

Core Point Chisels

A common but overlooked tool type from the late Middle Neolithic, the Late Neolithic and the Early Bronze Age in Southern Scandinavia

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Abstract

The hitherto largely unnoticed tool type, core point chisels, is presented in the paper. The tools are reminiscent of core axes, but are pointed at one end and flat at the other. Based on the presence of small crush marks on each end and along the edges of the long-sides, it is suggested that the tools were used for preparation of rock. Several possible objects for which the core point chisels may have been used are suggested, while the chisels' use for preparation and reoccurring pecking of quern stones is emphasised. The tool type is dated to the late Middle Neolithic B, Late Neolithic and Early Bronze Age based on find contexts.

Introduction

Although various stone tools with crush marks are frequently found on sites from almost every phase of Scandinavian prehistory, crushing tools comprise an under-investigated category of finds. This is likely because of their often somewhat casual appearance: some are coarse stones that were not or only slightly modified before use; others consist of various types of broken or worn-out tools subsequently used for crushing, hence leaving the impression that crushing tools were mostly so-called ad-hoc tools, i.e. quickly made, or simply grabbed from the ground at the moment they were needed and discarded shortly after use (Eriksen 2010). Some types of artefacts with crush marks however seem to have been

specialised tools made after a standardised scheme. The latter applies to a tool type, which has been found at the site Vinge in the Northern part of Zeeland, Denmark (Fig. 1). In recent years, approximately 80 hectares of land have been archaeologically investigated in Vinge generating a large archaeological material from a period spanning from the Early Neolithic to the Viking Age. Among this is a small flint assemblage consisting of broken tools, preforms and flint debris found in a sunken floor of a monumental two-aisled house dated to the second half of the Late Neolithic. The finds included two core tools made of Danien flint, both broken in the thickest end and with characteristic crush



Fig. 1. The location of Vinge marked with a red spot.

marks in the pointed end and along the edges of the long-sides (Johannsen 2017, 6 f.). After the tools were identified, it became clear that several similar tools, which had been categorised as pointed core axes from the Mesolithic, had already been found in the area. Today a total of 13 examples of the core tool have been found in Vinge within a

radius of approximately half a kilometre (Fig. 2, a-m). Except for the two objects from the sunken floor, all of these are stray finds. In the present paper, the tools are analysed and discussed. The aim of the paper is twofold: to draw attention to the tool type and its function, and to bring attention to the risk of habitually relate core tools to the Mesolithic.

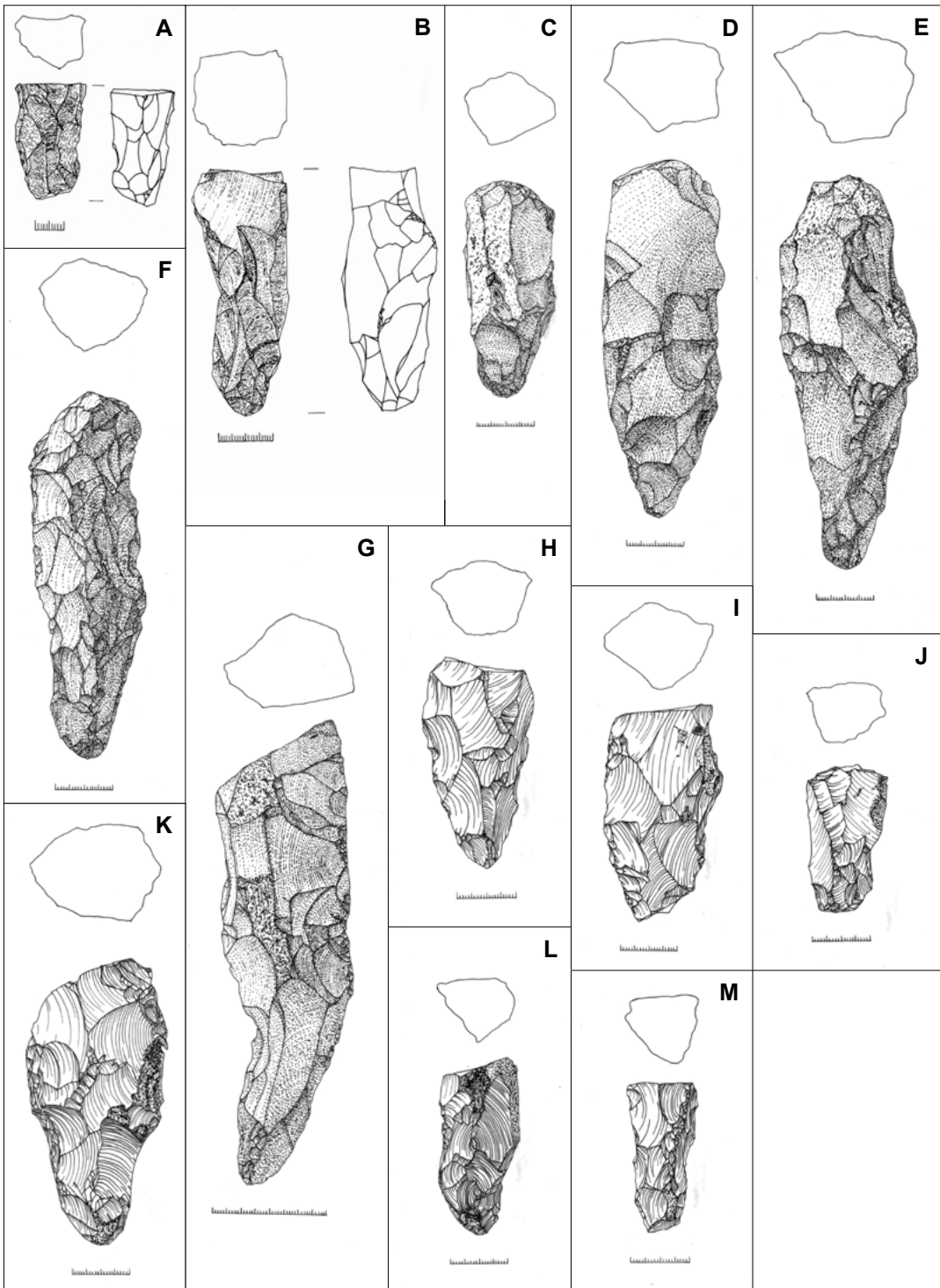


Fig. 2a–m. Drawing of the core point chisels found in Vinge. A and b are the ones that were found in the sunken floor of a large Late Neolithic house (Johannsen 2017). C to m are core point chisels found in a proximate radius of 500 metres from the house. Drawings: Rikke Lorentzen.

Description

The core tools from Vinge vary between six and 16 centimetres in length. They are oblong, and the unbroken examples are slender and pointed in one end, while the other end is thick and flattened. The tools are three- or four-sided: several, but not all, pieces are four-sided in the flat, platform end and three-sided in the pointed end. Seven of the core tools from Vinge are made of Danien flint (Fig. 2 a-g), while six are made of Senon flint (Fig. 2 h-m). Seven of the 13 tools are broken, and the platform end is missing (Fig. 2 a, b, h, i, j, l and m). Durability is a well-known quality of Danien flint (e.g. Högberg and Olausson 2007, 108 ff.), which may explain why tools made of Danien flint seem to have been less vulnerable to breakage. Numerous small crush marks are found on both ends. The pointed end is often rounded by small crush marks (Fig. 2 a-f; j-m; Fig. 3), and the crush marks in some cases continue on the edges of the long-sides. In the cases where the platform



Fig. 3. Close-up of the worn pointed end of a core point chisel (Fig. 2f) Photo: Cille Krause.

end is preserved, several crush marks show that this end was heavily struck. The tools somewhat resemble flint punches dated to the Maglemose Culture (Becker 1952, 136 ff.; Sørensen 1985, 26) but differ from these by the crush marks found in the platform end.

Use

Considering the shape of the tools and the crush marks, it is evident that they were struck with something in the platform end to work something with the pointed end. The tools' use thereby resembles the function of a chisel, which according to the Oxford English Dictionary, can be defined as a tool "*used for cutting wood, metal, or stone, and worked either by pressure, or by the blows of a mallet or hammer*". Chisels are also described as most commonly having a straight cutting edge, which is transverse to the axis. It is thereby reasonable to name the tools from Vinge *core point chisels* to underline their pointed shape and separate them from the well-known Neolithic polished flint chisels (Ebbesen 1981; Stenak *forthcoming*). That the majority of the core point chisels from Vinge are broken indicates that they at least sometimes were used for heavy work tasks. This and the use-wear show that the core point chisels were used with a material that was just as hard, or close to as hard, as the chisels. They were thus likely used for the preparation of stone. Below it will be argued that the core point chisels belong to the Late Middle Neolithic B, the Late Neolithic and the Early Bronze Age. Except for the initial preparation of flint nodules, it is doubtful that the core point chisels were used in this period's delicate flint working technique. It is thereby likely that they were used for the preparation of some of the periods' artefacts, which were made out of other rock types.

As the core point chisels have been shaped to the described distinct form, they

are different to ordinary, simple crushing stones: the chisels' shape was made to be able to make precise blows to something. A find from the Late Neolithic settlement Østbirk in eastern Jutland (Borup 2019) may be the key to understanding what this was. In a sunken floor house, no less than 19 core point chisels with various degrees of use-wear were found along with a number of other artefacts. These included flint waste, two roughouts for pressure-flaked arrowheads and a flint dagger of Lomborg's Type IB, the latter dating the house to the Late Neolithic period I (2350-1950 BC). Five hand-sized stones with smooth cup mark-like depressions, suggested to have been used when drilling shaft holes, were also found in the sunken floor. Most interesting for the present discussion were the finds of a partly polished shaft hole axe and a, by pecking shaped, round, flat stone, likely the hand stone of a quern. As stated above, the core point chisels seem too coarse to have been used for the preparation of bifacial flint tools, such as the ones in the find. More likely, the stones with the smooth depressions and the core point chisels must be seen as a tool kit for the production of the partly finished shaft hole axe in the find, which is also suggested in the presentation (Borup 2019, 104 f.). It is however also likely that the round hand stone was pecked with the core point chisels. The finds from the sunken floor in Østbirk thereby support the idea that the tools were used for preparation of various artefacts made out of rock types, which were slightly softer than flint. Although the shaft hole axes, like the one from the sunken floor in Østbirk, probably shall be counted in thousands, they are yet another poorly described and poorly understood artefact type of the Late Neolithic and Early Bronze Age (see however Heimann 2005; Bendixen 1976). Evidently, there must be an even more neglected material culture connected to their production, which the find from Østbirk sheds a rare light upon.

However, the hand stone in the find indicated that the core point chisels are also related to another neglected Late Neolithic artefact type, namely the quern stone.

Late Neolithic quern stones

Recent years' systematic soil sampling of Late Neolithic houses, macrofossil analyses, ¹⁴C-dating, and increased awareness of ard marks have shown that a wide variety of cereals was cultivated in the Late Neolithic settlements and that crop rotation, cultivation of former house plots, and likely also increased manuring, improved and maintained field fertility (Andreasen 2009; Borup 2019; Kanstrup *et al.* 2014; Møbjerg *et al.* 2007; Simonsen 2017, 379 ff.). The development of the bifacial flint sickle in the earliest part of the period and the large amount of sickle finds from the Late Neolithic, and Early Bronze Age support increased importance of cereal cultivation compared to the preceding period (Johannsen 2022; Johannsen *forthcoming*). These agricultural improvements led to increased production of grain. Although grain can be consumed without grinding, finds of quern stones indicate that making flour was part of the food preparation throughout the Neolithic. Quern stones are most often stray finds, and their uniformity over several thousands of years makes typological dating of them impossible. Querns, or fragments of querns, have however been found in several contexts dated to the Middle Neolithic B, the Late Neolithic and the Early Bronze Age in Denmark and Scania (see Table 1 & Fig. 4). Although the finds show that the quern stone was a common part of the in late Middle Neolithic, Late Neolithic and Early Bronze Age households, the querns are, like crushing stones, rarely discussed, and for the most part only briefly mentioned, for instance, in find lists in papers and excavation reports.

Table 1: List of quern stones found in context dated to the Middle Neolithic B, the Late Neolithic and the Early Bronze Age. The main part of the finds have been collected through a survey of all settlements with two-aisled houses from Denmark dated to the mentioned periods. A minor part of the querns stones derive from graves, while only a single find derives from a settlement in Scania. Finds belonging to the last two categories have been less systematically collected.

Site_name	Sb. no.	Date	Reference
Dommerby Hede	130102-72	MNB	(Sparrevohn <i>et al.</i> 2019, cat. no. 234)
Troldebjerg	160109-59	MNB	(Sparrevohn <i>et al.</i> 2019, cat. no. 369)
Vorbasse	190604-295	MNB	(Hvass 1977)
Jegstrup	130102-76	Late MNB	(Simonsen 2001)
Pisselhøj	120814-177	MNB/LNI	(Gyldenløve 2017)
Strandet Hovedgård	130118-91	MNB/LNI	(Simonsen 2006)
Tandrupgaard	120814-297	MNB/LNI	(Sparrevohn <i>et al.</i> 2019, cat. no. 226)
Tofteparken	120814-403	MNB/LNI	(Sparrevohn <i>et al.</i> 2019, cat. no. 232)
Kongehøj II	190307-208	MNB/LN	(Sparrevohn <i>et al.</i> 2019, cat. no. 458)
Limensgård	060205-198	MNB/LN	(Nielsen <i>et al.</i> 2022)
Måde Slam	190503-304	MNB/LN	(Sparrevohn <i>et al.</i> 2019, cat. no. 476)
Solbjerg	120311-104	MNB/LN	(Jensen 1973; Johansen 1986)
Tindbæk Hestehave	131203-80	MNB/LN	(Sparrevohn <i>et al.</i> 2019, cat. no. 319)
Bejsebakken	120506-82	LNI	(Sarauw 2007)
Birknæs	160515-141	LNI	(Borup 2019, 112)
Diverhøj/Digrshøj	140206-18	LNI	(Asingh 1987)
Kronhjorten	120502-147, 222, 223	LNI	(Posselt 2016)
Kølsen Gårde	130816-147	LNI	(Sparrevohn <i>et al.</i> 2019, cat. no. 293)
Kølsenvej	130816-130	LNI	(Sparrevohn <i>et al.</i> 2019, cat. no. 292)
Myrhøj	120212-105	LNI	(Jensen 1973)
Møllegård	130906-129	LNI	(Sparrevohn <i>et al.</i> 2019, cat. no. 298)
Søndermose	200203-195	LNI	(Sparrevohn <i>et al.</i> 2019, cat. no. 486)
Tromgade	131108-65	LNI	(Simonsen 2017)
Tuesbøl I-II	190301-228/242	LNI	(Sparrevohn <i>et al.</i> 2019, cat. no. 449)
Tvilum	160114-74	LNI	(Sarauw 2007)
Tåbel Renseanlæg	110612-417	LNI	(Sarauw 2007)
Mannehøjgård I	190307-192	LNI/LNII	(Sparrevohn <i>et al.</i> 2019, cat. no. 455)
Nøvling Plantage	180320-51	LNI/EBA	(Sarauw 2007; Sparrevohn <i>et al.</i> 2019, cat. no. 434)
Sydlejren	020216-207	LNI/LNII	(Schlein Andersen 2019)
Hemmed Plantation	140110-161	LNI/EBAI	(Boas 1993)
Bremdal Skole	180706-90	LNII	(Sparrevohn <i>et al.</i> 2019, cat. no. 440)
Brunde	220204-161	LNII	(Sparrevohn <i>et al.</i> 2019, cat. no. 499)
Fosie IV		LNII	(Bjørhem & Säfvestad 1989)
Gilmosevej	180318-57	LNII	(Pedersen 2006)
Kongehøj III	190307-212	LNII	(Sparrevohn <i>et al.</i> 2019, cat. no. 459)
Nygårdstoft	190401-45	LNII	(Sparrevohn <i>et al.</i> 2019, cat. no. 464)
Østbirk	160515-183	LNII	(Borup 2019)
Arnbjerg Nord	130801-231	LN	(Sørensen 2019)
Egelund 2	220204-195	LN	(Sparrevohn <i>et al.</i> 2019, cat. no. 500)
Enkehøj	170802-303	LN	(Møbjerg <i>et al.</i> 2007)
Gyvellunden	120814-437	LN	(Larsen 2021)
Ingersminde	110104-98	LN	(Sparrevohn <i>et al.</i> 2019, cat. no. 183)
Mariasminde_III	190308-177	LN	(Sparrevohn <i>et al.</i> 2019, cat. no. 463)

Site_name	Sb. no.	Date	Reference
Stenildvadvej Nord	120814-415	LN	(Gyldenløve 2018)
Thorsmark Sønder Fald	100101-143	LN	(Sparrevohn <i>et al.</i> 2019, cat. no. 174)
Vorgod	180113-221	LN	(Sparrevohn <i>et al.</i> 2019, cat. no. 426)
Egehøj	140110-194	LNII/EBAI	(Boas 1983)
Stamplund	220202-127	LNII/EBA	(Sparrevohn <i>et al.</i> 2019, cat. no. 498)
Hestehaven	160207-36	LN/EBAI	(Jensen <i>et al.</i> 2020; Sparrevohn <i>et al.</i> 2019, cat. no. 376)
Tange Nørrehede	130606-56	LN/EBAI	(Sparrevohn <i>et al.</i> 2019, cat. no. 274)
Brd. Gram	200208-18	LN/EBA	(Sparrevohn <i>et al.</i> 2019, cat. no. 488)
Clemens	160305-117	LN/EBA	(Sparrevohn <i>et al.</i> 2019, cat. no. 380)
Johannesminde	220110-83	LN/EBA	(Sparrevohn <i>et al.</i> 2019, cat. no. 494)
Nørregård VIII/Nørre_Holsted	190304-105	LN/EBA	(Grundvad & Poulsen 2014)
Povlstrupgård	120509129	LN/EBA	(Hertz 1987, 261)
Skjelborg	170811-65	LN/EBA	(Sparrevohn <i>et al.</i> 2019, cat. no. 420)
Vintenvej 32-34	160306-145	LN/EBA	(Sparrevohn <i>et al.</i> 2019, cat. no. 383)
Vibjerg	010511-37 C	LN/EBA	(Ebbesen 2007, 35)
Vrold	160208-145	EBAI	(Sparrevohn <i>et al.</i> 2019, cat. no. 378)



Fig. 4. The rare find of a complete Late Neolithic quern. The quern was found in a pit close to a Late Neolithic house in Nørre Holsted in the southern part of Jutland and is dated to the early part of the Late Neolithic by both finds and a ^{14}C -analysis (Grundvad & Poulsen 2013). Photo: Thomas R. Knudsen/Museet Sønderkov.

Some observations can however be drawn from studies of Early Neolithic quern stones. Liversage briefly described and discussed quern stones from the Early Neolithic site Lindebjerg on Zealand. These querns were either made from split field stones, which were roughly shaped with a few blows, or from boulders making the initial shaping more comprehensive. Liversage also describes two cases where the surfaces used for grinding were carefully roughened by pecking. He concludes that the querns did not get their hollow shape only by abrasion from use, but were deliberately shaped and were given an initial pecking of the grind surface with a pointed stone. According to Liversage, the smooth work surface, which is found on most quern stones, is a result of querns not usually being discarded before being worn smooth (Liversage 1980, 144).

In another study of Neolithic quern stones, Cecilia Lidström Holmberg also points out that the contact between the hand stone and the quern over time makes the surfaces smooth and unsuitable for grinding. To maintain an effective outcome of the work, the surface of both hand stone and quern must continually be roughened by pecking (Lidström Holmberg 2004, 215). How often the quern stones needed pecking, of course, depended on how much they were used and which stone types they were made of and may thereby have varied considerably. Lidström Holmberg refers to an ethnographic study where quern stones were roughened with a hammerstone approximately once a year (Lidström Holmberg 2004, 215 f. with further references). In Land of Legends, Centre for Historical-Archaeological Research and Communication in Lejre, Denmark, school children and others can get acquainted with various tasks of prehistoric food preparation, including the grinding of cereals with quern stones. In the spring of 2022, the quern stones in Lejre, which are used on/off in the five-month opening season, needed pecking after

approximately three years of use (Natascha Ingemann Støvhase, Lejre Land of Legends, *pers. comm.* 2022). It is questionable whether school children's on/off use of quern stones can be compared to the use of quern stones in the Late Neolithic, where grinding cereals likely was a daily task throughout the year. The case nevertheless shows that pecking is and was necessary for the maintenance of the querns. The point of describing the preparation and maintenance of the quern stones is to suggest that some of the core point chisels may have been used for the initial shaping of the quern stones and the reoccurring pecking of the grind surface. The coarseness of the core point chisels found in Vinge differs somewhat from the slender core point chisels from the described find from Østbirk, and that several of the Vinge core point chisels are broken, as mentioned, also indicate a heavy use, which hardly matches the preparation of the surface of a battle axe, while the shaping and maintenance of quern stones seems like a more likely use. Quern stones have been found in Vinge, although not in a secure Late Neolithic context. But stray finds of 21 bifacial sickles underline the importance of cereal cultivation in the area in the Late Neolithic and/or the Early Bronze Age, while carbonised grains found in six houses from the second half of the Late Neolithic¹ clearly show that a variety of different cereal species was cultivated, and made up an essential part of the subsistence on the settlement (Johannsen 2017). Of course, the core point chisels may have been used for other heavy work tasks. Late Neolithic stonemasonry also included the preparation of slabs for gallery graves. The crush marks along the edges of the long-sides of the core point chisel may indicate that they sometimes were used as wedges, possibly when

1 Since the excavation and publication of the large Late Neolithic house in Vinge, additional five Late Neolithic houses have been excavated in its close vicinity. Carbonised grains of wheat and barley have been found in the houses.

splitting rocks. But pecking of quern stones and hand stones for querns may have been the primary work task in which the core point chisels were involved since this must have been a reoccurring work task on the Late Neolithic settlements, were subsistence to a wide degree was based on cereals. However, it must be pointed out, that direct evidence of the use of the core point are still lacking, which merits further investigations. One way of approaching the problem would be experiments with replicas of the core point chisels in re-pecking of quern stones and subsequent comparing the crush marks of the replica chisels with the crush marks of the prehistoric tools. Another method could be residue analyses.

Previous mentions and interpretations

The core point chisels have been described and discussed a few times before. The earliest example is from 1896 by Sophus Müller, who, along with a drawing of what clearly represents a core point chisel, describes the existence of several finds of roughly shaped, two- or three-side flint pieces with use-wear in one or both ends. The tools are described as 7 to 18 centimetres long and two to four centimetres wide, and Müller suggests that they (and other flint tools with similar crush marks) were used for the preparation of stone (Müller 1896, 410 ff.). 80 years passed before the tool type was brought up again; this time in a short paper by amateur archaeologist Frederik Klestrup (1975). Here, Klestrup presents sketches and descriptions of six core point chisels, all of which are stray finds from Hejls Parish in the southern part of Jutland. The tools are described as small, cone-shaped core tools with a pointed end, and a platform end, a three- or four-sided cross-section and a length between five and six centimetres. All presented examples are described as having

the same characteristic use marks on both ends. Klestrup avoids going into details about their use but claims that the crush marks in both ends are so regular that the tool must have been used for precision work: The pointed end was put against the object being processed, while the platform end was struck with a club or the like. According to Klestrup, the tools are likely Late Neolithic since they are found on sites with Late Neolithic tool types (Klestrup 1975, 28).

Anders Jæger and Jesper Lauersen mention the finds of what must be several core point chisels on the Røjle Mose settlement in the northwestern part of the Danish island Funen. It is however unclear how many since the tool type is described along with various other types of stones with crush marks. No less than 85 of these were found at the site; the vast majority in an occupation layer dated to the Early Bronze Age by the find of type VI-dagger (Jæger and Laursen 1983, 114 f.). The tools are described as hammerstones and either round or oblong, of which the latter form is the most common. The oblong hammerstones are described as two- or three-sided and pitted on one or both ends (*ibid.*, 105 ff.). A drawing of one of the oblong hammerstones depicts a heavily used core point chisel (*ibid.*, Fig. 13g). According to the authors, the crush marks on the oblong hammerstones are generally small; on some examples even smooth, and it is often centred around an unworked area. The smoothening from small crush marks is described as continuing on the edges of the long-sides on some examples. The Røjle Mose site is found close to what in the Late Neolithic/Early Bronze Age was a shallow fiord and the authors interpret the tools as used for working stone, including grooved net sinkers, which were also found on the site (Jæger & Lauersen 1983, 111 & 115).

Finally, Peter Vang Petersen has briefly described the tool type in his handbook of flint from the Danish Prehistory. The tool is

named “slender crushing stone” (the author’s translation). Petersen states that the tool type is found on sites close to the coast, where net sinkers are also found and suggests that the tools were used for making the grooves in these (Vang Petersen 2008, 142). Petersen’s interpretation is thereby likely based on the Røjle Mose finds.

Date

With little or no description, the tool type also occurs in presentations of lithic finds from several other sites. This includes a grave from the Late Middle Neolithic B at Tissø (Gebauer Thomsen 2002), the Myrhøj site from the early Late Neolithic (Jensen 1973, Fig. 15:6), the early Late Neolithic occupation layer found under the Diverhøj mound (Asingh 1987, Fig. 20), the Fosie IV settlement from the second half of the Late Neolithic (Björhem and Säfstestad 1989, Pl. XVIIIi), the Hellegard site from the Late Neolithic (Simonsen 2017, Fig. 4.55) and a house from the Early Bronze Age at the site Hemmed Plantation (Boas 1993, Fig. 13).

The core point chisels are thus found in closed context from the late Middle Neolithic B (c. 2600 B.C., Tissø), the Late Neolithic (2350–1700 B.C., Hellegard), the Late Neolithic I (2350–1950 B.C., Myrhøj, Diverhøj and Østbirk), the Late Neolithic II 1950–1700 B.C., Vinge, Fosie IV), and the Early Bronze Age (1700–1100 B.C., Røjlemose and Hemmed Plantation). The core point chisels thereby have a dating frame spanning from the Late Middle Neolithic B and into the Early Bronze Age.

Since quern stones were used in other parts of the Neolithic and later periods too, it would not be surprising if the dating frame was even wider. However, the need for a specialised tool for pecking of quern stones from the end of the Middle Neolithic B and not earlier could

be explain by an overall intensification of cereal cultivation during the period. Where cereals seem only to play a minor role in the Pitted Ware and early Single Grave Culture (Klassen 2005; Andraesen 2020), the increased permanence of the settlements reflected by the emergence of sturdy houses in most parts of Southern Scandinavia (Nielsen 2019, 24–36), the change in agricultural methods reflected by the variety cultivated cereals (Andraesen 2009) and the thousands of finds of crescent shaped flint sickles (Johannsen *forthcoming*) show that agriculture was intensified during the Late Neolithic. Where quern stones of the previous Neolithic periods may occasionally have been re-pecked with whatever stone at hand, the daily use of quern stones from the end of the Middle Neolithic B and onwards may have prompted the development of a specialised tool as the core point chisel. However, a similar tool type must obviously have been used in production of the thousands of battle-axes of the Single Grave culture (and the Battle Axe Culture in Sweden), since the find from Østbirk indicate that core point chisels were used in the production of the Late Neolithic shaft hole axes. The rarity of core point chisels dated to the Middle Neolithic B may be explained by the general scarceness of identified settlements from this period (Nielsen 2019, 20–24).

Conclusions and implications

Summing up, the core point chisel is a distinct tool-type somewhat resembling Mesolithic core axes but are distinguished from these by the platform and pointed end, and the characteristic small crush marks on the platform, along the edges of the long-sides and in the pointed end. It has been found in context from the end of the Middle Neolithic B and into the Early Bronze Age. Based on the use-wear and the coarseness of the examples

from Vinge, it is suggested here that the tools were used in the preparation and reoccurring pecking of the grind surfaces of quern stones. The core point chisels may however also have been used for preparation of a variety of other stone artefacts. Their use in the making of Late Neolithic shaft hole axes is demonstrated by the key find from Østbirk. Other possible purposes may have been the making of grooves in stones, as suggested for the Røjle Mose site. They may also have been involved in the preparation of the stone slabs for the Late Neolithic gallery graves and even the Bronze Age's stone cists and rock art.

The purpose of the present paper is to draw attention to the tool type and its role in somewhat neglected archaeological subjects, such as subsistence and food preparation in the end of the Neolithic and Early Bronze. Another point is to warn against too optimistic typological dating of core tools, which are typically thought to belong to the Mesolithic period in Scandinavia. An example is the often-discussed large core tools from the Maglemose and Kongemose Culture (Karsten and Knarrström 2003, 94). These are also for the main part made of Danien flint and have the same characteristic use-wear along the edges of the long-side and in the pointed end (Sørensen 2017, 48 f.; Karsten and Knarrström 2003, 94 ff.). Most of them beyond doubt belong to the early Mesolithic. However, a find from Diverhøj (Asingh 1987, Fig. 20m) shows that the Late Neolithic core point chisels sometimes had a comparable size and shape, and the tools' similarities make it questionable to date core tools found without context on typology alone. An example is the hoard find of four so-called flint picks from Tissø in west Zealand, Denmark. These have been dated to the Mesolithic (Toft 2009, Fig. 92.1; Fischer 2003, 48 f.), but considering the nearby Late Neolithic settlement and cemetery (Bican 2010) and the lack of other certain Mesolithic finds in the area, the flint

picks from Tissø might as well be of Late Neolithic date.

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References

- Andreasen, M. H. 2009. Agerbruget i enkeltgravskultur: senneolitikum og ældre bronzealder i Jylland belyst ud fra plantemakrofossiler. *Kuml* 2009.
- 2020. Agriculture during the Pitted Ware culture in the Kattegat Region? In Klassen, L. (ed.) *The Pitted Ware Culture on Djursland. Supra-regional significance and contacts in the Middle Neolithic of southern Scandinavia*. Aarhus & Oxford.
- Asingh, P. 1987. Diverhøj: the excavation of a complex burial mound and a neolithic settlement. *Journal of Danish Archaeology* 6.
- Becker, G. J. 1952. Maglemosekultur paa Bornholm. *Aarbøger for nordisk oldkyndighed og historie* 1951.
- Bendixen, E. 1976. En våbenøkse fra tidlig bronzealder. *Fra Holbæk Amt* 69.
- Bican, J. F. 2010. Bulkister og bådgrav ved Bulbrogård: en senneolitisk gravplads ved vestbredden af Tissø. *Aarbøger for nordisk oldkyndighed og historie* 2010.

- Björhem, N. & Säfvestad, U. 1989. *Fosie IV: byggnadstradition och bosättningsmönster under senneolitikum*. Malmö.
- Boas, N. A. 1983. Egehøj. A Settlement from the Early Bronze Age in East Jutland. *Journal of Danish Archaeology* 2.
- 1993. Late Neolithic and Bronze Age Settlements at Hemmed Church and Hemmed Plantation, East Jutland. *Journal of Danish Archaeology* 10.
- Borup, P. 2019. Østbirk – a strategic settlement at the end of the Neolithic. *Journal of Neolithic Archaeology* 20.
- Ebbesen, K. 1981. Offerfundet fra Å Højrup : Bondestenalderens mejseldepoter. *Harja* 1981.
- 2007. Danske hellekister fra stenalderen. *Aarbøger for nordisk oldkyndighed og historie* 2004.
- Eriksen, B. V. 2010. Flint working in the Danish Bronze Age: The decline and fall of a master craft. In Eriksen, B. V. (ed.), *Lithic technology in metal using societies*. Højbjerg.
- Fischer, A. 2003. En megaøkse fra Tissøs mudderbund. *Fra Holbæk Amt* 2003.
- Gebauer Thomsen, L. 2002. Sidegevinst. *Skalk* 2.
- Grundvad, L. & Poulsen, M.E. 2014. Nordens ældste væv. *Skalk* 6.
- Gyldenløve, K. 2017. *VMÅ 2832 Pisselhøj 2015*. Excavation report. Vesthimmerlands Museum.
- 2018. *VMÅ 2859 – Stenildvadvej Nord*. Excavation report. Vesthimmerlands Museum.
- Heimann, C. 2005. *Förflutna rum: landskapets neolitiserings i sydvästra Värmland*. Göteborg.
- Hertz, J. 1987. *Danmarks længste udgravning: arkæologi på naturgassens vej 1979–86*. København.
- Hvass, S. 1977. A house of the Single-Grave Culture Excavated at Vorbasse in Central Jutland. *Acta Archaeologica* 48.
- Högberg, A. & Olausson, D. 2007. *Scandinavian flint: an archaeological perspective*. Aarhus.
- Jensen, J. A. 1973. Bopladsen Myrhøj 3 hustomter med klokkebægerkeramik. *Kuml* 1972.
- Jensen, P. M., Ivanovaité, L. & Jensen, A. V. 2020. A Bronze Age house at Hestehaven: An early example of storage and cultivation of hulled barley (*Hordeum vulgare* var. *vulgare*) in Denmark. In Vanhanen, S. & Lagerås, P. (eds.), *Archaeobotanical studies of past plant cultivation in northern Europe*. Eelde.
- Johannsen, J. W. 2017. Mansion on the Hill – A Monumental Late Neolithic House at Vinge, Zealand, Denmark. *Journal of Neolithic Archaeology* 19.
- 2022. En upåagtet flintskat fra museumsmagasinets gemmer. Om et depotfund med to bronzealderflintsegle fra Svineholm ved Skuldelev. *ROMU* 2021.
- *forthcoming*. Crescent-shaped Flint Sickles from the Late Neolithic and the Bronze Age in Southern Scandinavia. *Offa*.
- Johansen, E. 1986. Tre bosættelser fra sen enkeltgravskultur/tidlig senneolitikum ved Solbjerg, Østhimmerland. In Adamsen, C. & Ebbesen, K. (eds.), *Stridsøksetid i Sydsandinavien. Beretning fra et symposium 28. –30.X. 1985 i Vejle*. København.
- Jæger, A. & Laursen, J. 1983. Lindebjerg and Røjle Mose: two early bronze age settlements on Fyn. *Journal of Danish Archaeology* 2.
- Kanstrup, M., Holst, M. K., Jensen, P. M., Thomsen, I. K. & Christensen, B. T. 2014. Searching for long-term trends in prehistoric manuring practice. $\delta^{15}\text{N}$ analyses of charred cereal grains from the 4th to the 1st millennium BC. *Journal of Archaeological Science* 51.
- Karsten, P. & Knarrström, B. 2003. *The Tågerup excavations. Skånska spår*. Lund.
- Klassen, L. 2005. Zur Bedeutung von Getreide in der Einzelgrabkultur Jütlands. *Journal of Neolithic Archaeology* 2005.
- Klestrup, F. 1975. Mellemstokke og amboltsten. *Nordslesvigske Museer* 1975.
- Larsen, N. F. M. 2021. *VMÅ 2962 Gyvellunden 2020*. Excavation report. Vesthimmerlands Museum.
- Lidström Holmberg, C. 2004. Saddle querns and gendered dynamics of the early Neolithic in mid central Sweden. In Knutsson, H. (ed.), *Coast to coast – arrival: results and reflections: proceedings of the final Coast to Coast Conference, 1–5 October 2002 in Falköping, Sweden 2004*. Uppsala
- Liversage, D. 1980. Neolithic monuments at Lindebjerg, Northwest Zealand. *Acta Archaeologica* 51.
- Müller, S. 1896. Nye Stenalderes Former. *Aarbøger for nordisk Oldkyndighed og Historie* 1896.
- Møjbjerg, T., Jensen, P. M. & Mikkelsen, P. H. 2007. Enkehøj: en boplads med klokkebægerkeramik og korn. *Kuml* 2007.
- Nielsen, F. O. S., Nielsen P. O. & Stilborg, O. 2022. *Limensgård. Houses from the Early, Middle and Late Neolithic on Bornholm*. Copenhagen

- Nielsen, P. O. 2019. The development of the two-aisled longhouse in the Neolithic and Early Bronze Age. In Sparrevojn, L. R., Kastholm, O. T. & Nielsen, P. O. (eds.), *Houses for the Living. Two-aisled houses from the Neolithic and Early Bronze Age in Denmark*. (Vol. 1, pp. 9–50). Copenhagen & Odense.
- Pedersen, V. J. 2006. Gilmoesevej. Foreløbig analyse af bopladsspor fra yngre stenalder og bronzealder. *Midtjyske fortællinger* 2006.
- Posselt, M. V. 2016. *ÅHM 6499 Kronhjorten*. Excavation report. Nordjyllands Historiske Museum.
- Sarauw, T. 2007. Male symbols or warrior identities? The ‘archery burials’ of the Danish Bell Beaker Culture. *Journal of Anthropological Archaeology* 26.
- Schlein Andersen, J. 2019. *MNS50166 Sydlejren*. Excavation report. Museum Nordsjælland.
- Simonsen, J. 2001. Sjældne fund fra stenalderens sidste del. In Gormsen, G., Kristensen, I. K., Mortensen, N., Simonsen, J. (eds.), *Skive Kommunes Historie. Fra Oldtiden til 1880*. Skive.
- 2006. Strandet Hovedgaard. Children’s graves of the late Single Grave Culture in North Jutland, and some social and cultural considerations. *Journal of Danish Archaeology* 14.
- 2017. *Daily life at the Turn of the Neolithic. A comparative study of longhouses with sunken floors at Resengaard and nine other settlements in the Limfjord region, South Scandinavia*. Skive.
- Sparrevojn, L. R., Kastholm, O. T. & Nielsen, P. O. 2019. *Houses for the Living. Two-aisled houses from the Neolithic and Early Bronze Age in Denmark*. Vol. 2. Copenhagen & Odense.
- Stenak, S. *forthcoming*. Mejselstudier: Form og Funktion i Neolitikum. *Aarbøger for Nordisk Oldkyndighed og Historie*.
- Sørensen, C. 2019. *VSM 10528 Arnbjerg Nord, Asmild sogn, Nørhng herred, Viborg amt*. Excavation report. Viborg Museum.
- Sørensen, S. A. 1985. En boplads fra Maglemosekulturen ved Korsbjerggård. *ROMU* 1984–85.
- Sørensen, S. A. 2017. *The Kongemose Culture*. Copenhagen.
- Toft, P. A. 2009. What Goes Where? Intrasite Studies of Depositions of Maglemosian Art and Flint Picks of the Maglemose and Kongemose. In McCartan, S., Schulting, R., G., W. & Woodman, P. (eds.), *Mesolithic Horizons Volume II: Papers Presented at the Seventh International Conference on the Mesolithic in Europe, Belfast 2005*. Oxford.
- Vang Petersen, P. 2008. *Flint fra Danmarks oldtid*. Vordingborg.

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