maßstab 1:35).



Fig. 14. Flintbek LA 3, Graves C and D. Photo, view from east-northeast; within Grave D the shadow of a human corpse is visible (Photo D. Stoltenberg).

Abb. 14. Flintbek LA 3, Gräber C und D. Photo des Ausgrabungsbefunds, Ansicht von Ostnordost; im Bereich von Grab D ist der Leichenschatten eines Menschen zu erkennen. (Photo D. Stoltenberg).

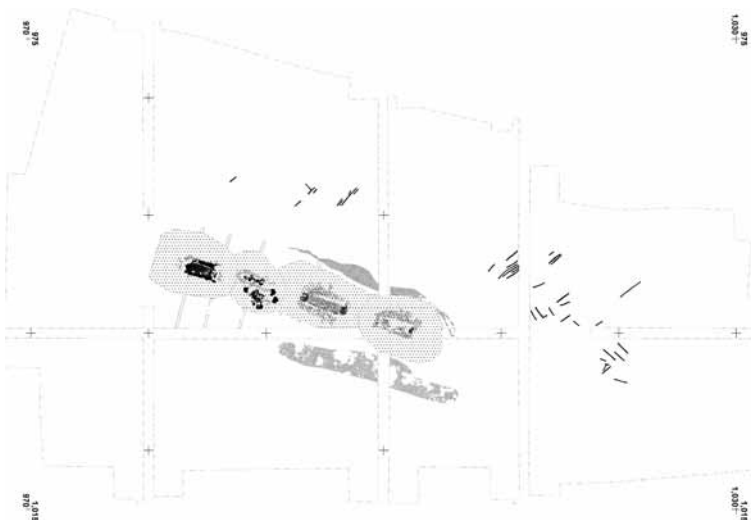


Fig. 15. Flintbek LA 3. Position of Graves E, G, H and plough marks 1 in the excavation plan. The previous phases are marked in grey.

Abb. 15. Flintbek LA 3. Lage der Gräber E, G und H sowie der ersten Pflugspuren im Grabungsplan. Die vorherigen Phasen sind grau schattiert.

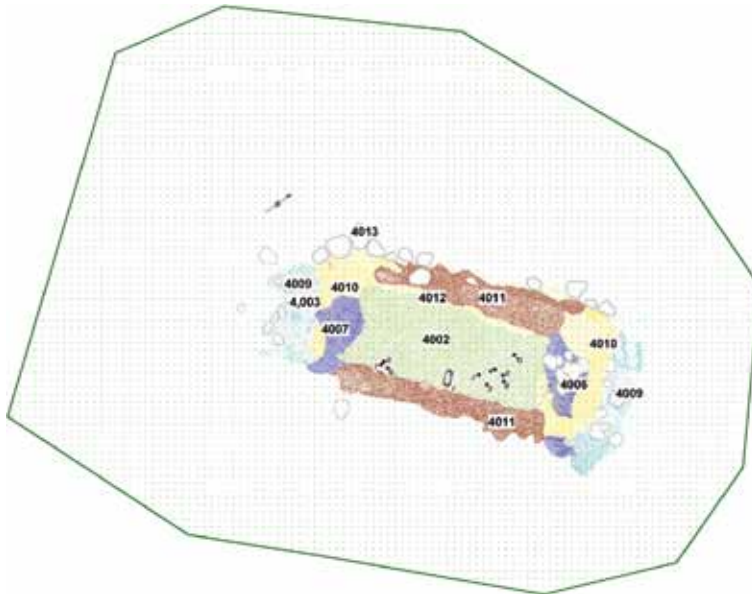


Fig. 16. Flintbek LA 3, Grave E. Excavation plan with feature numbers (scale 1:35).

Abb. 16. Flintbek LA 3, Grab E. Grabungsplan mit Befundnummern (Maßstab 1:35).



Fig. 17. Flintbek LA 3, Grave E. Photo of the Konens Høj grave with a floor of burnt flint, view from eastnortheast (Photo D. Stoltenberg).

Abb. 17. Flintbek LA 3, Grab E. Photo des Konens Høj Grabs während der Ausgrabung. Zu sehen ist ein Bodenbelag aus geglühtem Flintschotter, Ansicht von Ostnordost (Photo D. Stoltenberg).



Fig. 18. Flintbek LA 3, Grave E. Photo of the eastern part of the longitudinal section; view from southsoutheast (Photo D. Stoltenberg).

Abb. 18. Flintbek LA 3, Grab E. Photo der Osthälfte des Längsprofils; Ansicht aus Süd-südosten (Photo D. Stoltenberg).

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Fig. 19. Flintbek LA 3. Longitudinal section through parts of Dolmen III, Grave E and parts of Grave D showing stratigraphical superpositioning of the tumulus of Grave E over the tumulus of Grave D and the cutting of the pit for the Dolmen chamber III into parts of the Tumulus of Grave E.

Abb. 19. Flintbek LA 3. Längsprofil durch Teile des Dolmens III, durch Grab E und Teile von Grab D. Erkennbar ist die stratigraphische Überlagerung des Tumulus von Grab E über denjenigen von Grab D und die Eingrabung der Grabgrube von Dolmen III in Teile des Hügels von Grab E.

Fig. 20. Flintbek LA 3, Graves G and H. Excavation plan with feature numbers (scale 1:35).

Abb. 20. Flintbek LA 3, Gräber G und H. Grabungsplan mit Befundnummern (Maßstab 1:35).



Fig. 21. Flintbek LA 3, Graves H and G. Photo, view east-southeast (Photo D. Stoltenberg).

Abb. 21. Flintbek LA 3, Gräber H und G. Photo des Grabungsbefunds; Ansicht von Ost-südost (Photo D. Stoltenberg).

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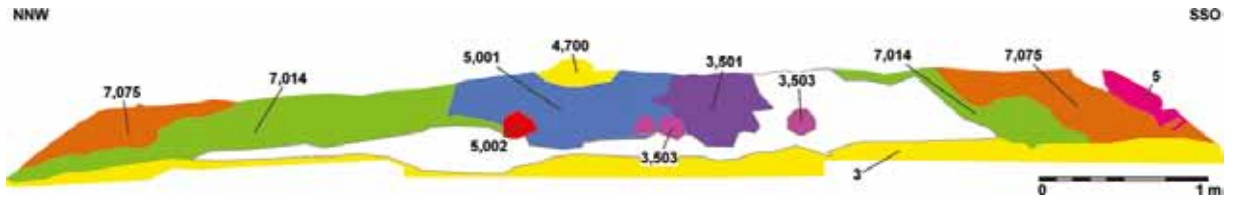


Fig. 22. Flintbek LA 3, Graves H and G. Crosssection through the Graves C (pebbles 3503) and D (pebbles 5002) and G (4700) above.

Abb. 22. Flintbek LA 3, Gräber H und G. Querschnitt durch die Gräber C (Gerölle 3503) und D (Gerölle 5002) sowie G (4700) darüber.



Fig. 23. Flintbek LA 3. Plough marks. Photo from southeast (Photo D. Stoltenberg).

Abb. 23. Flintbek LA 3. Pflugspuren. Photo des Grabungsplanums; Ansicht von Südost (Photo D. Stoltenberg).

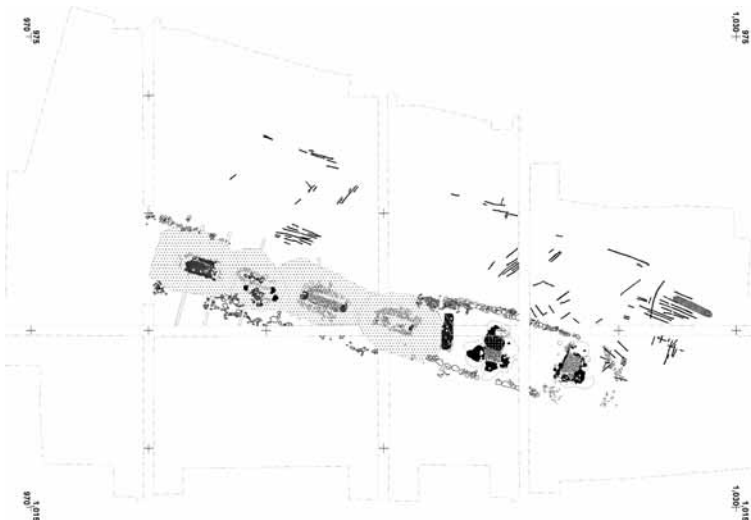


Fig. 24. Flintbek LA 3. Position of Dolmen I, II, Grave F, Frame 1, plough marks 2 and flint burning pit in the excavation plan. The previous phases are marked in grey.

Abb. 24. Flintbek LA 3. Lage der Dolmen I und II, von Grab F und Steinrahmen I sowie den jüngeren Pflugspuren sowie eine Feuerstelle mit gebranntem Flint im Grabungsplan. Vorherige Phasen sind grau wiedergegeben.

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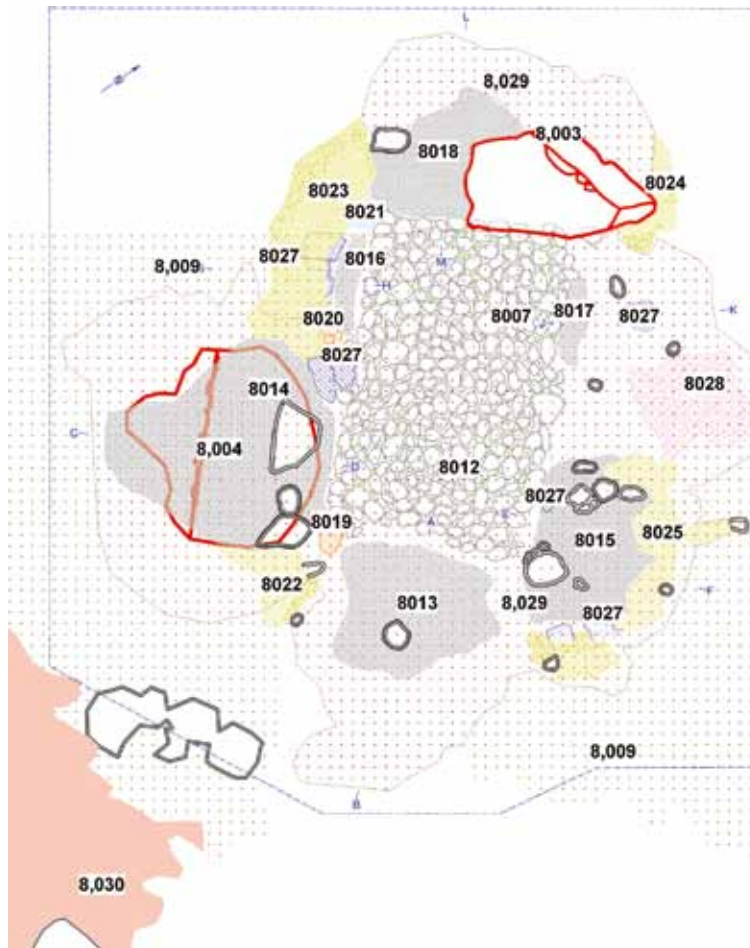


Fig. 25. Flintbek LA 3. Dolmen II. Excavation plan (niveau 6) with feature numbers (scale 1:35).

Abb. 25. Flintbek LA 3. Dolmen II. Grabungsplan (Planum 6) mit Befundnummern (Maßstab 1:35).



Fig. 26. Flintbek LA 3, Dolmen II. Photo of the third plan. The collapsed standing stone is still laying on the pavement; view from southeast (Photo D. Stoltenberg).

Abb. 26. Flintbek LA 3, Dolmen II. Photo des dritten Planums. Der verstürzte Trägerstein liegt in situ auf dem Planum; Ansicht von Südost (Photo D. Stoltenberg).

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Fig. 27. Flintbek LA 3, Dolmen II. Photo of the burial remains underneath the collapsed standing stone; view from southwest (Photo D. Stoltenberg).

Abb. 27. Flintbek LA 3, Dolmen II. Photo der Überreste von Bestattungen unterhalb des verstürzten Orthostaten; Ansicht von Südwesten (Photo D. Stoltenberg).

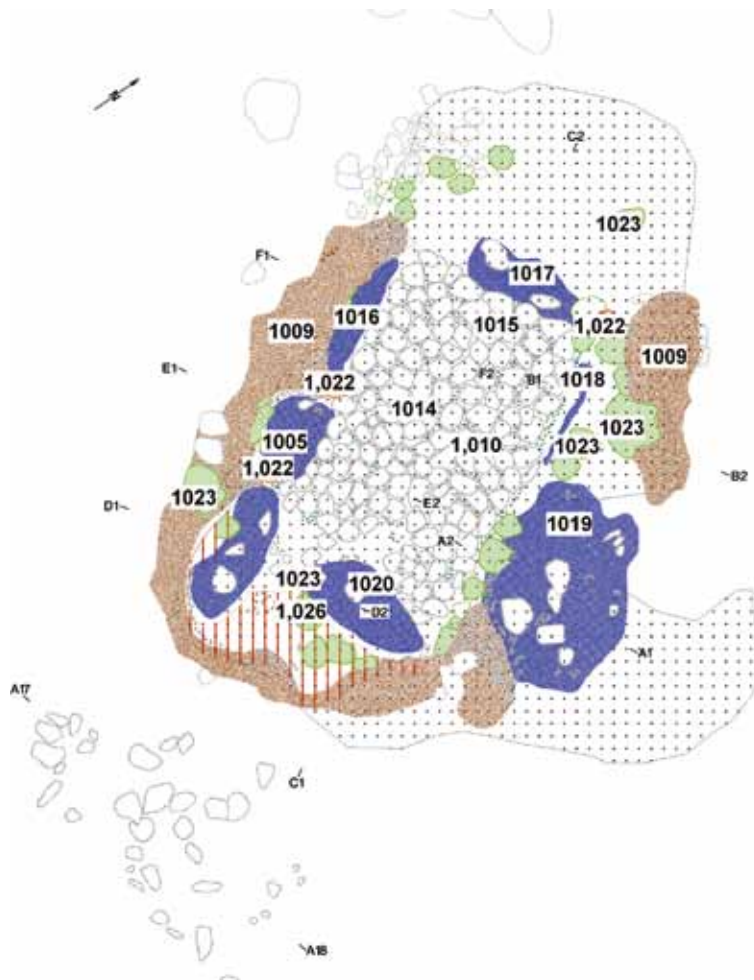


Fig. 28. Flintbek LA 3, Dolmen I. Excavation plan with feature numbers (scale 1:35).

Abb. 28. Flintbek LA 3, Dolmen I. Grabungsplan mit Befundnummern (Maßstab 1:35).

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Fig. 29. Flintbek LA 3, Dolmen I. Photo of the third plan, visible are the remains of the loam coating; view from northeast (Photo D. Stoltenberg).

Abb. 29. Flintbek LA 3, Dolmen I. Photo des dritten Planums mit deutlich erkennbaren Lehmverputzresten im Außenbereich der Trägersteinstandspuren und zwischen diesen; Ansicht aus Nordosten (Photo D. Stoltenberg).



Fig. 30. Flintbek LA 3, Dolmen I and II. Section showing the interleaving of the debris from the construction of the grave pits; view from northeast.

Abb. 30. Flintbek LA 3, Dolmen I und II. Profil mit sich mehrfach abwechselnden verschieden gefärbten Sedimentresten. Es handelt sich vermutlich um Aushubreste, die beim Ausheben der Grabgruben für Dolmen I und II anfielen. Die Verzahnung belegt die Gleichzeitigkeit dieser Arbeiten; Ansicht aus Nordosten.

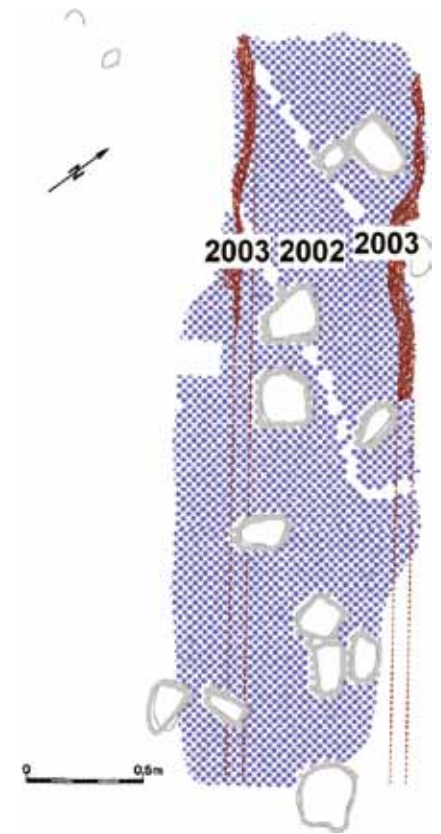
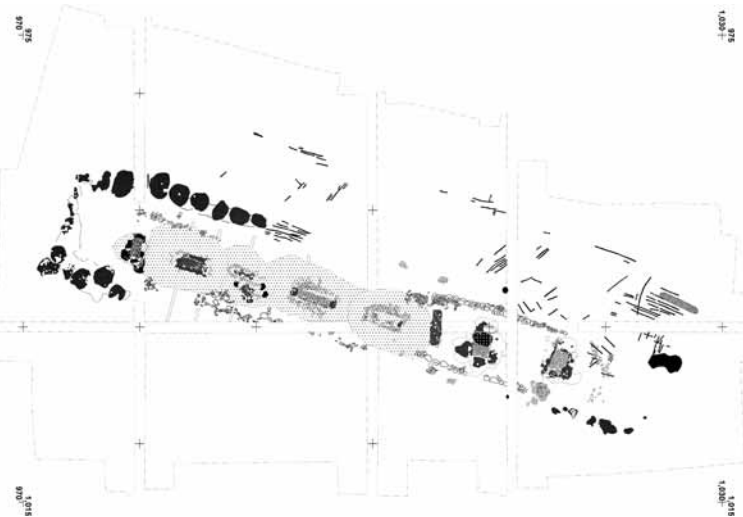


Fig. 31. Flintbek LA 3, Grave F. Excavation plan with feature numbers (scale 1:35).

Abb. 31. Flintbek LA 3, Grab F. Grabungsplan mit Befundnummern (Maßstab 1:35).

Fig. 32. Flintbek LA 3, Grave F. Photo of about the half of the plan with stone bordering, a flint axe as grave good and the crosssection visible; view from southeast (Photo D. Stoltenberg).

Abb. 32. Flintbek LA 3, Grab F. Photo des Befundes während der Ausgrabung. Zu sehen sind im Planum eine Einfassung aus Stein sowie ein Flintbeil als Grabbeigabe und im Hintergrund das Profil; Ansicht von Südosten (Photo D. Stoltenberg).

Fig. 33. Flintbek LA 3. Crosssection through eastern part of tumulus Grave B (3002), Grave F (2000) and parts of Dolmen II (>8000). Grave F is cut into the tumulus of Grave B.

Abb. 33. Flintbek LA 3. Querschnitt durch den östlichen Teil des Tumulus von Grab B (3002), Grab F (2000) und Teile des Dolmens II (> 8000). Grab F wurde in den Hügel von Grab B eingegraben.

Fig. 34. Flintbek LA 3. Position of Dolmen III, Frame 2 and fireplace in the excavation plan. The previous phases are marked in grey.

Abb. 34. Flintbek LA 3. Lage des Dolmens III, Steinrahmen 2 und Feuerstelle im Grabungsplan. Ältere Phasen sind grau hervorgehoben.

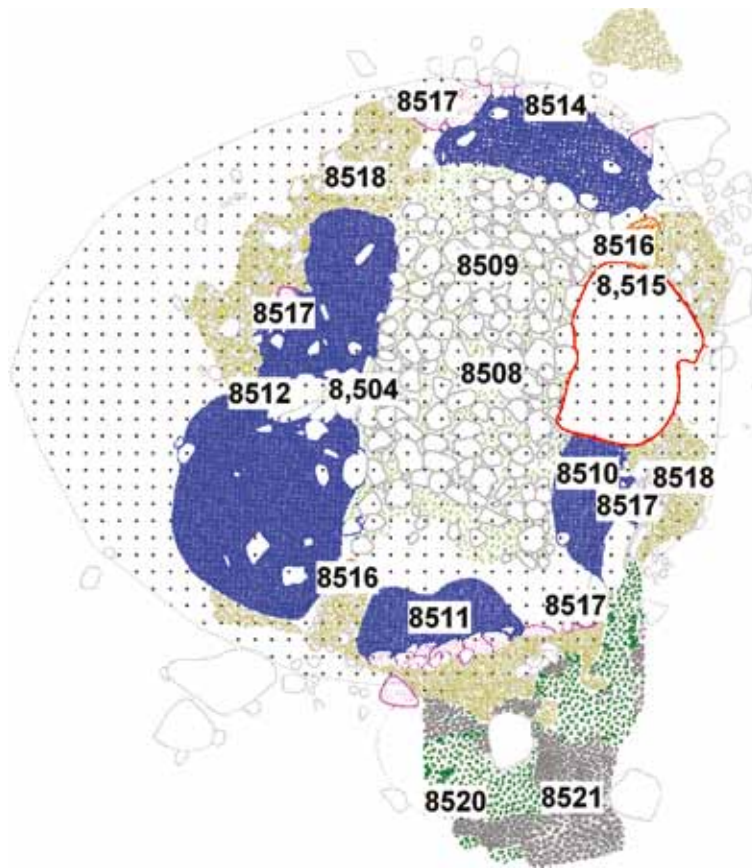


Fig. 35. Flintbek LA 3, Dolmen III. Excavation plan with feature numbers (scale 1:35).

Abb. 35. Flintbek LA 3, Dolmen III. Grabungsplan mit Befundnummern (Maßstab 1:35).



Fig. 36. Flintbek LA 3, Dolmen III. Photo of the second plan showing parts of the pavement; view from westsouthwest (Photo D. Stoltenberg).

Abb. 36. Flintbek LA 3 Dolmen III. Photo auf die Bodenpflasterung im zweiten Planum; Ansicht von Westsüdwesten (Photo D. Stoltenberg).



Fig. 37. Flintbek LA 3. Position of Dolmen IV, Cart tracks, posthole and Frame 3 in the excavation plan. The previous phases are marked in grey.

Abb. 37. Flintbek LA 3. Lage von Dolmen IV, Karrenspuren, Pfostenstandspur und Steinrahmen 3 im Grabungsplan. Vorherige Phasen sind in grau wiedergegeben.

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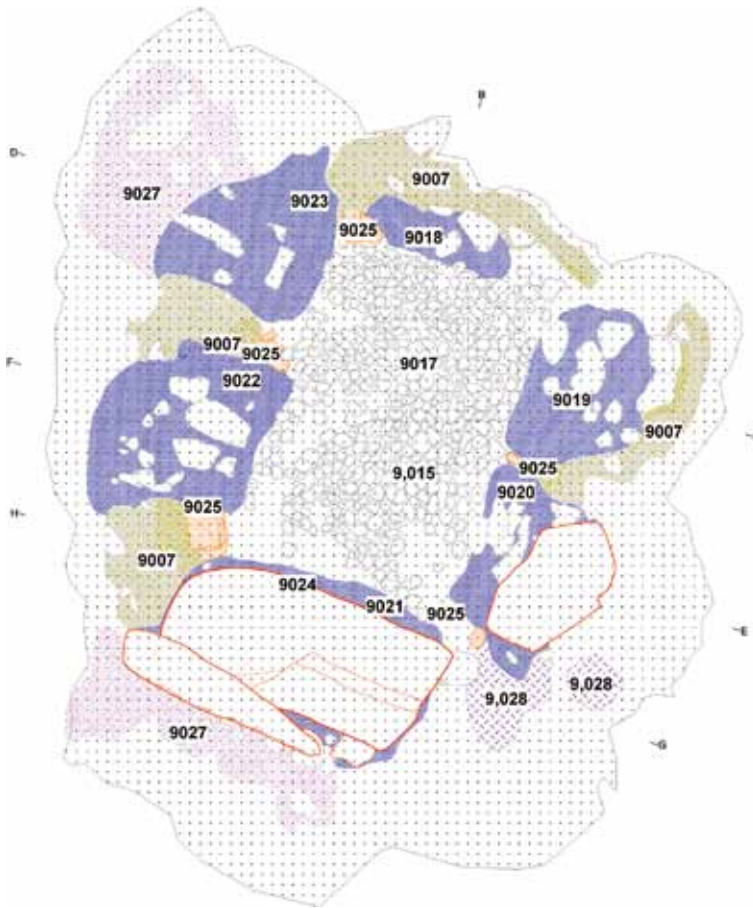


Fig. 38. Flintbek LA 3, Dolmen IV. Excavation plan with feature numbers (scale 1:35).

Abb. 38. Flintbek LA 3, Dolmen IV. Grabungsplan mit Befundnummern (Maßstab 1:35).



Fig. 39. Flintbek LA 3, Dolmen IV. Photo of the third plan showing parts of the standing stones partly destroyed in modern times and the pavement. In the upper left corner the vessel was standing in an upright position in situ (Photo D. Stoltenberg)..

Abb. 39. Flintbek LA 3, Dolmen IV. Photo des dritten Planums. Sichtbar sind Reste der bei der Zerstörung des Grabes in moderner Zeit zurückgelassener Orthostaten und das relativ ungestörte Bodenpflaster. In der oberen linken Bildecke stand ein Gefäß aufrecht auf dem Grabboden in situ (Photo D. Stoltenberg).

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Fig. 40. Flintbek LA 3. Cart tracks leading to Dolmen IV; view from southwest (Photo D. Stoltenberg).

Abb. 40. Flintbek LA 3. Auf Dolmen IV zu-führende Wagenspuren; Ansicht von Süd-westen (Photo D. Stoltenberg).



Fig. 41. Flintbek LA 3, frame 3. Photo of the section through parts of frame 3; view from east (Photo D. Stoltenberg).

Abb. 41. Flintbek LA 3, Steinrahmen 3. Pho-to des Schnitts durch Steinrahmen 3; An-sicht von Osten (Photo D. Stoltenberg).

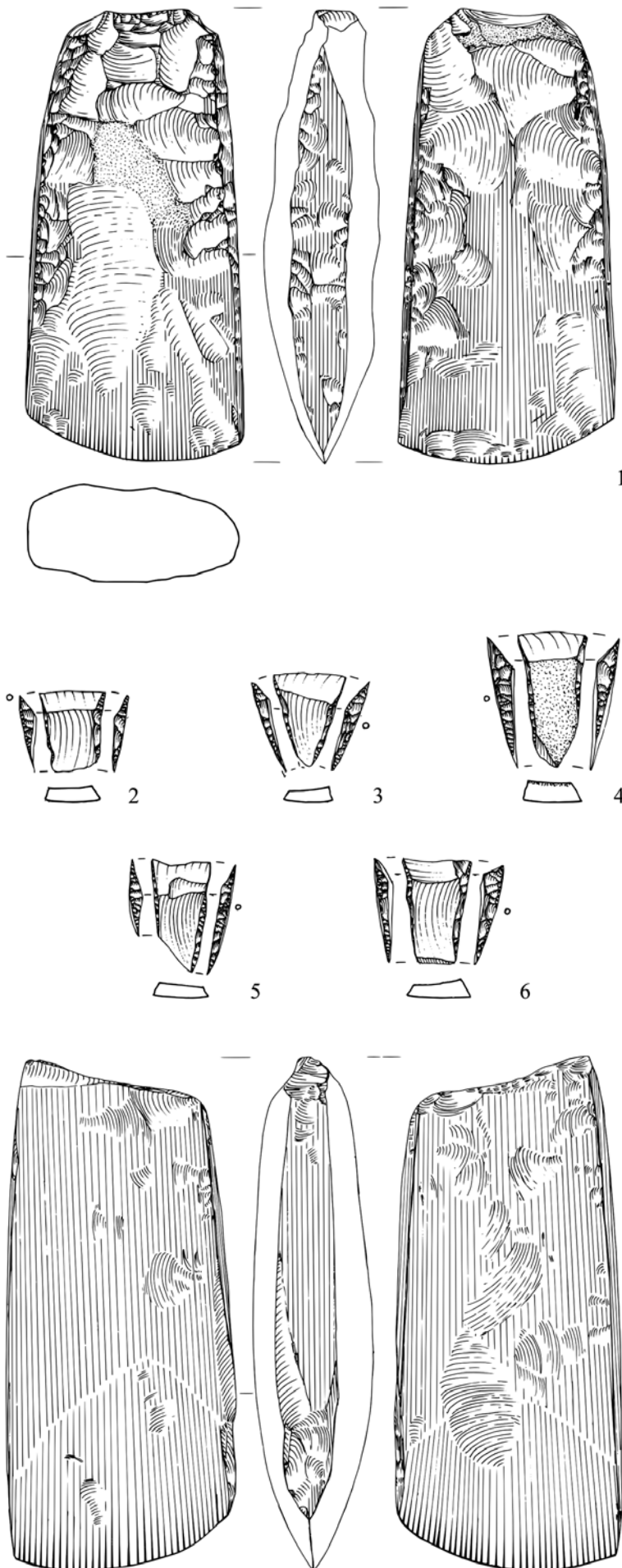


Fig. 42. Flintbek LA 3, Grave A. 1 Thin butted flint axe (6001/6) and transverse arrowheads (60010/18-22) from the grave inventory. 1 scale 2:3, 2-6 scale 1:1, drawings B. Gehlen.

Abb. 42. Flintbek LA 3, Grab A. 1 Dünna-
ckiges Flintbeil (6001/6); 2-6 querschnei-
dige Pfeilspitzen (60010/18-22) des Grabin-
ventars. 1 Maßstab 2:3, 2-6 Maßstab 1:1,
Zeichnungen B. Gehlen.

Fig. 43. Flintbek LA 3, Grave B. Thin butted flint axe (3001/3) from the grave inventory. 1 scale 1:1, drawing B. Gehlen.

Abb. 43. Flintbek LA 3, Grab B. Dünna-
ckiges Flintbeil (3001/3) der Grabausstat-
tung. 1 Maßstab 1:1, Zeichnung B. Gehlen.

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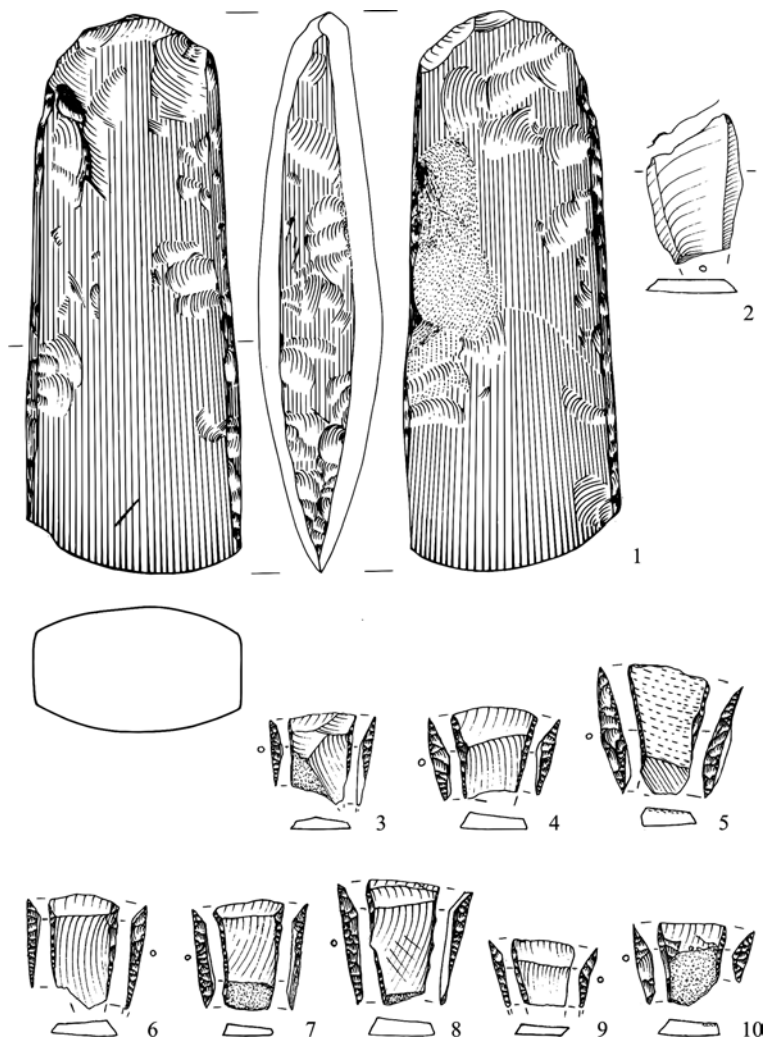


Fig. 44. Flintbek LA 3, Grave D. 1 Thin butted flint axe (5001/5), 3–10 transverse arrowheads (5000/9-16) and 2 probable preform of an arrowhead (5001/17) of the grave inventory. 1 scale 2:3, 2–10 scale 1:1, drawings B. Gehlen.

Abb. 44. Flintbek LA 3, Grab D. 1 Dünna-
 ckiges Flintbeil (5001/5), 3–10 querschnei-
 dige Pfeilspitzen (5000/9-16), 2 vermut-
 lich Vorarbeit einer querschneidigen Pfeil-
 spitze (5001/17) der Grabausstattung. 1 Maß-
 stab 2:3, 2–10 Maßstab 1:1, Zeichnungen B.
 Gehlen.

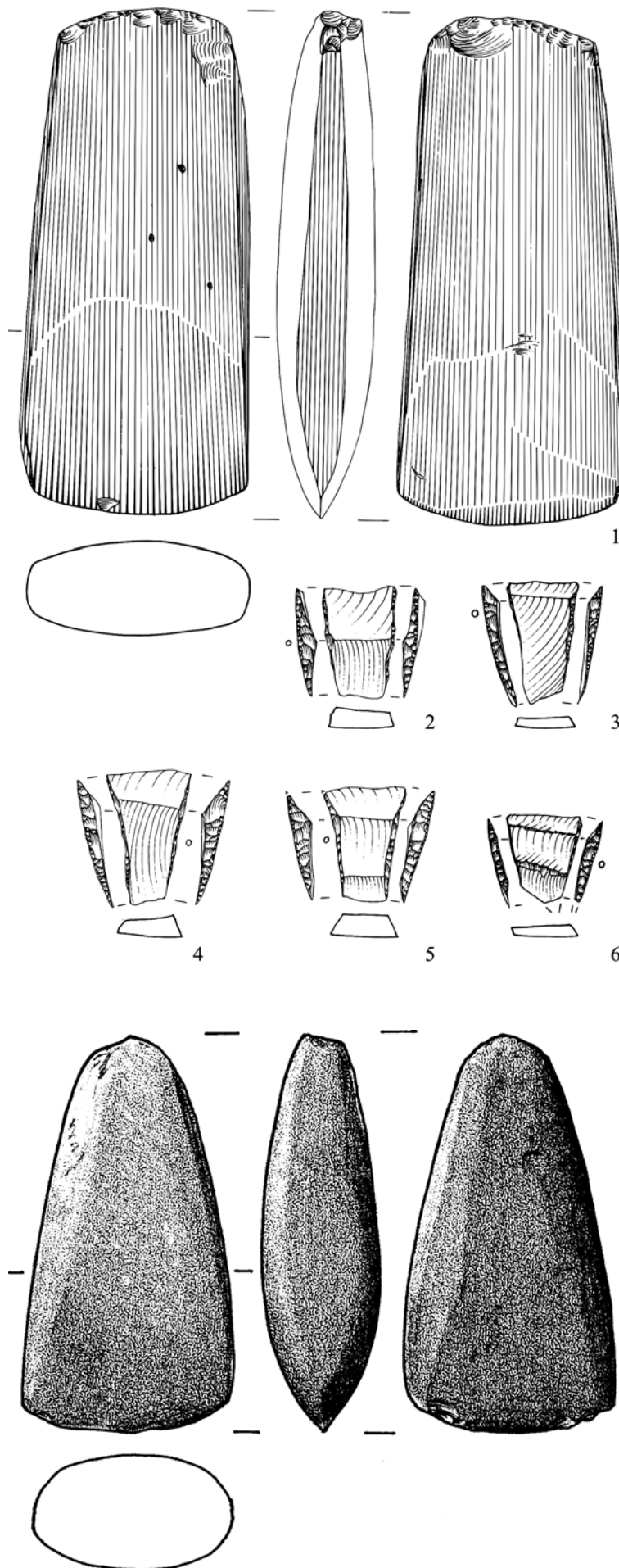


Fig. 45. Flintbek LA 3, Grave E. 1 Thin butted flint axe (4000/1), 2-5 transverse arrowheads (4002/23-27). 1 scale 2:3, 2-6 scale 1:1, drawings B. Gehlen.

Abb. 45. Flintbek LA 3, Grab E. 1 Dünnaeckiges Flintbeil (4000/1), 2-5 querschneidige Pfeilspitzen (4002/23-27). 1 Maßstab 2:3, 2-6 Maßstab 1:1, Zeichnungen B. Gehlen.

Fig. 46. Flintbek LA 3, Dolmen II. 1 Pointed butted hard rock axe from the grave inventory. 1 scale 1:1, drawing B. Gehlen.

Abb. 46. Flintbek LA 3, Dolmen II. 1 Spitznaeckiges Beil aus Felsgestein aus der Grabausstattung. 1 Maßstab 1:1, Zeichnung B. Gehlen.

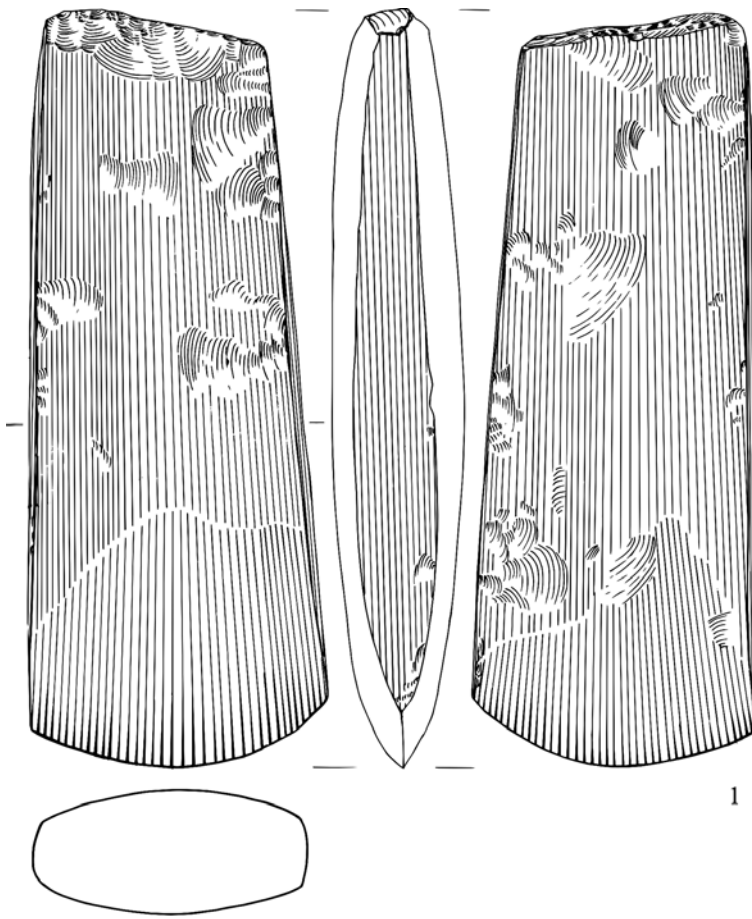


Fig. 47. Flintbek LA 3, Dolmen I. 1 Thin butted flint axe (1000/1). 1 scale 2:3, drawing B. Gehlen.

Abb. 47. Flintbek LA 3 Dolmen I. 1 Dünnackiges Flintbeil (1000/1). 1 Maßstab 2:3, Zeichnung B. Gehlen.

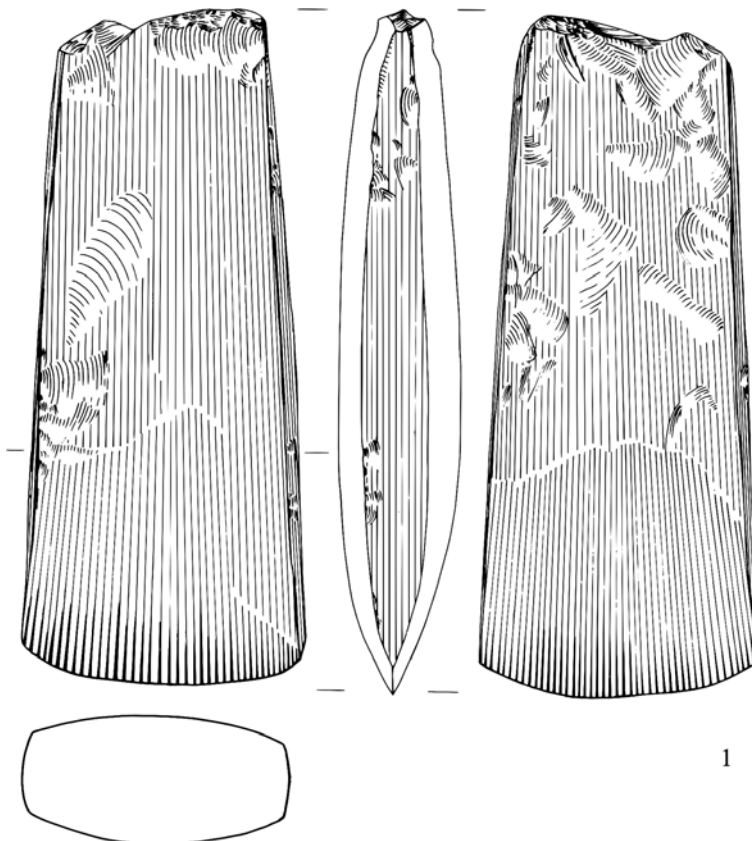


Fig. 48. Flintbek LA 3, Grave F. 1 Thin butted flint axe (2001/2). 1 scale 2:3, drawing B. Gehlen.

Abb. 48. Flintbek LA 3, Grab F. 1 Dünnackiges Flintbeil (2001/2). 1 Maßstab 2:3, Zeichnung B. Gehlen.

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Fig. 49. Flintbek LA 3, Dolmen IV. 2-4 Thin butted arrowheads (9004/28-30). 2-4 scale 1:1, drawings B. Gehlen.

Abb. 49. Flintbek LA 3, Dolmen IV. 2-4 querschneidige Pfeilspitzen (9004/28-30). 2-4 Maßstab 1:1, Zeichnungen B. Gehlen.



Fig. 50. Flintbek LA 3, Dolmen IV. Flask from the grave inventory. Height of the pottery 18 cm, scan L. Hermannsen, Archaeological State department Schleswig-Holstein.

Abb. 50. Flintbek LA 3, Dolmen IV. Verzierte Flasche aus der Grabausstattung. Höhe des Gefäßes: 18 cm (Scan L. Hermannsen, Archäologisches Landesamt Schleswig-Holstein).

Grave	Description	Feature	Part of	Quality for dating of construction
Grave A	Filling, in the area of the rotten deal board	6008	Construction	+
Grave B	Filling	3001	Use or Later	
Grave D	Filling	5001	Use or Later	
Grave E	Wooden deal board	4014	Construction	+++
Dolmen I	Burned layer on the floor	1011	Construction	+++
Dolmen II	Burnt flintgravel layer underneath fallen orthostat	8034	Construction	++
Dolmen II	Burial	8000	Use	
Dolmen III	Charcoal layer on the floor	8507	Construction	+++
Dolmen IV	Filling	9030	Use	
Dolmen IV	Content of decorated pot	9012	Use	

Fig. 51. Flintbek LA 3. Description of the dated features.

Abb. 51. Flintbek LA 3. Beschreibung der datierten Befunde.

Grave	Feature	ID	Lab ID	Radiocarbon Age BP	+/-	d13C	+/-	cal BC, 1s	charcoal	Number tree rings	class of diameter	waney edge
Grave A	6008	204	KIA41584	4619	39	-24.93	0.10	3498 3356	Fraxinus	4	5	
Grave B	3001	211	KIA41581	4674	32	-23.60	0.09	3516 3373	Fraxinus	1	?	
Grave D	5001	210	KIA41582	8328	45	-26.02	0.12	7476 7350	Betula	?	?	
Grave E	4014	197	KIA41586	4596	33	-23.69	0.33	3494 3344	Alnus	10	2	
Dolmen I	1011	198	KIA41585	4644	35	-27.28	0.11	3499 3366	Corylus	7	3	x
Dolmen II	8034	187	KIA41588	4672	28	-27.66	0.12	3515 3373	Quercus	2	4	
Dolmen III	8507	191	KIA41587	4663	30	-26.23	0.13	3511 3371	Corylus	5	4	x
Dolmen IV	9030	207	KIA41583	4727	29	-28.11	0.12	3628 3383	Corylus	10	2	

Fig. 52. Flintbek LA 3. List of AMS dates of charcoals, bones and organic remains. Anthracological determination made by D. Jansen (Class of diameter determined after Ludemann and Nelle 2002), bone analysis J. Schmitz and determination of the organic remains A. Alsleben, all from Kiel University.

Abb. 52. Flintbek LA 3. Liste der AMS Daten aus Holzkohle, Knochen und organischen Resten. Die anthrakologischen Bestimmungen der Holzart und Durchmesserklassen führte D. Jansen durch. Die Knochen untersuchte J. Schmitz und die organischen Reste A. Alsleben, alle Universität zu Kiel.

Grave	Feature	ID	Lab ID	Radiocarbon Age BP	+/-	d13C	+/-	cal BC, 1s	bone
Dolmen II	8000	003	KIA36398	4700	29	-21.51	0.16	3621 3378	bone fragment (Kollagen, 3,9 mg C)
Dolmen II	8000	004	KIA36399	4737	24	-19.90	0.17	3631 3385	cranium (Kollagen 1,8 mg C)
Dolmen II	8000	001	KIA40095	4816	26	-17.97	0.19	3646 3536	clavicle ?
Dolmen II	8000	007	KIA40096	4863	23	-15.21	0.42	3660 3638	mandible

Grave	Feature	ID	Lab ID	Radiocarbon Age BP	+/-	d13C	+/-	cal BC, 1s	organic remain
Dolmen IV	9012	002	KIA39915	4626	26	-29.15	0.52	3495 3363	base of glume and burnt organic food remain (< 1 gr)

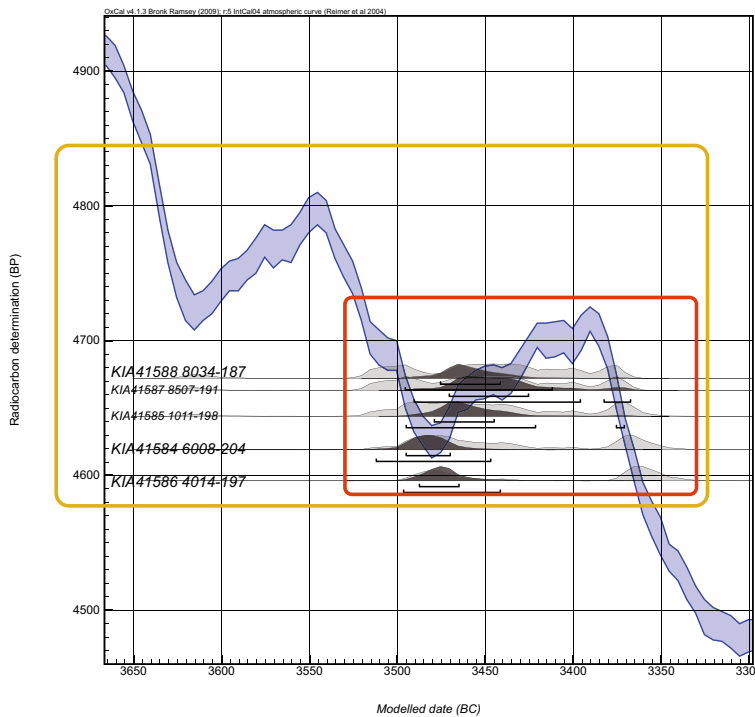


Fig. 53. Flintbek LA 3. Results of the modelled and calibrated AMS dates related to the construction of the graves A, E, Dolmen I-III with a reduction of the absolute time span to the wiggle between 3500 – 3425 cal BC.

Abb. 53. Flintbek LA 3. Ergebnis der modellierten und kalibrierten mit der Grabkonstruktion verbundenen AMS-Daten der Gräber A, E, Dolmen I-III mit deutlicher Verkürzung der absoluten Zeitspanne auf den wiggle-Bereich zwischen 3500 – 3425 cal BC.

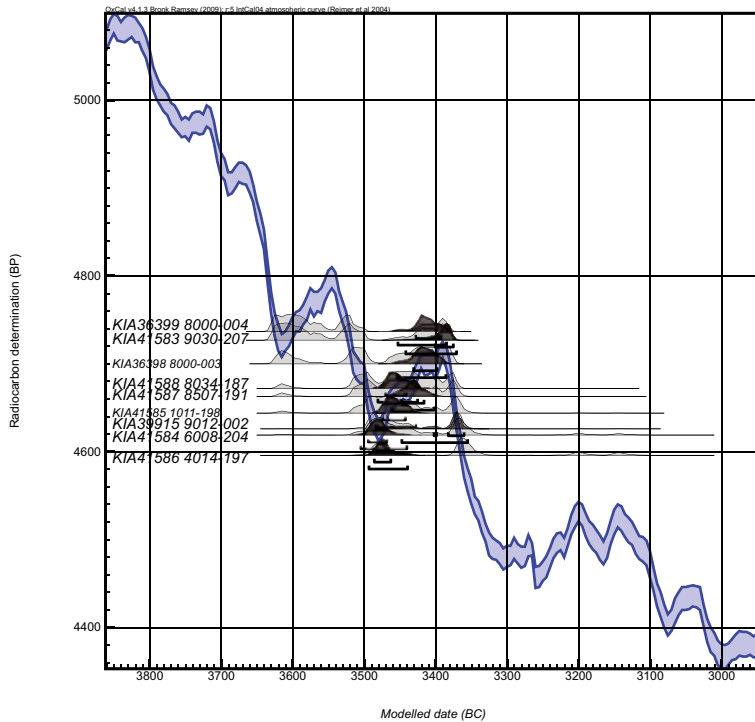


Fig. 54. Flintbek LA 3. Results of the modelled and calibrated AMS dates related to the construction and use of the graves A-B, E, Dolmen I-IV between 3500 – 3360 cal BC. The cart tracks could be dated indirectly by their ordering within this sequence to 3460 – 3360 cal BC.

Abb. 54. Flintbek LA 3. Ergebnis der modellierten und kalibrierten mit der Grabkonstruktion und -nutzung verbundenen AMS-Daten der Gräber A-B, E, Dolmen I-IV zwischen 3500 – 3360 cal BC. Die durch ihre Einbindung in diese Sequenz indirekt datierten Wagenspuren entstanden zwischen 3460 – 3385 cal BC.

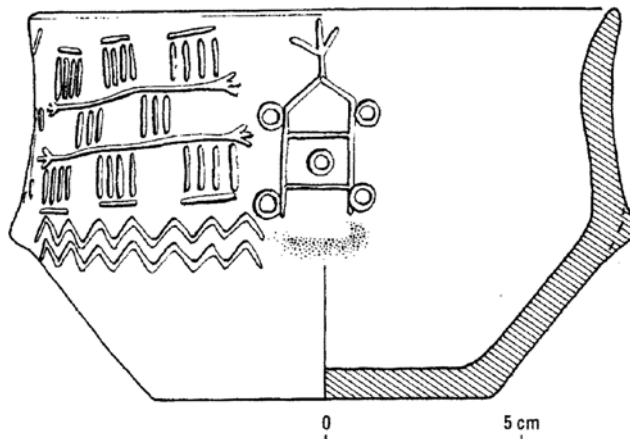


Fig. 55. Bronocice, Poland. Decorated Funnel Beaker vessel from a settlement pit with depiction of a four wheeled cart (Bakker et al 1999, 785 fig. 7.1), dated within the long range of 3629 – 3379 cal BC.

Abb. 55. Bronocice, Polen. Trichterbecher mit Darstellung eines vierrädrigen Fahrzeugs aus einer Siedlungsgrube (Bakker u.a. 1999, 785, Abb. 7.1). Wegen des Verlaufs der Kalibrationskurve ist eine Datierung des Einzeldatums nur innerhalb der langen Spanne 3629 – 3379 cal BC möglich.

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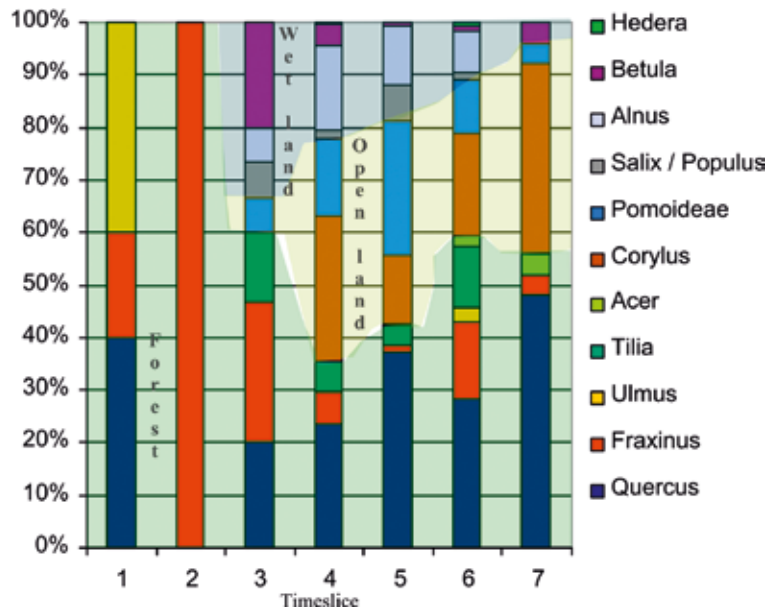


Fig. 56. Flintbek LA 3. First results of the charcoal analysis taken out by D. Jansen, Ecolgy Center of the CAU Kiel. Seven time slices were build to group the charcoal samples of the neolithic. Flintbek LA 3 had been erected and used within time slice 4 lasting for 3650-3350 cal BC. It is the time of a remarkable opening of the landscape.

Abb. 56. Flintbek LA 3. Erste Ergebnisse der Holzkohleanalysen durch D. Jansen vom Ökologiezentrum der CAU Kiel. Die datierbaren Proben bzw. Befunde gruppieren sich in sieben Zeitscheiben. Flintbek LA 3 wurde innerhalb von Zeitscheibe 4, die von 3650-3350 v. Chr. dauert errichtet und genutzt. Es ist die Zeit einer größeren Auflichtung der Landschaft.