

BONE ARTEFACTS FROM DÚN AONGHASA [92E102]

Bone Points Catalogue (C. Mullins) [Appendix 1.22 in Vol. 3]

Points

Find No.	Feature	Description	Dimensions
57	14	Length of bone cut from segment of longbone wall of large animal. Wide oval in section through most of length becoming gradually more rounded in section as it tapers nearing the point. Side tapers very gently through most of length; rate of taper becoming stronger in final 35mm. Point intact. Surface is badly corroded and root marked. No manufacture marks. Final 10mm of point bears a vague patchy surface polish. Also remains of some polish at sides.	L.95mm; W.13mm; T.6mm
174	14	Very well worked piece. Possibly represents lower working end of larger object. Sides taper evenly to point. Fracture surfaces finely rounded into underside throughout length. Trace of marrow cavity in upper area, fading out at 9mm above point when piece also adopts finely rounded section; continues to taper in round to sharp point. Point intact but slightly damaged at both sides. Entire surface has fine surface sheen over clearly visible horizontal file marks.	L.24mm; W.7mm; T.3mm
262	26/14	Produced from longitudinal segment of longbone wall. Sides taper fairly evenly to point, though is some irregularity in upper sides. Fracture surfaces are rounded, especially in lower half where taper is even and symmetrical. Upper part retains concave-convex section which disappears at 8mm from point when oval section shape is adopted. Point is intact. No manufacture marks visible but fracture surfaces and final 8mm display surface sheen.	L.53mm; W.9mm; T.3mm
347	9	Produced from wide longitudinal segment of longbone wall of large animal. Upper area retains deeply curved section, diminishing in depth towards the working end. Fracture surfaces rounded and upper sides taper evenly towards working end. At 18mm above point sides converge more sharply for short distance and then resume with a gentler taper at which point the object takes on a stoutly rounded section, continuing to taper in the round to point. Point is intact but slightly damaged. Surface is quite corroded but horizontal file marks are visible around working end.	L.56.5mm; W.21mm; T.5.5mm
640	14,16	Produced from longitudinal segment of longbone wall of large animal. May possibly represent upper part of bone point, though upper ends of bone points tend to remain rough and unfinished. Cut from the cancellous area of longbone near articular end. Top is smoothed with a shine, possibly from wear. Other end broken. Rectangular/ oval in section with smooth appearance, possibly from prolonged handling. No manufacture marks visible.	L.38mm; W.12mm; T.9.5mm

652	32/41	Finely worked piece, probably represents broken working end of larger piece. Approximately oval-shaped in section with sides tapering fairly evenly, although somewhat asymmetrically, to sharp point. Sides are finely rounded into underside becoming more so nearing point. Final <i>ca.</i> 8mm adopts a more rounded cross-section and tapers in the round to point. Front surface retains trace of marrow cavity. Point perfectly intact. Fine, horizontal file marks visible on sides and surface bears fine all-over sheen.	L.28mm; W.8.5mm; T.5.5mm
779	70	Fairly well-made piece. Produced from longitudinal segment of longbone wall. Sides are approximately parallel before tapering for final <i>ca.</i> 17mm on left and final 15mm on right, to point. Fracture edges appear to have been rounded, most noticeably on left, though upper left side is broken. Final 10mm adopts more rounded cross-section continuing to taper in the round to point. Point is perfectly intact. Trace of marrow cavity continues down most of front surface. Some longitudinal facets from longitudinal knife cuts are visible around lower end.	L.37mm; W.7mm; T.5mm
959	82	Produced from longitudinal segment of longbone wall. Upper part almost wedge-shaped in section with slight curve. Upper sides taper very gently, rate of taper becomes more abrupt at <i>ca.</i> 13mm from point. Fracture surfaces are left rough until nearing point of taper when some secondary working becomes apparent. Final 7mm is worked rounded section and tapers to sharp point. Extreme tip of point is broken. Object is now broken into two pieces along approximate midline.	L.37mm; W.10mm; T.4.5mm
976	82	Produced from longitudinal segment of longbone wall. Shallow curved section in upper area, fading out just below midline. Fracture surfaces left unworked in upper area where sides also run parallel. From approximate midline sides taper to point; in this area fracture surfaces show some rounding, becomes more definite for final 17mm on left and for final 12mm on right. This final part of working end has fine oval/square section and continues to taper on all faces to sharp point which is still intact.	L.73mm; W.12mm; T.5mm
1042	217	Approximately oval-sectioned length of bone tapered evenly from all faces to point. Point intact and very sharp. Surface is very corroded with no surface detail visible.	L.31.5mm; W.6.5mm; T.4.5mm
1091	85	Very roughly-made piece. Produced from longitudinal segment of longbone wall of large animal. Sides taper to point. Roughly wedge shaped in section until nearing point when the fracture surfaces join, creating a triangular section. No secondary modification.	L.63mm; W.20mm; T.4mm
1105a	216	Group of six bone points found together. Produced from longitudinal segments of longbone wall. 92E102:1105a: Retains shallow curved section with parallel sides through most of length down to round sectioned working end. Fracture surfaces show no secondary working until 20mm from point where sides are rounded into oval shaped cross-section which tapers sharply to point. Point is intact. No surface evidence of file marks though	L.76mm; W.11mm; T.5mm

		traces of polish (manufacture or wear) remain on working end.	
1105b	216	92E102:1105b: Retains curved section with irregularly parallel sides through most of length down to round-sectioned working end. Fracture surfaces show no secondary working until 20mm from point where they are rounded off, creating oval/rounded section, and begin to taper abruptly to point. Final 10mm are finely rounded. Point is intact though slightly damaged. Final 5-6mm of working end retains surface polish (wear or manufacture). Surface otherwise seems partly peeled, possibly removing more extensive evidence of manufacture.	L. 77mm; W. 20mm; T. 5.5mm
1105c	216	92E102:1105c: Retains curved section in upper area. Sides taper evenly to point. Fracture surfaces show no secondary working until 18mm from point when the shape adopts roughly rounded cross-section, tapering to point. Point is intact though possibly slightly damaged. Some remains of surface polish remain around lower working end.	L. 86mm; W. 16mm; T. 6mm
1105d	216	92E102:1105d: Roughly rectangular shaped in section with irregular sides above working end. Fracture surfaces are left rough until 20mm above point - object becomes worked into round sectioned working end; tapers to intact point. Final 10 - 15mm retains remains of surface polish with possibly faint trace of encircling file marks.	L. 85mm; W. 13mm; T. 6mm
1105e	216	92E102:1105e: Retains curved section with irregularly tapering sides above round sectioned working end. Fracture surfaces are left rough. Working end begins at <i>ca.</i> 18mm above point when sides taper inwards abruptly to produce round sectioned, spindle-like working end; continues to taper to point. Extreme tip of point is broken. Working end surface retains traces of polish.	L. 79mm; W. 14.5mm; T. 6mm
1105f	216	92E102:1105f: Poorly-worked piece. Trace of marrow cavity persists above working end, which is comprised of final 15mm. Fracture surfaces are left unworked and sides taper irregularly above this area. At <i>ca.</i> 15mm above tip sides become smoothed and rounded and, at 10 - 11mm above tip, working end becomes worked in round, adopting finely rounded cross-section, tapering all the time to intact point. Object has very slight lateral curve.	L. 67mm; W. 10mm; T. 4.5mm
1123	217	Produced from narrow longitudinal segment of longbone wall. Appears only roughly worked but outer layer of bone has peeled away leaving an uneven surface and possibly removing evidence of fine grade manufacture. Axis is bent to one side at obtuse angle, about a third from top. For remainder of length sides taper regularly to fine point. Upper end is clearly intact and curved in section at very top. Slight polish on upper surface at edges. Point seems intact though extreme tip may be damaged.	L. 128mm; W. 9.5mm; T. 5mm

1124	88	Produced from longitudinal segment of longbone wall. Sides taper evenly to point. Fracture surfaces are rounded and smoothed, merging into underside. Upper area is almost wedge-shaped in section. Trace of marrow cavity fades out at 18mm above point and object adopts oval cross-section, tapering to round section nearing point. Final 6mm is worked in the round to intact point. Rounded fracture surfaces and final few mm of point bear fine surface sheen. Top may be broken post-manufacture.	L.32mm; W.10-2mm; T.5mm
1125	88	Probable broken working end of a bone point. Perfectly oval in section except for slight trace of marrow cavity down front. Sides are finely rounded, merging into underside, and taper evenly to point, the tip of which is broken. Entire surface is finely polished and sides show clear horizontal file marks. Underside shows coarse vertical groove marks.	L.19.5mm; W.13-4mm; T.5mm
1142	216	Produced from longitudinal segment of longbone wall. Upper part is somewhat L-shaped in section due to manner in which it has been split from bone. Sides taper fairly evenly to point. Fracture surfaces are rounded throughout most of length. L-shaped section diminishes towards point, fading out completely at 6mm from end. Final 9mm has been worked into rounded section, continues to taper to now broken point. Fracture surfaces show clear horizontal file marks which are less clear in lower rounded area, possibly through wear.	L.39.5mm; W.13-4mm; T.6mm
1148	217	Produced from longitudinal segment of longbone wall. Almost oval in section with slight trace of curved section. Sides are rounded throughout length, merging into underside for most of length. Sides taper evenly to point. Lower half gradually becomes more rounded near point, especially for final 10mm. Point is very sharp and in perfect condition. Upper area is composed largely of spongy bone. Faint file marks visible on fracture surfaces and around final <i>ca.</i> 20mm of point.	L.69mm; W.17mm; T.4.5mm
1159	85	Produced from longitudinal segment of longbone wall. Pronounced lateral curve to longitudinal axis. Surface very corroded with no surface detail. Wedge shaped in section throughout most of length. Final <i>ca.</i> 26mm becomes rounded/triangular in section. Sides taper evenly throughout length to intact point.	L.72mm; W.13mm; T.6mm
1164	219	Possibly produced from pig fibula. Small longbone, unmodified except for oblique cut to lower end of one side creating a sharp point at one end. No secondary working apparent. Length of sharpened part 25mm.	L.57mm; W.8mm; T.4.5mm
1192	219	Approximately square sectioned length of bone which tapers bilaterally to point. Extreme tip of one or both of adjacent faces is also bevelled for final few mm of point. May be some secondary working on one side but this is uncertain. No manufacture marks visible.	L.22.5mm; W.5mm; T.5mm
1208	219	Possible, broken, working end. Round sectioned piece, tapering in the round to point, the tip of which is broken. Fine surface sheen with horizontal file marks all over.	L.16mm; W.6mm; T.5mm

1217	255	Produced from longitudinal segment of longbone wall. Retains remains of marrow cavity in upper area. Some spongy bone showing near the upper end with remains of what may be articular surface at top. Piece is irregularly shaped. Right side continues straight down with no taper while left splays out from top before converging sharply inwards to form narrow pointed working end with diamond-shaped cross-section. Fracture surfaces show no secondary working above working end. Working end is worked in the round, taking on round section as it approaches broken tip. Remains of file marks are faintly visible around working end.	L.82mm; W.19mm; T.10mm
1233	255	Produced from longitudinal segment of longbone wall. Retains shallow curved section down most of length. Sides are parallel in upper region but begin to taper towards point in the lower <i>ca.</i> 1/3 of length. Fracture surfaces are left rough but secondary working of edges, in form of rounding and smoothing, has been applied from point of taper on left side. On right side secondary working is only present for final <i>ca.</i> 15mm and from here working end is worked into an oval cross-section. Point is intact but slightly damaged. No trace of filing visible though lower 15mm has good surface polish.	L.93mm; W.16mm; T.16mm
1244	255	Produced from longitudinal segment of longbone wall. Retains shallow curved section in upper half, fading out almost completely in lower area. Upper sides run parallel but show no secondary working. Final 26mm taper to point; the left side of this area has been rounded and smoothed while the corresponding right side remains rough except for final 8mm. Point is perfectly intact but its final 8mm length is broken into a separate piece.	L.36mm; W.9.5mm; T.3mm
1251	255	Finely-worked piece. Produced from wide longitudinal segment of longbone of large animal. Upper part appears to be missing and object has broken into a number of conjoining fragments. Three other loose fragments may be part of upper region of piece. Retains curved cross-section in upper region. Sides converge regularly to point. Fracture surfaces in uppermost region are left unworked. From <i>ca.</i> 1/3 distance from top, fracture surfaces become smoothed and rounded and from the approximate centre they merge into underside in continuous curve. Final <i>ca.</i> 1/3 adopts a finely-rounded cross-section continuing to taper to sharp, perfectly intact, point. Final 1/3 is finely polished and manufacture marks are still discernible in the form of fine vertical and transverse file marks.	L.82mm; W.19mm; T.7mm
1256	220	Probably represents broken working end. Roughly round sectioned piece of bone, tapering in the round to sharp point which is very slightly curved to one side. Composed largely of spongy bone. No manufacture marks visible. Polish concentrated on both sides and around extreme tip of point suggesting that polish may be result of use. Point is perfectly intact.	L.22.5mm; W.5mm; T.5mm

1268	255	Produced from longitudinal segment of longbone wall. Upper part retains deep curved section which diminishes in depth through length. Sides taper fairly regularly to point with more noticeable taper in lower half. Some rounding of fracture surfaces even in upper half but bone texture is chalky. Fracture surfaces in lower half, where sides show more pronounced taper, are rounded into underside. Final 7mm are worked in the round to round sectioned point. Point is intact but its tip may be broken or damaged. Faint traces of polish survive in patches around working end and on upper rounded fracture surfaces.	L.43mm; W.9.5mm; T.3.5mm
1279	255	Produced from narrow longitudinal segment of longbone wall of large animal. Remains of marrow cavity continue down most of length. Fracture surfaces are totally unworked until final <i>ca.</i> 15mm when object is shaped into finely rounded tapering point, the lower extremity of which is broken. Upper sides taper gently but rate of taper is greater in round sectioned working end.	L.75mm; W.17mm; T.7mm
1280	220	Sheep/goat metatarsal/metacarpal; retains distal epiphysis and distal area of shaft in upper part. From 15mm below top, one side of shaft has been split away for remainder of length. Remaining projection has been worked into tapered point. Upper fracture surfaces are irregular with no secondary working but rate of taper becomes regular in lower half - fracture surfaces have been rounded and smoothed. Natural concave-convex cross-section is retained for most of length. Final 8mm adopts finely rounded section shape, tapering to a sharp point, tip of which is now missing. Upper rims of articular condyles have been trimmed away. Transverse file marks are clearly visible on sides of lower working end.	L.118mm
1293	220	Object is cut from broad segment of outer wall of long bone and therefore retains no trace of medullar cavity, giving it a D-shaped cross-section. Retains part of articular end at top. From top, sides taper evenly to point. For final 20mm taper is greater and sides are further worked, creating an oval-shaped cross-section which narrows to sharp, intact, point. No details of surface manufacture are visible but outer layer of bone has peeled away.	L.78mm; W.22mm; T.5mm
1302	220	Doubtful bone point. Produced from a longitudinal segment of the longbone of a large animal. Parallel sides with base cut off diagonally and bevel from the underside creating sharp edge. No sign of manufacture marks but surface is very corroded. Very slight trace of polish along edge of base. Lower point on edge of base is recently broken.	L.52mm; W.9.5mm; T.3.5mm
1304	220	Produced from longitudinal segment of longbone wall. Deeply curved section throughout most of length, becoming shallower for final 10 - 15mm. No secondary working on fracture surfaces in upper area where sides also run parallel. For final <i>ca.</i> 20mm sides taper evenly to point and in this area the fracture surfaces become finely rounded into the underside. Lower working end is broken. Surface is generally very corroded but a slight sheen remains on the rounded fracture surfaces of the working end.	L.55.5mm; W.9.5mm; T.3mm

1305	220	Probably cut from longitudinal segment of longbone wall. Surface is very corroded with no apparent secondary working. Fracture surfaces taper evenly, with slight lateral curve, to point. Object has broad rectangular section shape in upper area narrowing to wedge shape further down. Fracture surfaces converge at front surface for final 5mm giving a triangular cross-section.	L.35mm; W.10mm; T.3.5mm
1314	220	Produced from narrow longitudinal segment of longbone wall. Poorly worked except for working end. Natural concave-convex cross-section has been lost in splitting process. Sides converge evenly to fine, sharp point. Upper left side is slightly broken. Fracture surfaces show no secondary working in upper region. Final 40mm (i.e. tapering area) on left side and final 29mm on right side show some secondary rounding which becomes more definite nearing tip. Final <i>ca.</i> 10 - 15mm is worked all around to fine round sectioned point with sharp, intact, tip.	L.82mm; W.17.5mm; T.7mm
1315	220	Produced from longitudinal segment of longbone wall of large animal. Fairly roughly made. Retains curved cross-section throughout most of length. Fracture surfaces show no secondary working. Tapers fairly regularly throughout length to the pointed tip but the taper is greater for the last approximately 12mm and at this point the sides have been rounded and smoothed. Final approximately 9mm are worked in the round to an oval-sectioned point which tapers to a sharp tip which, while intact, may be slightly damaged. No manufacture marks visible.	L.120mm; W.27mm; T.8mm
1334	220	Sheep/goat metatarsal/metacarpal which retains complete distal epiphysis and distal portion of shaft in upper part. From <i>ca.</i> 20mm below top, one side of shaft has been split away. Leaves a projection of bone on the other side which retains the concave-convex section in its upper area and tapers fairly evenly through length to round-sectioned point. Fracture surfaces in upper area are left rough though there is some secondary filing on the upper left fracture surface. Fracture surfaces in the lower <i>ca.</i> 15mm are rounded and smoothed to merge into underside; creating a rounded cross-section in final <i>ca.</i> 5mm. Point is intact.	L.92.5mm
1382	32	Fairly crudely-worked piece. Produced from wide longitudinal segment of longbone wall of large animal. Retains deeply curved section in upper part and trace of marrow cavity down to end. Sides are irregular for upper <i>ca.</i> 2/3 of length before tapering evenly to sharp point. Little secondary working apparent. Left side of tapered working end has been somewhat smoothed - this may be attributable to use rather than deliberate manufacturing process. Only final 15-20mm of right side of working end shows secondary modification - has a rounded and polished surface which continues around underside of point and unto left side. No secondary working on front surface of extreme tip. Point is sharp and intact.	L.79mm; W.24mm; T.6.5mm

1388	14	Possibly composed of sheep/goat metatarsal. Poorly-worked piece. Produced from a longitudinal sidewall segment of bone. Retains portion of proximal head in upper end. Sides taper irregularly to pointed tip. Right side is bevelled close to point. No secondary working visible but surface has peeled. Point seems intact.	L.98mm; W.12mm; T.3mm
1394	238	Poorly-worked piece. Produced from narrow longitudinal segment of longbone wall of large animal. Retains trace of marrow cavity throughout length to working end. Sides run parallel in upper area with no secondary working of fracture surfaces. For final 25mm, sides become slightly rounded, creating a more rounded cross-section and sides begin to taper to point, tip of which is now broken. Longitudinal axis adopts a slight lateral curve at top of working end. Horizontal file marks are visible around working end.	L.80mm; W.11mm; T.5mm
1452	239	Very finely-worked piece. Produced from longitudinal segment of longbone wall of large animal. May represent detached working end of more complete bone point. Oval or rounded rectangular in cross-section, tapering evenly from both sides throughout length to sharp point. Final 8mm adopts rounded cross-section and tapers in the round to point. This area also has fine surface polish which continues upwards in places. Point intact. Upper surface appears to be broken.	L.41.5mm; W.8.5mm; T.6mm
1508	101	Produced from narrow longitudinal segment of longbone wall. Square/oval in section with faint trace of marrow cavity down most of length. Fracture edges have been rounded, in places merging into underside. Sides in upper half are irregularly parallel but from centre they taper evenly and gently to point with a very slight swelling of shank in upper end of lower half. In lower half-sides are finely rounded to merge into underside and final 20-25mm adopts a finely rounded section and tapers in round to sharp point which is still perfectly intact. Fine file marks are visible on upper sides.	L.61.5mm; W.5.5mm; T.4.5mm
1554	106	Produced from longitudinal segment of longbone wall of large animal. Very well made piece. Retains trace of marrow cavity throughout most of length. Sides converge fairly evenly to finely rounded working end with rate of taper being more pronounced in region of working end. Fracture surfaces are left rough above working end. Final 20mm comprises working end and here bone has been worked all around into oval sectioned form, tapering to rounded section towards extreme tip. Extreme tip of original sharp point is now broken. Surface of working end is highly smoothed either due to manufacture process or from use.	L.82mm; W.15mm; T.7mm

1555	106	Cut from longitudinal segment of longbone wall. Upper left side is broken. Otherwise had curved section in upper area, fading out below centre. Sides taper fairly evenly to point. Some secondary working, in form of lateral trimming - horizontal file marks also visible at side of upper right fracture surface. From <i>ca.</i> 1/3 distance down length of object, both sides have been rounded slightly. Final 15mm adopts oval section continuing to taper to point. Final 5mm is worked in round to produce a fine point. Point still intact.	L.42mm; W.6mm; T.2mm
1608	239	Produced from longitudinal segment of longbone wall. Sides converge evenly to round-sectioned and finely-pointed tip. Piece is composed from outer area of longbone wall, retaining little of natural bone shape. Fracture surfaces appear to be slightly reworked for lower 34mm while area nearing point has been worked in the round for final <i>ca.</i> 15mm. Point is intact. Little detail is visible concerning surface working as surface has peeled considerable. Upper region is composed largely of spongy bone. There is a circular perforation just below the upper end.	L.91mm; W.16mm; T.5mm
1610	239	Produced from longitudinal segment of longbone wall. Very well made piece. Retains natural curved section in upper region. Sides taper evenly throughout length to point. Fracture surfaces are finely rounded, blending into underside in central region. Final <i>ca.</i> 20mm are finely-worked all round into round sectioned tapering working end. Point is sharp and intact. Upper part may be broken as secondary working at sides continues right up to top which is unusual. No surface manufacture marks visible.	L.72mm; W.20mm; T.8mm
1679	239	Produced from longitudinal segment of longbone wall of large animal. Piece has been worked into rounded cross-section, which tapers evenly to the point. Point has been deliberately blunted by being cut off horizontally above tip. Upper area either broken post-manufacture or left rough. Surface is heavily root marked. No manufacture marks visible.	L.46mm; W.10mm; T.7.5mm
1728	217	Produced from longitudinal segment of longbone wall of large animal. Shallow concave-convex section in upper part with no secondary working of fracture surfaces. Sides run approximately parallel in upper half, beginning to converge towards point in lower half and here sides also show secondary modification in the form of rounding off. The final 1/3 takes on finely rounded cross-section and continues to taper to point. Extreme tip of point is broken. Slight lateral curve to longitudinal axis. File marks are visible in lower area encircling round sectioned working end.	L.88mm; W.16mm; T.7.5mm

1743	239	Fairly well made piece. Produced from narrow longitudinal segment of longbone wall. Faint vestige of marrow cavity is still visible down the centre. Fracture surfaces have been rounded throughout entire length. The front surface has been worked into a rounded form from <i>ca.</i> 1/2 way down length while final 15mm is worked all round to form a round-sectioned working end with a tapered sharp point. Sides are parallel for most of length, beginning to converge towards point at <i>ca.</i> 30mm above tip. Extreme tip of point is intact. The pronounced anterior-posterior longitudinal curve is a feature of the raw material.	L.102mm; W.9.5mm; T.7.5mm
1862	221	Produced from longitudinal segment of longbone wall. Roughly made piece. Parallel sides with fracture surfaces showing no secondary working. At <i>ca.</i> 1/3 distance from lower end right side is bevelled to form sharp, triangular sectioned point. Fracture surfaces are smoothed in this area, possibly from use more than from secondary working. Point is perfectly intact.	L.91mm; W.12mm; T.5mm
1891	244	Fairly well made piece. Composed from small sheep or goat radius with one side wall split off longitudinally below top. Remaining segment of bone has been tapered into a finely sharpened point, its upper region being curved in section, forming an oval section for final <i>ca.</i> 13mm. Curved longitudinal axis is a feature of bone from which piece is manufactured though manufacture process appears to have emphasised this. Point is perfectly intact. Traces of file marks are still visible around working end.	L.79.5mm; W.15.5mm; T.8.5mm
1953	244	Sheep/goat metacarpal/metatarsal which retains full circumference of shaft for final <i>ca.</i> 35mm at distal end of bone. Distal articulation appears to have been broken off. At <i>ca.</i> 35mm below top, shaft has been cut obliquely from one side as far as opposite wall leaving only a thin projection of bone. Projection has been worked in the round to form finely shaped oval sectioned working end which tapers evenly to sharp point, becoming more rounded in section in lower half. Working end is very finely-worked. Point is intact but extreme tip seems broken.	L.62mm; W.14mm; T.10mm
2122	270	Tiny, round sectioned short length of bone which tapers in the round to sharp point. Possibly represents tip of working end of point. Surface is slightly uneven. Lower half has fine, though patchy, surface polish. Possibly produced from full longbone shaft with tiny hole in centre representing marrow cavity. Some surface polish exists on broken upper surface.	L.16mm
2128	267	A well-made bone point tapering to end in a rounded blunt tip which has been burnt slightly, probably to harden it. The tip is also polished. The point is rectangular in section and there is a slight groove in one surface following the shape of the bone. Surfaces are smooth and worn.	L.37.5mm; W.12.4mm; T.6.3mm

2130	267	Produced from longitudinal segment of wall of longbone of large animal. Retains trace of marrow cavity down centre. Sides taper to narrow point. Well made with secondary working down left side where fracture edge has been lightly smoothed and rounded. Final 25mm of right side has been smoothed and rounded and final 14mm of piece has been carefully-worked to finely rounded and sharply tapered point. Extreme tip of point broken. Remains of file marks encircling the working end are visible.	L.91mm; W.21.5mm; T.8mm
2134	267	Well-made piece. Produced from longitudinal segment of longbone of large animal. Retains deeply curved section in upper half, fading out towards working end. Side runs parallel with rough fracture surfaces before tapering sharply at 34mm above point on left and at 22mm above point on right to form an oval/round sectioned working end. Rate of taper lessens at <i>ca.</i> 19mm from point and working end tapers gently to point, tip of which is now broken. Final 5mm possesses fine surface polish all around.	L.74mm; W.17mm; T.7mm
2181	269	Oval-sectioned length of bone worked in the round and tapered gently, with emphasis of taper in final few mm, to perfectly intact point. Well-worked but no surface manufacture marks or polish.	L.17mm; W.7mm; T.5mm
2214	269	Produced from longitudinal segment of longbone wall. Upper part retains deep concave-convex section with parallel sides but fracture surfaces are left rough. For final 29mm on left, sides taper evenly to sharp point. This is repeated on right side for final 20mm. In this tapered area sides become finely rounded into underside and for final 8mm object is worked into round-sectioned working end which continues to taper in the round to sharp, fine, perfectly intact point.	L.62mm; W.9mm; T.3mm
2218	279	Fairly roughly-made piece. Produced from narrow longitudinal segment of longbone wall of large animal. Wedge-shaped in section in upper area with rough fracture surfaces. Sides taper fairly evenly in lower half but are approximately parallel above this. Is some secondary rounding of sides from point of taper and final 15mm adopts a rounded cross-section which continues to taper to point, tip of which is now broken. This area also shows fine surface polish although surface is somewhat corroded.	L.53mm; W.16mm; T.8mm
2239	267	Produced from wide longitudinal segment of longbone wall of large animal. Shape is quite symmetrical with evenly tapering sides, with slight outwards expansion around centre, to point. Almost rectangular in section with little trace of natural curved cross-section of longbone. Left fracture surface is rounded except for upper region, right fracture surface remains rough or has been damaged post manufacture. Final <i>ca.</i> 10mm adopts rounded section and continues to taper in the round to point. Extreme tip of point is broken or damaged. Final few mm of point shows a deep surface polish.	L.68.5mm; W.19mm; T.7mm

2269	267	Very well-made piece. Produced from narrow longitudinal segment of longbone wall of large animal. Traces of marrow cavity almost totally obliterated by high level of modification. Fracture surfaces have been rounded and smoothed, merging into underside creating a smoothly oval cross-section throughout length. Sides taper fairly evenly to point but more strongly for final <i>ca.</i> 10mm when object also adopts a rounded cross-section. Point intact. Fine file marks visible in places on surface.	L.67mm; W.11mm; T.8mm
2278	244	Very finely-worked piece Produced from longitudinal segment of longbone wall. Originally retained deeply curved section in upper area, diminishing towards point, but right upper side is broken post manufacture. Left side tapers evenly to point as does remaining right side. Fracture surfaces on left are rounded, merging with underside in continuous curve from mid-length. Remaining right side also merges into underside. Final 9mm adopts a finely-rounded cross-section which continues to taper in round to sharp point, extreme tip of which is now broken. Surface is extensively root-marked. Lower area, especially working end, displays a fine surface polish.	L.43mm; W.7mm; T.3.5mm
2293	271	Produced from longitudinal segment of longbone wall. Fracture surfaces taper unevenly to point. No evidence of any secondary working and therefore no real differentiation between working end and upper part. Final <i>ca.</i> 15mm displays slight sheen which overlies rough fracture surfaces suggesting this is result of use. Upper part has a shallow concave-convex section. Trace of marrow cavity continues down to tip. Point intact.	L.71.5mm; W.10mm; T.3.5mm
2297	85	Fairly well-made piece. Produced from longitudinal segment of longbone wall of large animal. Upper part is triangular in cross-section with no secondary working. Sides taper throughout length but show a greater degree of taper approaching point. Lower half becomes roughly rounded with degree of modification becoming greater nearing tip. Final <i>ca.</i> 10mm is worked to finely-rounded form and appears to have tapered to finely-pointed tip, which is now broken. Manufacture marks have been polished away either as part of manufacture process or through use.	L.99mm; W.17mm; T.15mm
2304	217	Produced from longitudinal segment of longbone. Broadly wedge shaped in section with sides tapering evenly to sharp point. Final 6mm adopts more rounded cross-section and continues to taper to point. Faint traces of surface polish survives, especially around final few mm. Surface is otherwise very corroded so details of manufacture are not clear. Point perfectly intact.	L.32mm; W.5.5mm; T.3mm
2309	244	Produced from wide longitudinal segment of longbone wall. Broadly rectangular in section at top, just retaining a trace of marrow cavity almost to point. In upper half fracture surfaces show no secondary working and sides are somewhat irregular. In lower half, i.e. final <i>ca.</i> 27mm, fracture surfaces become rounded and adopt a regular taper to sharp point. Final 8mm is worked in round to oval section shape and tapers in round to perfectly intact point. Faint horizontal file marks on lower sides.	L.55mm; W.13.5mm; T.3mm

2314	285	Produced from wide longitudinal segment of longbone wall. Upper part of object is almost rectangular shaped in section with little trace of marrow cavity. Right side tapers evenly, with a slight outward curve in upper half to point. Left side appears to have been same but its upper area is now broken, possibly post-manufacture. Fracture surfaces are finely rounded and smoothed. For final 16mm object tapers more sharply to point and for final 5mm object is worked into a round section shape. Tip of point is now broken.	L.53mm; W.16mm; T.6.5mm
2316	279	Produced either from longitudinal segment of long bone or from antler. Approximately oval/rectangular in section. Right side tapers evenly to point. Left side splays outwards from top for just less than half of length before turning in an obtuse angle and tapering evenly to point. Sides are smoothed and rounded throughout length. For final 14mm object is worked to approximately oval sectioned working end, continuing to taper to sharp perfectly intact point. Final 14mm has fine surface polish all round.	L.53mm; W.12mm; T.6mm
2317	279	Produced from longitudinal segment of longbone wall of large animal. Retains shallow curved section shape through most of length. Right side tapers evenly to point, left is slightly more irregular. Fracture surfaces have been slightly rounded throughout most of length but left remains rough in area immediately below top. From midpoint sides become rounded into underside and from <i>ca.</i> 12mm above point object is worked in the round, adopting finely shaped oval cross-section while continuing to taper to sharp perfectly intact point. Horizontal file marks clearly visible along upper sides. Final 20mm on sides and underside show fine polish.	L.75mm; W.11mm; T.5mm
2383	267	Produced from longitudinal segment of wall of longbone of large animal. Very well made. Retains strongly curved cross-section down most of length. Most of left fracture edge has been finely rounded and smoothed. Some effort has also been made to smoothen fracture edge on right. Sides are approximately parallel in upper part. At <i>ca.</i> 40mm from lower end sides converge abruptly to form a finely round sectioned and elongated working end which lies mainly to one side (i.e. tapers more strongly on right) and which continues to taper towards point. A sliver of bone has broken from left side of working end, post-manufacture but in antiquity. There was no attempt to erase this mark. Actual point is intact but appears slightly damaged from use. Upper 1/3 of object shows little secondary working and fracture edges are left mainly rough. Sides of working end show strong marks of filing which are not visible on rounded fracture surfaces above. Some transverse filing marks are visible on underside above working end.	L.114mm; W.20mm; T.11mm

2386	253	Produced from narrow longitudinal segment of longbone wall of large animal. Upper part is almost square sectioned but with trace of marrow cavity continuing down most of length. Sides run parallel with no secondary working of fracture surfaces. Final <i>ca.</i> 25mm shows a sudden lateral curve and from here fracture surfaces become rounded, merging into underside a few mm below this. From this spot working end becomes more finely rounded as it approaches broken point, taking on rounded section for final 10mm.	L.65mm; W.12mm; T.8mm
2394	88	Possible broken working end from larger point. Sub-oval in section - shaped from sides and front surface. Tapers evenly from sides and front surface to point. Point intact but extreme tip is broken. Upper surface is rough and may be broken. Faint file marks visible down sides and on lower underside.	L.30mm; W.11mm; T.6.5mm
2408	283	Produced from longitudinal segment of longbone wall of large animal. Upper part is wedge sectioned with fracture surfaces showing no secondary working. Sides are irregularly parallel. Trace of marrow cavity continues through most of length. For final 25mm fracture surfaces become rounded and taper evenly to point. Final 14mm adopts finely rounded, stout, section shape which continues to taper in the round to point. Tip of point is now broken. Horizontal file marks are clearly visible at sides, these have been obliterated by final polish on lower 10mm, either as a result of manufacture or of use.	L.72mm; W.17mm; T.8mm
2427	290	Produced from narrow longitudinal segment of longbone wall of large animal. Wedge shaped in section throughout length, narrowing towards point. Retains trace of marrow cavity down centre almost to end. Laterally curved longitudinal axis. Sides taper evenly to point. Fracture surfaces left totally unworked. There is some smoothing of fracture surfaces in lower region but this appears to result from use. For final <i>ca.</i> 10mm the anterior and posterior surfaces appear to have been bevelled to create a sharp point perfectly intact.	L.84mm; W.14mm; T.8mm
2435	282	Cut from longitudinal segment of longbone wall. Sides run parallel until final 17mm when they taper abruptly to point. Fracture surfaces of parallel sides are mainly unworked - there has been some rounding off of lower right fracture surface. Upper part is vaguely right angled in section due to manner in which it has been split from bone. This diminishes throughout length, especially from place of taper where section becomes more oval. Final 10mm takes on oval cross-section and continues to taper to point, extreme tip of which is broken.	L.45mm; W.8.5mm; T.5mm

2443	290	Well-made piece. Produced from wide longitudinal segment of longbone wall of large animal. Wide rectangular in cross-section with slight trace of marrow cavity on front surface. Sides are vaguely rounded and adopt even taper to point from 8mm below top. Sides become more rounded towards working end and the final 6mm adopts a finely circular cross-section, continuing to taper to point, tip of which is now broken. Upper sides display clearly visible horizontal file marks. Rounded part of working end shows very fine surface polish with no manufacture marks visible. Underside also has surface sheen though natural bone surface texture has not been worked away.	L.45mm; W.15mm; T.5mm
2491	283	Produced from longitudinal segment of longbone wall. Sides taper evenly to point with slight outward bulge around centre. Upper left side broken. Retains deep curved section in upper half, fading out completely in lower half to create oval section which continues to taper from sides to point. Fracture surfaces are finely rounded into underside throughout length, especially in upper half. Final <i>ca.</i> 6mm tapers on all surfaces to intact point. Fine file marks visible over much of surface. Just below top is a longitudinal slit or eye, 8mm long.	L.51mm; W.8mm; T.3mm
2523	244	Produced from longitudinal segment of longbone wall of large animal. Upper area has parallel sides with rough fracture surfaces, possibly broken post manufacture. Some trace of marrow cavity continues to just above working end. On lower left side above working end is level fracture surface with appearance of being knife cut. Lower 1/3 of object comprises working end where sides begin to taper and cross-section becomes rounded, continuing to taper to point. Transition from parallel sides to tapered sides is gradual on left but on right, side has been cut inwards obliquely to produce narrow working end. Point is intact though possibly slightly damaged. Horizontal file marks are clearly visible at sides and underside on upper working end. Lower working end displays fine surface polish.	L.57mm; W.15mm; T.7mm
2524	9	Produced from longitudinal segment of longbone of large animal. Poorly made. Upper part retains deeply curved section which fades out at approximate centre. Longitudinal axis is strongly curved laterally but otherwise sides taper evenly to point. Fracture surfaces seem to be left rough but final <i>ca.</i> 25mm on right have been reworked to roughly rounded form. Final <i>ca.</i> 10mm have been worked from both sides to form triangular sectioned working end. Point is intact.	L.75mm; W.25mm; T.3mm
2583	297	Produced from longitudinal segment of longbone of large animal. Upper half retains a curved cross-section. Sides converge evenly throughout length to, now missing, point. Working end is triangular/oval sectioned, becoming more clearly oval towards lower end. Secondary working has taken place around working end as demonstrated by rounded edges. Surface is poorly preserved and fine detail of surface finish is not visible. Fracture surfaces in upper region appear to have been slightly smoothed.	L.80mm; W.17mm; T.10mm

2642	83	Well made piece cut from narrow longitudinal segment of longbone wall. Section shape is almost oval/rectangular throughout most of length with trace of marrow cavity remaining, in form of shallow groove, down front. Fracture surfaces are well rounded, partly merging into underside. Sides are approximately parallel, slightly expanding towards midline, before tapering at 19mm from point. Final 6-7mm takes on perfectly rounded cross-section, tapering in round to point which is now broken away. Top is intact with some secondary finishing. No manufacture marks visible but worked surface has good polish.	L.50mm
2665	257	Produced from longitudinal segment of longbone wall of large animal. Very well made piece. Retains deeply curved section in upper part. Sides converge evenly to round sectioned and tapered working end, extreme tip of which is now broken. Fracture surfaces have been smoothed throughout their extent; from <i>ca.</i> 1/3 distance from top they are finely rounded and smoothed, blending into underside nearer tip. Final 10mm have been finely rounded to round sectioned point; its extreme tip broken. No manufacture marks visible - may have been either polished or worn off surface from use.	L.103mm; W.22mm; T.8mm
2667	253	Produced from longitudinal segment of longbone. Sides taper evenly to sharp point. Upper half retains curved section shape. Fracture surfaces left rough until <i>ca.</i> 17mm above point on right (unclear on left due to damage) where they become rounded and blended into underside. From <i>ca.</i> 13mm above point, object is worked in round to form fine round sectioned and sharp point, extreme tip of which is broken.	L.44mm; W.7mm; T.3mm
2718	1201	Produced from a narrow longitudinal segment of longbone wall of large animal. Well made. Retains spongy bone in upper area. Flat top may represent part of articular surface of longbone. Rectangular/square in section with curved edges i.e. fracture surfaces have been rounded. Slightly angled to one side at approximate centre. Upper left side is split away, probably post manufacture. Sides taper evenly to point below angle. At 15mm from lower end section assumes a rounded shape and continues to taper to intact point. Final 15mm of point bears fine surface polish in patches. Outer layer of bone has peeled away in areas between these patches of polish and also possibly over remaining surface of object.	L.60mm; W.10mm; T.9mm
2739	1202	Very crudely produced piece composed from broad segment of longbone wall. Left side tapers fairly regularly to point while right side is irregular to 20mm above point; from here it again tapers fairly evenly. No secondary working of fracture edges visible except for final 10-12mm above point where what appears to be a couple of secondary cut marks are visible at edges. There has been little or no attempt to round these edges; slight polish displayed in this area may be due to use.	L.120mm; W.24-17mm; T.4mm

2741	1020	Cut from longitudinal segment of longbone of large animal. Upper sides are irregularly parallel while lower half tapers evenly and symmetrically to point. Wedge shaped section in upper half becomes rectangular in lower half. Bone surface is very corroded, making it difficult to say whether upper fracture surfaces have secondary working or not. Fracture surfaces on lower tapered part are slightly rounded. Point is intact. Lower fracture surfaces have slight shine but no clear manufacture marks.	L.69.5mm; W.11mm; T.5mm
2772	1212	Produced from wide longitudinal segment of longbone of large animal. Sides are irregular with fracture surfaces showing little secondary working above working end. Curved section persists in upper area but final 27mm has been worked into oval/round section; tapers evenly to intact point. Transverse fine marks are visible on rounded sides above working end. Final 16mm bears fine surface polish all round.	L.82mm; W.18mm; T.9mm
2781	1218	Produced from narrow longitudinal segment of longbone of large animal. Trace of marrow cavity survives in upper half. Sides taper somewhat unevenly to pointed end with very slight lateral curve. Left fracture surfaces show no secondary working while right fracture surfaces are slightly smoothed and rounded. Working end comprises final <i>ca.</i> 1/3 of length when object becomes gradually worked in round to form round sectioned tapering point. Point is intact. Actual working end surface bears a fine surface sheen.	L.83.5mm; W.10.5mm; T.7.5mm
2782	1218	Produced from longitudinal segment of longbone of large animal. Upper area retains curved section which diminishes towards working end. Sides taper evenly to point. Fracture surfaces are left rough above working end. At 20mm from point object assumes a triangular cross-section and cut sides become slightly smoothed and rounded. Continues to taper to sharp, perfectly intact, point. Final few mm above point retains all round surface polish.	L.72mm; W.15mm; T.5mm
2786	1219	Produced from longitudinal segment of longbone - outer wall only is utilised and therefore piece retains no trace of marrow cavity in its cross-section. Sides run parallel at slight diagonal before tapering evenly to point. Upper edges are left rough. From point at which taper begins, sides become rounded into underside. Lower working end, for final 10mm, is finely rounded into D-shaped cross-section. Front surface is flat, having been split longitudinally - this may have happened post manufacture as there are now no signs of working on this front surface. Point intact.	L.44mm; W.25-3mm; T.6.5-3mm
2797	1220	Small, roughly made piece. Produced from longitudinal segment of longbone. Irregularly tapering sides with vaguely curved cross-section. At approximate centre object adopts semi-rounded cross-section and sides run parallel before converging a few mm above tip. Lower half bears good surface polish.	L.24mm; W.6-2mm; T.3-2mm

2815	1204	Produced from segment of longbone of large animal. Retains shallowly curved section in upper region. Left side tapers evenly to point. Right side tapers more irregularly. Fracture surfaces left unworked. From 25mm above point fracture edges become smoothed and rounded, merging into underside and front surface, forming a rounded cross-section which continues to taper to intact point. Rounded working end retains good surface polish with no actual file marks visible.	L.81.5mm; W.15mm; T.5mm
2846	1224	Produced from metacarpal/metatarsal of sheep/goat. Working end is very finely-worked. Upper part retains full circumference of longbone shaft with distal articulation broken off. Working end has been produced by removing section of shaft for final 43mm, leaving projection of bone, of ccs, which tapers evenly and symmetrically throughout length to point. Fracture surfaces are rounded for most of length, merging into underside for final 23mm. Final 6mm takes on finely rounded section, tapering in the round to point, tip of which is broken. Fracture surfaces on lower working end bear very fine surface polish. Faint trace of horizontal filing on tapered sides.	L.62.5mm; W.13mm; T.9mm
2924	1226	Produced from wide longitudinal segment of longbone wall. Deeply curved section in upper area. Fracture surfaces in upper region appear to have been cut with knife on left side but are left rough on right. For final 30mm there appears to have been an attempt to rework piece into broad oval section. This becomes more pronounced towards point. Final part of point is broken away. Surface is quite corroded with no surface detail apparent.	L.81mm; W.24-9.5mm; T.6-5mm
2978	1225	Produced from longitudinal segment of longbone of large animal. Exceptionally stout in its proportions. Retains part of marrow cavity down most of length, diminishing towards point. Fracture surfaces have been rounded into underside on right and either left rough or broken post manufacture on left. Sides taper evenly to point. Object is worked in the round for final 30mm, assuming a perfectly rounded cross-section for final 22mm. Point seems either worn or deliberately blunted and, while intact, is slightly damaged on one side. Round sectioned point has a slight surface polish. Surface is generally quite rough and root marked.	L.77mm; W.21mm; T.10mm
2996	1219	Produced from longitudinal segment of longbone. Almost rectangular in section with faint trace of marrow cavity. Fracture surfaces left rough and taper unevenly to point. Final 10mm is worked from sides and front to form irregularly round sectioned point; tapers evenly to sharp tip. Underside is left largely unworked. Point still intact. Faint diagonal file marks are visible around point for final 10mm.	L.40.5mm; W.9mm; T.5mm

2997	1224	Well-worked piece. Produced from longitudinal segment of longbone wall. Sides taper evenly to point. Upper left corner of top is broken. Upper area retains curved section shape with fracture surfaces showing no secondary working. Some secondary working appears for final 22mm on left and for final 16mm on right where sides become slightly smoothed - may also be result of use. Final 10mm is worked in round to form a fine round sectioned working end which tapers to sharp point. Faint transverse file marks are visible around lower working end.	L.49mm; W.8mm; T.3mm
3033	1224	Produced from sheep/goat metatarsal. The proximal epiphyses is retained in upper part. At 20mm below top shaft of longbone has been broken away leaving a narrow segment projecting for a further <i>ca.</i> 67mm. This segment is curved in section with parallel sides; fracture surfaces appear to be cut instead of broken and are, therefore, quite smooth. From 13mm above point on left and 17mm on right, sides taper to form a sharp point. Some rounding of fracture surfaces is visible above taper, especially on left. At 9mm from point, a finely rounded section is assumed. Point is intact. Both knife cut marks and file marks are visible on tapered edges. File marks are also visible on underside in this area and on final few mm of point.	L.86mm
4012	US	Incomplete bone point. Polished surfaces. Sides tapering to a blunt point.	L.54.1mm; W.7.4mm; T.3.4mm
4019	99/68	Curved bone point - worked only at the tip. The external surface of the bone is flat and smooth and the inner surface is rough and grooved. Sub-rectangular in section.	L.94.3mm; W.22.5mm; T.6mm
4032	253/255	Incomplete bone point. Produced from longitudinal segment of longbone of large animal. Retains part of marrow cavity down most of length, diminishing towards point. Fracture surfaces have been rounded into underside on right and broken post manufacture on left. Sides taper evenly to point. Object is worked in the round (now damaged on left) for final 19mm. Point is slightly damaged on one side. Polished surface at point.	L.52mm; W.13mm; T.6mm
4035	258	Gouge. An incomplete hollow bone point. Only point and lower part of shaft intact. From 34mm above point one side of shaft has been split away for remainder of length. Remaining projection has been worked into tapered point. Oval in section. Final 7mm adopts oval section shape, tapering to a sharp point, tip of which is now missing. Upper rims of articular condyles have been trimmed away. Some patches of wear polish are clearly visible on sides of point.	L.53mm; W.11mm; T.8mm

Bone Needles and Pins Catalogue (M. FitzGerald) [Appendix 1.23 in Vol. 3]

Type 1: Boat-shaped needles

Find No.	Feature	Description	Dimensions
828	208	Incomplete. Tip and about one-third of shank of polished bone needle; broken near centre. The shank is roughly U-shaped in section with a groove on one surface. Tapers in width from 5mm at point of breakage to 2mm at slightly off-centre, blunt tip. Broken below where perforation may have been. Central longitudinal groove which fades out towards tip; 2mm wide by 25mm long and 1mm deep. Patches of polish along both edges of it.	L.36mm; W.5mm; T.3.5mm
843	202	Incomplete. About half of shank and tip of bone needle. Shank is oval in section with slightly curved profile. Tapers from 7mm by 4mm to 1mm diameter at sharp tip. Broken across central slot-type perforation. Surfaces are rough and uneven, though needle is quite well-made and has traces of polish along the shank. Longitudinal groove on both surfaces. On one side it tapers and fades out from central perforation to point (14mm long by 3mm to 1mm wide). Groove in other surface is more pronounced but also tapers out to point (17mm long by 3mm to 1mm wide). Perforation is 3mm wide and 5mm long; the needle is broken at this point.	L.49mm; W.6mm; T.4mm,
960	41	Incomplete. Tip missing and one side of central slot-type perforation. Shank is rectangular with rounded sides in section; slightly curved profile. Tapers from 6mm by 3mm to 2mm diameter at blunt point. Surfaces are worn, have traces of polish along shank. Central perforation is 9mm long, and <i>ca.</i> 2mm wide. A short shallow longitudinal groove on both sides - either side of perforation. Groove in 'outer' surface tapers from perforation to shallow point, from 2mm to 1mm, and is 23mm long. Groove in other surface is similar but continues to where shank is broken; 32mm long and tapers from 2mm to 1mm.	L.68mm; W.55mm; T.3mm

1240	255	Incomplete. Two fragments of two needles. Both are finely made and are polished, and have broken across the perforation. A) has a shank of rectangular section with a tapering shank, from 6mm at the perforation to 1mm at the blunt tip. The tip is slightly off-centre. Shank is broken across the perforation. The profile is straight, and the needle is polished. There is a longitudinal groove on both surfaces, one more prominent than the other. The former tapers, and fades out towards the tip; 30mm long and 2mm wide. The groove on the other side tapers from the perforation to a point, and is shallow; 1mm long, 1.5mm wide. Slot-like perforation is 6mm long by 1.5mm wide. B) has a fine shank which tapers to a point, from 5mm by 2mm at the perforation to 1mm diameter at the blunt tip. Rectangular with rounded sides in section; straight in profile. It has a slightly short longitudinal groove on both surfaces, tapering from the slot-like perforation. In one surface it is 14mm long by 2mm wide, and in the other it is 10mm by 1mm. The perforation is 6mm by approximately 2mm wide, and the needle has broken across it.	A) L.40mm; W.5.5mm; T.2mm B)L.29mm; W.6mm; T.2mm
1753	244	Incomplete. Two shank fragments. Shank is oval in section with slightly curved profile. Tapers from 7mm by 3.5mm in the centre to 1mm in diameter at the blunt point at each end. Surfaces are smooth, with traces of polish along the shank. There is a central groove and perforation. Short groove in both surfaces, 13mm and 18mm long respectively, which taper from 2mm wide to a point. Grooves are carved diagonally across the shank. Faint grooves in the other piece of the needle. The central, slot-like, perforation has a diameter of 2mm and is 5.5mm long; the needle is broken across it.	L.58mm x 46.5mm; W.7mm; T.4mm
2200	282	Complete. Polished needle. Shank is very finely made. Curved profile, tapers from an oval section of 6mm by 3.5mm to a circular section of 2mm diameter at blunt point at either end. Surfaces are polished but also quite worn. Central groove and perforation. Longitudinal groove in both surfaces which only extends from a maximum of 5mm beyond the perforation. Tapers to a point. Slot-type perforation is 11mm long by 2mm wide.	L.88mm; W.6.5mm; T.3.5mm
2272	284	Incomplete. Very tip of one end is missing. The shank is finely made. Curved profile. Oval in section at centre and for one half, but tapering to a circular section for the other half. Tapers from 8mm by 4.5mm to 2mm in diameter at the blunt tip. Central groove in both surfaces and a perforation. Extensive patches of polish remaining, but the surfaces are worn. A short longitudinal groove tapering to a point either side of the perforation in both surfaces of the needle. On the outer surface, it starts just above the perforation and fades out along the oval-section half; 23mm long by 5mm wide. Groove in the inner surface tapers from either side of the perforation to a point, and is 8mm long by W.5mm wide. Slot-type perforation is 6mm by 5mm.	L.109mm; W.8mm; T.4.5mm

Type 1b: Bone needle

1069	217	Complete; finely-made, tapering needle with perforation and groove. The head is rounded and undifferentiated from rest of needle. Oval in section. Groove on outer surface continues to top of head. The shank is rectangular in section; curved in profile. Tapers from 7mm by 3.5mm to 2mm in diameter at blunt tip. Oval-shaped, slightly off-centre perforation, 4.5mm long by 1.5mm wide located just below head. Groove either side of perforation in both surfaces. Surfaces are very worn but there are faint traces of polish along sides. Groove in one surface it starts just below head, above perforation, widens to take in perforation, and then gradually fades out above tip; 2mm wide, and 54mm long. Groove in other surface is 15.5mm long and is diagonal across shank, taking in the slot-like perforation.	L.98.5mm; W.6.5mm; T.4mm
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Type 2: Bone needles

36	9	Incomplete. Lower part of shank and tip missing. Head is unexpanded and perforated with slightly rounded top (L.5mm; W.5.5mm; T.2mm). Rectangular with rounded sides in section. Eccentric perforation (D.2.5mm) is hour-glass in section. Shank is oval in section and slightly curved in profile. Tapers from diameter of 5mm by 3mm to 3.5mm by 3mm. Traces of polish on head and along shank.	L.25mm; W.3.5mm; T.3mm
1137	88	Complete. Two parts. Unexpanded perforated oval-shaped head and tapering shank. Top is square off. Rectangular with rounded sides in cross-section. Eccentric perforation (D.3mm) A second perforation attempt (D.1.5mm) below. The shank is flattened oval in section and curved in profile. Tapers from 6mm by 3mm to 2mm at blunt point. Surfaces are worn but there are patches of polish along shank.	L.76mm; W.4.5mm; T.3.5mm
1146	217	Incomplete. Head missing. Broken just below perforation. Shank tapers from rectangular section of 5mm by 2.5mm to circular section of 2mm diameter at blunt tip. Slightly curved profile. Slight groove in one surface. Surfaces are worn with traces of polish around tip. Slight longitudinal groove, 24.5mm long by 2mm wide, which tapers and fades out towards the point.	L.57mm; W.5mm; T.3mm
1385	217	Incomplete. Two fragments. Tip missing. Unexpanded rounded head (L.8mm, W.7.5mm; T.3mm) with rectangular with rounded sides section. Top of head is slightly flattened. Perforation is hour-glass in shape (D.2mm). Shank is flattened circular in section and tapers from 6mm by 4mm below head to 3.5mm by 3mm. Surfaces are smooth with patches of polish at head and along shank.	L.48mm; W.5mm; T.4mm
1412	220	Complete. Rounded unexpanded head (L.8.5mm; W.7.5mm; T.2.5mm). Rectangular with rounded sides in section. Eccentric perforation of hour-glass shape (D.3.5mm). Shank of flattened circular section and straight in profile. Fine and tapering from 5mm by 3.5mm below head to 2mm in diameter at blunt tip. Traces of polish around tip but otherwise surfaces are worn and rough.	L.45mm; W.4.5mm; T.3.5mm

1964	257	Incomplete. Shank and tip missing. Head appears to have been sliced deliberately at a diagonal angle in half. Top of head is flat. Rectangular with rounded side in section. Cylindrical perforation (D.3mm). Surfaces are smooth and polished.	L.18mm; W.4mm; T.4mm
2108	244	Complete. Unexpanded head and tapering shank. Head is square-shaped (L.6mm; W.6mm; T.2mm) with rounded top. Rectangular with rounded sides in section. Perforation is hour-glass shaped (D.2mm). Shank of rectangular with rounded sides section and curved in profile. Tapers from 5mm by 2mm below head, to 2mm by 1mm at blunt tip. Slight groove in one surface from 9mm below perforation (L.36.5mm long by 1mm wide). Slight groove or incision above tip may be natural. Surfaces are worn and smooth with patches of polish, particularly on upper part of shank.	L.71.5mm; W.4.5mm; T.3mm
2188	270	Incomplete. Undifferentiated perforated head and upper part of shank. The head is rectangular in section and flat-topped (L.4mm; W.4.5mm; T.3mm). Hour-glass perforation (D.2mm). The shank is circular in section and a diameter of 4mm. Fine and highly polished, grey in colour.	L.25mm; D.4mm
2389	76	Incomplete. Upper part of head missing. Unexpanded head and tapering shank. Rectangular in section (L.3mm; W.5.5mm; T.3mm). Hour-glass perforation (D.2mm). Shank is rectangular with rounded sides in section and curved in profile. Tapers from 5.5mm by 3mm at head to 1.5mm by 1mm at blunt tip. Bone is dark brown in colour, and has worn surfaces. Faint traces of polish around perforation and just above tip.	L.72mm; W at Hd.6mm, W.4.5; T.3.5mm
2426	290	Complete. Unexpanded head and tapering shank. Head is rectangular in shape with a rectangular with rounded sides section. Perforation (D.2mm) is hour-glass shaped. Evidence on one surface of vertically incised line either side of perforation but stopping before shank. Shank is rectangular with rounded sides in section and straight in profile. Curves very slightly towards point. Tapers from 4mm by 3mm below head to 1.5mm in diameter at blunt tip. Surfaces are smooth and polished.	L.60mm; W.4mm; T.3mm
2484	290	Incomplete. Upper part of head missing. Unexpanded head and tapering shank. Flattened oval in section (L.5mm; W.7mm; T.3.5mm). Broken across cylindrical perforation (D.3mm). Shank is circular with rounded sides in section and curved in profile. Tapers from 5mm by 3.5mm below head to 2mm in diameter at blunt tip. Surfaces are smooth and highly polished.	L.80mm; W.6mm; T.4mm
2501	802	Complete. Unexpanded head and tapering shank. Head is oval in section (L.23mm; W.5mm; T.3mm). Eccentric perforation (D.4mm by 1.5mm) is pear-shaped. Indentation in back of head incorporates perforation. Evidence on one surface of vertically incised line either side of perforation. Surfaces are rough and worn. Shank is rectangular in section and curved in profile. Tapers from 5mm by 3mm at head to 1mm in diameter at blunt tip. One side is flatter, smoother and has traces of polish. Other surfaces are rough and worn.	L.74mm; W.5mm; T.2.5mm

2601	271	Incomplete. Top of head missing. Unexpanded head (L.3.5mm, W.6mm; T.3mm). Rectangular with rounded sides in section. Perforation is hour-glass shaped (D.1.5mm). Slight shallow groove, 11mm long by 1mm wide, extending from perforation down to shank. Shank is flattened oval to circular in section. Tapers from 6mm by 3mm at head to 1.5mm in diameter at blunt tip. Slightly bent/angled in centre. Surfaces along shaft are slightly uneven but are smooth and polished.	L.5mm; W.5mm; T.3mm
2606	912	Complete. Unexpanded head and tapering shank. Head rectangular with rounded sides in section. Eccentric cylindrical perforation (D.2mm). Shank is circular in section and tapers from 5mm by 4mm below head to 2mm at blunt tip. Surfaces are worn and rough but there are traces of polish along sides of shank.	L.63mm; D.4mm
2661	253	Complete. Unexpanded square head with rounded top (L.7mm; W.7mm; T.4mm). Rectangular with rounded sides, tapers slightly to one side in section. Off-centre perforation is rectangular with rounded corners, and is 3mm by 2mm. Head has smooth polished surfaces. Shank tapers from 5mm by 3mm below head to diameter of 1.5mm at blunt tip. Finely made with smooth polished surfaces.	L.54mm; W.4mm; T.3mm
4010	269	Incomplete. Top of head and the point and lower part of shank are missing. The shank is sub-rectangular in section. Tapers from 5mm to 4mm in diameter. All surfaces are highly polished.	L.25mm; W.4-5mm; T.3mm

PINS

Type 1: Plain bone pins

1300	253	Complete. Plain undecorated-headed pin. The head is undifferentiated from shank. Slightly rounded top; rectangular with rounded sides in section. It measures 4mm by 6mm by 4mm. No perforation. The shank is rectangular in section. Indents slightly about halfway down shank and tapers to a blunt but well-made point 2mm in diameter, from lower part of shank. Surfaces are smooth with patches of polish.	L.73mm; W.6mm; T.5mm
1352	255	Complete. Plain, undecorated, polished well-made pin. The head is undifferentiated from shank, slightly rounded top, and is rectangular with rounded sides in section. It measures 4mm wide by 3mm thick. No perforation. The shank is rectangular to circular in section, tapers from 4mm by 3.5mm to a 2mm diameter at blunt tip. Slightly curved in profile. Smooth, polished surfaces.	L.64mm; W.4mm; T.3.5mm
1744	239	Complete. Undecorated, finely-made pin with a plain undifferentiated head and a tapering shank. The head is rectangular with rounded sides in section. Slightly rounded top; roughly square; measures 5mm by 5mm by 2.5mm. No perforation. The shank is oval in section and curved in profile. Tapers from 5mm by 2.5mm at head to 2mm by 1mm at blunt tip. Surfaces are smooth and polished, highly so in places.	L.63mm; W.6mm; T.3mm

1745	244	Complete, fine, undecorated pin with plain, undifferentiated head. The head is flat-topped, circular in section, diameter of 3mm. No perforation. Traces of polish around top. The shank tapers very slightly from diameter of 3mm at head to 1mm at sharp tip. In centre, section is oval. Straight in profile and has smooth surfaces.	L.75.5mm; W.3.5mm; T.3mm.
1775	239	Complete. Fine, undecorated pin with a plain, undifferentiated head and tapering shank. The head is plain, flat-topped, rectangular in section and measuring 5mm by 4.5mm by 2.5mm. No perforation. Traces of polish. The shank is flattened oval in section, 4mm by 2.5mm; straight in profile. The lower part of shank widens slightly to 4.5mm by 3mm before curving slightly and tapering to blunt point of 2mm in diameter. Surfaces are smooth and polished.	L.59mm; W.4.5mm; T.3mm
3023	314	Incomplete. Plain pin with undifferentiated head and shank of fine, undecorated pin. The head is rectangular in section, 4mm by 1.5mm. Slightly grooved in one surface, 10mm long by 2mm wide, from top of pin. No perforation. Surfaces are smooth and polished. The shank is rectangular in section but broadens out to become circular before beginning to taper; measures 4mm by 4mm at head to 3mm diameter towards broken end. Surfaces are smooth and polished.	L.53mm; D.3mm

Type :: Annular-headed bone pins

598	47	Incomplete. Head fragment. An unexpanded flat rounded perforated head with rectangular with rounded sides in section. The perforation is oval-shaped of hour-glass form and slightly off-centre; diameter of 4mm by 3mm. The head is well-made, has smooth surfaces and remains of polish particularly along top of head. Bone is dark brown in colour. Beginning of shank at base of head is also oval in section.	L.12mm; W.10mm; T.3.5mm
705	208	Complete. In two parts. The unperforated head is expanded on one side and straight on the other with a tapering shank. The head is flattened oval in section; measures 10mm by 8.5mm by 5mm. Rounded top, unperforated but with slight indentation, 3mm in diameter, suggesting an attempt to perforate it. Smooth surfaces with traces of polish. The shank is sub-angular-shaped in section and tapers to circular section for blunt tip. Surfaces mid-shank have been squared off. The shank tapers from 7mm by 5mm below the head to 2mm in diameter at the tip. Slight groove or nick, 2mm by 2mm, in one side 11mm from tip which appears intentional.	L.91mm; D.5mm

918	203	Incomplete. Top of head missing. Undecorated pin with expanded rounded head. The head is rectangular with rounded sides in section. Perforation originally hour-glass in form but only about one-third remains, measuring 5mm in diameter. It is off-centre, and may be cause of breakage. Remaining piece of head measures 8mm by 8.5mm by 2mm. The shank is circular in section, gets thicker towards centre before tapering to point. Slightly curved profile. It measures 5.5mm by 4mm below head, expands to 5mm in diameter at centre and tapers to 1mm diameter at tip. Very rough, worn surfaces, though traces of polish evidence.	L.95mm; D.5mm.
1231	255	Complete. Undecorated pin with expanded head in two pieces. Circular expanded head of 10mm x 9mm by 2.5mm. Rectangular with rounded sides in section. Perforation is slightly eccentric, hour-glass in form of 3.5mm in diameter. Polish along top of head. The shank is flattened, oval in section just below head, becoming more rounded to circular-sectioned towards middle of shank. Straight in profile. Length is 63mm. Tapers from 5mm by 3mm below head to diameter of 5mm in centre and of 2mm at tip. Tip is still quite pointed. Polish along shank.	L.73mm; D.4.5mm
1467	239	Complete. Well-made pin with expanded head. Flat, expanded, circular head measuring 12mm by 10mm by 3mm. Rectangular with rounded sides in section. Perforation is hour-glass in form and 3.5mm in diameter. Very slight, shallow groove in one surface either side of perforation, but not continuing down shank. Surfaces are smooth, traces of polish along edges. Shank is rectangular with rounded sides in section; curves very slightly in profile. Tapers from 6mm by 4mm to diameter of 2mm at blunt tip. Smooth surfaces with patches of polish.	L.94mm; W.6mm; T.4.5mm
1727	217	Complete. Crudely-made pin with expanded head and tapering shank. The head is expanded from shank on one side. Flat-topped and roughly squared off. Rectangular with rounded sides in section; measures 12mm by 10mm by 4mm. Perforation is of hour-glass type and is slightly off-centre. It has a diameter of 2.5mm. There is polish along the top of the head and around the perforation. The shank is irregularly shaped, roughly circular in section; tapers from 7mm by 5mm below head to a diameter of 2mm, to blunt tip. Surfaces are rough and worn-weathered.	L.70mm; W.6.5mm; T.5mm
1768	244	Complete. Large fine undecorated pin with circular expanded head. The head is rectangular with rounded sides in section, slightly curved in profile, measuring 11mm by 10mm by 4.5mm. Slightly off-centre perforation, hour-glass in form, 4mm in diameter. The shank is circular in section, 4.5mm in diameter below head, 5mm in centre and 1.5mm at tip. Widens in centre before tapering to sharp point. Surfaces are smooth and worn. No traces of polish left.	L.101.5mm; D.5mm

1874	244	Complete. Finely-made. Undecorated pin with circular, expanded head and tapering shank. The head has a circular expanded head of 11.5mm by 10mm by 4.5mm. Rectangular with rounded sides in section, slightly curved in profile. The perforation is slightly off-centre, hour-glass in section, diameter of 2.5mm. Traces of polish around head. The shank is circular in section, tapers from 5mm in diameter below head to 1.5mm at blunt tip. Slightly curved profile. The tip is off-centre. Surfaces are smooth and worn with patches of polish.	L.102.5mm; D.4.5mm
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Annular headed pin with segmented point

2398	244	Incomplete. Elaborate pin head, broken at perforation. Head roughly inverted 'y'-shaped. Top is circular in section, tapering out to flattened oval section at perforation, from 3mm in diameter to 9.5mm by 5mm. About one-third of perforation is remaining; probably hour-glass in section. On upper part of head, there are four narrow circumlinear grooves which give it a beaded effect. Top of head is slightly rounded. Traces of polish. Circular section. Surfaces are smooth and worn with traces of polish.	L.47.5mm; W.5mm; T.4mm.
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2563	297	Complete; undecorated pin with circular expanded head (D.9mm; T.3mm) and tapering shank. Head is rectangular with rounded sides in section; centrally perforated. Perforation is 2mm in diameter and is hour-glass in section. Surfaces are smooth, with polish along top of head. The shank is rectangular, with rounded sides in section and middle of shank where it becomes circular; 6mm by 3mm below head, 5mm in centre before tapering to 1.5mm at blunt tip. Surfaces are smooth and worn with patches of polish, particularly around centre of shank.	L.102mm; W. at Hd. 14mm; D.5mm
2676	297a	Complete. Fine well-made pin with circular expanded head and tapering shank. Head (10mm by 12mm by 3mm) is rectangular with rounded sides in section. Large off-centre perforation is hour-glass in section and has a diameter of 5mm. Smooth worn surfaces. The shank is circular in section and straight in profile. Tapers from 5mm below head to 1.5mm in diameter at blunt tip. Surfaces are worn and rough but have traces of polish along shank.	L.68mm; W. at Hd.11.5, D.5mm

Type :: Nail-headed pins

1028	217	Complete. Well-made undecorated, flat nail-headed pin with tapering shank. Head is flat and oval-shaped, 10mm by 8mm. Tapers in to shank. No perforation. Traces of polish around top. Shank is circular in section and tapers, from 5mm to 1.5mm, to sharp tip. Surfaces are worn, traces of polish especially around tip.	L.71mm; D.5mm
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1457	43	Incomplete. Head and shank of a nail-headed pin. The head is round and flat (L.5mm; D.7mm) on top and narrow slightly to where it joins shank. Circular in cross-section with a slightly curved profile. The surface is worn with traces of polish. A small fragment is broken away at one side of head.	L.43.5mm; D.5mm
1633	239	Complete. Well-made, undecorated pin with 'nail' head and fine shank. The head is oval and flat-topped with a diameter of 7.5mm. Tapers in to shank. No perforation. Top is smooth and polished. The shank is circular in section and tapers from 5mm below head to 1.5mm at tip in diameter. Lower part of shank is worn and rough. Tip is blunt. Smooth surfaces and traces of polish, particularly around tip.	L.83mm; W.5mm; T.5mm
2989	1226	Complete. In two fragments. Nail-headed pin. Head is flat-topped and circular in section (4.5mm by 5.5mm). On one side it is in line with the pin, elsewhere it overhangs shank. A slight indentation below head, but shank then expands slightly and maintains that thickness until it tapers to a blunt tip (D.2mm). The shank is circular in section and straight in profile. Polished pin.	L.83mm; D.5mm

Miscellaneous bone pins

Crutch-headed pin

39	6	Incomplete. Lower part of shank and tip missing. Crutch-head pin with tapering shank. The head is flat-topped, rectangular in section; measures 7.5mm by 6mm by 3mm. Hour-glass sectioned perforation which is slightly off-centre and has a diameter of 3mm. On top of head is finely-incised 'x' to one side. Traces of polish around head. The shank is flattened oval in cross-section; slightly curved profile. Tapers from 6mm by 4mm below head to 5mm by 3mm where broken. Smooth, slightly polished surfaces but in some places worn and more rough.	L.52mm; W.5.5mm; T.3.5mm
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Segmented-head bone pin

499	56	Complete. Finely-made pin with decorated head, tapering shank and blunt tip. The head is circular in section. Ornate head divided into four unequal panels, between 2mm and 4mm wide, by four incisions, 5mm-1mm wide, which produce beaded effect. Traces of polish on top and around head. The shank is circular in section; has curved profile from mid-shank to slightly blunt tip. Tapers from 4mm, below head, to 2mm in diameter at tip. Traces of polish along shank.	L.77mm; D.3mm
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Paddle-headed bone pin

1022	217	Incomplete. Undecorated expanded head and shank of pin. The head is rectangular of 18mm by 11mm by 5mm; expanded on one side, goes straight up from shank on the other. Rectangular in section. Incomplete perforation on both sides; hour-glass in section and 2.5mm in diameter. Perforation attempts are not exactly opposite each other - would not join if continued through to opposing side. Surfaces are smooth with traces of polish. Only 20mm of shank surviving. Tapers from 7mm by 5mm below head to 5mm in diameter. Surfaces are smooth and worn with traces of polish.	L.39.5mm; W.7mm; T.5mm
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Pig-fibula pin

2162	281	Complete. Fine undecorated pin with naturally expanded head and tapering shank. Carved from pig fibula. Head formed by joint end of bone. Rectangular in section and measures 10mm by 13mm by 4mm. Triangular in shape - expanding from shank - and flat-topped. Perforation to one side which is funnel-shaped and has diameter of 2mm. The shank is fine, circular in section and straight in profile. Tapers from 7mm by 3mm below head to diameters of 3mm in centre and 1mm at sharp tip. Lower shank is very curved. Notch just above tip, 1mm by 1mm - probably natural. Smooth surfaces with traces of polish.	L.40mm; W.45mm; T.3.5mm
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Indeterminate bone pins/needles

511	98	Incomplete. Shank fragment. Circular in section and straight profile. Rough worn surfaces with traces of polish. Tapers from diameter of 4mm to 3mm.	L.31.5mm; W.5.5mm; T.4mm
585	41	Incomplete. Shank fragment. Oval in section and straight in profile. Smooth grey surface with traces of polish. Possibly from near tip of pin.	L.17mm; W.3mm; T.2.5mm
659	70	Incomplete. Shank and tip fragment. Shank is rectangular with rounded sides in section and straight in profile. Tapers from 4mm by 3mm to diameter of 1mm at blunt tip. Rough, worn surface, but traces of polish, especially around tip.	L.26mm; W.4mm; T.3mm
687	203	Incomplete. Tapering shank fragment. Circular in section and slight 'bulge' suggests that it may have come from centre of pin shank. Tapers in diameter from 4.5mm to 3mm. Smooth worn surfaces.	L.26mm; W.4.5mm; T.3.5mm
971	82	Incomplete. Short shank fragment. Diamond-shaped section. Bone is dark brown, almost black in colour. Surfaces are quite worn with traces of polish.	L.17.5mm; W.4.5mm; T.3mm
1088	217	Incomplete. Small shank fragment. Circular in section. Tapers from 5mm to 4.5mm. Smooth surfaces with traces of polish.	L.21.5mm; W.5mm; T.5mm
1089	85	Incomplete. Tip of finely-made bone pin. Shank is circular in section. Tapers from 4.5mm to 1.5mm in diameter, to blunt tip. Very, smooth, polished surfaces.	L.21mm; W.44mm; T.4mm

1095	85	Incomplete. Shank fragment. Oval in section. Tapers from 4mm by 3.5mm to 3.5mm by 3mm. Smooth surfaces.	L.12mm; W.3.5mm; T.44mm
1172	85	Incomplete. Tip of pin shank. Flattened oval in section and slightly curved in profile. Tapers from 4mm by 3mm to 1mm in diameter, to blunt point.	L.19mm; W.6mm; T.4mm
1178	219	Incomplete. Pin roughout. Crude shank. Head and tip are missing. Roughly circular in section; sides have been crudely squared off. Tapers, from diameter of 6.5mm to 6mm by 4mm, to semi-circular section. Polish along edges of squaring off.	L.27.5mm; W.4mm; T.3mm
1191	85	Incomplete. Small polished shank fragment. Circular in section, 4.5mm in diameter. Highly polished and dark grey in colour. Possibly from finely-made pin.	L.11.5mm; D.4.5mm
1196	90	Incomplete. Shank in two fragments. Circular in section and straight in profile. Tapers from 4.5mm to 3mm in diameter. At wider end, sliver of bone has been removed lengthways from underside - may be secondary reworking. Patches of polish along shank.	L.72mm; D.4.5mm
1234	255	Incomplete. Shank fragment. Oval in section, shows little sign of working though there are two smooth surfaces. Rough weathered surface.	L.15mm; W.8mm; T.7mm
1243	255	Incomplete. Shank and tip in two fragments. Flattened circular section. Tapers from 4.5mm by 4mm to diameter of 2mm at blunt tip. Slightly curved profile; tip is slightly off-centre. Polished surfaces - probably from finely-made pin.	L.40mm; W.4mm; T.3.5mm
1254	220	Incomplete. Shank and tip fragment. Flattened circular section, curved in profile. Tapers from 4mm by 3mm to 2mm diameter at blunt tip. Surfaces are worn and rough. Traces of polish along shank and around tip.	L.51mm; W.4mm; T.3mm
1287	221	Incomplete. Tip and shank fragment. Triangular in cross section with a slightly curved profile. Point is slightly rounded. Traces of polish on edges. Smooth surfaces.	L.27mm; W.4mm; T.3.5mm
1309	257	Incomplete. Tip and shank fragment. Flattened oval in section, 4mm by 3mm, and tapers to blunt tip of 2mm diameter. Curves slightly in profile. Traces of polish along shank and around tip.	L.33mm; D.3.5mm
1310		Complete. Pin/needle rough-out. The head (L.9mm, W.9mm, T.4mm) is slightly expanded and curved on one side and straight on opposite site. The top is flat. Shaft (L.51.5mm; W.6.5mm; T.4mm) is sub-rectangular in cross-section with one flat face and other side retaining the hollow natural bone. This narrows to an off-centre rounded tip. The upper surface and one long side appear polished. The opposite side and the underside are rough.	L.60mm; W.9mm; T.4mm
1472	239	Incomplete. Tip and lower part of shank. Circular in section and 5mm in diameter. Tapers to blunt tip of 2mm in diameter. Smooth surfaces.	L.36.5mm; D.5mm
1556	106	Incomplete. Fine shank fragment. Flattened oval section. Tapers from 3.5mm by 3mm to 2mm in diameter. Thinner end is worn and rough, otherwise surfaces are smooth.	L.31.5mm; W.3.5mm; T.3mm

1563	113	Incomplete. Shank fragment. Rectangular with rounded sides in section. Tapers slightly from 4mm by 3mm to 2mm in diameter at blunt tip, patches of polish. Surfaces are rough and worn along shank.	L.48mm; W.4mm; T.3mm
1648	51	Incomplete. Tip and shank of pin. Circular in section. Tapers from 5mm to 3mm in diameter at blunt point. Surfaces are very worn and abraded; traces of polish around point.	L.26mm; D.5mm
1710	239	Incomplete. Fragment of bone that tapers to a point. Flattened rectangular in section with a curved profile. Smooth though worn surfaces with traces of polish.	L.30mm; W.4mm; T.3mm
1717	239	Incomplete. Lower shank fragment of pin. Circular in section. Tapers slightly from 6mm in diameter to flattened circular section 3mm by 2mm. Rough surfaces but traces of polish towards where tip is broken off.	L.26mm; D.6mm
1721	239	Incomplete. Small shank fragment. Circular in section. Grey in colour, highly polished.	L.12mm; D.4mm
1748	239	Incomplete. Lower shank fragment. Circular in section and tapers from 4mm to 1mm at sharp tip. Small nick, 2mm by 1mm, about 10mm above tip which is possibly deliberate. Surfaces are smooth with patches of polish. Possibly from a finely-made pin.	L.40mm; D.4mm
1806	244	Incomplete. Roughout. Tip missing. Rough expanded head (L.9mm; W.8mm; T.5mm). Shank is circular in section and tapering to the tip. Surface now has some patches of the original surface but also abraded and worn areas. A small incised 'x' on the lower shank may be natural.	L.70mm; W.8mm; T.6mm
1849	244	Incomplete. Tip of head. Broken in antiquity. Top of head is flat and oval in cross-section. About one-third of perforation remaining. Top of head has evidence for wear and polish. The other surfaces are comparatively rough.	L.7.5mm; W.9mm; T.7mm
1850	244	Incomplete. Tip and shank fragment. Flattened oval section. Tapers from 4mm by 3mm to 1.5mm in diameter at sharp point. Smooth, worn surfaces.	L.18mm; W.4mm; T.3mm
1859	244	Incomplete. Tip fragment. Shank is circular in section and tapers to blunt point. Surfaces are very worn and abraded but there are traces of surface wear and polish.	L.17mm; D.4mm
2023	81	Incomplete. Tip and fine shank fragment. Oval in section. Tapers from 3.5mm by 2.5mm to 1mm by 0.5mm, to sharp point. Grey in colour. Uneven surfaces but highly polished.	L.23mm; W.3mm; T.2.5mm
2159	244	Incomplete. Tip and shank fragment. Rectangular in section with a curved profile. Tapers from 4mm by 3mm to a 1.5mm diameter at sharp tip. Smooth surfaces with patches of polish.	L.42mm; W.5mm; T.3mm
2197	282	Incomplete. Three shank fragments, only two of which are conjoining. Roughly circular in section. Tapering. Surfaces are abraded and worn. One fragment preserves a smooth polished strip on it.	L.40mm; D.5mm (2 conjoined) L.23mm; D.4mm

2240	69	Incomplete. Shank fragment. Circular in section and tapers in diameter from 4mm to 3mm. Dark brown in colour with smooth, worn but polished surfaces, particularly towards lower end of fragment.	L.29mm; D.4mm.
2284	283	Incomplete. Shank fragment. Oval in section. Smooth but worn surfaces - no traces of polish remaining.	L.26mm; W.3.5mm; T.3mm
2310	270	Incomplete. Tip and fine shank. Circular in section and curved in profile. Widens from diameter of 4mm at upper end to 5mm in centre before tapering to sharp tip of 1mm diameter. Two chips missing from one edge where shank has been broken, measuring 3.5mm by 1mm and 6mm by 4.5mm respectively. Smooth, worn surfaces. No trace of polish remains.	L.83mm; D.5mm
2377	255	Incomplete. Tip and fine tapering shank. Circular in section and straight in profile. Tapers from 4mm to 1mm in diameter at blunt tip. Surfaces are smooth with patches of polish on upper part of fragment.	L.37.5mm; D.4mm
2418	220	Incomplete. Tip and lower shank fragment. Rectangular with rounded sides in section and straight profile. Curves slightly and tapers from 5mm by 4mm to 1.5mm by 1mm at blunt tip. Surfaces are worn, slightly traces of polish around tip. From finely-made pin.	L.59mm; W.5mm; T.4mm
2565	297	Incomplete. Shank fragment. Circular in section. Surface is rough and worn but with traces of polish.	L.19mm; D.3.5mm
2701	1200	Incomplete. Off-split fragment from tip. Very tip is intact but rest of remaining shank is split. Flattened oval to circular in section. Tapers to sharp tip and is slightly curved in profile. Surface is smooth with traces of polish around tip.	L.32mm; W.4mm; T.2mm
2752	1211	Incomplete. Upper part of shank. Rectangular in section. Appears to have broken just below head. No sign of any expansion but break suggest that there may have been a perforation; just below break is very slight indentation in back. Shank then tapers, from 5mm to 3.5mm, to circular section, 4mm in diameter. Curved in profile and has a slight groove in one surface. Groove is 15mm long, 3mm wide and less than 1mm in depth. This pin may have been similar to 92E102:01137, 1744 or 2426.	L.52mm; W.5-4mm; T.3.5-4mm
2991	1231	Incomplete. Tip and fine shank fragment. Oval in section, tapering to circular-section sharp tip. Tapers from 5mm by 4mm to 2mm in diameter. Surfaces are polished, particularly around tip.	L.40.5mm; W.5-2mm; T.4-2mm

Bone Spindle-Whorls Catalogue (R. O'Brien) [Appendix 1.24 in Vol. 3]

Whorls

Find No.	Feature	Description	Dimensions
139	26	Plain ox femora whorl. Underside damaged on one side. Domed surface has traces of polish. Central perforation, drilled from upper surface, is hourglass shaped and splayed at the base.	D.43-45mm; T.15.5-28mm; <i>Perforation</i> W. 6-13mm; Wt. 15.8g.
220	26	Plain ox femora whorl. Central hourglass perforation drilled from the upper surface.	D.35-37.5mm; T.16-19mm; <i>Perforation</i> W. 5.5-9mm; Wt. 9.1g
2276	285	Plain ox femora whorl. Central perforation is barrel-shaped and drilled from one face.	D.42-49mm; T.18.5-33mm; <i>Perforation</i> W. 8-12mm; Wt. 19.7g
4034	239	Plain ox femora whorl. Underside damaged. Domed surface. Central perforation, drilled from upper surface, is splayed at the base.	D.38-41mm; T.22-27mm; <i>Perforation</i> W. 5.5-9mm; Wt. 12.5g

Miscellaneous Bone and Antler Artefacts Catalogue (M. FitzGerald)

[Appendix 1.25 in Vol. 3]

Late Bronze Age /possible late Bronze Age artefacts

Beads and Pendants

Find No.	Feature	Description	Dimensions
290	47	Tooth with circular perforation	
412	47	Incomplete; perforated tooth - broken across top. Small pointed tooth with perforation 7mm above tip of tooth. Perforation is 3mm in diameter, and cylindrical.	L.21mm; W.9mm; T.6mm
478	56	Complete; small polished cylindrical bead. Circular section; hour-glass perforation. Outer surface has two rough grooves, between which are two rough '+'s. May be natural features of bone. Polished surfaces.	D.10mm H.13mm;
2238	267	Incomplete; pendant in two halves made from a pig's tusk. Rectangular in section; tapers from 18mm to 8mm in width, at rounded point. Semi-circular open perforation in top - appears to be complete - it has finished edges. Grooves in both sides of pendant just below top, which measures 7mm and 10mm long respectively. Is split longitudinally in half. Pendant is polished.	L.46mm; W.18.5mm; T.10mm

Handles

263	26/14	Incomplete; two pieces of a possible haft. Carved from red deer antler. Rectangular in shape with thin rectangular curved section; very slightly curved profile. Shallow, irregular groove incised near one end of smaller piece, and larger piece has two roughly conjoining incised lines also near one end. The pieces are very worn.	L.41mm; W.20mm; T.4mm
1306	220	Incomplete; small, hollow handle broken at both ends. Fine, oval-sectioned. Central hollow of 4.5mm diameter. Very smooth, worn surfaces with faint traces of polish. Unclear what it may have been a handle for.	L.46mm; D.11mm; T.10.5mm
1344	220	Complete; slightly curved handle. Well-made. Oval to circular in section. Tapers towards flat and smooth top from 24mm by 18mm to 15mm in diameter. Numerous scratch marks on one surface towards hafting end. Surfaces are very smooth, worn. Traces of polish around top of handle. Unclear what it may have been a handle for.	L.92mm; D.23mm x 18mm
2233	270	Incomplete; perforated, broken handle. Well-made. Tubular with a hollow centre. Oval-sectioned, curves slightly in profile. Three perforations, 6mm - 7mm in diameter, in one surface, and two remaining in the other. Surfaces are worn and smooth; traces of polish along surfaces and around top. Unclear what it may have been a handle for.	L.125mm; W.23mm; T.17mm

Spatula

59	10	Bone spatula. Incomplete; handled, spatula-type object, broken across 'blade'. Carved from large mammal rib. Finely made, flat	L.100mm; W.23.5mm;
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		implement. Roughly circular expanded head, 19mm by 22mm; narrow handle, 34mm by 13mm by 3mm - widens slightly to form blade 40mm by 3mm thick. Blade widens slightly from 22mm below handle to 23.5mm at breakage point. Curves slightly in profile.	T.3.5mm
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Double-perforated object

118	26	Incomplete; Double-perforated bone tool with a blunt and rounded point at one end and broken across the upper perforation at the other. Lower perforation is off-centre. Traces of polish particularly around blunt point. Oval in cross-section.	L.31.5mm; W.5.5mm; T.4mm
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4014	267	Incomplete. Tip fragment. Sub-rectangular in section. The tip is blunt but it appears to have been damaged (as opposed to broken) in antiquity.	L.38-39mm; W.4mm; T.3mm
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Awl

1034	217	Small fine awl with flattened circular section. Handle part is 26mm by 5mm by 4mm, and point is 16mm by 3mm in diameter. Head is rounded off, and tip is blunt. Traces of polish remaining but surfaces are very abraded.	L.42.5mm; W.5mm; T.4mm
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Rib knives

1082	85	Rib bone, which has been worked. Tapers to a rounded point at end. Sides are damaged/chipped and it has broken. Bone is smooth. Patches of surface wear/polish.	L.123mm; W.28mm; T.10mm
1152	85	Incomplete; possibly worked cattle rib which is broken. Thin fragment of probably rib. Flattened oval in section, straight in profile. Slightly rounded, but chipped at one end. Piece is very worn and smooth. Traces of polish on both surfaces. Similar to 1082 but is thinner and end has not been worked to a point.	L.72mm; W.8mm; T.5.5mm

Pronged implements

685	216	Gouge? Incomplete, perforated head of possible gouge. Broken across the shank. Head of gouge formed by joint of large bone. Perforation, diameter 6.5mm, in top of joint. Traces of polish around perforation, otherwise surfaces are worn.	L.70mm; W.37mm; T.11mm, W.O.P.4mm
4013	267	Gouge. A complete hollow object, sub-triangular in section. Both ends are pointed. The narrow end is defined by a single flat-tipped blunt point and is chipped at the tip. The wider end has two pronged points. The area between these points was notched in a roughly rectangular shape. Also it appears that originally there was a third point. Its condition is much poorer than the narrow end and the tip of one of its points is broken. There are traces of polish on the gouge, particularly on the underside, and around the edges of the point at the narrow end.	L.7.6mm; W.2.5mm; T.2.3mm
4015	257	Incomplete hollow worked bone implement. Both ends are	L.102mm;

		double-pointed but in different planes. The tips of all four points are now damaged.	W.27mm
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Indeterminate artefact

2722	938	Incomplete fragment of irregular worked bone. Hollow semi-circular sectioned bone. Two semi-circular shaped notches cut out of one edge, of 8mm and 12mm diameter respectively. Traces of polish; one side is blackened.	L.60mm; W.12mm; T.3mm
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Early medieval artefacts

Combs

Find No.	Feature	Description	Dimensions
48	6	Incomplete; sideplates, teethplates, teeth and pegs of decorated, double-sided comb. One end of the comb is missing. Probably carved from antler. Sideplates. Two 'c'-sectioned side plates, with two remaining, broken, pegs in each. One peg joins with another in other side plate, joining two together. One end of sideplates is smoothed and polished. Both sideplates decorated with rectangles incised with diagonal lines. Pegs holding sideplates together were in place before decoration was carved. Teethplates: Two pieces and four fragments of teethplates. One has complete tooth, and on opposite side part of tooth, still attached. Complete tooth is 19mm from base to tip. Both pieces of teethplate have broken where perforated. These perforations, diameter 3.5mm-4mm, were for pegs to hold teethplates in place. Teethplates are 20mm wide by 3mm thick. Teeth are rectangular in section and taper from 3mm by 2mm to 1.5mm by 1mm. 43 teeth remaining, including two still attached to teethplate. Pegs: Five remaining pegs, three of which are still in sideplates; measure 12mm -13mm long, and <i>ca.</i> 5mm in diameter. Taper slightly from one end to other, in some cases are slightly curved and vary in section from circular to oval.	L.71.5mm; W.19mm; T.5mm
356	6	Incomplete; fragments from comb sideplate and endplate; one comb tooth. Sideplate: Small fragment of sideplate, 15mm by 5mm by 3.5mm. Appears to have had same type of incised decoration as 92E102:48. Decorated surface is polished. Part of peg perforation remaining. Endplate: Two small, probable end plate fragments. Larger is 19.5mm by 11mm by 3mm. Both have 'dot and circle' decoration, circles are 4.5mm in diameter, and dots 1mm in diameter.	L.32mm; W.11mm; T.3mm

Buttons

1450	22	Incomplete; <i>ca.</i> half of decorated, single-perforated button. Carved from an unidentifiable bone. Finely made with convex front and concave back. Flattened semi-circular in section. Front is decorated with two finely incised, circumlinear lines around outer edge and around edge of central perforation. Cylindrical perforation 4.5mm in diameter. Reverse of button is plain and, as with rest of button, is worn and smooth with traces of polish.	D.22.5mm; W.15mm; T.4mm
2261	267	Complete; circular disc/ button with two perforations. Probably carved from a scapula of a large mammal. Flat disc of bone with two off-centre perforations; one is circular, diameter of 3mm. The second is roughly rectangular and is 5mm long by 3.5mm wide. The disc is very slightly curved in profile, and has very worn surfaces. It thins slightly, to 1.5mm, towards edge in some places. Possibly some sort of weaving tablet.	D.35.5mm; T.2mm

Ferrule

131	14	Incomplete; half of a small, decorated haft. Carved from a red deer antler. Cylindrical shaped, rectangular in section with rounded sides. Outer surface is very worn, some horizontally incised circumlinear lines remain; a pair at each end and three in the centre. Perforation was cylindrical; diameter is 8mm.	L.18mm; D.12mm; T.3mm
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Whalebone chopping board

56	6 \ 10	Whalebone chopping board. Incomplete; oval-shaped, flat, piece with one end chipped away. 'Slice' of bone with a smoothed surface with numerous scratch marks on it. The outer surface is rough - natural bone appearance. Edges are smooth and rounded but chipped in places. Slightly curved in profile.	L.110mm; W.67mm; T.8mm
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Gaming piece or whorl roughout

1221	51	Bone Disc. Complete oval-shaped charred bone disc. Rectangular section. Slightly burnt. Smooth surfaces with traces of polish. Edges of one surface are chipped. Possibly a gaming piece.	D.25.5mm x 19.5mm; T.6.5mm
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