

NEOLITHIC VEHICLE TRACKS SUPERPOSED BY LONG-BARROW LA 3, FLINTBEK, NORTH GERMANY

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Abstract

Out of 71 investigated tumuli in the prehistoric cemetery near Flintbek, long-barrow LA 3 deserves special attention because of its gradual extension in early Neolithic times and its superposition of a vehicle track.

Key words: vehicle tracks, long-barrows, megalithic graves, Funnel Beaker Culture, wheeled transportation.

In Flintbek, southwest of Kiel, the capital of Schleswig-Holstein (north Germany), a Neolithic and Bronze Age cemetery was excavated¹ from 1977 to 1996 (Zich 1992b; 1992/93; 1995; 1999a; 1999b; 2005). At least 19 out of about 80 located prehistoric sites could be identified as megalithic graves of Funnel Beaker Culture. They belong to a micro-region of less than 12 square kilometres (Fig. 1). Unfortunately, all megalithic graves in Flintbek were in very bad condition, since they were destroyed during the 19th century. Therefore, their documentation derived mainly from subterranean traces. On this premise, it was necessary to excavate them completely, which is quite uncommon in the archaeology of megaliths. This method resulted in new ideas on the grave building and burial rites of a megalithic community.

Six of the Flintbek sites turned out to be remains of long-barrows². Special attention is drawn to long-barrow LA 3 (Fig. 2). Its excavation provided excellent information on the gradual growth of a megalithic monument, because more than half a metre of the raised mound had been preserved. In this case, there were better chances to place profiles in line with the monument. The discovery that megalithic and contemporaneous non-megalithic graves coexisted in one and the same long-barrow³ is of great importance. At least four extended dolmen, three Konens Høj-type graves (Madsen 1979), two graves which seemed to contain tree-coffins (*Baumsärge*), and another grave with an ordinary case-shaped wooden coffin were found. Two more burials in the upper layers had been destroyed by agriculture.

Besides the graves, some traces of settlement contexts were discovered. Among several ard-marks, a posthole and three fireplaces, traces were found which were eventually interpreted as vehicle tracks.

Northeast of chamber IV, standing out against the glacial soil and covered by the long-barrow mound, we discovered two dark traces, 19.4 metres and 18.2 metres long, which were at points 0.6 metres wide. They ran completely parallel, forming a slight curve (Fig. 3). The average distance between them measured 1.1 to 1.2 metres. West of the traces a single six-metre-long track, only 0.06 metres wide, ran parallel to the others. Its profile was roundish-rectangular. The same width was found in the middle section of the large eastern track. Here the soil changed to sandy ground and for that reason the tracks ran into single grooves, which were also roundish-rectangular in profile. Furthermore, the profiles of the two main traces showed that the transitional soil to the glacial surface was hard and compressed and in some places covered with grey, washed-out sand (Fig. 4). Based on these indications, we concluded that the tracks in Flintbek had been caused by a wheeled vehicle. In our opinion, only a rolling movement can produce such traces. The grey washed-out sand in the grooves indicates that rain had rinsed some earthen material into the tracks.

This interpretation is closely linked to the results of the long-barrow's gradual extension (Fig. 5). Certain stratigraphical evidence suggests the following sequence. The first burial was the Konens Høj-type grave A (Fig. 6), which lay on the Neolithic surface. Its most significant feature is the use of wooden components (Madsen 1979, 301 ff.), shown by remarkable, up to 0.5-metre-deep postholes and some traces of mouldered wood on the longer sides. Its inner floor was covered by a stone pavement. Outside, the wooden construction had been propped up by small supporting stones. The grave contained a thin-butted flint-axe and five transverse arrowheads. The edge of an oval-shaped mound was to be seen, which had been partly raised from the dug-out soil of two adjacent ditches to its left and right (Fig. 2).

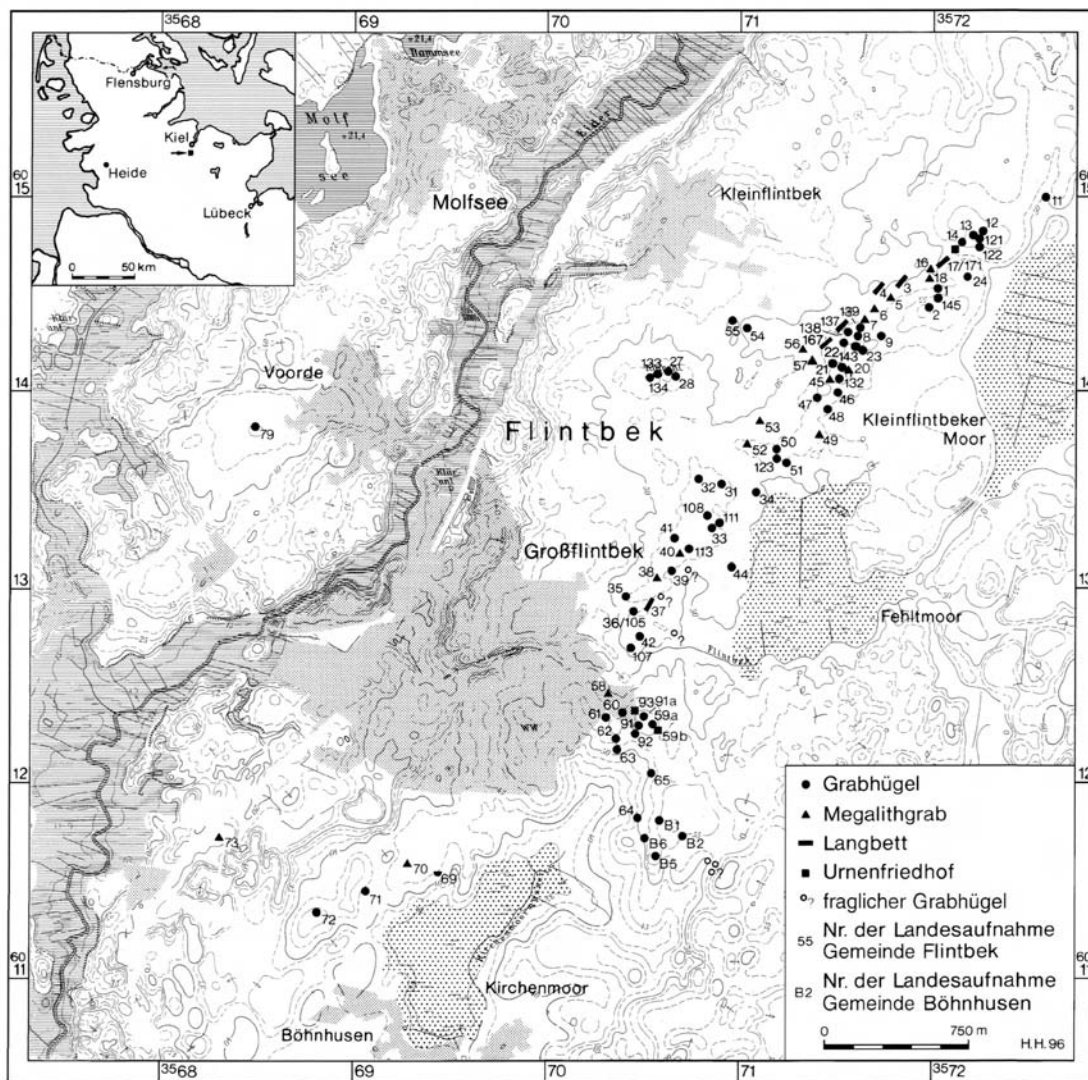


Fig. 1. Flintbek, Rendsburg-Eckernförde county (north Germany). Map of the tumulus cemetery

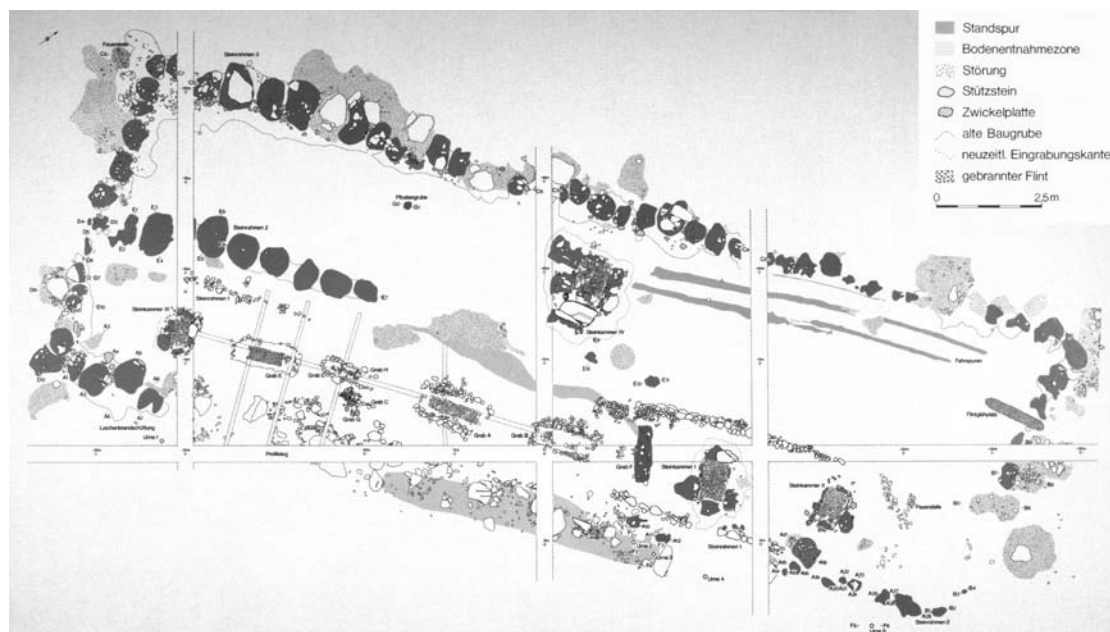


Fig. 2. Flintbek, long-barrow LA 3, detailed plan of the excavated area



Fig. 3. Flintbek, long-barrow LA 3, vehicle tracks, viewed from WSW

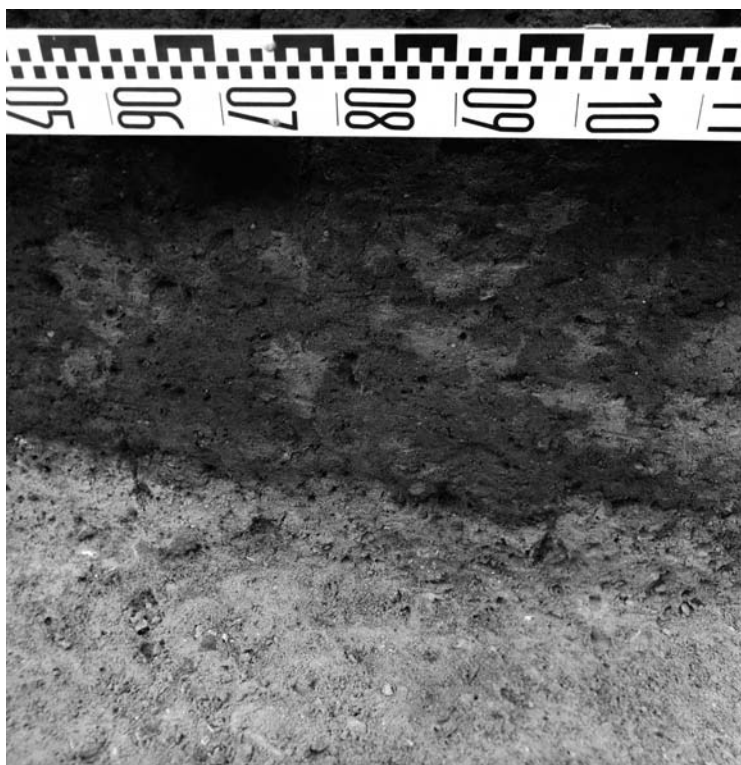


Fig. 4. Flintbek, long-barrow LA 3, vehicle tracks in profile, viewed from NE

After grave A, Konens Høj-type grave B was built, almost in the same way as grave A (Fig. 2), but in this case the Neolithic surface was thinner, because the soil had already partly been taken to erect the mound for the older burial. To point out the chronological sequence of grave A and B it is important that the dug-out yellow glacial soil from the neighbouring posthole of grave B was lying at the foot of the mound of grave A. This observation was also made in the schematic view, where the soil material belonging to grave B enclosed the already existing mound (Fig. 5). Another important hint concerning the dating was that on the edge of the tumulus fragments of a late early Neolithic lugged flask were found. The grave itself contained another thin-butted flint-axe.

In a third phase the barrow was extended to cover grave C and D (Figs. 2 and 5), which were probably burials in tree-coffins (*Baumsärge*), as indicated by parallel rows and one oval-shaped end of a series of stones, usually found in Bronze Age tumulus graves⁴. No remains of the coffin were preserved, but in grave D the silhouette of the buried individual was visible. The grave goods, including a thin-butted flint-axe and eight transverse arrowheads (Fig. 7), suggest that we are dealing with a Funnel Beaker Culture burial.

Some useful information concerning the relative-chronological age of the third phase was that the Neolithic surface had been widely removed. This could only have happened in conjunction with the already existing two phases of the barrow. Stratigraphical evidence arose from a profile, which clearly showed that the soil material covering grave C superposed the foot of the neighbouring mound belonging to grave A. Another profile across the third phase of the barrow proved that tree-coffin grave D was younger than grave C. The condition of the soil material showed a trunk dug into this part of the mound.

Grave E was also of Konens Høj-type (Figs. 2 and 5). The only difference compared to graves A and B was a layer

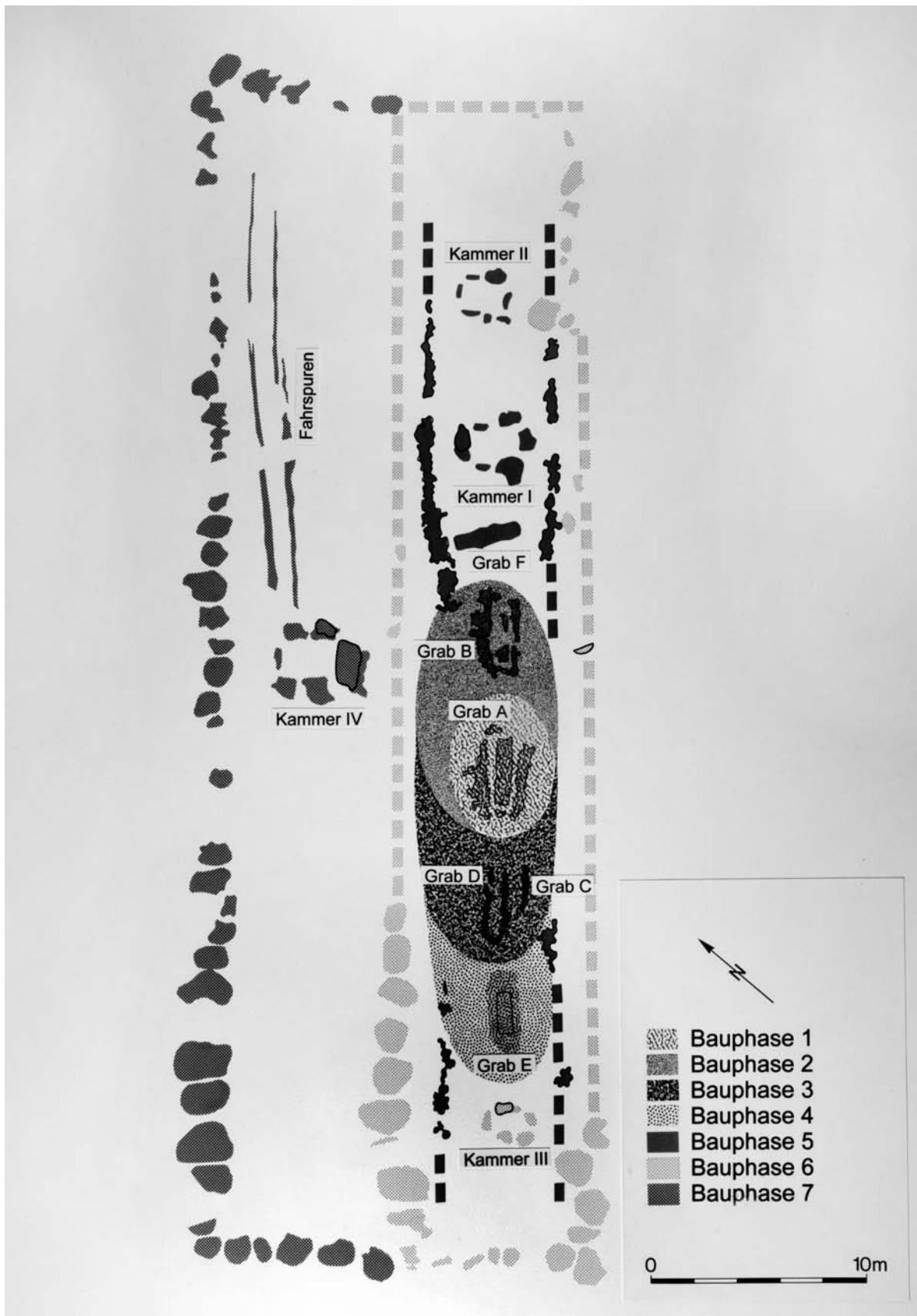


Fig. 5. Flintbek, long-barrow LA 3, schematic view of the gradual extension



Fig. 6. Flintbek, long-barrow LA 3, grave A of Konens Høj-type, with a central pavement and a frame of stones, viewed from WSW

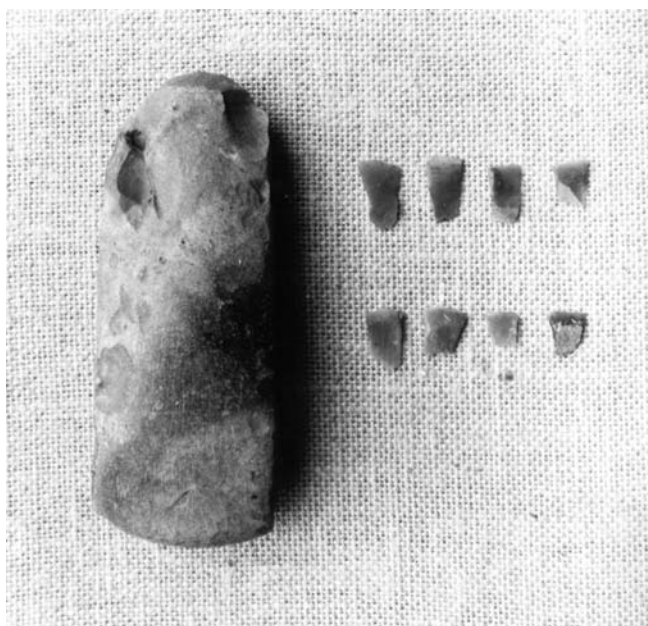


Fig. 7. Flintbek, long-barrow LA 3, grave goods from grave D (the length of the thin-butted axe is 17 cm)

of burnt flint instead of a stone pavement inside the burial chamber. Its relative-chronological age was obvious by the fact that in connection with one of its postholes the dug-out glacial soil could be localised at the foot of the existing mound. Within the grave a thin-butted flint-axe and five transverse arrowheads were found.

Up to the fifth phase, all burials of long-barrow LA 3 were situated parallel with the barrow. In phase V the first megalithic chambers were built, and the orientation changed to a transverse position.

Extended dolmen chambers I and II were covered by the same kind of soil (Figs. 2 and 5). The barrow's fifth phase was lined by packed-up stones of non-megalithic size. Chronological evidence arose from the fact that the stone line partly overlapped the mound of grave B (Fig. 8) and that the mound of phase V obviously superposed the older phases.

Chamber I revealed some details concerning construction. At first a foundation trench was dug 0.32 metres deep into the subsoil, producing more than four cubic metres of dug-out material, which could be found on the Neolithic surface close around the trench. On its perimeter six orthostates (kerbstones) were placed and supported as required with small stones at their base. Gaps between the pillar-stones were filled in with dry-walling, and from the outside the chamber was covered by a layer of clay, as concluded from a remaining 0.2-metre-high collar on the outer base of the chamber. The inner floor was almost trough-shaped, with a burnt layer on the topsoil and covered by a stone pavement with a coating of fired flint. As the stones of the pavement did not show any effects of heat, the firing must have been done from outside the chamber.

Grave F had been dug into the mound of phase V (Figs. 2 and 5). For this reason it is obvious that it is younger than dolmens I and II. It contained an ordinary case-shaped wooden coffin and was found between grave B and chamber I. Traces of mouldered wood could be identified especially at the bottom. The Funnel Beaker Culture context is given by another thin-butted flint-axe. However, its age in relation to the following graves is rather uncertain.

Extended dolmen is to be seen in connection with phase VI (Figs. 2 and 5). A profile of the destroyed structure showed that its foundation trench hardly reached the glacial soil, which was only possible because it was dug into an already existing mound. This assumption became clearer with another profile of the chamber. A sixth phase of the mound was recognised, which was larger than phase V. It was surrounded by kerbstones, as proven by several traces in the ground.

Phase VII of the barrow is represented by an enlargement, which now for the first time grew into its width (Figs. 2 and 5). It was constructed in connection with chamber IV (Fig. 9). The edges were enclosed by large stones, and with this last phase the barrow acquired a total size of 54 by 18 metres. A lugged flask (Fig. 10) was standing in

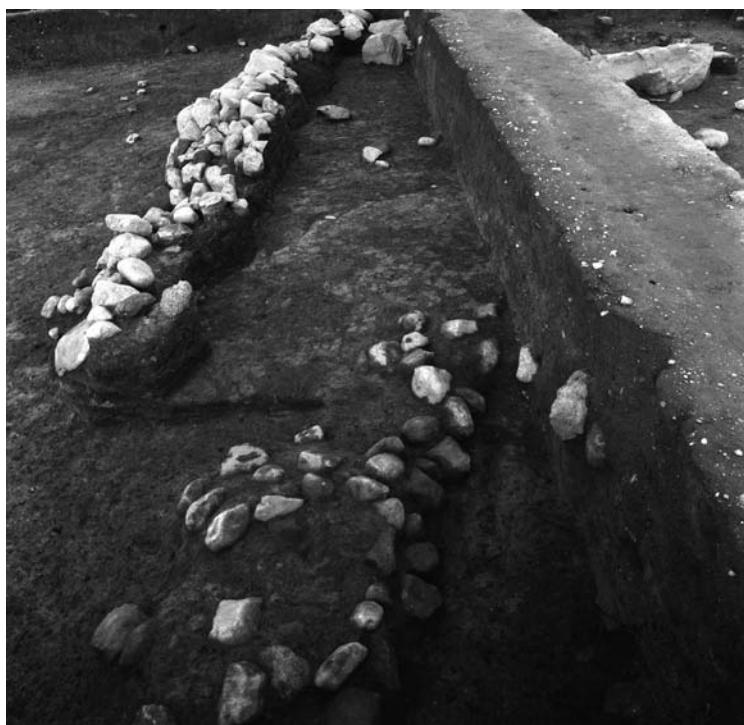


Fig. 8. Flintbek, long-barrow LA 3. Line of stones (phase V; see left) overlapping the mound of grave B (see foreground), viewed from SW

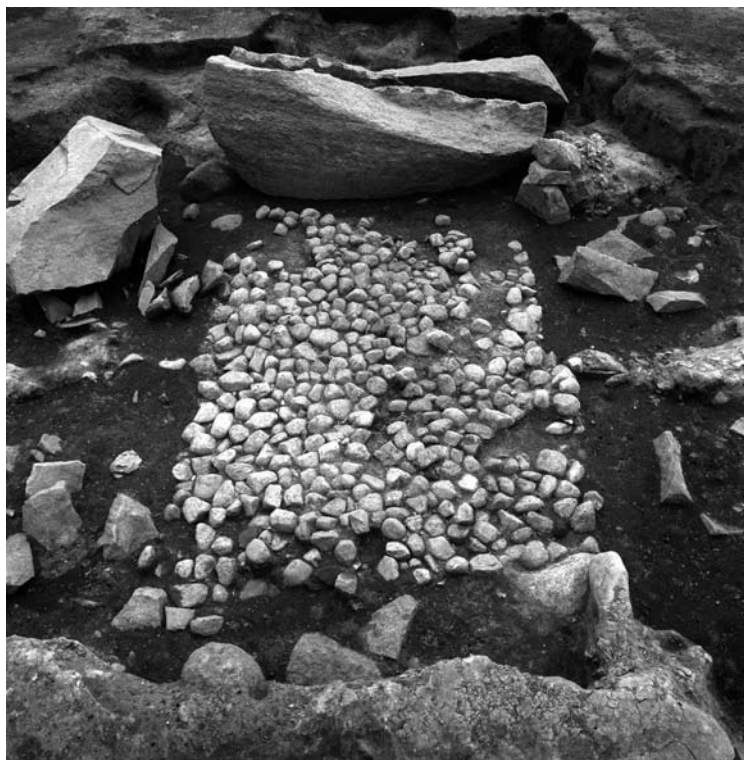


Fig. 9. Flintbek, long-barrow LA 3, destroyed chamber IV (phase VII), viewed from NNW

situ on the pavement of chamber IV, dating phase VII to the end of the early Neolithic period (Becker 1947, 141–145, 151–156, Fig. 34; Hoika 1990, 211–216, Plate 2).

Chamber IV gave further important information. It was built in an unusually large foundation trench which moreover penetrated a natu-

ral clay bed in the subsoil. With a size of 16 square metres and a depth of 0.41 metres, the amount of clay dug out can be estimated at about 6.5 cubic metres.

Finally, we would like to point out that Flintbek long-barrow LA 3 was built up in seven different phases. Meanwhile, similar results are known from three other long-barrows in Flintbek: also for LA 4, LA 17/171 and LA 37 a gradually extension was proven.

The observations concerning the Flintbek long-barrow's final seventh phase are closely related to the interpretation of the vehicle tracks. As no traces of clay and dug-out material from chamber IV's unusually large foundation trench were found on the site, the material must have been removed, probably by a cart-like vehicle (Zich 1992) whose wheels caused the traces mentioned above. This idea was supported by the evidence that single tracks were 0.06 metres wide, thus corresponding to the breadth of Neolithic disc-wheels. Because of the large amount of removed soil, we can easily imagine that the vehicle was in use several times, causing *Fahrgeleise*. Their preservation on the surface of the glacial soil was promoted by the fact of the long-barrow's growth, because in connection with phases I to VI, most of the Neolithic ground had already been dug off to built up the mound. So the tracks were well preserved, standing out against the yellow to light brown sterile glacial soil.

Their immediate relation with the building of dolmen-chamber IV is proven by the fact that the traces only ran to the northeast edge of the foundation trench. On the dolmen chamber's opposite side no traces were found, although here the conditions for preservation were almost the same. For this reason, we suggest that the vehicle tracks are directly linked to the building of chamber IV.

Chamber IV, by stratigraphical evidence belonging to the final building phase, is dated by the already mentioned lugged flask to the end of the early Neolithic period, corresponding with the Fuchs-

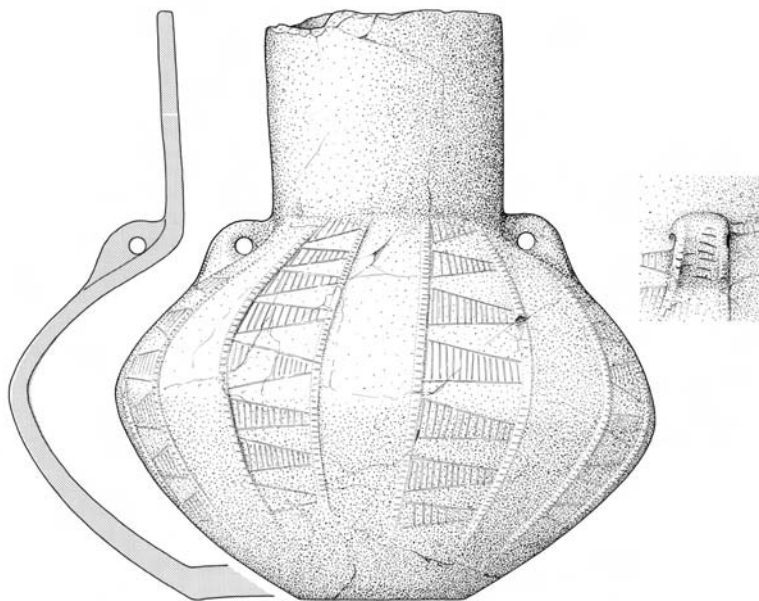


Fig. 10. Flintbek, long-barrow LA 3. Lugged flask (height 19 cm) from chamber IV, dating the vehicle tracks

berg phase of the northern Funnel Beaker Culture, dating with its climax stage to circa 3550 to 3400 BC (Hoika 1990: 203–207, Table 1).

Wheeled transportation⁵ has been found in connection with Funnel Beaker Culture in northern and middle Europe. Carvings of carriages are known from several orthostates (kerbstones) and a smaller stone of the large megalithic grave of Züschen (Gandert 1964: 43–46, Plate 1, 3–4; Günther 1990: 48–52, Figs. 7–8) and from a roof-stone of the Warberg grave in Hessia (Günther 1990: 39–43, Figs. 3–6); and moreover from a funnel beaker from Bronocice in Poland (Kruk, Mili-sauskas 1982: Fig. 1, Plate 8). Furthermore, important evidence is given by the hoard from Bytyn in Poland, with its two harnessed oxen of copper (Gandert 1964: 47–51, Plate 2; Pieczynski 1985). Also some wooden disc-wheels and *Bohlenwege* (plank ways), mainly in Lower Saxony and Holland, dating from Funnel Beaker Culture, are known (Hayen 1989: 33).

Last but not least, there are clay models of disc-wheels (Spennemann 1984), the oldest ones from the Balkans (Häussler 1994: 223, Fig. 5), dating to the fourth and fifth millennia BC. These examples give us an idea about vehicles in early Funnel Beaker Culture. In this connection, some other findings, up to now only mentioned in passing, should be considered: the so-called *Fahrgeleise*. This German term has been used in research papers concerning old ways and roads (Dehnecke 1979). They are known in great numbers, dating from post-medieval and maybe medieval times. Meanwhile, there is some information about *Fahrgeleise* of even older times: The first was excavated in 1955, the

rail-shaped traces from Helvesiek, Lower Saxony, lying close to a passage grave (Dehnecke 1979: 469–473, Fig. 7). Very similar traces from Schneverdingen (Lower Saxony), Krautheim and Großbrenbach (Thuringia), superposed by burials from Single Grave, Unetician and strata of Urn-field cultures, are known (Möbes 1986: 213, Fig. 1; Voss 1970: 234, Fig. 19, a-b). From Denmark, information on rail-shaped vehicle tracks from Arnitlund near Vojens, found under a Bronze Age tumulus (Aner, Kersten 1984: 90, Abb. 66; Neumann 1958: Figs. 5–6), should be mentioned, although their interpretation does not seem to be free of doubt.

The traces under Flintbek long-barrow LA 3 were doubtless caused by a vehicle, and may be called *Fahrgeleise*. This can also be proved by comparing them to profiles of recent way or cart marks in the same area, which means in the same quality of soil; whereas it has clearly been shown by experiments that movements of sledges or simple timber trails do not cause comparable traces.

Notes

(1) The excavations in Flintbek will be published as a monograph. The illustrations in this report can only give some examples of the documentation. In fact, many more profile-lines were cut into the soil to find out numerous details concerning stratigraphical relations. These detailed plans will be discussed in the main publication. Since the monograph will be printed in German, captions and legends differ from the language of the report.

The main aspect of the future publication will be the development of a micro-region from Neolithic to Bronze Age times. The excavations were carried out by the *Landesamt für Vor- und Frühgeschichte von Schleswig-Holstein (LVF)*, since 1996 *Archäologisches Landesamt Schleswig-Holstein (ALSH)*; the scientific edition of the results was sponsored by Deutsche Forschungsgemeinschaft (DFG).

This report is dedicated to D. Stoltenberg (ALSH), who was responsible for the technical leadership of the Flintbek excavations, in recognition of his excellent work.

- (2) LA 3, 4, 17/171, 37, 137 and 167
- (3) Long-barrow LA 3 has already been presented in two preliminary reports of the Flintbek excavations (Zich 1992b: 12, Abb. 4; 1992/93, 23–28, Abb. 8). This, however, has been done in a very early state, discussing the excavation results. The published plans were only meant as a very schematic view to describe the main features of the monument, and may now be replaced by the more detailed ones (see Fig. 3 and Zich 1999a: 387–392, Abb. 12).
- (4) Many similar examples are to be found in catalogues of Bronze Age finds of the northern hemisphere: Aner and Kersten 1973 passim; moreover Zich 2005, 31 ff.
- (5) For a general view on this subject, see Piggott 1983, Fansa and Burmeister (eds.) 2004, Vosteen 1999.

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NEOLITO LAIKOTARPIO VEŽIMO VĖŽĖS PO ILGUOJU FLINTBEK LA 3 PILKAPIU, ŠIAURĖS VOKIETIJOJE

Bernd Zich

Santrauka

Neolito ir bronzos amžiaus Flintbeko kapinynas, kuris yra į pietryčius nuo Kylio, buvo tyrinėtas nuo 1977 iki 1996 metų. Šešiose Flintbeko gyvenvietėse pavyko aptikti ilgųjų pilkapių liekanų. Megalitinei kultūrai priklausantis LA 3 pilkapis, kuriame aptikta nuosekli laidosenos seka (1–3 pav.), vertas atskiros publikacijos. Be to, po šiuo pilkapiu buvo aptiktos dviejų vežimų paliktos vėžės (4–5 pav.), kurių ilgis buvo 19,4 ir 18,2 m. Atstumas tarp vėžių takų buvo 0,6 m, o vėžių plotis siekė 1,1–1,2 m. Suspaustas dirvožemis po vėžėmis rodo, kad jas galėjo palikti 6 cm pločio diskinis ratas.

Įspaustas vėžes padeda datuoti pilkapio konstrukcijos formavimo raida (8 pav.). Ilgajame pilkapyje ankstyviausiu palaidojimu galima laikyti kapą A (9 pav.). Jo įrangoje naudotos medžio konstrukcijos. Antrajam pilkapio įrangos etapui priklausė kapas B, kurio įranga panaši kaip ir kapo A. Trečiajam pilkapio etapui priklausė C ir D kapai, kuriuose mirusieji palaidoti skobtiniuose karstuose. E kapas priklauso ketvirtajam pilkapio įrangos etapui. Jis yra identiškas A ir B kapams. Visi aukščiau tirti kapai buvo orientuoti išilgai ilgojo pilkapio sampilo. Megalitinės kameros I, II įrengtos jau penktajame pilkapio raidos etape. Kameros, kuriose buvo laidojami mirusieji, orientuotos jau skersai ilgojo pilkapio sampilo. F kape aptiktas karstas pagamintas

iš storų medinių lentų. Pastarasis kapas buvo įkastas į pilkapio sampilą megalitinių kapų egzistavimo metu. III megalitinė kamera sietina su šešuoju pilkapio plėtros etapu. IV megalitinė kamera (13 pav.) mirusiajam buvo įrengta šalia ilgojo pilkapio sampilo, todėl pilkapis septintajame raidos etape, kuris priskiriamas Piltuvėlinių taurių kultūros Fuchsbergo etapui (3550 – 3400 BC), buvo praplėstas į plotį. Šiame pilkapio raidos etape, kuris buvo paskutinis, pilkapis tapo 54 m ilgio ir 18 m pločio. Išlikusios vežimo vėžės siejamos su paskutiniu pilkapio įrangos ir plėtros etapu.

Su vežimo vėžėmis, kurios išliko po LA 3 pilkapio sampilu, galima sieti ant puodų sienelių, megalitinių statinių akmenyse pavaizduotus vežimus su ratais ar aptiktus medinių ratų fragmentus, kurie datuojami IV– III tūkst. pr. Kr.

