

# DISSERTATIONES ARCHAEOLOGICAE

ex Instituto Archaeologico Universitatis de Rolando Eötvös nominatae



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Budapest 2020

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Methods and Decisions for the 21st Century. Graz–Budapest, 2019.*

# Chipped stone assemblages from Schleswig-Holstein (North Germany) in the collection of the Institute of Archaeological Sciences – ELTE Eötvös Loránd University

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## **Abstract**

*Attila Péntek recently acquired a large amount of chipped stone artefacts from the legacy of his departed friend Peter Nierling († 2017), archaeologist and field researcher in Hamburg. The aim of bequeathing the finds was to support the Palaeolithic and Mesolithic research in Hungary. The beneficiary catalogued the finds according to the sites and together with the necessary documentation handed them over to the Institute of Archeology of the Eötvös Loránd University.*

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The entire assemblage contains artefacts from a total of 92 sites or smaller lithic concentrations (Fig. 1; Tab. 1). The artefacts of a single site are undoubtedly Palaeolithic (N° 1, Ahrensburg-Stellmoor AB 78). In the surroundings of the settlement Alveslohe, Paleolithic or Mesolithic finds occur at three concentrations close to each other (N° 2–N° 4). Due to the small number of finds, the exact cultural affiliation cannot be determined. The number of doubtlessly Mesolithic sites is 24, and in addition to this, due to a likely intermingling, the Mesolithic or neolithic nature cannot be determined for 8 sites. Two sites are most likely Neolithic. In the case of 7 sites, the Neolithic or Bronze Age nature of the finds is questionable due to the absence of pottery. Finally, at 39 sites the number of finds is scarce and missing any culture-specific marks so that the age of them is utterly indeterminate.

Fig. 2 shows the sites and lithic concentrations according to their approximate cultural affiliation. The entire lithic material has not been evaluated comprehensively; however, the unusually large and varied nature of the material makes the at least partial presentation necessary. The finds to be studied were compiled from the artefacts of three sites belonging to different periods. In what follows, the Late Upper Palaeolithic finds from the Ahrensburg-Stellmoor site, the Mesolithic finds from the Naherfurth *NF SW* site (N° 52) and the Neolithic finds from Sülfeld *SF-C* (N° 77) and *SF-E* (N° 79) lithic concentrations will be briefly reviewed. The raw material of all chipped stone artefacts is Baltic Cretaceous flint, which sometimes appear in an intensively patinated form. However, it should be noted that the patination of Baltic flint cannot be considered as a reliable chronological marker.

## **Geography and Geomorphology of Schleswig-Holstein**

Geographically, Schleswig-Holstein consists of the southern area of the Cimbrian Peninsula (Jutland) and the northern part of the North German Lowland. It is enclosed between the North Sea in the west, the Baltic Sea and Mecklenburg-Western Pomerania in the east, Ham-

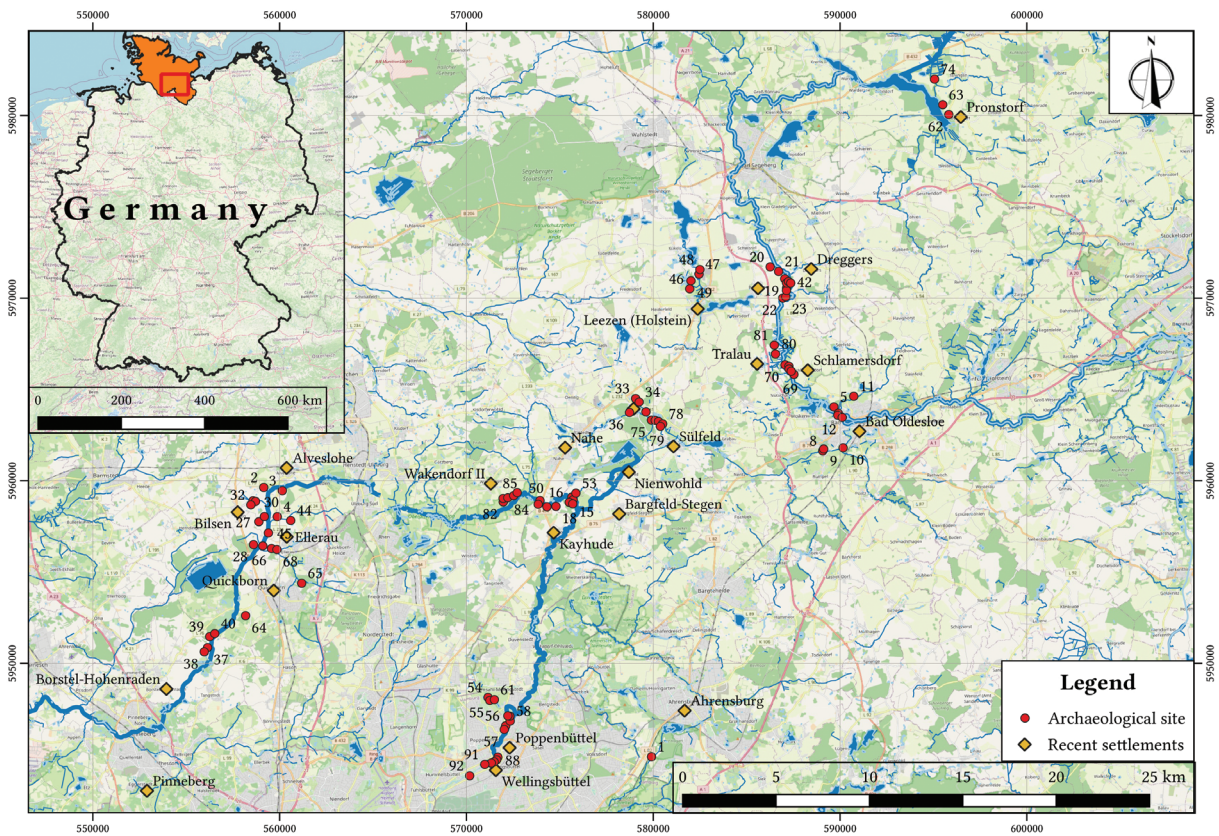


Fig. 1. The 92 archaeological sites or lithic concentrations with lithic assemblages.

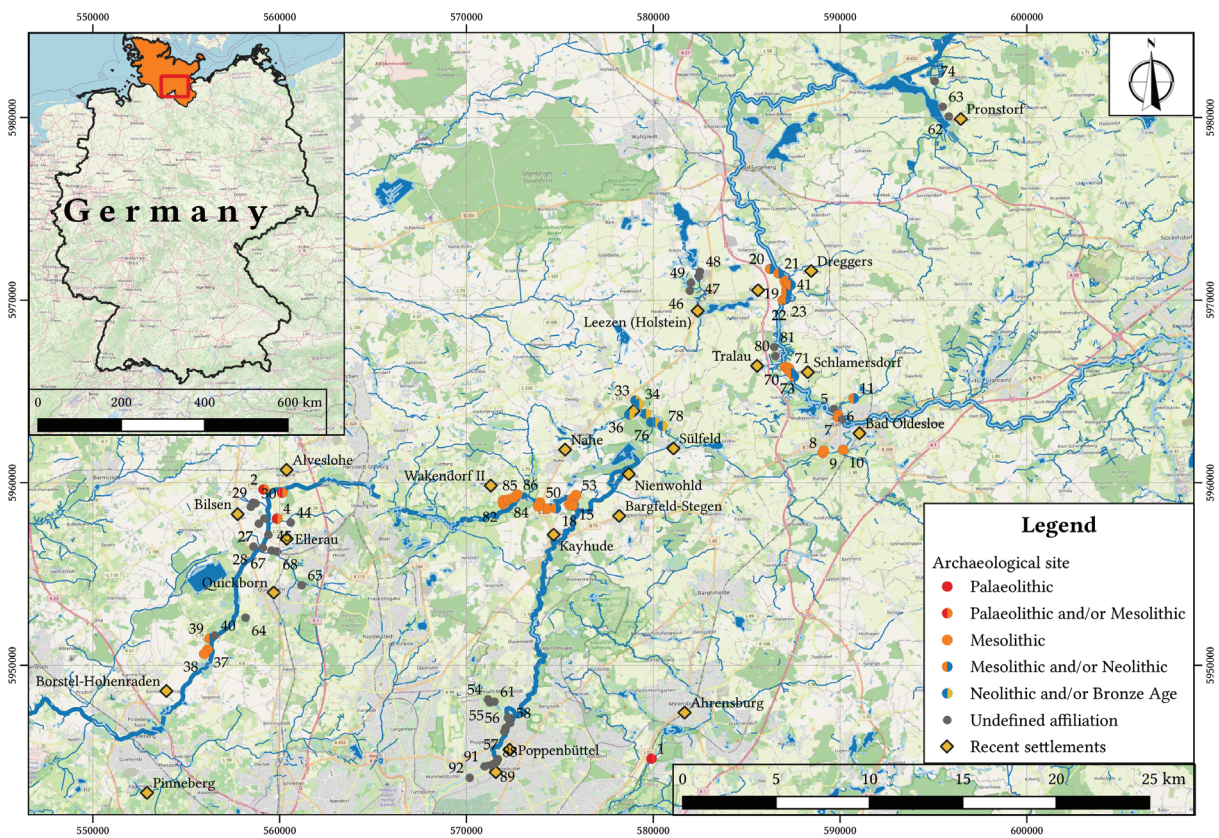


Fig. 2. The 92 archaeological sites or lithic concentrations according to their approximate cultural affiliation.

burg and Lower Saxony in the south and Denmark in the north. The landscape of Schleswig-Holstein is divided from west to east into three parts: the Marshland, the high and low Geest and the Schleswig-Holstein hill country (also known as the eastern hill country). This landscape and the Geest were created as a terminal moraine landscape in the last Ice Age. Geest (the word “*Geest*” is a substantivation of the Lower German adjective “*güst*”, which means dry and infertile) is a type of landform, slightly raised above the surrounding countryside, that occurs on the plains of Northern Germany, the Northern Netherlands and Denmark. It is a landscape of sandy and gravelly soils formed as a glacial outwash plain and now usually mantled by heathland vegetation on the glacial deposits left behind after the last ice age during the Pleistocene epoch.<sup>1</sup>

The landscape of Schleswig-Holstein is characterized by its three great rivers. The Pinnau is a 41 kilometre long river, which has its source in the town of Henstedt-Ulzburg, then runs southwest, in Pinneberg to the west and in the municipality of Haselau it enters the Elbe, which streams towards northwest. The Alster is a right tributary of the Elbe River in Northern Germany. Its source is located near Henstedt-Ulzburg, then flows a little southwards through much of the Free and Hanseatic City of Hamburg and enters the Elbe in central Hamburg. In total, the Alster is 56 km long and has a slope from 31 m to 4 m above sea level. Its drainage basin is about 587 km<sup>2</sup>. The Trave is approximately 124 km long, running from its source near the village of Gießelrade in Ostholstein to Travemünde, where it flows into the Baltic Sea. It passes through Bad Segeberg, Bad Oldesloe, and Lübeck. Its drainage basin is about 2,676 km<sup>2</sup>. In *Fig. 1*, it is obvious that almost all of 92 archaeological sites and lithic concentrations are linked to one of these main rivers.

### **The Late Upper Palaeolithic site of Ahrensburg–Stellmoor AB 78 (*Gut Stellmoor*, „*Wohnkoppel*”, „*Kreis Stormarn*”)**

This is the eponymous site of the so-called Ahrensburg culture or Ahrensburgian (ca. 12,900 to 11,700 BP), which was a Late Upper Palaeolithic specialized culture of “reindeer hunters” in north-central Europe during the Younger Dryas, a near-glacial period. The culture bears the name of a tunnel valley near the settlement of Ahrensburg. The approximately 7 kilometres long and 0.2 to 2 kilometres wide Stellmoor–Ahrensburger tunnel valley is particularly interesting from a geological point of view. The tunnel valley was formed around the end of the last ice age (about 15,000 BP) by the outflowing meltwater, which made its way in a tunnel under the ice. In the 1930s, Alfred Rust German prehistoric archaeologist discovered remains of Palaeolithic settlements near Ahrensburg. Among the discoveries, in particular, Meiendorf<sup>2</sup>, a typical site of the Hamburg culture or Hamburgian (15,500–13,100 BP) and Stellmoor<sup>3</sup> (“marshy place” in German) should be mentioned. The latter site, the hill of Stellmoor, is the highest spot in the surrounding landscape and protrudes into the valley, allowing a wide view on both the northeastern and the southwestern part of the valley. Between 1934 and 1936, excavations were carried out leading by Rust, which yielded a vast amount of lithic artefacts and beyond that thousands of reindeer bones have been found. Among the unearthed artefacts, there are also well-preserved wooden arrow shafts of pine intended for

1 GENWIKI 2015.

2 RUST 1937.

3 RUST 1943.



the culture's characteristic tanged flint arrowheads. The arrow shafts are still the oldest evidence of bow-and-arrow hunting.<sup>4</sup>

Based on the palaeozoological analysis of the bones – in particular, the antlers – the site was a seasonal hunting camp, inhabited primarily in October. In autumn, the reindeer arriving from the south migrate to their winter range. During the migration, the reindeer were intercepted by hunters at the narrow passage as a topographically neuralgic point of the Ahrensburg tunnel valley.<sup>5</sup> The ephemeral character of the site is reflected in the composition of the lithic material as well.

Because of the favourable topographic situation of the site, it is very likely that after the Ahrensburgian hunters the site was occupied by either Mesolithic or younger prehistoric groups as well. As a result of this, a possible intermingling of the lithic artefacts of different cultures is conceivable. Since the site is nowadays an intensively cultivated agricultural area, such intermingling is also likely.

The close environment of Stellmoor represents some other well known archaeological sites (Fig. 3). Close to Meiendorf, later Early and Late Hamburgian sites of Hagenwisch, Krattwisch, Poggenwisch and Teltwisch were localized. At Poggenwisch, in 1951, during the excavations, Alfred Rust found circles of stones, possible weights for a “teepee” covering. At the site of Bornbeck, during the excavations led by Alfred Rust between 1946 and 1948, cultural layers with Hamburgian, Ahrensburgian and Mesolithic lithic artefacts were unearthed. At Pinnberg, in 1936–37 further excavations were carried out, led also by Alfred Rust. Several culture-bearing layers with rich Palaeolithic and Mesolithic material were found.<sup>6</sup> At Teltwisch, the excavations led by Gernot Tromnau revealed both Hamburgian and Ahrensburgian settlement remains, among others, remnants of residential buildings.<sup>7</sup>

The lithic assemblage of Stellmoor AB 78 in the collection of the Institute of Archaeological Sciences contains 300 lithic artefacts. Since the site was steadily visited by amateur collectors (“*Heimforscher*” in German) for artefact collecting purposes, the assemblage does not represent a substantive cross-section of the Ahrensburgian. The artefacts are marked uniformly with the identifier AB 78. Here, AB is an abbreviation that stands for Ahrensburg, the number 78 refers to the so-called “*Landesaufnahmenummer*” (meaning about “field survey registration number” in German) of the site. The majority of the lithic finds is typical debitage material. The flakes are related primarily to core shaping. There are, however, some blades or blade-fragments, which could have been suitable blanks for tool manufacturing. From a technological point of view, the Late Upper Palaeolithic blade technology, with a tendency towards the production of large blades can be detected. There are some characteristics, such as the regularity of blades, the sign of soft-hammer use, the presence of the opposing core platforms and faceted butts, which are associated with Late Upper Palaeolithic rather than Mesolithic technology.

Among the remaining artefacts, there are several formal tools. Gustav Schwantes gave a complete overview of the lithic tool-composition of the Ahrensburgian emphasizing the character-

4 MEADOWS et al. 2018, 105.

5 BAALES 1999, 64; BRATLUND 1996, 19.

6 RUST 1938a; RUST 1938b; RUST 1939; RUST 1958; GROSS et al. 2016.

7 TROMNAU 1975.

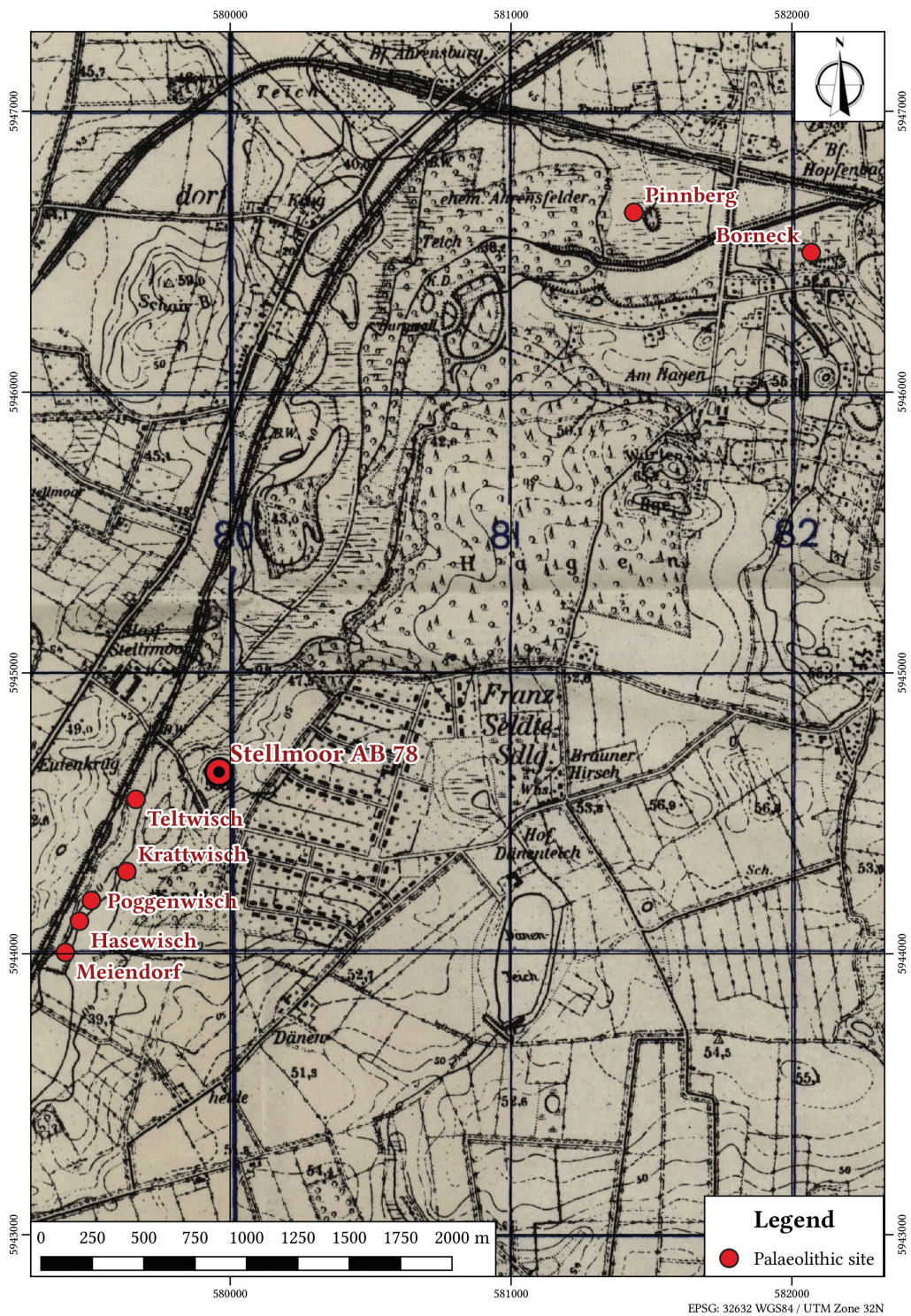


Fig. 3. Offcut from the 1:25,000 black-and-white topographic map “G.S.G.S 4414 Sheet 2327 Edition 3 Ahrensburg” of 1951, which was georeferenced. Geographical values agree with the Universal Transverse Mercator (UTM) Grid Zone 32 N).

istic elements.<sup>8</sup> Disregarding the fact of the above-mentioned possibility or probability of intermingling, the tools will be reviewed in one block if they would be homogeneous and belong to the same culture. The rather small tool kit of 25 tools is poor in culture-specific artefacts.

8 SCHWANTES 1928, 183–193.

Among the retouched tools, end-scrapers have a clear dominance with 14 specimens. Their form or morphology and dimension are various. Except for the three large end-scrapers (Fig. 4.1–2; Fig. 5.2), which were made on a flake, all others were made on a blade. The working edges are in most cases somewhat asymmetric, offset to one side; the regular, nicely curved working edges are rather exceptional. The semi-abrupt retouch is common. The traces of usage can be observed but the renewal of the working edge is rare. Lateral retouch occurs only in two cases.

Five specimens have an intentionally broken base. It is connected most probably to the hafting of the tools, either in a wooden or a bone shaft. Two small specimens have unretouched lateral notches (Fig. 4.8; Fig. 4.10), and there is an end-scraper made on an elongated flake with a twisted profile, which has an almost straight oblique working edge (Fig. 5.2). Its highest leftmost end is pointed as a borer, so the tool can be considered as a combined tool. There is another end-scraper made on a blade with curved side-profile, which is a combined tool also (Fig. 5.3). Beside the slightly curved scraping edge, the distal end of the right lateral edge is notched (without having been retouched); the proximal end of the left lateral edge is concave retouched. The straight base is intentionally broken and roughly retouched.

There is one borer or “Zinken”-type perforator in the assemblage, made on an irregular blade (Fig. 5.5). The preparation of the right side of the tip was conducted by abrupt retouching. On the left side, there are two small inverse removals initiated from the upper face. Both lateral edges are retouched and show traces of intensive use. The proximal end of the tool is thinned on the lower face likely for a hafting purpose. In the type list of Gustav Schwantes that contains the main lithic types of the Ahrensburgian industry,<sup>9</sup> the borer is listed under the N° 20 *Bohrer*.<sup>10</sup> According to Schwantes, there is a single borer made on a blade present, having a tip retouched from both sides. In several cases, however, the tip is less elaborated, if it would have been retouched only on the one side of the tip. As Kufel-Diakowska stated,<sup>11</sup> use-wear analysis



Fig. 4. Selected end-scrapers from the Ahrensburg-Stellmoor AB 78 site.

9 SCHWANTES 1928, 183–189.

10 SCHWANTES 1928, 187.

11 KUFEL-DIAKOWSKA 2011.



Fig. 5. Selected tools from the Ahrensburg–Stellmoor AB 78 site. 1–3 – end-scrapers, 4, 6, 9 – notched tools, 5 – *Zinken*-perforator, 7–8 – atypical tools made on a blade.

on flint artefacts shows traces of antler working mostly on burins and *Zinken* perforators. Burins were used for making grooves and *Zinken* perforators for obtaining antler blades. The “groove and splinter technique” of working bone and antler was widely used in Upper Palaeolithic and Mesolithic times in northern Europe and other territories as well. The essence of the technique was to remove longitudinal splinters from the beam by cutting parallel grooves of V-section through the hard outer wall of the antler and forcing out the intervening portions.<sup>12</sup>

There are four notched tools, manufactured almost certainly for special working tasks, which can likely be related to the bone working and/or the bow-and-arrow-hunting. The first one (Fig. 5.4) was made on a regular blade with a triangular cross-section. It has an intentionally broken distal end and two retouched notches of different size. There is a notch at the distal end of the right lateral edge, the other one is at the proximal end of the left lateral edge. Both lateral edges show clear traces of intensive use. The next specimen (Fig. 5.6) with two notches was made on a slightly offset blade of irregular cross-section and a curved side-profile. The small-sized notch on the right lateral is unretouched, the other, approximately opposite, is on the left lateral edge and retouched. The proximal end of the left lateral edge shows use-wear traces. Another tool was made on a flake of highly unusual form (Fig. 5.9). The distal end is pointed; the concave left lateral edge and the straight part of the right lateral edge show use-wear traces. At the right side, next to the distal end, there is a retouched notch-like shaping. Gustav Schwantes also mentioned the presence of notched blades under the type N° 38 *Klingen mit tiefen oder seichten Hohlbuchten an einem der Seitenränder*.<sup>13</sup> Incidentally, small notches on blades are common.

The following tool was made likely on an irregular blade with widening distal end (Fig. 5.7). Its base was intentionally broken, the distal end obliquely truncated in a length of 23.4 mm. The somewhat concave retouched left lateral edge was intensively used.

12 CLARK – THOMPSON 1953.

13 SCHWANTES 1928, 189.

There is a tool made on a blade that is unclassifiable due to its fragmented nature (*Fig. 5.8*). It is an undamaged mesial fragment with a nicely curved and abruptly retouched (almost backed) left lateral edge. This fragment might have been the mesial part of a retouched blade or a so-called “*Federmesser*”-point.

Some of the selected specimens show evidence of intentional elaboration and traces of intensive use on various parts, however with the lack of use-wear analysis they can be classified only as atypical tools (*Fig. 6.1–8*).

Lastly, some further pieces are highlighted here, which make the type list more expressive and significant:

1. A small-sized instrument made on a flake with an obliquely truncated distal end and a retouched notch on the right lateral edge (*Fig. 7.1*). The dimensions are 22.9×13.6×4.0 mm.

2. A double end-scraper (*Fig. 7.2*). Gustav Schwantes enlisted double end-scrappers under the N° 37 *Klingendoppel-schaber*. They have always curved working edges, and their length varies between 3 and 7 cm. The dimensions are 24.5×16.6×5.7 mm

3. A proximal fragment of a broken microblade with a regular triangular cross-section (*Fig. 7.3*). However, the plain surface of the distal end might have been the bottom surface of a low microblade core as well. The proximal part of the right lateral edge is narrowed through abrupt retouching; the left edge shows very intensive use-wear traces. The dimensions are (35.0)×13.0×3.5 mm.

4. One specimen, which can be certainly regarded as a decisive piece, merits special attention (*Fig. 7.4*). The distal end seems to be the natural end of the blank that was used for making the point is unretouched, there are only minimal traces (thinning) of any elaboration. The base is straight and obliquely broken, that is the point cannot be classified as a tanged point. The proximal end of both edges is narrowed through abrupt retouching (backing) forming a stem. This point is rather an atypical or not very characteristic example of an Ahrensburg-point, which is the index fossil of the culture. Among the numerous analogues, it is enough to refer to the specimens mentioned by Schwantes,<sup>14</sup> Schmitt<sup>15</sup> or Baales.<sup>16</sup> The dimensions are 26×10.5×2.0 mm.

5. A blade of an irregular shape with a slightly curved profile (*Fig. 8.1*). On the distal end of the left



*Fig. 6.* Selected blades with traces of intensive use from the Ahrensburg–Stellmoor AB 78 site.

14 SCHWANTES 1928, 192, Abb. 16.

15 SCHMITT 1999, 329, Fig. 1; 331, Fig. 2; 332, Fig. 3.

16 BAALES 1999, 65, Fig. 2.

lateral edge, there is an unretouched notch. The edge in its entire length has use-wear marks. The proximal end of the right lateral edge is retouched in a length of 20 mm; it has also use-retouch. The dimensions are 68.8×19.8×7.7 mm.

6. A strongly offset blade of an irregular cross-section (Fig. 8.2). The distal end of the left lateral edge is retouched in a length of 14 mm. Below this retouched part, there are four denticulations of different size and shape with use traces. The dimensions are 71.6×27.0×5.3 mm.

7. A notched blade of irregular cross-section and with a curved distal end (Fig. 8.3). The retouched notch of 12 mm length is created on the distal end of the right lateral edge. The tool would have had a special function, likely related to antler working or the bow-and-arrow-hunting. The dimensions are 65.6×27.9×10.7 mm. The tool in Fig. 8.4 is also a notched blade. The blade blank is strongly offset, has a curved profile and an irregular cross-section. On the proximal end of the right lateral edge, next to the base, there is a somewhat asymmetric retouched notch of 27 mm length and 9 mm depth. On the distal end of the left lateral edge, there is use-retouch. The dimensions are 79.5×34.3×10.0 mm.

8. A slender blade of an irregular cross-section (Fig. 8.5). At the end of the right lateral edge, there is a small retouched part of 9 mm length ending in a shallow notch. Both on the upper and the lower face, use-retouch is visible suggesting the function of being a borer or “Zinken”-type perforator. The dimensions are 70.9×19.0×5.3 mm.

9. A blade with a retouched right lateral edge is in its entire length (Fig. 8.6). The left lateral edge is retouched only on the proximal part; the distal part shows use-retouch caused by cutting some hard material. The dimensions are 68.8×29.5×10.4 mm.

Among the remaining, unrepresented artefacts there are five blades, most of them also with use-wear traces. There is a notched flake and a single tool was classified as a retouched flake of amorphous shape.

Concerning the relatively many notched tools in the reviewed assemblage, it is noteworthy that in the type list of Gustav Schwantes, these tools had no particular significance. The tools were listed under the N° 38 “Klingen mit tiefen oder seichten Hohlbuchten an einem der Seitenränder” (blades with a deep or shallow notch on their one lateral edge). Grahame Clark<sup>17</sup> stated that “The Ahrensburgian occupants of Stellmoor got along without two tool forms of which the

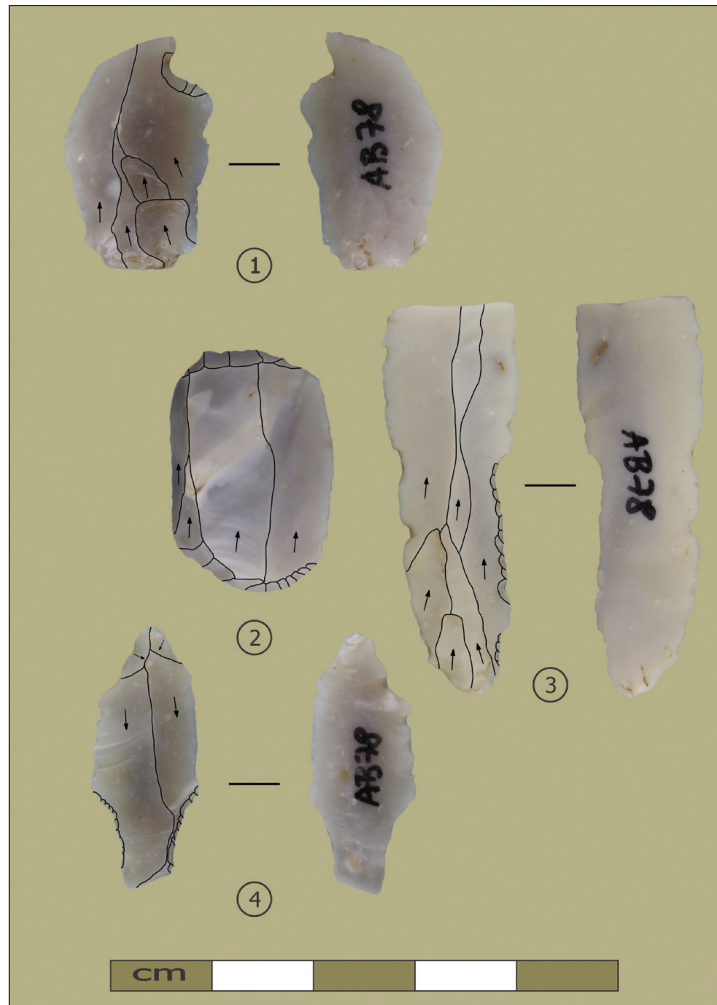


Fig. 7. Selected tools from the Ahrensburg–Stellmoor AB 78 site. 1 – notched tool, 2 – double end-scraper, 3 – microblade with use-wear traces, 4 – Ahrensburg-point.

17 CLARK 1975, 75.

*Hamburgians made significant use, namely notched blades (resembling in many cases the 'strangled blades' of French prehistorians) and pronged tools (Zinken) made on blades and having oblique points."*

### The Mesolithic site of Naherfurth NF SW ("Kreis Segeberg")

The site is situated south of Nahe, which is a small municipality in the district of Segeberg, in Schleswig-Holstein. The geographic name is associated with the ford („Furth" in German) over the Alster River (Fig. 9). Along the Alster River, there are some well-known Mesolithic sites. Among them, the site of Wakendorf II "Germanenacker" (signed as *WD II LA3* and *WD II LA3* in Fig. 3) is quantitatively the richest Mesolithic site in North Germany with an estimated amount of over 125,000 artefacts.<sup>18</sup>

Out of the three Mesolithic sites at Naherfurth, which are linked to the ford, the site Naherfurth NF SW, that has the most various lithic material, will be described.

Before the review of the selected Mesolithic site, short remarks concerning the chronology of the Mesolithic in North Germany should be made. The assemblages mentioned at the beginning of the paper, which considered having Mesolithic affiliation, do not belong to the so-called Early Mesolithic.<sup>19</sup> Gustav Schwantes made the first attempt to establish a chronological scheme for the Late Mesolithic period.<sup>20</sup> Based on surface collections discovered in the valley of the river Trave around the town Bad Oldesloe in Schleswig-Holstein, he proposed the denomination Oldesloer Stage or Oldesloer Culture ("Zivilization von Oldesloe" in German). Hermann Schwabedissen, following the ideas of Gustav Schwantes, divided the Mesolithic into several early stages followed by the Oldesloer Stage between 6,000 and 4,500 uncal. BC. As regards to the microliths, according to Schwabedissen, the Oldesloer Stage contains small narrow triangles, long narrow triangles, very rarely wide triangles and several quadrangle forms (e.g. trapezes). The attempts toward the separation of a younger phase of the Oldes-



Fig. 8. Selected tools from the Ahrensburg–Stellmoor AB 78 site. 1–5 – notched tools made on a blade, 6 – retouched blade.

18 GROSS – HARTZ 2013.

19 See e.g. SØRENSEN et al. 2018.

20 SCHWANTES 1926; SCHWANTES 1928, 222–226.

loer Stage and further classification are described in detail by Frauke Metzger-Krahé.<sup>21</sup> The Oldesloer Stage has been questioned later on<sup>22</sup> and rejected on the ground that according to typological considerations it is a mixture of artefacts of both Late and Terminal Mesolithic and even Neolithic character.

The obvious uncertainty concerning the chronological position of the sites with Mesolithic character in the collection of the Institute of Archaeological Sciences makes it necessary to refer to them henceforward only as Mesolithic. Only a detailed analysis of the occurring microliths would make it possible to determine the chronological affiliation of the assemblages more precisely.

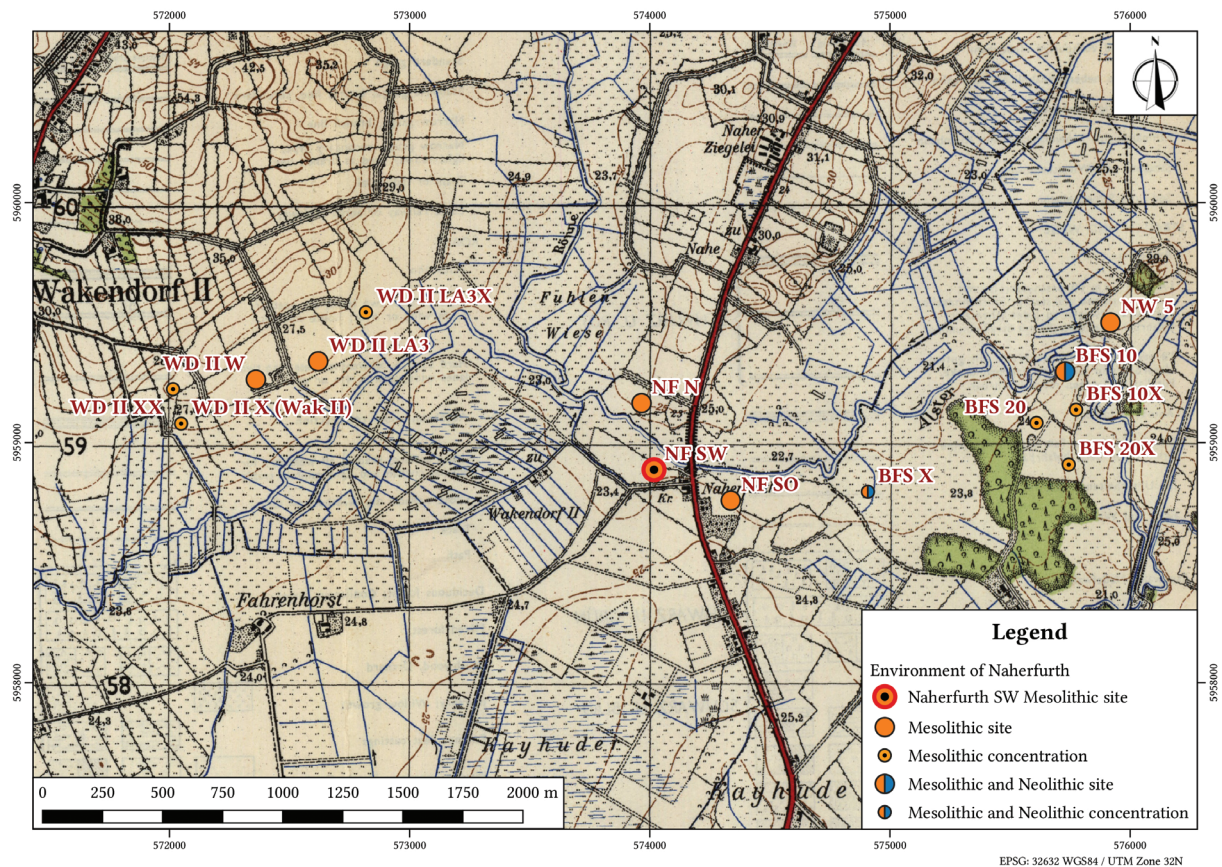


Fig. 9. Offcut from the 1:25,000 topographic map “G.S.G.S 4414 Sheet 2226 Edition 4 Wakendorf” of 1954, which was georeferenced. Geographical values agree with the Universal Transverse Mercator (UTM) Grid Zone 32 N). In the figure, the close environment of Naherfurth can be seen. At the same time, the nature of the marshy plain with the spider-web-like drainage canal system is well perceptible/recognizable.

The Mesolithic sites around Naherfurth and Wakendorf have been collected since decades by amateur collectors and most probably in a somewhat selective manner, so the assemblage to be reviewed does likely not represent all substantive characteristics of the Mesolithic.

All finds from the Naherfurth *NF SW* site are marked uniformly with the identifier “NF SW”. Here the abbreviation NF stands for Naherfurth and SW, meaning southwest (“*Südwest*” in German) refers to the southwestern part of the ford over the Alster River. The entire assem-

21 METZGER-KRAHÉ 1977, 124–125.

22 HARTZ 1985 cited in HARTZ 2009, 401.

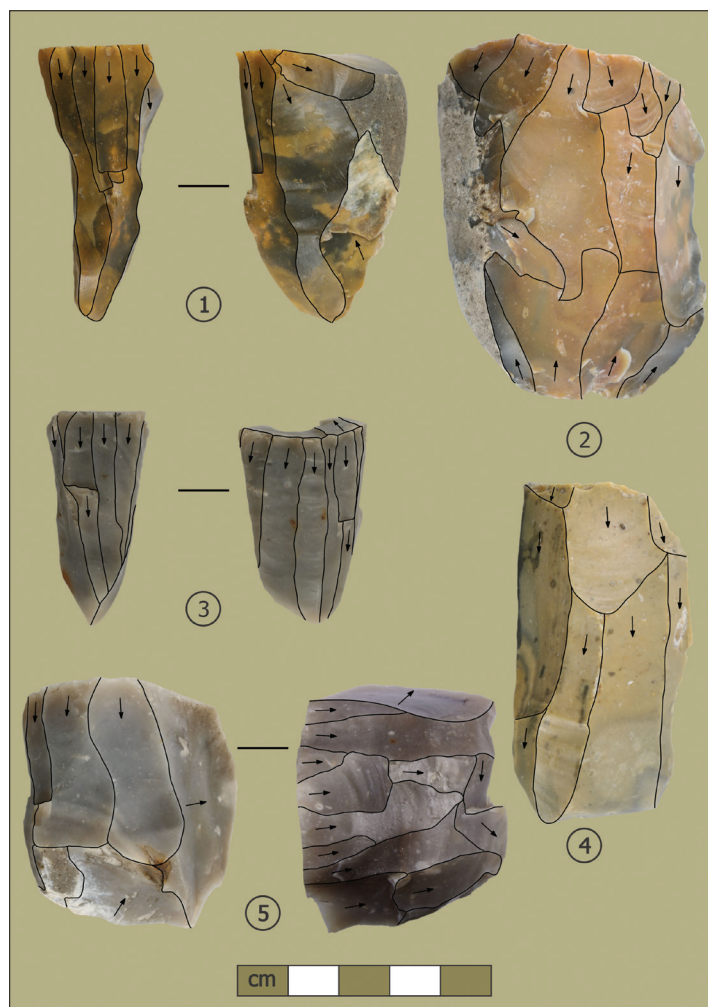


blage contains several hundreds of lithic artefacts, that has not been evaluated in more detail. The overwhelming majority of the lithics are debitage products, mostly blades of varied length and microblades. Except for the microliths, the number of tools is relatively low. In the following, some of the most characteristic lithic artefacts will be described.

There are relatively few cores in the assemblage but fortunately, they give a satisfactory indication to the applied debitage technique. Grégor Marchand gave a very illustrative comparison between the Early and Late Mesolithic technology.<sup>23</sup> In contrast to the Early Mesolithic, during the Late Mesolithic, the objective of the debitage was to produce regular blades (blades thin in cross-section, wide blades with parallel or sub-parallel edges and a straight profile). The flaking surface forms an acute or orthogonal angle with the two sides of the core. The striking surface is relatively narrow. The flaking advances from the front and the volume is reduced by parallel planes without turning around the core. After flaking, the convexities will be reduced, getting a flat general morphology. Blades were removed by pressure flaking technique or indirect percussion. Both techniques enable a precise application of force and thus better flaking control. The preparation of the striking zone is not indispensable; it sometimes happens by micro-facetting.

In the assemblage of the Naherfurth SW site, there are no such characteristic blade cores present. There is a single unipolar blade core, having a prepared, micro-faceted striking platform (*Fig. 10.4*). The rough preparation may indicate the application of the direct percussion with a soft or hard hammer technique during flaking. The dimensions are 65.1×34.4×19.4 mm. The majority of the cores may have been originally blade cores but in the recent state, they are unipolar flake cores with a single striking surface and a single flaking surface. The edge of the striking surface of a flake core had been strengthened and the overhangs, created by the removals of debitage products, removed by small removals (dorsal reduction) (*Fig. 10.2*). The dimensions are 63.3×49.7×30.2 mm. Due to the abundance in available raw material, the cores are unlikely exhausted. In most cases the cortex of the flint nodule has not been removed, it is visible (e.g. *Fig. 10.1–2.4*). One small-sized core, which has two opposite, orthogonal striking platforms is also presented here (*Fig. 10.5*). The dimensions are 41.7×40.5×37.8 mm.

In the assemblage, there are only two microblade cores. The specimen in *Fig. 10.1* shows the above-mentioned volumetric concept for producing microblades in details. The core has an unprepared strik-



*Fig. 10.* Selected cores from the Naherfurth NF SW site.

23 MARCHAND 2014.

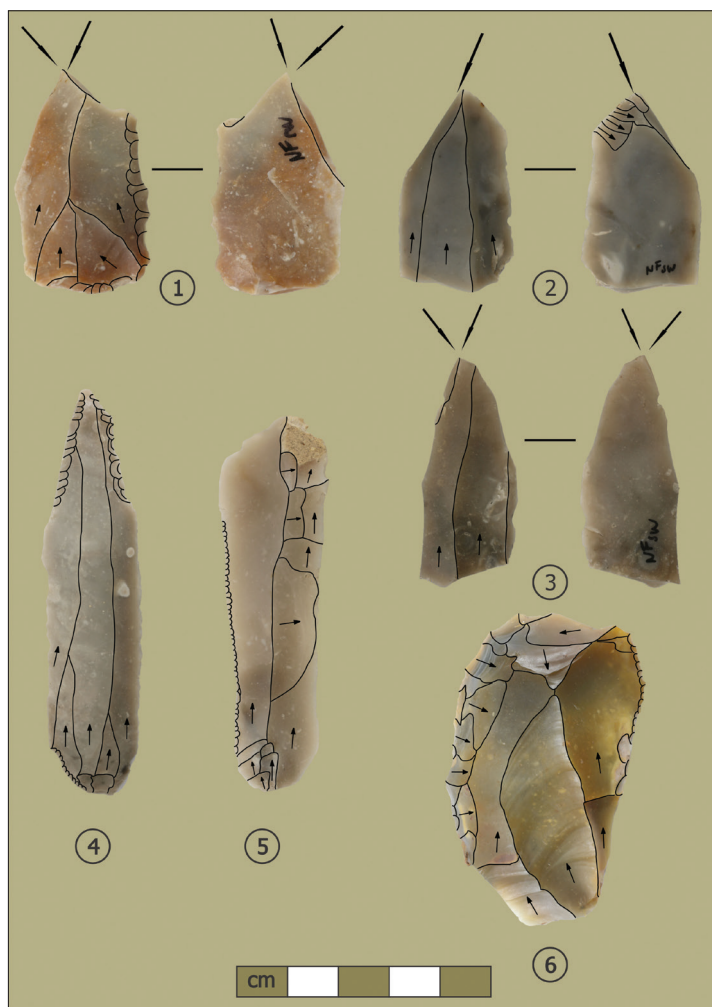


Fig. 11. Selected tools from the Naherfurth NF SW site. 1–3 – burins, 4 – borer, 5 – retouched blade, 6 – double side-scraper.

ridge formed by the butt and the lower face can be observed. This morphology is characteristic for the use of direct percussion by a soft hammer.<sup>25</sup> The butt is almost always flat and has a linear or punctiform shape.

There are three relatively small-sized burins. One specimen is an angular burin on break made on a flake. The right lateral edge is retouched in its entire length with semi-abrupt retouch (Fig. 11.1). The dimensions are 42.3×25.0×9.7 mm. The next burin was most likely made on the distal end of a blade with a broken proximal end (Fig. 11.2). From a typological point of view, it is a hardly classifiable border-line case. It has some similarities to the so-called “burin de Bassaler” or “burin de Raysse”<sup>26</sup> or “burin du Gratadis”.<sup>27</sup> Both lateral edges show traces of use. The dimensions are 38.3×22.8×6.6 mm. The angular burin on break (Fig. 11.3) was possibly made on the distal end of a blade with a broken proximal end. The tip is broken. The dimensions are 44.6×18.4×6.6 mm. According to Gustav Schwantes,<sup>28</sup> in the Bad Oldesloe stage, the burins are rare but those are excellent specimens. The dihedral burins mentioned by him are not present in the collection.

24 SCHWANTES 1928, 222, 225, Abb. 36, 1.

25 INIZAN et al. 1999, 144.

26 DEMARS – LAURENT 1992, 72; TOUZÉ 2011, 9, Fig. 7. 16, Fig. 11.

27 ONORATINI 1975, 271, Fig. 1.

28 SCHWANTES 1928, 222.

ing platform and a narrow flaking surface. This microblade core corresponds slightly to the type listed by Gustav Schwantes under the number “N° 3 Kernsteine mit Handgriff” (core with handle).<sup>24</sup> The dimensions are 52.0×32.4×19.8 mm. The other specimen (Fig. 10.3), a characteristic microblade core has a rectangular overview and three adjacent flaking surfaces. The striking platform is unprepared but there are traces of either dorsal reduction or abrasion. The applied flaking technique was either pressure technique or indirect percussion. Some hinge-fractures as knapping accidents can also be observed. The dimensions are 40.1×23.7×19.7 mm.

Almost all blades are relatively regular, having sub-parallel edges and a sub-triangular or sub-trapezoid cross-section. They usually have a thin cross-section and a straight profile. Plunging blades are not present at all and offset blades are rather incidental. The length varies between 63.8 and 79.6 mm. The width varies between 12.8 and 21.9 and the thickness varies between 4.2 and 5.7 mm. On all studied blades in the assemblage, a so-called lip, a slight projection of the

The following tool was classified as a borer made on a long narrow blade (*Fig. 11.4*). The creation of the tip happened by abrupt retouching from both sides. The lateral edges show use-retouch, indicating the use for scraping or cutting of some hard material. The butt is flat and has a linear shape. The dimensions are 80.1×19.3×5.2 mm.

The left lateral edge of the blade is retouched with semi-abrupt retouch in its entire length (*Fig. 11.5*). The dimensions are 73.5×21.9×5.3 mm.

There is one specific tool that should be likely classified as an end-scraper, although in its recent form it is rather a double side-scraper (*Fig. 11.6*). It was made on an offset flake. The distal end, the assumed end-scraper working edge was removed by a single lateral removal. The flake has an asymmetric cross-section. The high left lateral edge is abruptly retouched; the partially retouched left lateral edge is not so high. The tool has a faceted butt. The dimensions are 60.5×40.0×15.6 mm.

In *Fig. 12*, all represented blades show the evidence of use. On the edges, sometimes also gloss is present. These traces of use occur frequently on the proximal end close to the base. It might imply that the blades were not hafted but used by bare hand. The blade in *Fig. 12.1* has a small unretouched notch on the right lateral edge. Both edges have use-retouch caused probably by some scraping activity. The dimensions are 70.2×19.3×5.1 mm.

The blade in *Fig. 12.8* has a longish retouched notch on the left lateral edge. Both edges and the oblique distal end have use-retouch. The dimensions are 60.5×18.4×3.7 mm.

In the assemblage, there are nine end-scrapers. Two of each specimen were made on a blade or an elongated flake, the remaining four pieces were made on a flake.

The first end-scraper made on a blade has a sub-trapezoid cross-section (*Fig. 13.1*). The blank is a little twisted and offset. The steep working edge was several times renewed, so it lost its likely curved original shape. The use-retouch indicate working activity on hard material. There are traces (small flake removals) of dorsal reduction; the butt is punctiform and the bulb was eliminated by a small flake removal. The dimensions are 47.2×20.8×8.1 mm.

The next end-scraper had an offset elongated flake with an irregular cross-section as blank (*Fig. 13.2*). The working edge is very abrupt through the renewals. The left lateral edge is denticulated; the right edge is retouched with abrupt retouch. The butt was punctiform and the bulb was partly eliminated by a removal. The dimensions are 42.2×25.4×6.9 mm.

The following end-scraper was made on a long blade with sub-parallel edges and a straight profile (*Fig. 13.3*). The almost straight steep working edge was several times renewed. Both lateral edges were intensively used, likely for cutting of some soft material, such as plants or leather. On the right lateral edge, there is a gloss present. The butt is flat and has a linear shape. The dimensions are 81.4×28.8×6.3 mm.



*Fig. 12.* Selected blades with traces of intensive use from the Naherfurth NF SW site.

There is an end-scrapers which was made on a twisted, offset elongated flake with an irregular cross-section and a slightly curved profile (Fig. 13.4). The working edge is steep and renewed. On the upper face, several hinge-fractures can be observed. The bulb was eliminated by small flake removals, so the butt cannot be seen. The dimensions are 36.2×20.7×8.5 mm.

The next end-scrapers was made on a core rejuvenation flake (Fig. 13.5). The left side of the flake was the ridge of the core. The short asymmetric working edge is high and abruptly retouched. The butt is the natural surface of the flint nodule. The dimensions are 37.2×19.7×11.4 mm.

The following end-scrapers was made on an offset chunky flake (Fig. 13.6). The working edge is abrupt and renewed. It shows not only traces of scraping but also traces of some sort of "chopping" activity. The left lateral edge is retouched. On the right part of the upper face, there are remainders of the original cortex of the raw material nodule. The large butt of trapezoidal shape is flat. The dimensions are 41.4×43.5×12.5 mm.

There is one circular end-scrapers in the assemblage (Fig. 13.7). The proximal end is somewhat higher; the retouching is semi-abrupt to abrupt. The working edge was only partly renewed. The bulb was eliminated by a removal. The dimensions are 34.4×31.4×9.7 mm.

The last end-scrapers made on a flake has an asymmetric shape (Fig. 13.8). The curved distal end was abruptly retouched and several times renewed. The nicely curved left lateral was semi-abruptly retouched and shows no traces of renewal. The butt was likely flat and linear; the bulb was eliminated. The dimensions are 33.3×34.4×11.1 mm.

Gustav Schwantes in his type-list mentioned the presence of end-scrapers made on a blade with straight, slightly concave or with a convex working edge. There are semi-circular end-scrapers as well.<sup>29</sup> His terms "*runde Span- und Scheiben-schaber*" are hard to interpret.

With 99 artefacts, the microliths are undoubtedly the richest and most various part of the assemblage. All microliths were made by the so-called microburin blow technique. It is a special procedure for cutting up lithic blades or bladelets to gain fragments that can be used in the manufacture of microlithic tools.<sup>30</sup> In the assemblage, there are both proximal and distal microburins. The type list of the microliths of the Bad Oldesloe stage, given by Schwantes<sup>31</sup> is somewhat superficial to use it by describing some characteristic microliths of the assemblage. At the classification process, however, some much more



Fig. 13. Selected end-scrapers from the Naherfurth NF SW site.

29 SCHWANTES 1928, 222.

30 INIZAN et al. 1999, 82–84.

31 SCHWANTES 1928, 224.

detailed and accurate typological lists were applied.<sup>32</sup>

The collection of microliths does not contain typical isosceles triangles, triangles that have two sides of equal length, characteristic for the Early Mesolithic. If otherwise not noted, as a general rule the microliths are oriented with their base below.

From a morphological point of view, the first microlith has a segment-like form (Fig. 14.1). However, only the curved middle part of the left edge is backed, the proximal and distal ends, the tips are unretouched. There are some scalene triangles in the assemblage, the two legs are backed or abruptly retouched, the hypotenuse is unretouched (Fig. 14.2–4). The collection from this site contains some simple backed points also (Fig. 14.5–6).

The next microlith can be classified as a *sensu lato* PE-point (Fig. 14.7).<sup>33</sup> According to the definition, as regards the shape, it has two very oblique truncations and a very

short, not retouched natural edge between them. As Stefan Kozłowski noted, these points have not been distinguished within the majority of the proposed typological systems. The PE-points cover rather densely the Lowland territories from Great Britain to the Vistula in Poland and the northern Alpine foreland. Based on a detailed chronological analysis a three-stage evolution of the PE-point was suggested, which deriving from the Late Palaeolithic of north-western Europe, spread east in the Holocene but lasted longer in the west than in the east.

The following piece is an elongated deltoid-like point (Fig. 14.8). On the right side, the two adjoining edges are elaborated. The longer edge, the oblique distal end of the geometric microlith is backed, the shorter edge is retouched abruptly. Based on the studied typological systems, this atypical type of point seems to be uncommon. Gustav Schwantes mentioned that in the Bad Oldesloe stage rhombuses were rare. Unfortunately, there are no illustrations of any rhombuses, so it is unclear what they look like. The presence of rhombus shaped-points is evidenced among others in the Mesolithic Kongemose culture.<sup>34</sup> This type of point has generally two opposed edges backed or abruptly retouched.



Fig. 14. Selected microliths from the Naherfurth NF SW site.

32 BOHMERS – WOUTERS 1956; ROZOY 1967; BARRIÈRE et al. 1969; BARRIÈRE et al. 1972; KOZŁOWSKI 1976; KOZŁOWSKI 1980; MARCHAND 1999.

33 KOZŁOWSKI 1980; KOZŁOWSKI 2009, 164.

34 RIMKUS 2019, 74, Fig. 2.



Fig. 15. Selected microliths from the Naherfurth NF SW site.

On the following pieces, the edge close to the proximal end is obliquely truncated on their right side (Fig. 14.9–10).

The next piece is a so-called “Zonhoven” point, named after the Ahrensburgian archaeological site in Belgium (Fig. 14.11). The „Zonhoven Spitze” was defined by Gustav Schwantes<sup>35</sup> as a short thin blade, which is truncated by a retouch at its upper end in a way that the point is situated in the prolongation of the lateral blade edge. Pierre M. Vermeersch<sup>36</sup> excluded the irregular trapezes with two truncations and limited the term “Zonhoven point” to points that have the point prepared at the proximal end of the blank. This represented a tightening of the rather broad definition of Schwantes, which did not define the place of the point on the blank. The restricted definition of Vermeersch corresponds well to the definition of Mesolithic K-points (“Komornica type points”) given by Kozłowski.<sup>37</sup>

Again, some interesting retouched pieces are highlighted in the last two figure:

- A rhombus-like microlith with a distal microburin. The right edges are backed (Fig. 15.1).
- An obliquely truncated microblade (Fig. 15.2).
- A microlith, which has a highly irregular quadrilateral shape (Fig. 15.3). This specimen is reversely represented, the wider proximal end is above. The proximal and distal ends are backed. Although the left edge shows use traces, the tool should be considered likely as connected to hunting activity. It might have been used as an insert of a composite tool, such as a fishing harpune.
- A point, which does not fit into any typological system (Fig. 15.4). It was made on a regular microblade with a triangular cross-section. This specimen is reversedly represented, the proximal end is above. The oblique proximal end is backed, the narrow distal end is only slightly retouched. On both lateral edges, there are small retouched notches, which should have been associated with the hafting of the arrowhead.

35 SCHWANTES 1928.

36 VERMEERSCH 2015, 51.

37 KOZŁOWSKI 1976, 8; KOZŁOWSKI 2009, 159.

- Three double truncations (Fig. 15.5–7). The first microlith was made on a regular blade (or bladelet) with a trapezoid cross-section (Fig. 15.5). The distal and proximal edges are backed or retouched abruptly. The two elaborated edges are not parallel to each other. The base is not perpendicular to the lateral edges, on the left side it is slightly shifted high. In the typological system of the Epipalaeolithic of Barrière and colleagues, this rhomboid-like type of trapeze occurs as a unique type “*Trapèze à bases décalées*”.<sup>38</sup> The microlith corresponds well to the BH type in the class of asymmetric trapezes at Stefan Kozłowski.<sup>39</sup> The second microlith has an irregular quadrilateral shape (Fig. 15.6). The corresponding opposite edges are not parallel to each other. Both the proximal and the distal edge is backed obliquely. The base and the distal edge of the small-sized third trapeze made on a microblade are backed (Fig. 15.7). The base is perpendicular to the lateral edges. At Barrière and colleagues, this type is short rectangular trapeze (“*Trapèze rectangle court*”).<sup>40</sup>

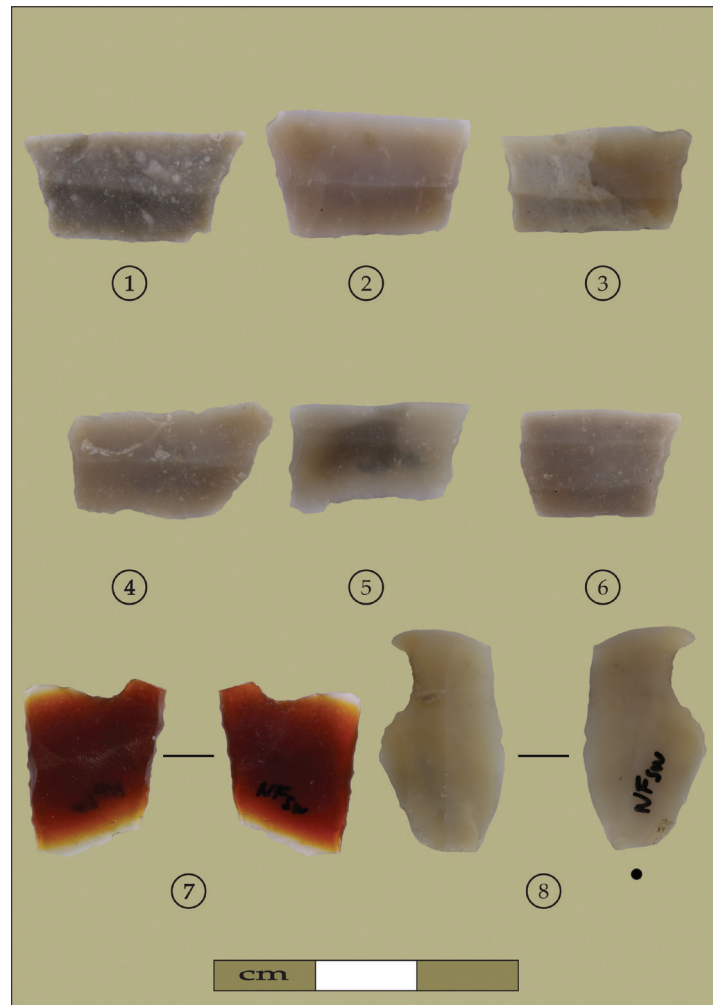


Fig. 16. Selected tools from the Naherfurth NF SW site. 1–7 – microliths (double truncations), 8 – microlithic notched tool.

- Four approximately symmetric double truncations, chisel or transverse arrowheads of different morphology (“*Querschneider*” or “*Pfeilschneiden*” in German) (Fig. 15.8–11). These must have been designed to produce a large wound on the prey and thus a great loss of blood. In the middle of the base of the exemplar in Fig. 15.11, there is a single small flake removal making the arrowhead a “fluted” character. The possible purpose of this removal was to facilitate the hafting of the arrowhead.
- Long symmetric double truncations, long narrow trapezes made on regular microblades with approximately straight parallel side edges (Fig. 16.1–3).
- Long, slightly asymmetric double truncations. The side edges are not parallel to each other, somewhat irregular partly because of the visible use traces. All of these long tra-

38 BARRIÈRE et al. 1969, 362, Fig. 6. 363, Nos 181–183.

39 KOZŁOWSKI 2009, 157.

40 BARRIÈRE et al. 1969, 362, Fig. 6.

- pezes might have been inserts for composite tools, such as fishing harpunes (Fig. 16.4–5).
- A symmetric double truncation with straight parallel edges (Fig. 16.6). It belongs most probably to the class of transverse arrowheads, too.
  - A transverse microlith (Fig. 16.7). Both lateral edges are backed, the unretouched edges are not parallel to each other. In the middle of the longer unretouched edge, there is a notch-like indentation. On the lower face, it is visible that the left side of the indentation is retouched. At the same time, on the right side, there are small use-wear marks, indicating some sort of damage. The function or purpose of the tool in the present form is highly questionable. However, it should be noted that a significant part of the transverse arrowheads has similar damage traces on the longer unretouched edge, which might have been caused by impact.
  - A microlithic notched artefact (Fig. 16.8–9). Its distal end is intentionally broken in a slightly curved manner. It is either a relatively long proximal microburin with a somewhat large retouched notch on its left lateral edge or it might have been an intentionally manufactured microlithic notched tool. Notched tools could have been applied in connection with hunting activity (e.g. smoothing the arrow shafts).

### The Neolithic sites of Sülfeld (“Kreis Segeberg”)

The sites or rather small lithic concentrations in the surrounding of the Borstel, which is a district of the settlement Sülfeld, and of Sülfeld itself, are linked to the Norderbeste River. The source of the Norderbeste is not specified, as the river arises from the outflowing waters of the

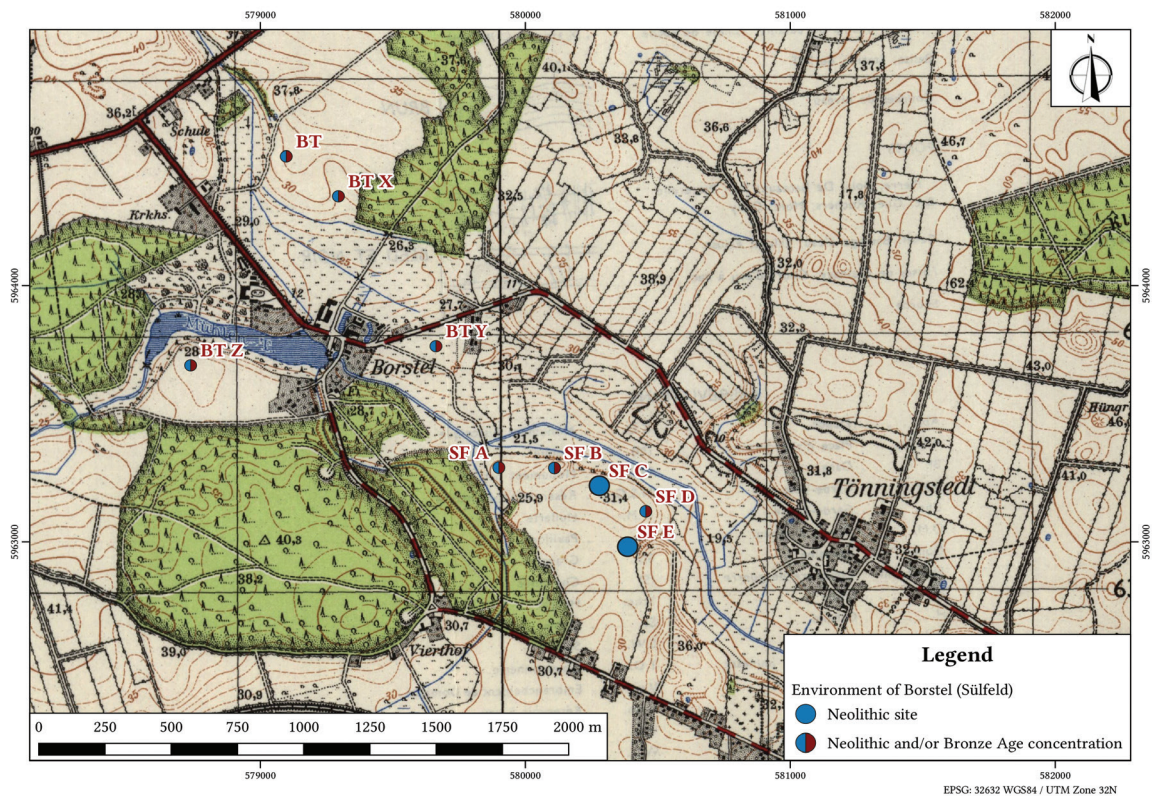


Fig. 17. Offcut from the 1:25,000 topographic map “G.S.G.S 4414 Sheet 2127 Edition 4 Leezen” of 1955, which was georeferenced. Geographical values agree with the Universal Transverse Mercator (UTM) Grid Zone 32 N). In the figure, the close environment of Borstel (Sülfeld) can be seen.



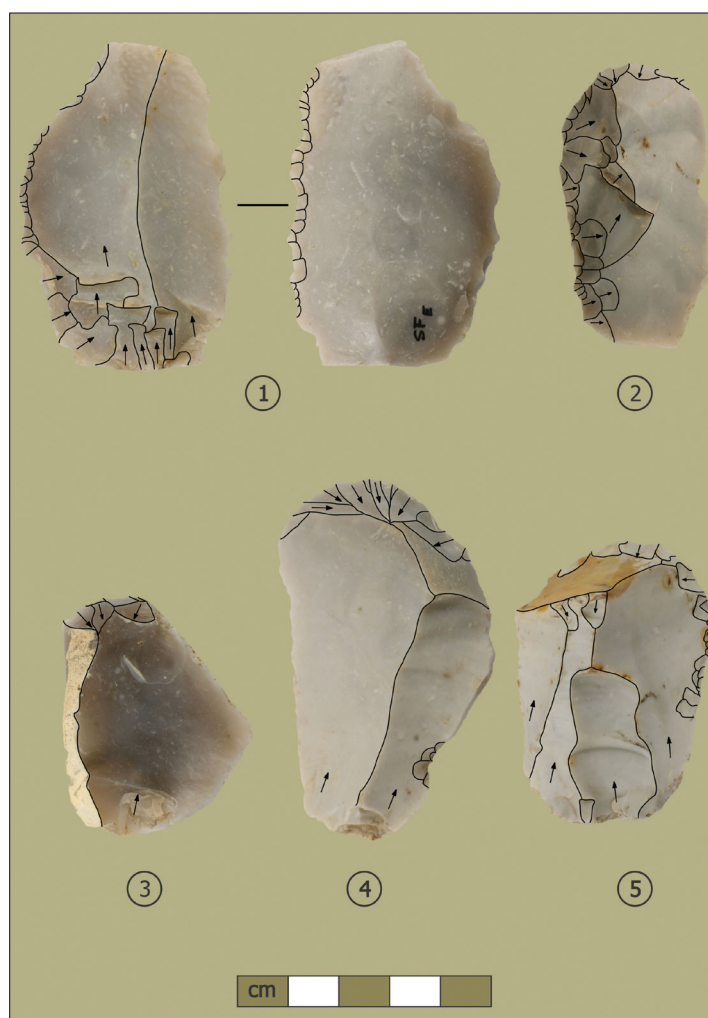
Lunder Moors and the Nienwohlder Moors south of Itzstedt, between Nahe and Nienwohld. The river is about 14.6 kilometres long and joined with the Süderbeste River south from Bad Oldesloe flows into the Trave River in Bad Oldesloe. The most problematic lithic materials in the collection are those from the above-mentioned area. These small assemblages have no Palaeolithic and/or Mesolithic characteristics. Due to the lack of ceramics and culture-specific lithic artefacts, it is certainly impossible to decide whether the assemblage belongs to the Neolithic or, rather likely, to the Bronze Age. The sites (N° 77, *SF-C* and N° 79 *SF-E*), however, which will be reviewed with a great probability belongs to the Early Neolithic period, which is associated to the Funnelbeaker culture in North Germany. The Funnel(-neck-)beaker culture (*“Trichter(-rand-)becherkultur”* in German) c. 4,300 BC–c. 2,800 BC) developed as a technological merger of local Neolithic and Mesolithic techno-complexes between the lower Elbe and middle Vistula rivers, introducing farming and husbandry as a major source of food to the pottery-using hunter-gatherers north of this line. In the north, especially in the area of what is today Denmark and North Germany, it was preceded by the Late Mesolithic/Proto-Neolithic Ertebølle-Ellerbek groups.<sup>41</sup>

Although the geomorphological and topographical situation (*Fig. 17*), the presence of large sandy hills between Borstel and Sülfeld at the right (the southern) bank of the Norderbeste River would not contradict the existence of Mesolithic, in the collection, there are only lithic finds with Neolithic and/or Bronze age affiliation present.

All lithic concentrations are poor in lithic finds and those are mostly unretouched flakes. Below some artefacts from the two possible Neolithic concentrations will be described.

The artefacts are marked uniformly with the identifier “*SF A*” to “*SF E*”. Here *SF* is an abbreviation that stands for Sülfeld, the letters *A* to *E* refer to the lithic concentrations.

All artefacts are rather large-sized, and except for the tool in *Fig. 20*, all others make a spontaneous, rough-and-ready impression. From a technological point of view, during the flaking, the „direct percussion with a hard hammer” technique was used.



*Fig. 18.* Selected tools from Sülfeld. 1–3, 5 – *SF E* concentration, 4 – *SF C* concentration. 1 – retouched and denticulated elongated flake, 2–5 – end-scrapers.

<sup>41</sup> HARTZ – LÜBKE 2006.

In the small assemblage of the Sülfeld *SF-C* concentration, there are only two artefacts, which deserve attention. The first is an end-scraper made on an off-set flake with an asymmetric cross-section (Fig. 18.4). The tool has a nicely curved working edge shifted to the left side of the distal end. It was retouched with a semi-abrupt retouch and was renewed. The adjoining distal end of the right lateral edge is also retouched. On the right lateral edge, there is a small retouched notch close to the base. The left lateral edge is not retouched but shows traces of use. The butt is flat and has a trapezoidal shape. The dimensions are 67.6×40.8×14.0 mm. The second is a strongly offset, twisted narrow unretouched blade with an asymmetric cross-section (Fig. 19.3). The distal end seems to be broken. There are no traces of use at all. The dimensions are 77.8×23.5×7.6 mm.

In the small assemblage of the Sülfeld *SF-E* concentration, there are seven end-scrapers made on a flake. The first tool has a high, curved working edge, which was several times renewed (Fig. 18.2). The left lateral edge is retouched. On the right lateral edge, there is a small retouched inverse notch. The proximal end was removed by a single removal from the upper face. The base is also retouched and near the base, on the lower face, there are also small removals. The dimensions are 55.5×28.2×13.0 mm. The second end-scraper has a high, narrow, abruptly retouched working edge (Fig. 18.3). The left lateral edge is the original core side surface. There are no traces of use at all, and its butt is punctiform. The dimensions are 46.7×36.9×9.2 mm. The third specimen was made on a chunky flake with an asymmetric cross-section (Fig. 18.5). The high abruptly retouched working edge is shifted to the right. It was renewed but it has a curved shape. The right lateral edge is partly retouched. On the upper face, there is the negative of a flake removal that ends in a step-fracture (hinge-fracture). The butt is flat and has a Z-shaped form. The dimensions are 54.6×38.9×18.7 mm.

The lateral edges of the tool made on a large chunky slightly offset flake were alternately elaborated (the left edge directly, from the lower face to the upper face, the right edge inversely), partly retouched, partly denticulated (Fig. 18.1). The left lateral edges show most traces of use. The trapezoidal butt is flat. The dimensions are 63.3×39.3×12.4 mm. A sub-circular end-scraper was made on a chunky first flake (decortication flake) (Fig. 19.1). It has a natural surface on the upper face and the butt. The retouch is semi-abrupt to abrupt. All the working edge around, there are use-retouch likely through scraping some hard material. The dimensions are 44.6×45.4×13.1 mm. The next end-scraper was made on a chunky offset flake of sub-circular form (Fig. 19.2). Only the left part of the distal end and the left lateral edge is retouched by abrupt retouch. The working edge was several times renewed and shows the evidence of intensive use. On the right edge, there are remains of the natural surface of the raw material nodule. The butt is flat and punctiform. The dimensions are 34.4×36.5×12.7 mm. The following piece is an end-scraper made on a chunky decortication flake (Fig. 19.5). In contrast to the curved working edge, the natural surface on the upper face is patinated. The dimensions are 52.7×52.1×13.5 mm. The next



Fig. 19. Selected artefacts from Sülfeld. 1–2, 4–6 – *SF E* concentration, 3 – *SF C* concentration. 1–2, 5–6 – end-scrapers, 3 – unretouched blade, 4 – notched tool made of a relatively thin laminar splinter from a polished tool, likely an axehead.

tool was also made on a chunky decoration flake (Fig. 19.6). The right part is intentionally struck off before the flake as blank for the tool was removed. The natural surface was on the left part removed through creating an end-scraper-like working edge. A relatively thin laminar removal from a polished tool, likely an axehead, was found, too (Fig. 19.4). On the surface, there are non-hierarchical striations, the traces of the initial grinding, re-grinding and final polishing activity on stone.<sup>42</sup> However, interestingly enough, from this use-re-touch, a tool was formed by creating a small notch on the right lateral edge (the orientation is arbitrary). This edge also shows the traces of cutting and/or scraping activity on hard material. The dimensions are 52.2×38.6×5.0 mm.

The last piece is a large combination tool of a borer and an end-scraper made on a tabular raw material chunk (Fig. 20). The lateral edges are retouched in their entire length with abrupt alternate retouch. On the proximal end, an end-scraper was created with abrupt retouch. The almost straight working edge was renewed. The lower face is the unpatinated original flat surface of the raw material. In the middle of the upper face, there is the remain of the patinated pitted surface of the raw material. The dimensions are 62.9×31.6×10.9 mm.

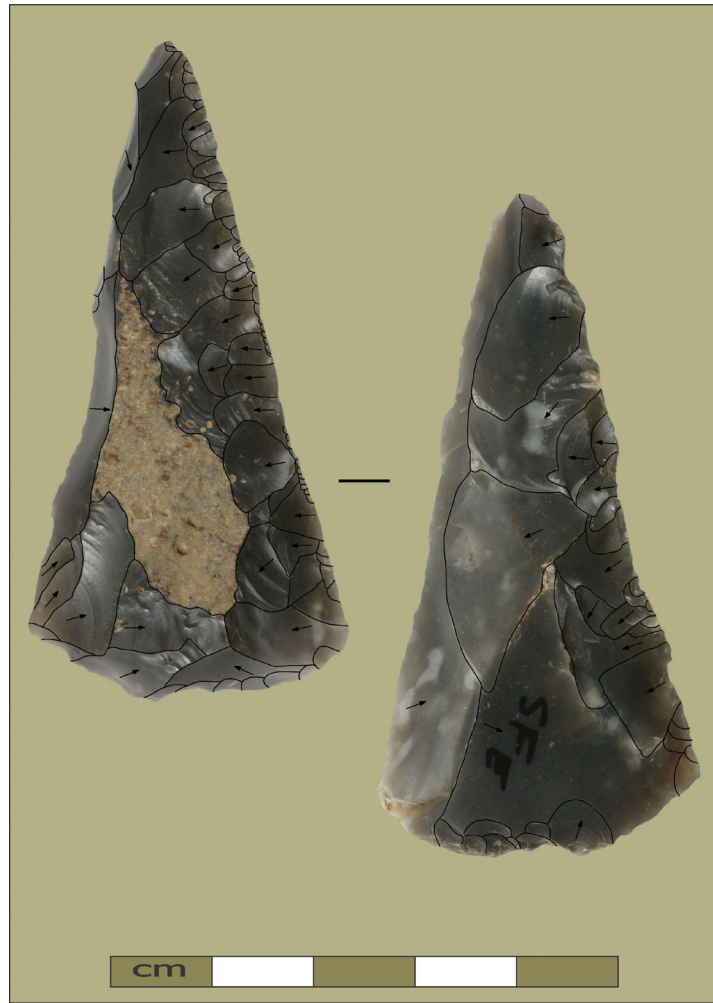


Fig. 20. Large-sized combination tool of a borer and an end-scraper made on a tabular raw material chunk from the *SFE* concentration.

## Conclusion

At the end of this review, some summarizing statements should be made. Concerning the Palaeolithic and Neolithic and/or Bronze Age sites, there is unfortunately a very little to say. In the first case, at the Stellmoor *AB 78* site, there the above-mentioned possibly intermingling should be taken into consideration. In the latter case, and it concerns the 39 sites with questionable affiliation, the lack of culture-specific artefacts and ceramic makes a proper evaluation nearly impossible. As regards to the Mesolithic sites, the most promising results might come from the thorough analysis of this material in the future. Besides the reviewed Naherfurth *NF SW* site, there are other sites very rich in lithic material. Among them, first and foremost Naherfurth *NF SO* (“*Südost*”=Southeast) and *NF N* (“*Nord*”=North), the sites in the surroundings of Wakendorf (*WD II X* and *WD II LA3*), the site of Nienwohld *NW 5* and Bargfeld-Stegen *BFS 10* and *BFS 20* should be mentioned (Fig. 9). These sites have lithic assemblages varied in their composition, first of all in geometric and non-geometric microliths. And finally, the sites around Bebensee are worth to mention, some of which were localized by Peter Nierling.

42 MADSEN 1984; SØRENSEN et al. 2020, 6.

The processing and evaluation of the Mesolithic assemblages is a very interesting and a really challenging task at the same time. After doing this work, we would have a little clearer impression of the scientific value of such surface collections and its contribution to the prehistory of the region.

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Tab. 1. The 92 archaeological sites or lithic concentrations with lithic assemblages.

Site N <sup>o</sup>	Name	Site Id	LA-No	LAT	LON	Epoch	Microliths	Topographic Map
1	Ahrensburg-Stellmoor	AB 78	78	53,647	10,209	P		2327 Ahrensburg
2	Alveslohe	AL		53,782	9,898	P/M?		2225 Quickborn
3	Alveslohe	AL X		53,780	9,913	P/M?		2225 Quickborn
4	Alveslohe	AL Z		53,767	9,908	P/M?		2225 Quickborn
5	Bad Oldesloe	BO 158	158	53,817	10,362	Undef.		2128 Bad Oldesloe
6	Bad Oldesloe	BO 159	159	53,814	10,366	M	+	2128 Bad Oldesloe
7	Bad Oldesloe	BO 169	169	53,813	10,365	M	+	2128 Bad Oldesloe
8	Bad Oldesloe	BO 172 X	172	53,796	10,352	M		2228 Eichede
9	Bad Oldesloe	BO 172 XX	172	53,797	10,353	M		2228 Eichede
10	Bad Oldesloe	BO 176	176	53,797	10,369	M	+	2228 Eichede
11	Bad Oldesloe	BO 180	180	53,822	10,378	M+N	+	2128 Bad Oldesloe
12	Bad Oldesloe	BO X		53,812	10,369	Undef.		2128 Bad Oldesloe
13	Bargfeld-Stegen	BFS 10	10	53,775	10,148	M/N?		2226 Wakendorf
14	Bargfeld-Stegen	BFS 4	4			M	+	
15	Bargfeld-Stegen	BFS 10X		53,774	10,149	M		2226 Wakendorf
16	Bargfeld-Stegen	BFS 20	20	53,773	10,146	M		2226 Wakendorf
17	Bargfeld-Stegen	BFS 20X		53,772	10,148	M	+	2226 Wakendorf
18	Bargfeld-Stegen	BFS X		53,771	10,135	M/N?		2226 Wakendorf
19	Bebensee	BS	21	53,881	10,324	M	+	2127 Leezen
20	Bebensee	BS A		53,887	10,312	M/N?		2127 Leezen
21	Bebensee	BS B		53,884	10,319	M/N?		2127 Leezen
22	Bebensee	BS X		53,871	10,322	M+N	+	2127 Leezen
23	Bebensee	BS XX		53,872	10,325	M/N?		2127 Leezen

<i>Site N<sup>o</sup></i>	<i>Name</i>	<i>Site Id</i>	<i>LA-No</i>	<i>LAT</i>	<i>LON</i>	<i>Epoch</i>	<i>Microliths</i>	<i>Topographic Map</i>
24	Bebensee	BS Y		53,876	10,326	M+N		2127 Leezen
25	Bebensee	BS YY		53,875	10,325	M+N		2127 Leezen
26	Bebensee	BS Z		53,879	10,326	M+N		2127 Leezen
27	Bilsen	BI A		53,765	9,893	Undef.		2225 Quickborn
28	Bilsen	BI B		53,754	9,889	Undef.		2225 Quickborn
29	Bilsen	BI X		53,775	9,889	Undef.		2225 Quickborn
30	Bilsen	BI XX		53,775	9,891	Undef.		2225 Quickborn
31	Bilsen	BI Y		53,768	9,898	Undef.		2225 Quickborn
32	Bilsen	BI Z		53,773	9,887	Undef.		2225 Quickborn
33	Borstel (Sülfeld)	BT		53,823	10,201	N/B?		2127 Leezen
34	Borstel (Sülfeld)	BT X		53,821	10,204	N/B?		2127 Leezen
35	Borstel (Sülfeld)	BT Y		53,816	10,209	N/B?		2127 Leezen
36	Borstel (Sülfeld)	BT Z		53,816	10,196	N/B?		2127 Leezen
37	Borstel-Hohenraden	BHR 15	15	53,704	9,850	M	+	2225 Quickborn
38	Borstel-Hohenraden	BHR 16	16	53,701	9,848	M		2225 Quickborn
39	Borstel-Hohenraden	BHR X		53,709	9,852	M/N?	+	2225 Quickborn
40	Borstel-Hohenraden	BHR XX		53,710	9,856	Undef.		2225 Quickborn
41	Dreggers	DR	3	53,879	10,327	M+N		2127 Leezen
42	Dreggers	DR X		53,879	10,327	M+N		2127 Leezen
43	Dreggers	DR Y		53,879	10,329	M+N		2127 Leezen
44	Ellerau	EA		53,766	9,919	Undef.		2225 Quickborn
45	Ellerau	EA X		53,760	9,901	Undef.		2225 Quickborn
46	Leezen	LE		53,877	10,247	Undef.		2127 Leezen
47	Leezen	LE X		53,884	10,254	Undef.		2127 Leezen
48	Leezen	LE XX		53,886	10,255	Undef.		2127 Leezen
49	Leezen	LE Y		53,881	10,248	Undef.		2127 Leezen
50	Naherfurth	NF N		53,774	10,122	M	+++	2226 Wakendorf
51	Naherfurth	NF SO		53,771	10,127	M	+	2226 Wakendorf
52	Naherfurth	NF SW		53,772	10,120	M	+++	2226 Wakendorf
53	Nienwohld	NW 5	5	53,777	10,151	M	+	2226 Wakendorf
54	Poppenbüttel	PB-1		53,677	10,077	Undef.		2326 Fuhlsbüttel
55	Poppenbüttel	PB-2		53,676	10,079	Undef.		2326 Fuhlsbüttel
56	Poppenbüttel	PB-4		53,663	10,091	Undef.		2326 Fuhlsbüttel
57	Poppenbüttel	PB-5		53,661	10,09	Undef.		2326 Fuhlsbüttel
58	Poppenbüttel	PB-6		53,665	10,095	Undef.		2326 Fuhlsbüttel

Chipped stone assemblages from Schleswig-Holstein...

<i>Site N<sup>o</sup></i>	<i>Name</i>	<i>Site Id</i>	<i>LA-No</i>	<i>LAT</i>	<i>LON</i>	<i>Epoch</i>	<i>Microliths</i>	<i>Topographic Map</i>
59	Poppenbüttel	PB-7		53,668	10,095	Undef.		2326 Fuhlsbüttel
60	Poppenbüttel	PB-8		53,668	10,093	Undef.		2326 Fuhlsbüttel
61	Poppenbüttel	PB-9		53,676	10,082	Undef.		2326 Fuhlsbüttel
62	Pronstorf	PT 1		53,960	10,461	Undef.		2028 Pronstorf
63	Pronstorf	PT 2		53,965	10,456	Undef.		2028 Pronstorf
64	Quickborn	QB-A		53,719	9,882	Undef.		2225 Quickborn
65	Quickborn	QB-X		53,735	9,927	Undef.		2225 Quickborn
66	Quickborn	QB-Y		53,753	9,896	Undef.		2225 Quickborn
67	Quickborn	QB-Z		53,752	9,903	Undef.		2225 Quickborn
68	Quickborn	QB-ZZ		53,751	9,908	Undef.		2225 Quickborn
69	Schlamersdorf	SD 6	6	53,834	10,330	M/N?		2127 Leezen
70	Schlamersdorf	SD 7	7	53,838	10,323	M		2127 Leezen
71	Schlamersdorf	SD 7X		53,838	10,326	M	+	2127 Leezen
72	Schlamersdorf	SD 9	9	53,836	10,326	M		2127 Leezen
73	Schlamersdorf	SD X, SD *		53,835	10,328	M/N?		2127 Leezen
74	Strenglin	ST		53,978	10,450	Undef.		2028 Pronstorf
75	Sülfeld	SF A		53,812	10,214	N/B?		2127 Leezen
76	Sülfeld	SF B		53,812	10,217	N/B?		2127 Leezen
77	Sülfeld	SF C		53,812	10,219	N/B?		2127 Leezen
78	Sülfeld	SF D		53,810	10,223	N/B?		2127 Leezen
79	Sülfeld	SF E		53,809	10,221	N/B?		2127 Leezen
80	Tralau	TR 71	71	53,844	10,315	Undef.		2127 Leezen
81	Tralau	TR 72	72	53,848	10,315	Undef.		2127 Leezen
82	Wakendorf II	WD II X (Wak II)	2	53,773	10,092	M	+	2226 Wakendorf
83	Wakendorf II	WD II XX	2	53,775	10,092	M	+	2226 Wakendorf
84	Wakendorf II	WD II W	2	53,775	10,096	M	+	2226 Wakendorf
85	Wakendorf II	WD II LA3	3	53,776	10,101	M	+++	2226 Wakendorf
86	Wakendorf II	WD II LA3X	3	53,778	10,104	M		2226 Wakendorf
87	Wellingsbüttel	WB-1		53,648	10,084	Undef.		2326 Fuhlsbüttel
88	Wellingsbüttel	WB-2		53,646	10,083	Undef.		2326 Fuhlsbüttel
89	Wellingsbüttel	WB-3		53,645	10,081	Undef.		2326 Fuhlsbüttel
90	Wellingsbüttel	WB-4		53,645	10,079	Undef.		2326 Fuhlsbüttel
91	Wellingsbüttel	WB-5		53,644	10,074	Undef.		2326 Fuhlsbüttel
92	Wellingsbüttel	WB-6		53,639	10,061	Undef.		2326 Fuhlsbüttel



