

CHAPTER 25

Barbed Points

Ben Elliott and Aimée Little

Introduction

Barbed bone and antler projectile points are ubiquitous across Europe throughout the Mesolithic period, representing a ‘type fossil’ for Early Holocene hunter-gatherer groups (Chatterton 2003). Star Carr has produced 92% of the total number of bone and antler uniserial barbed points (projectile points with barbs along one side) attributed to the British Mesolithic (Elliott 2012). As such, discussions of uniserial barbed point manufacture and typology for both the British Late Upper Palaeolithic and Mesolithic have referred to this dataset (Table 25.1)(Clark 1954; Clark and Godwin 1956; Wymer et al. 1975; Jacobi 1978; Lord 1998; Griffiths and Bonsall 2001; David 2005; Elliott and Milner 2010).

Clark’s excavations at Star Carr recovered an assemblage of 191 bone and antler uniserial barbed points. A barbed point was recovered from the site prior to backfilling by Tot Lord in 1950 (Dark et al. 2006), and another intact point was excavated in the 1980s (Mellars and Dark 1998). Of these, 58 were described as ‘intact or nearly so’, whilst the remaining 135 were broken fragments. Clark originally identified two of these as bone, two as undeterminable and the remaining 187 as being made from red deer antler, and thus linked to the evidence for the groove-and-splinter working of red deer antler at the site. More recent analysis of the assemblage has re-identified Clark’s two bone points as red deer antler (Elliott and Milner 2010).

Clark’s original discussion of the barbed points has proven somewhat contradictory: first highlighting the typological variation within the assemblage; before going on to define five distinct typological groups; and finally arguing that at least two of these groups are sufficiently stratigraphically discrete to support a two-phase occupation of the site. This latter suggestion has been adopted by subsequent authors and linked to peaks in the micro-charcoal profiles from the site (Mellars and Dark 1998; Dark 2000; Dark et al. 2006). Clark initially defined five typological units (see Table 25.2), allocating 44 barbed points to these groups before stating that ‘a distinction may be drawn between those with fine closely-set barbs, those with medium-spaced barbs, and those with relatively coarse, widely spaced and often prominent ones [barbs]’ suited the majority of the barbed points in the assemblage (Clark 1954, 125).

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Site	Quantity	Reference
Star Carr	191	Clark 1954
	1	Mellars and Dark 1998
	1	Dark et al. 2006
	34	This volume
No Name Hill	1	Elliott and Milner 2010
Flixton Island 1	1	Clark 1954
Fosse Hill/Brandesburton	6	Clark and Godwin 1956
	1	Radley 1969
	3	Davis-King 1980
Skipsea	1	Armstrong 1922
Hornsea	1	Armstrong 1922
Royston	1	Clark and Godwin 1956
Waltham Abbey	1	Cook and Barton 1986
Earl's Barton	1	Tolan-Smith and Bonsall 1999
Battersea	1	Lacaille 1966
Wandsworth	1	Lacaille 1966
Wawcott XXX	1	Froom 2012
	246	

Table 25.1: All Mesolithic uniserial barbed points recovered from England.

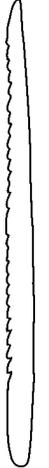
A	B	C	D	E
				
Over 250 mm long	Short, broad points	275–363 mm long	Slender and smooth profile	Under 150 mm long
2–4 barbs Barbs project beyond the line of the stem and tang	2–5 barbs	8–18 barbs	medium-fine barbs	Fine barbs >28
Tang over 100 mm long		More pointed tangs Tangs 106–113 mm long	20 mm long tangs	Scored tangs
N=8	N=6	N=11	N=6	N=11

Table 25.2: Typology for the Star Carr barbed points outlined by Clark (1954, 125).

The 2004–2015 excavations at Star Car resulted in the recovery of 34 barbed points (or fragments). The contexts from which these finds originated are shown in Table 25.3 and the state of preservation set out in Table 25.4. This assemblage is similar to that of Clark's in that it consists of both intact barbed points (10) and broken fragments (23).

Of these finds, 11 fit Clark's (1954, 123) description of being in 'a blackened, shrivelled condition ... in a soft and decayed state', whilst 21 were sufficiently well preserved to allow a detailed discussion of their manufacturing methods. Following excavation, the barbed points were recorded, photographed and illustrated. In instances of suitably intact and well-preserved artefacts, microwear analysis and reflectance transformation imaging (RTI) were also undertaken.

Spatially, the barbed points recovered during the 2004–2015 excavations can be defined by two broad clusters (Figure 25.1). The larger of these groups encompasses Clark's finds focussed on cuttings I and III, and includes the 22 barbed point finds from Clark's area, the surrounding area and the single in situ find from the base of cutting II. The loci of the smaller cluster of eight falls in the detrital wood scatter in the central area of the wetland excavations. The terms used to refer to break patterns and the frequency of broken fragments are shown in Figure 25.2 and Table 25.5.

The spatial distribution of the intact and broken points requires further scrutiny. Within Clark's area, broken fragments make up 86% (n=19) of the 22 finds. Of the three intact points from this area, one is peripheral to the main focus of deposition. However, in the detrital wood scatter/central/eastern timber platform area there is only one broken fragment in the overall 8, and in this instance it is the single broken find which lies peripheral to the main focus of deposition.

Context	Description	Quantity of barbed points
310	Wood peat	2
312	Reed peat	17
317	Detrital mud	9
317/319	Interface of mud and gravel	1
319	Gravel	1
Clark's backfill	Backfill of Clark's cuttings	4

Table 25.3: Depositional contexts of barbed points from the 2004–2015 excavations.

IP Level	Condition	Quantity of barbed points
1	Tentatively identifiable as a barbed point	1
2	Artefact type identifiable, material unidentifiable	1
3	Artefact type and material identifiable, no surface detail surviving	10
4	Some surface detail surviving	10
5	All surface detail surviving	12

Table 25.4: State of preservation of the 2004–2015 barbed points.

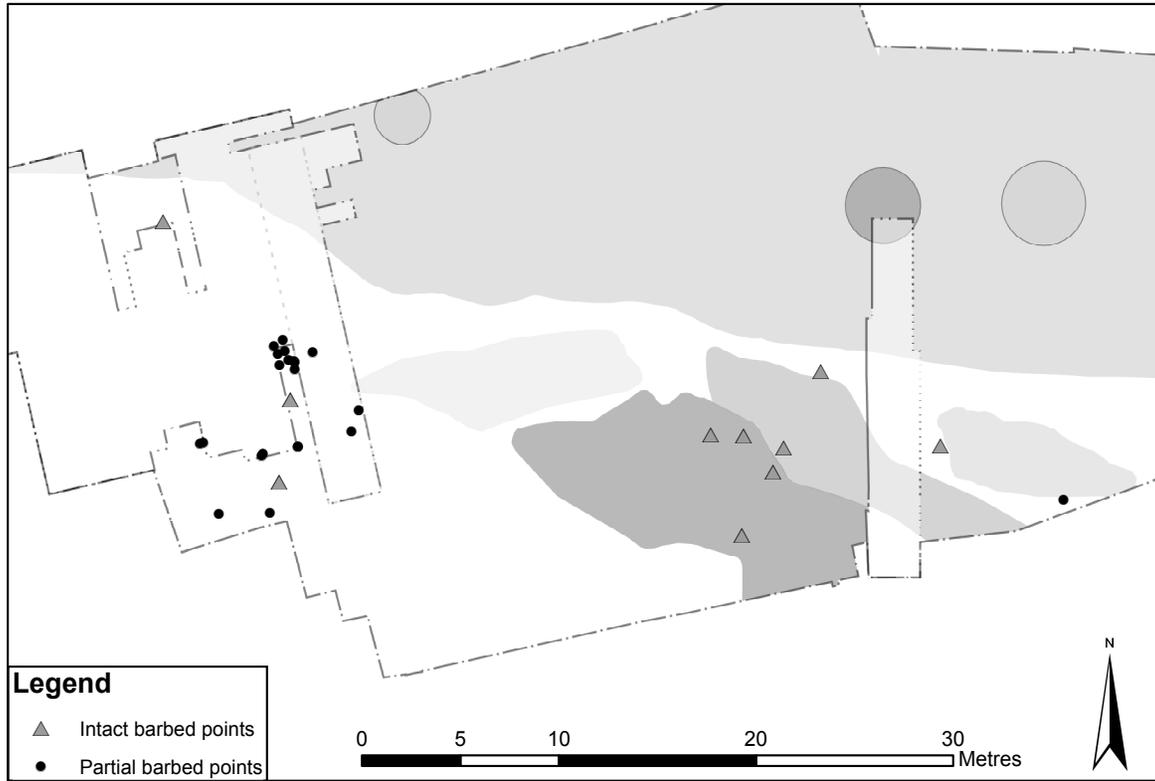


Figure 25.1: Spatial distribution of barbed points (Copyright Star Carr Project, CC BY-NC 4.0).

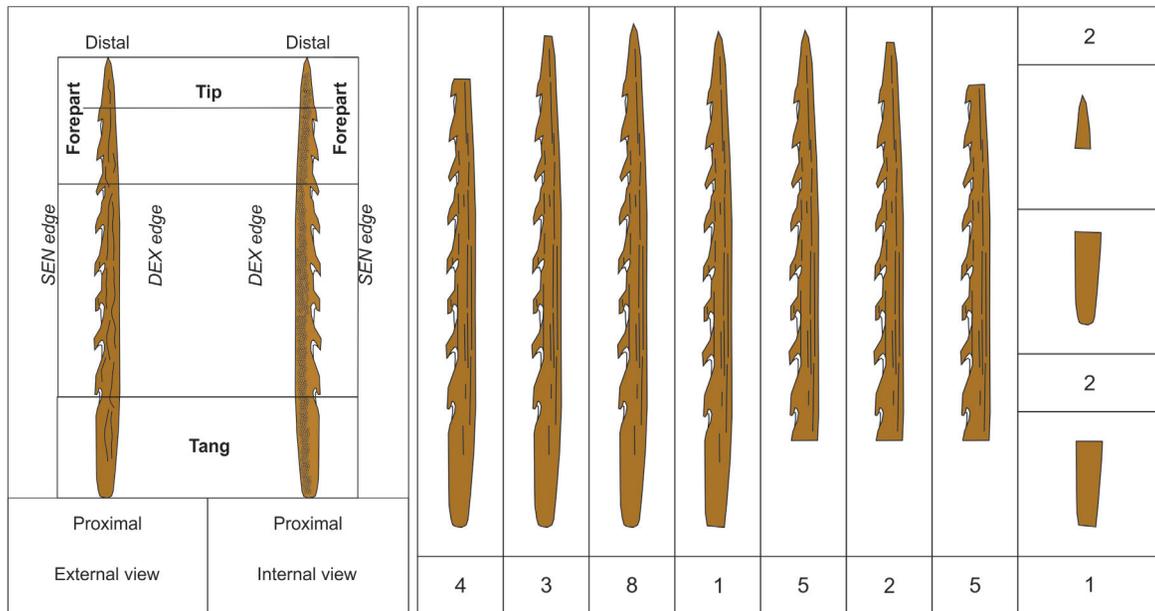
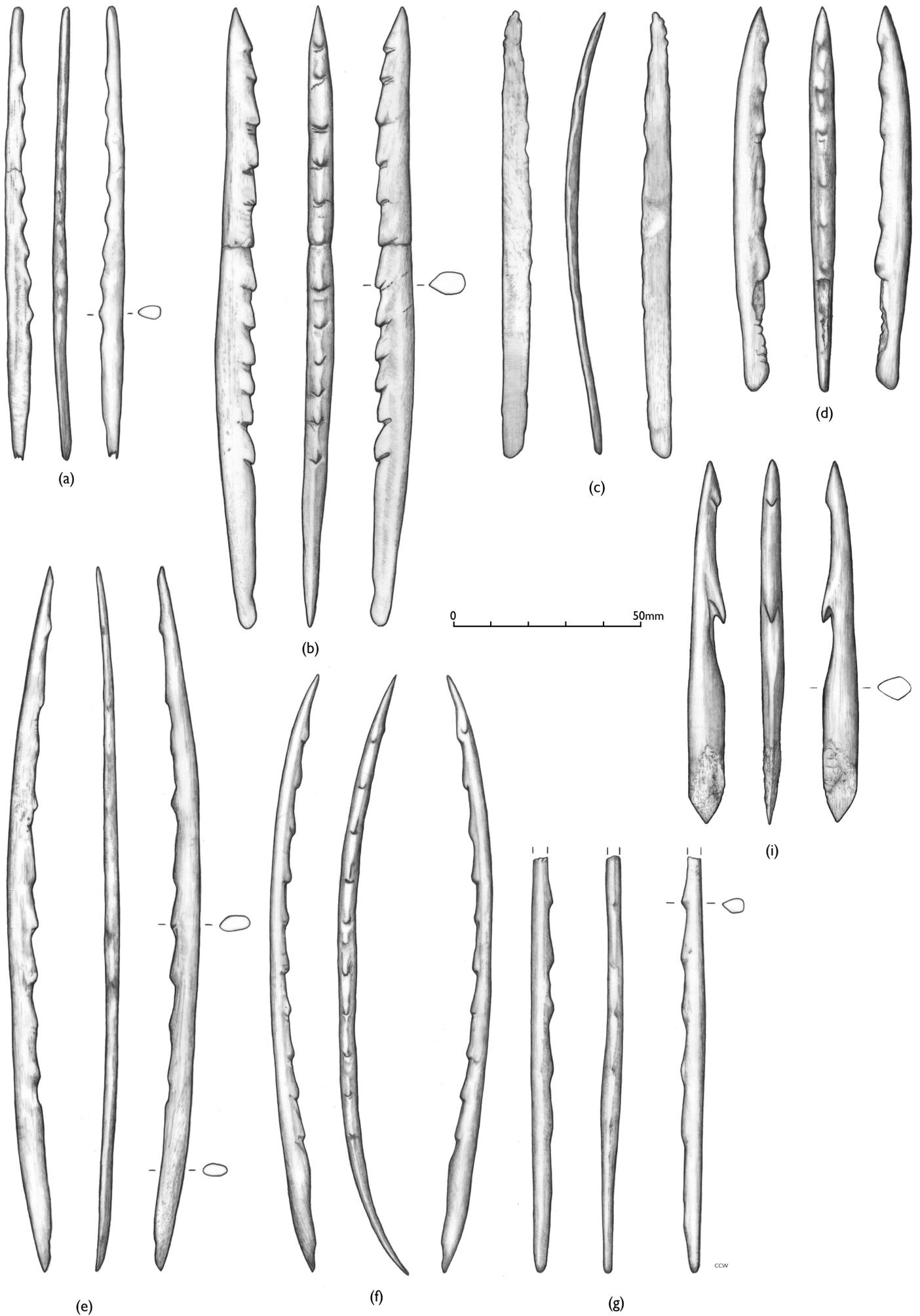


Figure 25.2: (left) schematic diagram of barbed point, with terminology used within the following analysis; (right) frequency of fragmentation patterns of the 2010–2015 Star Carr barbed points (Copyright Ben Elliott, CC BY-NC 4.0).

Find number	Phase	Context	Star Carr Type	Portion	Barbs
92370	Backfill	Backfill	D	Midshaft	3
92393	Backfill	Backfill	N/a	Tip, foreshaft and midshaft	3
92831	Cutting II	319	B	Tang and midshaft	3
99135	Central platform	310	N/a	Intact	8
99790	Central platform	312	N/a	Intact	12
99867	Detrital wood scatter	312	N/a	Intact	8
99886	Detrital wood scatter	312	N/a	Intact	10
103060	Detrital wood scatter	312	N/a	Intact	6
108789	Detrital wood scatter	319 / 320	N/a	Intact	2
113415	Eastern platform	312	N/a	Tang and midshaft	6
113733	Eastern platform	312	N/a	Intact	10
115238	Bead area	310	N/a	Intact	10
115976	Clark's area	312	N/a	Midshaft and tag	2
116025	Clark's area	312	N/a	Midshaft	6
116037	Clark's area	312	N/a	Forepart	7
116152	Clark's area	312	N/a	Tip	0
116464	Clark's area	312	N/a	Intact	15
116481	Clark's area	317	N/a	Tang	0
116482	Clark's area	317	N/a	Midshaft	7
116490	Clark's area	312	N/a	Tang and midshaft	2
116606	Clark's area	312	B	Forepart and tip	5
116706	Clark's area	312	B	Tang	0
116710	Clark's area	312	N/a	Tang and midshaft	2
116802	Clark's area	317	N/a	Tip and midshaft	12
116836	Clark's area	317	B	Forepart	2
116837	Clark's area	317	N/a	Midshaft	4
116870	Clark's area	317	N/a	Tip	1
117253	Clark's area	312	B	Intact	4
117421	Clark's area	312	N/a	Tang	0
117807	Clark's area	317	N/a	Forepart	7
117851	Clark's area	317	N/a	Forepart	7
117958	Clark's area	317	N/a	Midshaft	3
Backfill/71	Backfill	Backfill	N/a	Tang	0
Backfill/82	Backfill	Backfill	N/a	Midshaft	4

Table 25.5: Context of recovery, phase, fragmentation patterns, typological ascription and number of barbs for the 2010–2015 Star Carr barbed points.



(a) 99135 (b) 99790 (c) 99867 (d) 103060 (e) 99886 (f) 113733 (g) 113415 (i) 108789

Analysis

<99135> (**Figure 25.3, a**): An intact barbed point, with only the extreme tip missing. Although poorly preserved and lacking any surface detail, nine barbs are still visible. L=121 mm, W=7 mm, T=3 mm.

<99790> (**Figure 25.3, b**): A poorly preserved, complete point with 12 barbs visible in profile. Desiccation in situ has led to the discolouration, fragmentation, shrinkage and minor warping on the artefact, giving it a slight curve. L=170 mm, W=11 mm, T=4 mm.

<99867> (**Figure 25.3, c**): A complete barbed point, although poorly preserved and warped into a curve. Faint traces of eight barbs visible, although working marks do not survive. L=118 mm, W=7 mm, T=4 mm.

<99886> (**Figure 25.3, e**): A complete barbed point with ten barbs visible. The preservation is too poor to allow any surface detail or specific working marks to survive. L=184 mm, W=9 mm, T=4 mm.

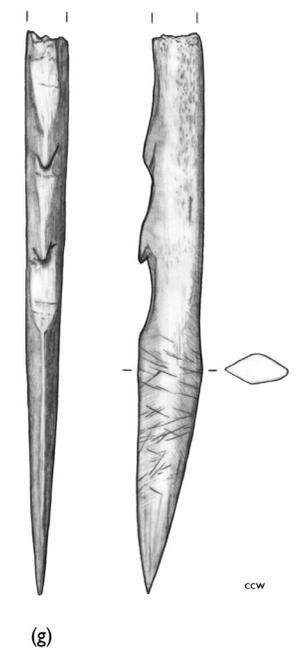
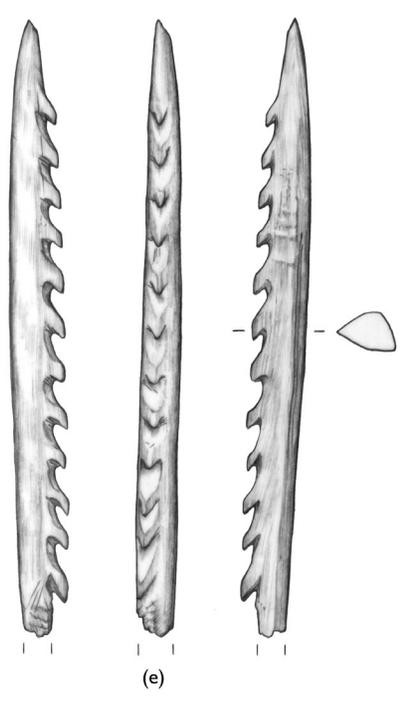
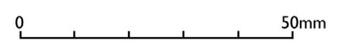
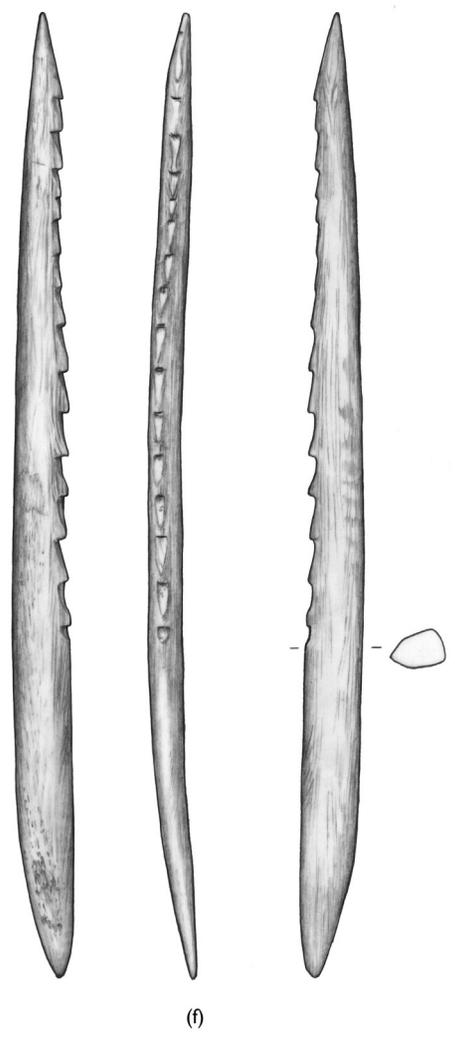
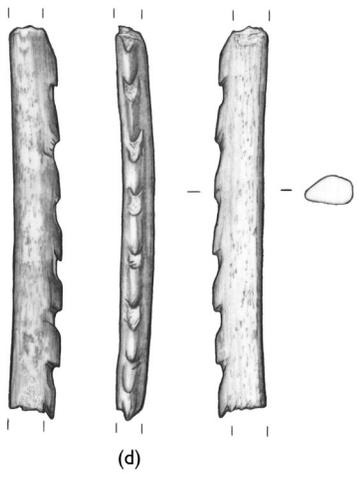
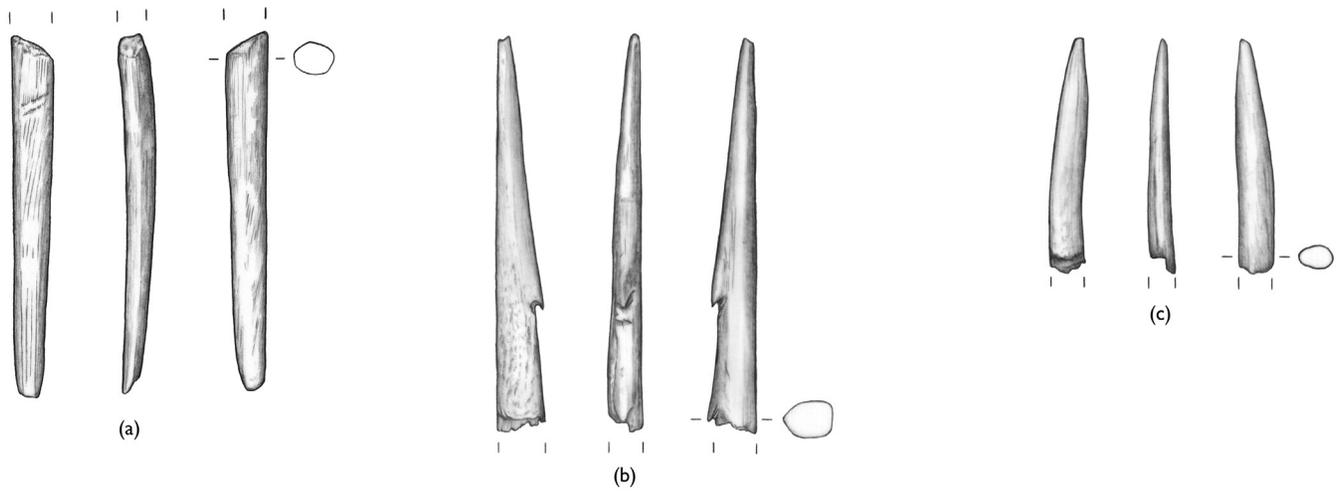
<103060> (**Figure 25.3, d**): A complete barbed point with six barbs visible. It is poorly preserved and has sustained some damage in situ to the tang. No working marks survive. L=141 mm, W=8 mm, T=7 mm.

<108789> (**Figure 25.3, i**): An intact barbed point with two barbs and slight damage to the tip of the tang. The first barb shows signs of undercutting through sawing on the external aspect, whilst the second barb shows signs of sawing from the external and internal aspect. The second barb is well pronounced and with a rounded tip. There is a faint trace of the square-edged original grooved facet along the SEN edge at the tang. L=96 mm, W=8 mm, T=6 mm.

<113415> (**Figure 25.3, g**): The midshaft and tang with six barbs surviving, albeit in a poor state of preservation. The surface details of the piece do not survive, so no assessment of the techniques used to define the barbs and shape the overall point can be made. L=107 mm, W=5 mm, T=3 mm.

<113733> (**Figure 25.3, f**): An intact barbed point with ten barbs in a poor state of preservation. No spongy tissue survives, so the interior/exterior distinction is based on the curvature of the point itself. Due to the poor preservation of the piece, no surface details survive which might help to ascertain the techniques used to create the barbs or shape the point. L=163 mm, W=4 mm, T=3 mm.

Figure 25.3 (page 278): Barbed points from the detrital wood scatter and eastern timber platform areas (Copyright Chloe Watson, CC BY-NC 4.0).



(a) 116152 (b) 116836 (c) 116481 (d) 116482 (e) 116802 (f) 116464 (g) 116490

ccw

<116152> (Figure 25.4, a): The tip of a barbed point. Oval shaped in section with longitudinal striations visible along the length, created through scraping along all edges and removing any trace of the original grooved facets of the splinter. L=65 mm, W=7 mm, T=5 mm.

<116464> (Figure 25.4, f): Intact barbed point with 15 barbs. Flat DEX edge with thick longitudinal striations showing signs of the original grooving of the splinter. The form of the original anatomical surface on the EXT aspect has been completely removed through scraping, leaving a series of longitudinal striations. The barbs are marked by long, continuous facets along the length of the point, characterised by well-defined longitudinal striations. The facets along the top and underlying the barbs themselves lack signs of sawing and feature a smooth surface and light polish, suggesting that they have been finished through filing.

Microwear analysis showed some crushing at the tip but no associated flake removals. Crushing may be a result of post-depositional processes or use. The tang has well-developed hafting traces—a polish that is smooth, bright, rounded and is only visible on the shaft, i.e. hafted zone. The very end of the tang has micro-flake removals which may relate to impact within the haft. From the degree of hafting wear it is likely that this barbed point was hafted and used. L=177 mm, W=6 mm, T=11 mm.

<116481> (Figure 25.4, c): Tip of a barbed point, broken at the foreshaft with longitudinal striations on all aspects.

Microwear analysis revealed a burin-like fracture at the tip. Micro longitudinal impact traces are visible at the tip, extending a short way down the foreshaft. Manufacturing traces, which are multidirectional, are visible across the surface. Microscopic evidence suggests that this barbed point was hafted and used. L=43 mm, W=7 mm, T=4 mm.

<116482> (Figure 25.4, d): A midshaft with seven barbs. SEN edge rounded with no traces of the original parent splinter surviving. The barbs undercut by sawing from the internal and external aspects, with smooth, lightly polished facets below each barb characterised by faint, diagonally orientated linear discolourations. These suggest filing has been used to further define the barbs after sawing. L=71 mm, W=9 mm, T=6 mm.

<116490> (Figure 25.4, g): The tang and midshaft with two barbs and scoring across the internal and external surface of the tang. The SEN edge is flat along the midshaft portion of the point with some longitudinal striations, suggesting the original traces of the grooved parent splinter. At the tang, both the SEN and DEX edges taper to a point. The barbs are undercut by sawing from both the internal and external aspects and feature a step immediately below the barbs, with a smooth, lightly polished facet below this step, displaying light, short and randomly oriented striations. This combination of both stepping and polish/randomly oriented striations is indicative of a phase of scraping followed by a phase of filing in the creation of these facets and the overall definition of the shape of the barbs. The tang is characterised by groups of well-defined striations running longitudinally towards the proximal edge of the piece. These are overlain by a series of shorter and lighter incised lines which create a pattern which falls into Clark's 'criss-cross group', where the lines overlap.

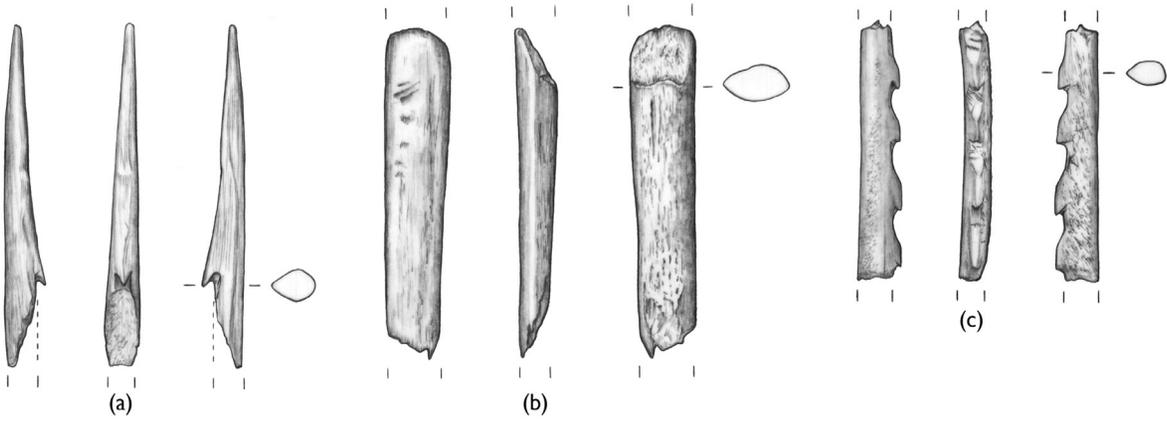
Microwear analysis revealed a discrete area of polish, which was orientated transverse to the end of tang. This may be the result of hafting but could also be manufacture related; as such it is not possible to determine whether this point was used. L=102, W=12, T=8.

<116802> (Figure 25.4, e): The tip, foreshaft and midshaft of a barbed point featuring 12 barbs. The proximal end of the piece is broken at the very start of the tang. The SEN edge is flat along the most proximal two-thirds of the point, with clear longitudinal striations suggesting the original grooving of the parent splinter. The SEN edge along the most distal third of the point is progressively more rounded towards the tip, which displays signs of macroscopic damage at the extreme tip. The barbs are undercut by sawing from the internal and external aspect, with short facets below the barbs devoid of any diagnostic working traces. The proximal end is characterised by diagonally aligned, fine incisions which are interrupted by a shelved break.

Microwear analysis revealed crushing and a burin-like fracture at the tip. Crushing was more evident on the internal surface. There is a clear distinction between polish that appears to be the result of hafting which is visible on the shaft only and the general manufacturing traces seen across the mid and foreshaft. The glossy polish from hafting extends to encompass the first (lowest) barb. It is unclear what this distribution means, or whether it could be a binding technique, using the lowest barb as a grip. In fact, the base of this barb displays the most developed polish, suggesting contact with either bindings or the haft itself. Given the brightness of the polish and its distribution it is probably the former, and probable that the bindings were made from plant materials. Within the hafted zone (the small part that remains) and beneath the hafting traces is a series of engraved lines running obliquely to the main axis. From the combination of impact damage and hafting traces it is likely that this barbed point was hafted and used. It is interesting to note that the breakage occurs at the base of the hafting zone, perhaps indicating an attempt to recover the tool from the animal carcass. L=113 mm, W=10 mm, T=6 mm.

<116836> (Figure 25.4, b): The tip, forepart and midshaft of a barbed point with two barbs. The tip shows signs of a jagged edged break with the extreme tip missing. The proximal end of the piece terminates immediately below the second barb in a jagged edged, shelved break. The first barb shows signs of sawing from the internal and external aspects, with a smooth, lightly polished facet below the barb which lacks any signs of striations. These facets may have been created through filing. L=72 mm, W=9 mm, T=6 mm.

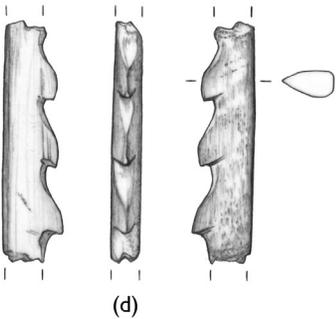
Figure 25.4 (page 280): Barbed points from Clark's area (Copyright Chloe Watson, CC BY-NC 4.0).



(a)

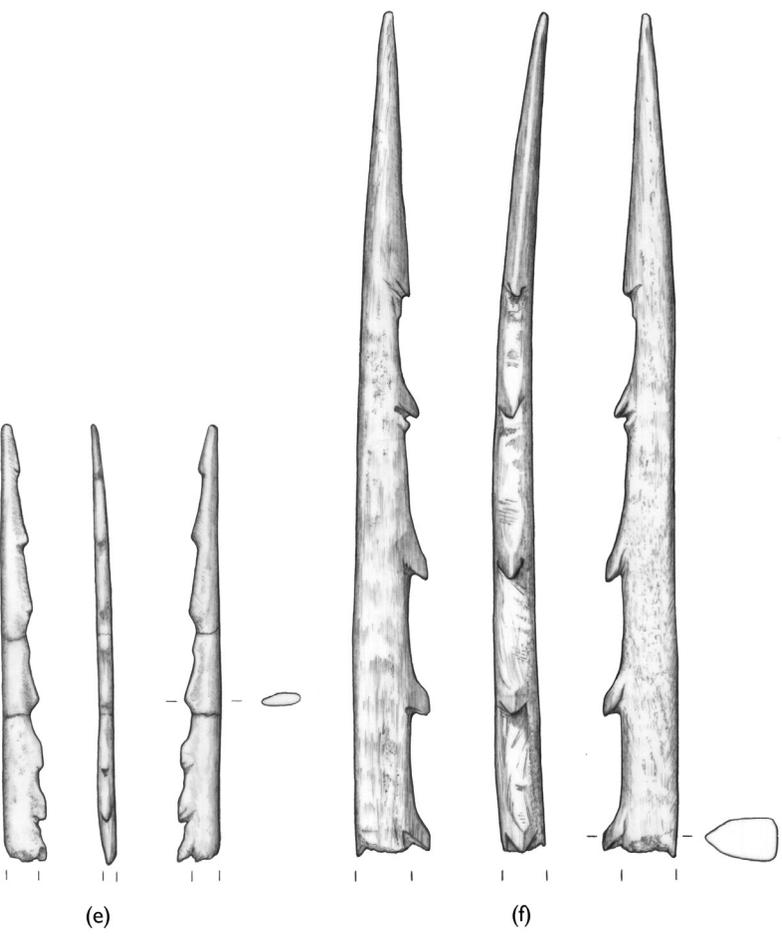
(b)

(c)



(d)

0 50mm



(e)

(f)

(g)

ccw

(a) I16870 (b) I16706 (c) I16837 (d) I17958 (e) I16037 (f) I16606 (g) I16025

<116025> (Figure 25.5, g): The midshaft of a barbed point with six barbs. The preservation of the point is poor, leading to a loss of surface detail and the distortion of its original shape. Due to these issues, the character of the proximal and distal breaks cannot be assessed and no clear conclusions can be drawn as to the techniques that have been used to create the barbs. However, based on the overall form of the barbs it would appear that they were undercut from both the internal and external aspect, with smooth facets being created below each barb to further define their shape in profile. L=104 mm, W=8 mm, T=5 mm.

<116037> (Figure 25.5, e): The forepart and midshaft with the tip absent. Seven barbs are visible, but the poor preservation of the piece prevents any working traces from surviving on either the barbs themselves or the proximal and distal breaks. L=83 mm, W=8 mm, T=5 mm.

<116606> (Figure 25.5, f): The tip, forepart and midshaft of a barbed point, with five barbs. The flat SEN edge with clear longitudinal striations towards the proximal end of the piece is consistent with the grooving of a parent splinter. Barbs are undercut by sawing from the internal and external aspects, with facets below the barbs which feature some longitudinally orientated groups of fine striations, and some diagonally orientated discolouration marks. This suggests a mixture of filing and scraping was used to define these facets and the finished profile of the barbs. The tip is characterised by small groups of short, longitudinally oriented striations on all aspects, suggesting intensive scraping being used to create the final form.

The tip displays possible impact traces in the form of crushing and flake removal. Indeterminate polish, probably use-related, is evident at the tip. The tang is missing, precluding the identification of hafting traces. L=156 mm, W=14 mm, T=8 mm.

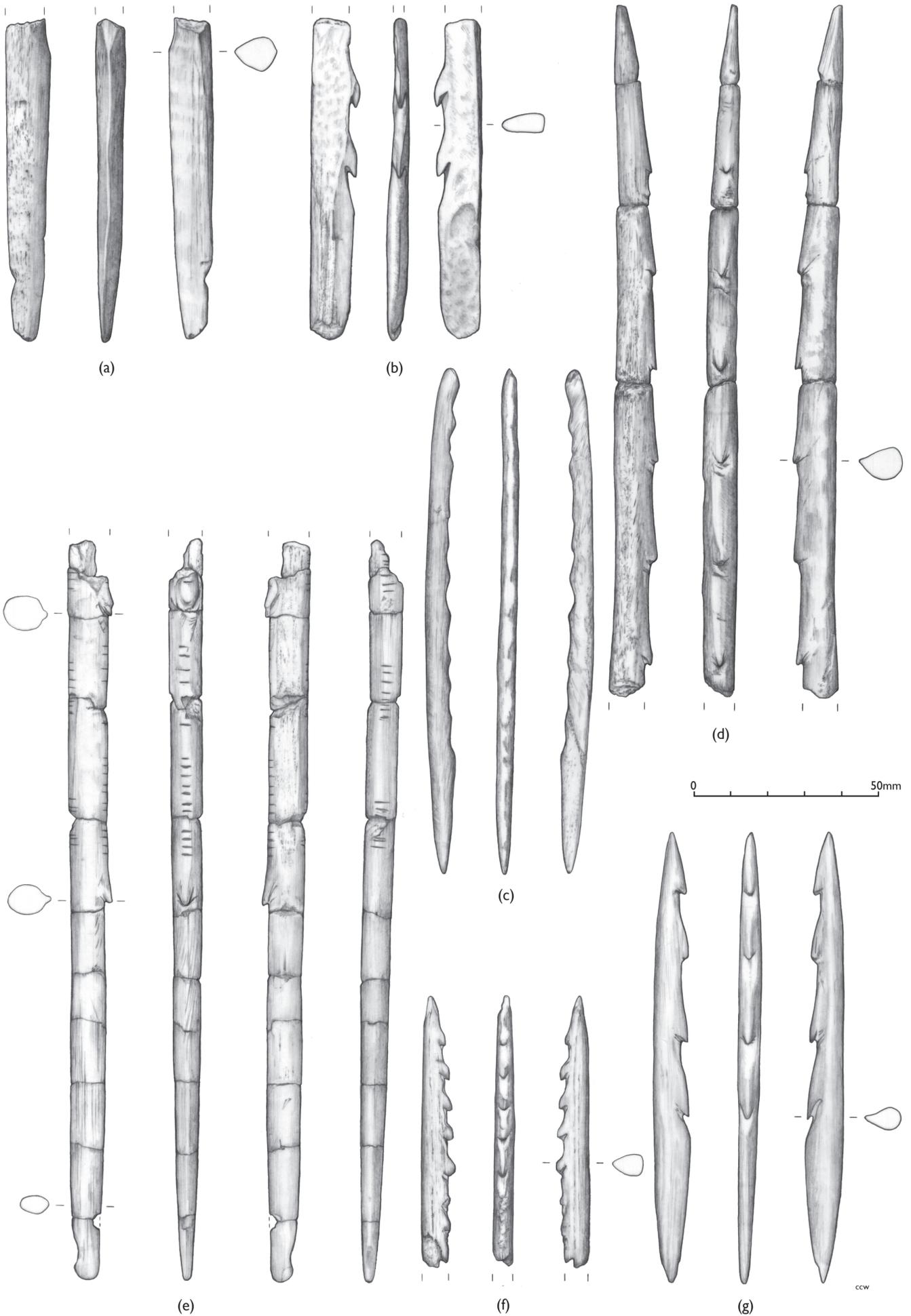
<116706> (Figure 25.5, b): A portion of an elongated tang of a barbed point with an oval shape in profile. The distal end of the tang is characterised by a sloping, shelved break which may be indicative of flexion pressures. The proximal end of the piece is defined by a more ambiguous break, which is angled obliquely but which features a level edge. Three shallow chop-like marks on the external surface of the tang may relate to the dehafting of the tang prior to deposition. L=64 mm, W=12 mm, T=8 mm.

<116837> (Figure 25.5, c): A midshaft with four barbs. The distal and proximal breaks are characterised by uneven, jagged edges, the proximal break occurring directly below the fourth barb. The SEN edge is smooth and flat with a light polish, and may relate to the original edge of the parent splinter. The first and third barb are undercut through sawing from the internal and external aspect, whilst the second and fourth barb appear to be undercut by sawing from the external aspect only. A smooth, short facet below each barb helps to further define their shape, and the very faint, short, diagonally orientated discolourations suggest filing was used to create these facets. The external aspect of the barbs is also marked with a light polish. L=46 mm, W=8 mm, T=4 mm.

<116870> (Figure 25.5, a): The tip, forepart and fragment of midshaft, with one barb. The extreme tip is missing, with a diagonal sloping break defining the distal end of the point. The piece is circular in section, with longitudinal striations and multiple facets characterising all aspects. The single barb is undercut by a 'C'-shaped cavity, which appears to have been more likely to have been produced through a technique more akin to boring than sawing. A slightly raised area towards the tip may suggest an older or nascent barb which has been removed by scraping or was never fully defined. L=60 mm, W=5 mm, T=4 mm.

<117958> (Figure 25.5, d): A midshaft with three barbs. The SEN edge is flat and displays pronounced longitudinal striations, suggestive of the original grooved edge of the parent splinter. The barbs are undercut through sawing from the internal and external aspects, with polished facets immediately below the barbs created through either filing or scraping. Longitudinal striations on the external and internal aspects of the barbs also suggest longitudinal scraping of the DEX edge. The proximal and distal breaks are similar, with clearly defined, jagged but generally level edges. L=47 mm, W=8 mm, T=3 mm.

Figure 25.5 (page 282): Barbed points from Clark's area (Copyright Chloe Watson, CC BY-NC 4.0).



(a) I17421 (b) I16710 (c) I15238 (d) I17851 (e) I15976 (f) I17807 (g) I17253

<115238> (Figure 25.6, c): This is an intact barbed point with ten barbs. It is severely desiccated and shrunken, with no surface detail surviving. No macroscopic working traces visible.

During microwear analysis some crushing at the tip was identified. No clear signs of hafting were observed, but overall the surface is very degraded, limiting analysis. It is possible that this point was used; however, poor condition prohibits a more definitive interpretation. L=135 mm, W=7 mm, T=4 mm.

<115976> (Figure 25.6, e): A highly fragmented proximal portion of a barbed point with the tang and midshaft intact, and two barbs intact on the DEX side. The distal barb shows signs of damage and possible reworking and is slightly misshapen. Both barbs were created by sawing from the internal and external aspects and then subsequent scraping of the area below the barb to create a facet. The SEN edge is flat but shows no signs of the original grooving to remove the splinter. Longitudinal striations on the internal and external surfaces of the tang suggest that during the latter stages of production it was shaped with a flint tool.

<115976> is highly unusual in that it features a series of 37 1.5–3 mm long linear markings along the SEN and DEX edges, which have been created through transverse sawing. Along the DEX edge, there are three distinct groups of markings. At the distal break of the point, a single transverse line is situated on the barb itself. About 17 mm below this, another series of five transverse lines are apparent, spaced across a break in the artefact. 8 mm below this is a series of 11 transverse lines. Along the SEN side, there is a series of six lines, interrupted by the distal break. 20 mm below this is a series of eight transverse lines, and 23 mm below this is a group of six further lines. The location of these groups mirror each other on the SEN and DEX edges respectively. L=199 mm, W=12 mm, T=7 mm.

<116710> (Figure 25.6, b): The midshaft and tang with two barbs surviving. The cortical tissue is inconsistent with that of antler in its structure and extends over just the proximal 43 mm of the points' total length. As such, this barbed point is clearly made from bone rather than antler. Following ZooMS analysis (conducted by Krista McGrath) the bone was identified as either red deer or roe deer. The external surface features an unusual series of smooth, shallow depressions, and there is a generally unusual smooth character to the edges of all aspects of the piece. This may suggest exposure to water action at some point in its depositional history. The barbs are undercut by sawing from the internal and external aspects, with material then being removed from underneath the barbs to further pronounce their shape. These areas have no signs of working traces and may be linked to the water action mentioned above. L=82 mm, W=13 mm, T=7 mm.

<117253> (Figure 25.6, g): An intact point with four barbs. The tip features longitudinal striations on all aspects, suggesting shaping through scraping from all angles. The tang features similar groups of shorter, longitudinal striations on the external and internal aspects, particularly in association with the proximal extent of the piece. This again suggests the shaping of the tang was achieved through scraping. The barbs are undercut with sawing from the internal and external aspects, with a step directly below the barb, and short facets extending below the steps to further define the shape of the barbs. These facets, whilst in immediate association with the steps, lack any visible longitudinal striations. As such, it is suggested that the initial facet was created through scraping (creating the step), and subsequent filing (obscuring the striations of the scraping event).

The microwear analysis shows that the proximal tip displays crushing with a flake removal, initiated from impact. A smooth, bright, well-developed polish is visible at the end of tang (L1), which is comparable to the polish seen in the hafted zone of other barbed points similarly interpreted as being hafted. In sum, the impact fractures and hafting traces suggest this barbed point was hafted and shot. As the barbed point is complete, neither impact or detooling have resulted in breakage. L=123 mm, W=10 mm, T=6 mm.

<117421> (Figure 25.6, a): An elongated tang, with a jagged and level-edged break directly below the final barb at the distal end. The DEX edge is flat and features clearly defined longitudinal striations, suggesting the original grooved edge of the parent splinter. A semi-circular notch on the DEX edge may be indicative of the insertion of a wedge during the removal of the splinter. The SEN edge tapers to a delicate point, giving the tang a teardrop shape in profile. The external surface of the tang features a number of longitudinal striations, often aligned in small clusters, thus suggesting scraping was used to achieve the finished form. L=87 mm, W=11 mm, T=8 mm.

<117807> (Figure 25.6, f): The tip, forepart and midshaft with seven barbs. Damage at the extreme tip of the point is associated with a loss of surface detail, whilst the proximal break is sloped in profile. The DEX edge is flat, with some longitudinal striations visible towards the proximal end. However, these do appear to be pronounced enough to be linked to the original grooving of the splinter and probably related to secondary scraping. The barbs are undercut by sawing from the internal and external aspects, with

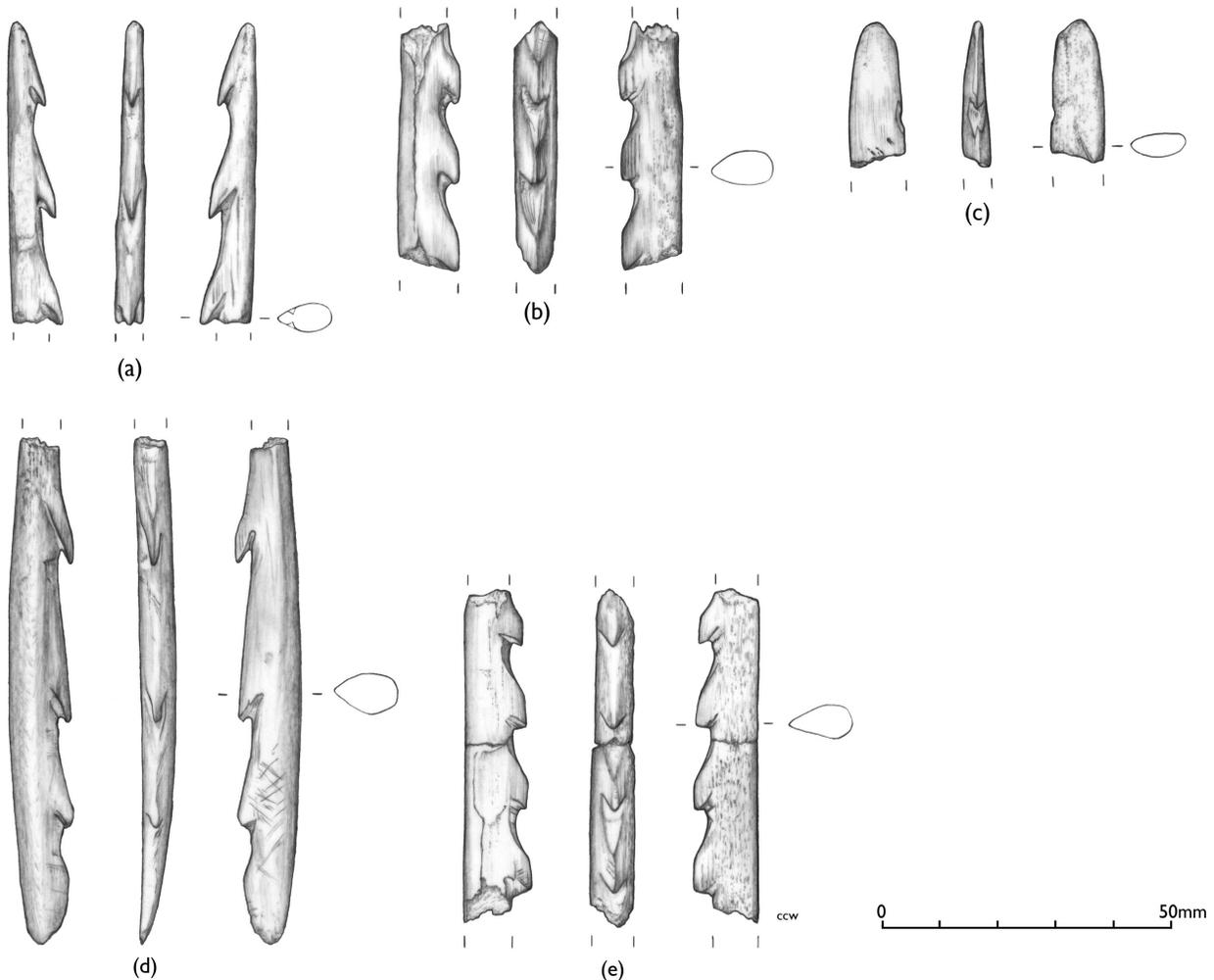
Figure 25.6 (page 284): Barbed points from north of cutting I and Clark's depositional area (Copyright Chloe Watson, CC BY-NC 4.0).

short smooth facets below featuring fine, multi-directional light striations. This suggests filing has been used to further define the shape of the barbs in profile. Longitudinal striations on the external and internal surfaces of the barbs suggest that longitudinal scraping has been used on the internal and external sides of the SEN edge to further shape the profile of the point. At the distal tip, longitudinal striations adjacent to the area of damage suggest shaping through scraping from all aspects.

Microwear revealed crushing at the tip, probably related to impact, which has also resulted in bifacial burin-like removals on opposing surfaces (L3: point of termination of flake removal). Micro longitudinal impact traces are also visible (L2 and L3). It is probable that this barbed point was used. L=73 mm, W=10 mm, T=4 mm.

<117851> (Figure 25.6, d): The forepart and midshaft with seven barbs, broken into four refitting fragments. The SEN edge is gently rounded and features faint longitudinal striations, suggesting shaping through scraping. The barbs are undercut by sawing from the internal and external aspects, with facets immediately below the barbs displaying longitudinal striations. This suggests scraping was used to create these facets and further define the shape of the barbs. Longitudinal striations on all aspects towards the broken tip suggest scraping to produce the finished shape.

Microwear analysis showed that, unlike other barbed points that display crushing and burin-like fractures at the tip, the tip of this point has a clear break. Micro longitudinal impact traces are visible from the point of breakage (L1-L3), suggesting that the tip snapped off with impact or perhaps during its recovery. No hafting traces could be identified as the tang has broken off. The wear traces suggest that this point was used. L=186 mm, W=11 mm, T=9 mm.



(a) 92393 (b) 92370 (c) Backfill/71 (d) 92831 (e) Backfill/82

<92370> (Figure 25.7, b): A fragment of midshaft with three barbs. The SEN edge is flat and features fine, longitudinal striations. These could be related to the original grooving of the parent splinter. There are signs of sawing to undercut the barbs from the internal aspect, with facets immediately below each barb featuring a smooth surface and diagonally orientated bands of discolouration. These therefore appear to have been reduced through filing. Both the proximal and distal breaks occur directly below barbs, and have uneven break edges. L=43 mm, W=11 mm, T=8 mm.

<92393> (Figure 25.7, a): The foreshaft and midshaft with three barbs and the tip missing. The DEX edge is gently rounded and shows no signs of the original parent splinter. Each barb is undercut with sawing from the internal and external aspect, and features a smooth facet directly below the barb itself. These feature a thin polish and very fine, longitudinal striations, typical of filing. The proximal break, below the third barb, is level and even. L=53 mm, W=10 mm, T=7 mm.

<92831> (Figure 25.7, d): The tang and midshaft with three barbs. The DEX edge is gently rounded and shows no signs of the original parent splinter. The barbs are undercut by sawing from the internal and external aspects. The internal and external surfaces of the barbs feature groups of fine, longitudinal striations running directly away from the edges of the barbs themselves, suggesting longitudinal scraping. The distal break is level, and may have occurred directly below another barb. L=87 mm, W=10 mm, T=7 mm.

Backfill 71 (Figure 25.7, c): The proximal tip of a tang, oval shaped in section. All of the interior spongy tissue has been removed and there are light longitudinal striations along the external face. There is some modern damage to the SEN edge, but all traces of the parent splinter have been removed through subsequent working. L=24 mm, W=9 mm, T=5 mm.

Backfill 82 (Figure 25.7, e): A midshaft with four barbs. The distal break is level edged, whilst the proximal break (directly below the fourth barb) is jagged, stepped and uneven. The barbs are undercut through sawing from the internal and external aspects, with facets immediately below the barbs. These facets feature stepping at the distal edge, which suggests scraping. However, no striations are visible on the surfaces of these facets, making it difficult to definitively determine the technique used to create these facets. L=11 mm, T=7 mm, W=5 mm.

Discussion

Technology

Analysis of the barbed points allows a more refined understanding of the chaîne opératoire of their production. The identification of sawing from both the internal and external aspects to undercut the barbs, the presence of facets directly below the barbs and the identification of longitudinal scraping marks along the barbed edge affords some extra detail in this respect. The sequence proposed here begins with the removed splinter of red deer antler (Figure 25.8a). The selected edge is worked down from the internal and external aspect using longitudinal scraping (Figure 25.8b), leaving longitudinal striations and bringing the profile of the splinter in section to an apex (Figure 25.8c). The position of barbs is then marked out through sawing from both the internal and external aspect, creating a series of angled notches along the length of the point (Figure 25.8d). These notches are accentuated through either scraping or filing (or both), creating a facet below the barb which extends in a proximal direction, defining the finalised shape and style of the barb in profile (Figures 25.8e & f, 25.9). This interpretation of the barbed point finishing sequence is supported by the relationship between the longitudinal striations on the external and internal aspects of the barbs, which are often observed intersecting directly with the edges of the barbs. This would suggest that they are cut by the shaping of the barbs, and thus that these particular episodes of scraping predate the shaping of the barbs themselves (Figure 25.8).

This simple method for the definition of barbs allows considerable scope for simultaneous stylistic variability and technological homogeneity. The barbs of the Star Carr points vary considerably in terms of their size, prominence, spacing and shape in profile. This variation can be achieved through the methodology outlined

Figure 25.7 (page 286): Barbed points from Clark's backfill, the base of cutting II and the central platform area (Copyright Chloe Watson, CC BY-NC 4.0).

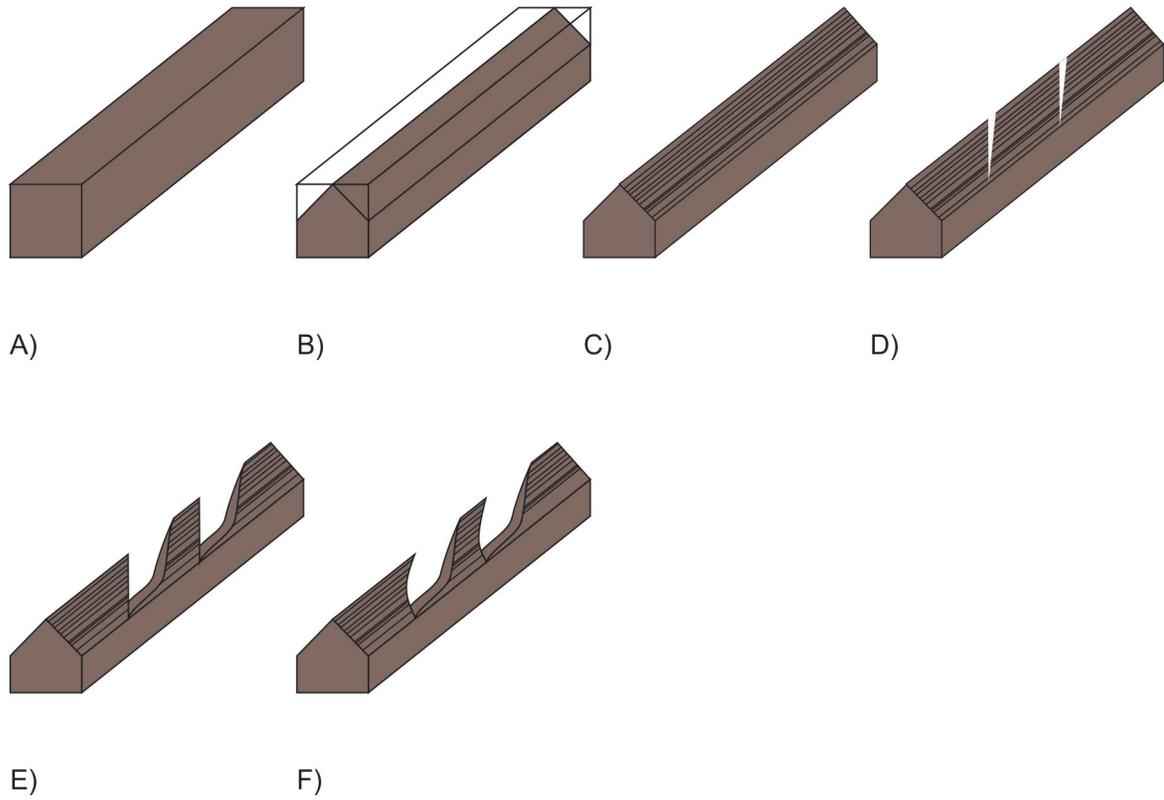


Figure 25.8: Schematic diagrams illustrating the stages of finishing a barbed point from the blank splinter: a) removed splinter from beam; b) longitudinal scraping from INT and EXT to define an apex along one edge; c) an apex is created with longitudinal striations running along both edges; d) sawing to create notches where barbs are to be positioned; e) scraping/filing of apex to define facets below barb; f) further scraping/filing below barb to fully define a hooked form to the barbs (Copyright Ben Elliott, CC BY-NC 4.0).



above, with decisions made at stage D affecting the spacing of the barb and the extent to which stage F is applied determining the morphological form of the finished barbs.

Typology

Clark's original typology for the Star Carr barbed points offers limited value for interpretation of the new finds. <92831>, <116606>, <116706>, <116836> and <117235> appear to be morphologically consistent with the points Clark places within Group B, whilst <92393> is slender and delicate enough to fit within Group D. Other typologies offer similarly limited use in defining the barbed points from Star Carr. Clark's (1936, 116) generalised Maglemosian typology of bone points from across Europe can be applied here (Table 25.6) and used to identify Kunda type 6 points (<99790>, <116025>, <116152>, <116481>, <116710>, <116836>, <117421>, <117851> and Backfill/71) and Mullerup type 7 points (<108789>, <116482>, <116490>, <116706> and <116870>), but it leaves a further 16 points unclassified. As such, both of these typologies leaves the majority of the finds unclassified, and attempting to impose a typological scheme onto this material may mask one of the key characteristics of the assemblage as a whole: its variability. Unifying typological characteristics for the Star Carr barbed points are difficult to define, with exceptions emerging to virtually every rule. This includes the perforated harpoon and two identical points found lying side by side originally noted by Clark (mooted as a leister), but it also extends now to include the bone point. Uniseriality remains the only common typological factor for the Star Carr assemblage.

The inability to ascribe the majority of Star Carr barbed points to a robust and consistent typology creates challenges for previous attempts to use the small number of previously identified typological groups as chronologically diagnostic. The absence of Type A and Type E points within the earlier and latter phases of the site's occupation, respectively, presents further problems for the typo-chronology suggested by Clark (1954; 1972) and echoed by Mellars and Dark (1998).

In lieu of this as an explanation for the variation in form of barbed point at Star Carr, it may well be worth considering the wider context of the occupation of the site. The large scales of consumption and construction observed at Star Carr, in comparison to the smaller scale of activity seen at other sites within the contemporary landscape, can be interpreted as evidence for aggregation events. If the production and deposition of barbed points is linked to these periods of aggregation, then this apparent variation in artefact form may be the product of a wider range of people coming together to visit the site at specific times. In this scenario, the formal/typological variation observed by previous authors would necessarily change through time, with each event aggregation being characterised by high levels of diversity in its own right.

Use

Although seldom explicitly stated, assumptions over the used/unused nature of the Star Carr barbed points have underlain much of their academic discussion. These assumptions have played a major role in understanding the context of deposition of barbed points at Star Carr, with some arguing for recovery of used points during butchery, others arguing for accidental loss during manufacture, and others discussing formal depositional practices, suggesting the ritualised production and breakage of barbed points prior to deposition. The micro-wear analysis of the barbed points from Star Carr demonstrates for the first time that some of these were likely to have been used prior to deposition (contra Mellars 2009). Three points show what are probably impact traces at the tip, indicating damage sustained during use as projectiles. There are three instances of micropolish associated with the tang region, indicative of binding and hafting; possibly with a plant material. In some instances, polishes also occur on the first barb directly above the tang, suggesting that binding may have extended over the first barb (Figure 25.10).

Figure 25.9 (page 288): A flint blade is used to shape the barbs of a replica barbed point (Copyright Aimée Little, CC BY-NC 4.0).

Clark's Star Carr Typology	Quantity	Clark's Maglemosian Typology		Quantity
A	0	Type 5		0
B	5	Type 6		9
C	0	Type 7		5
D	1	Type 8		0
E	0			
Unclassified	27			16

Table 25.6: Typological classification of 2004–2015 barbed points.



Figure 25.10: Plant binding materials extending over the first barb of replica barbed point: replicating hafting wear traces identified on artefact <116802> (Copyright Aimée Little, CC BY-NC 4.0).

Whilst the fragmentary nature of the points and poor surface condition prevent a full assessment of exactly how many were used, these results mark an important step in our understanding of the Star Carr barbed points. The evidence for hafting and use emphasises the fact that none of the barbed points excavated from Star Carr to date have been found in association with any form of haft. This is significant, given the quantities of worked wood recovered during the current excavations and the excellent preservation conditions noted in association with the locus of barbed point deposition. Equally, the suggestion that Star Carr was a hub for barbed point retooling and rehafting is compromised by the artefacts which are clearly broken beyond repair. This strongly suggests that some of the barbed points had been de-hafted post-use, elsewhere in the landscape, before being brought back to Star Carr for deposition, a practice which is mirrored in other forms of organic and inorganic material culture.

Beyond the evidence for hafting wear traces and impact fractures suggesting use as projectiles, a formal consideration of the entire Star Carr barbed point assemblage can offer further insight into their use. Hafted projectiles come in a variety of forms and can be used in a variety of ways, including being thrown as javelins, fired with a bow as arrows and held in the hand as thrusting spears (Clark 1954; Jacobi 1978; Elliott 2009). The wide range of bird, fish and mammal species represented within the faunal assemblage suggest that the inhabitants at Star Carr employed a variety of hunting and trapping techniques in order to successfully kill this behaviourally diverse group of animals (see Chapter 29 in terms of using a barbed point for fishing).

The intact points from Star Carr which offer measurements which can be approximated to their original length display a continuous distribution of lengths which cannot be easily divided into functional groups (Figure 25.11). On the one hand, given the context of their recovery alongside the aforementioned faunal assemblage, this range of lengths can be taken to indicate that barbed points were used to hunt a range of different species. It is difficult to envision a species of animal for which both the largest and shortest of the Star Carr barbed points would be appropriate for hunting! On the other hand, trapping and flint-based hunting

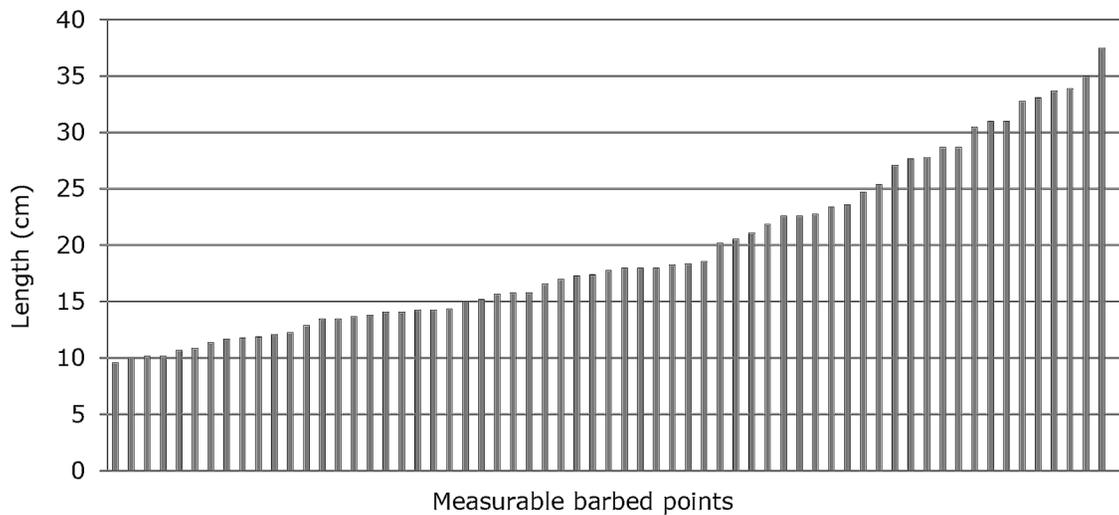


Figure 25.11: Lengths of 63 barbed points from Star Carr (all excavations) which are intact enough to give an indication of their original length (Copyright Star Carr Project, CC BY-NC 4.0).

technologies also undoubtedly played a role, and so assuming that barbed points were involved in the hunting of all of these species is unlikely. The continuous nature of the length distribution may also imply that some points may have had the potential to be hafted in several different ways and used as different hunting tools; being short enough to function as both arrow tips but long enough to also work in leisters or javelin tips. Alternatively, longer points may also have been suitable for use as both thrusting spears and robust javelin tips when hafted. This overlap emphasises the versatility of osseous barbed points as hunting tools and creating points which could be hafted in a range of hunting tools may have been a conscious choice made by the makers.

Decoration

Two barbed points show signs of incised lines on internal and external aspects of the tang region (Figure 25.12). This practice of incising tangs was noted by Clark (1954) and is attributed to the provision of roughage for hafting. However, given the presence of resin on two of Clark's barbed point tangs, and the substantial body of experimental and ethnographic literature concerning projectile hafting techniques, this functional interpretation is lacking in several respects. Firstly, the amount of extra friction which the marking of a tang surface might produce pales in comparison to the strength of resin and non-resin based hafting techniques which have been experimentally replicated. Secondly, both the form of the incised lines observed on the barbed points and the methods used in their creation (incision) have strong parallels with patterns observed on other portable objects at Star Carr and other European Mesolithic sites. The incised shale pendant (Chapter 34) and the possible incised piece of worked wood from Star Carr (Chapter 29) are good examples, as are the short, fine incisions which run across the surface of two of the elk bone bodkins excavated by Clark (EB1 and EB7), which also appear to be grouped into discrete sets (Clark 1954, 160). Yet in these instances a functional interpretation has not been proposed. There are also similarities between these overlapping criss-cross motifs and incised patterns documented in a range of Mesolithic contexts across Britain (Figure 25.13) and Southern Scandinavia (Milner et al. 2016). Some of these relate directly to portable material culture; others appear as examples of Mesolithic cave art (Mazel et al. 2007).

It may be argued that the position of the majority of these markings on the tang which would have presumably rendered them invisible once hafted would seem an unlikely place for decoration. However, there were presumably at least two moments when these markings became visible; after the point was made but prior to hafting, and after the haft had been removed prior to deposition. It may also be possible that barbed points were disassembled and reassembled between use and transported in their composite parts. If this was the case,



Figure 25.12: RTI images of <116490> (above) and <116802> (below) with illustrations of incisions to the right of each (Copyright Star Carr Project, CC BY-NC 4.0).

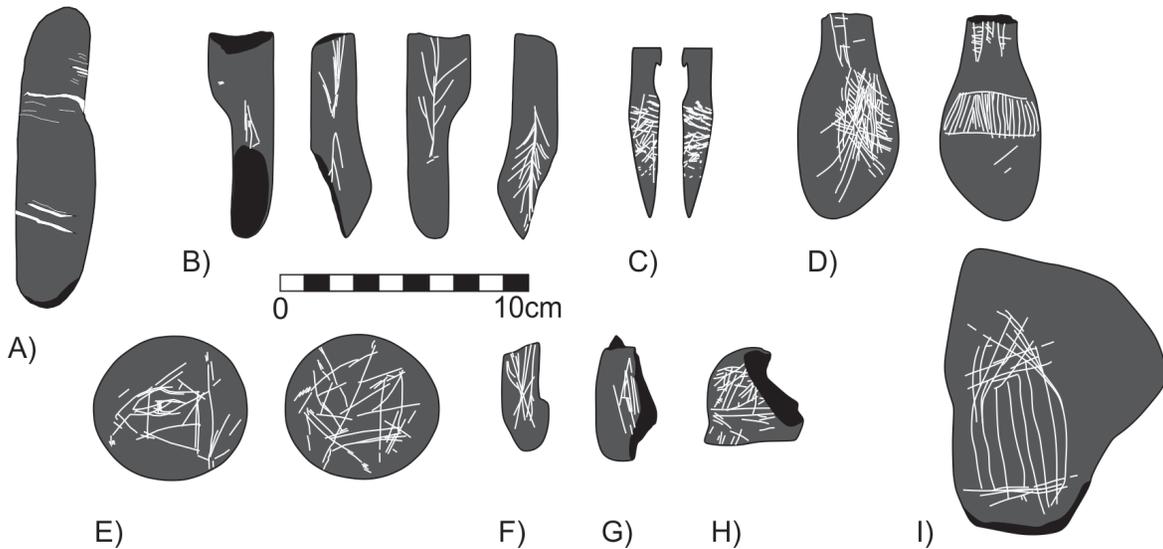


Figure 25.13: Examples of incised motifs from other British Mesolithic sites: a) Incised pebble, Camas Daraich; b) Incised pebble SF1, Rhuddlan; c) Incised haft of barbed point <116490>, Star Carr; d) Incised pebble SF2, Rhuddlan; e) Incised pebble B127, Llandegai; f) Incised pebble SF4, Rhuddlan; g) Incised pebble SF5, Rhuddlan; h) Incised pebble SF3, Rhuddlan; i) Incised pebble SF6, Rhuddlan (Drawn by Ben Elliott. Sourced from Milner et al. 2016, *Internet Archaeology*, licenced under CC-BY 2.0).

it is possible that these markings remained visible throughout the object's active life. Discussions of artistic expression and material culture aesthetics are notably absent within academic literature concerning the British Mesolithic due to a perceived lack of data. A non-functional interpretation of behavioural practices such as the incision of the Star Carr barbed point tangs may help to address this in the future.

Finally, the linear markings of <115796> (Figure 25.14) also need to be considered. These do not appear on the tang region and cannot be functionally linked to hafting techniques. With this in mind, it may be more appropriate to think of these incised patterns as decorative motifs forming part of a longer tradition of linear-based designs which occur sporadically throughout the British Mesolithic. A notable parallel here is the markings on an undated, uniserial antler barbed point from the Holderness region of East Yorkshire, curated at the Kingston-Upon-Hull Museum (Accession no. KINCM 1973(a)). This also features a series of 49 transverse markings created through sawing (Bartlett 1969).

Conclusions

When the finds of these excavations are considered, Star Carr can be seen to account for 227 of the 244 uniserial barbed points recovered from England to date. This constitutes 92% of the national record for this type of artefact. Across the excavated areas, the deposition of barbed points appears to be focussed in two wetland zones: the area of Clark's excavations, and across the detrital wood scatter/central/eastern timber platform areas. Whilst deposition within Clark's area appears to be more intense, the detrital wood scatter area is notable in being dominated by intact artefacts in contrast to the much higher rates of fragmentation within Clark's area. Typological comparisons between these areas are hampered somewhat by the differential preservation levels, which have left many of the detrital wood scatter points misshapen and distorted.

Analysis of the 34 new finds has revealed a shared chaîne opératoire in terms of finishing process, which appears remarkably standardised across the assemblage. Yet beyond this, variation is plentiful. There is variation in the shape of barbs, in the spacing of barbs, in the length of intact points, in fragmentation patterns, in

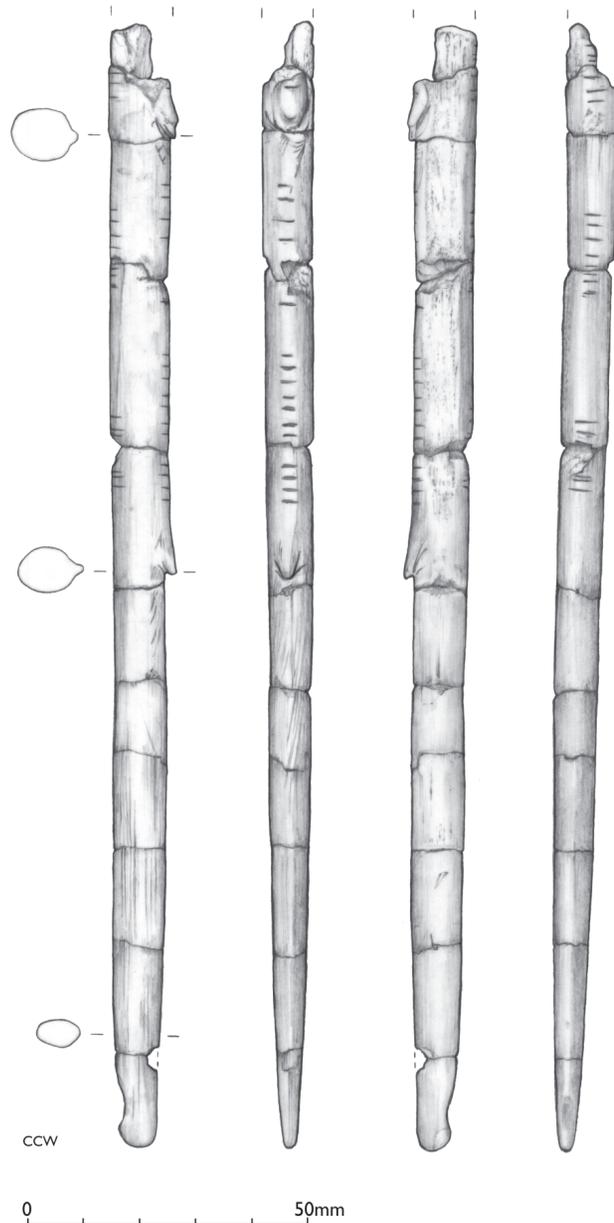


Figure 25.14: Barbed point <115976>, with groups of incisions between barbs and along unbarbed edge (Copyright Chloe Watson, CC BY-NC 4.0).

the form of the tang and in the position and presence of incised lines. This analysis has also identified the use of animal bone for the production of a very small minority of barbed points at Star Carr (see Chapter 24 for further evidence for this). As such, defining the Star Carr barbed points typologically is deeply problematic. The general Maglemosian and Star Carr specific typologies devised by Clark are of limited utility in understanding these artefacts, as the majority cannot be categorised under these schemes. Therefore, Star Carr barbed points demonstrate a high level of typological variation, but a low level of technological variation. In other words, the same production techniques and chaîne opératoire were being used to make similar artefacts in a wide range of different forms.

One area in which the Star Carr barbed points are united (as are the vast majority of similar barbed points from elsewhere in Europe) is their removal from any form of hafting prior to deposition. This echoes the removal of hafts from other forms of organic material culture such as elk antler mattocks, and flint artefacts such as axes and adzes. This, combined with the microwear evidence which suggests that barbed points were hafted and used prior to being deposited, indicates that these artefacts had complex, multi-stage biographies (Conneller 2004; Elliott and Milner 2010; Conneller 2011).