

Appendix III

The lithic assemblage

(Conor Brady)

Introduction

This report provides an overview of the lithic assemblage from the excavation of Site M at Knowth, Co. Meath. Most of the finds in this assemblage, many of which were clearly manufactured in prehistoric times, appear to have been derived from medieval or later contexts rather than *in situ* prehistoric deposits. A total of 577 artefacts were examined and included in the analyses here. Additional pieces that were catalogued include a plough pebble of probably 13th-century date (O'Kelly 1976; Brady 1988) and two pieces of bone. All artefacts were measured to the nearest millimetre and weights were recorded for all flint pieces to the nearest gramme. The colour of all flint pieces was recorded objectively using Munsell Soil Colour Charts where macroscopic assessment was not precluded by cortex, patination or burning. As the assemblage under discussion is from Knowth, Co. Meath, the most relevant comparisons are likely to come from the assemblages from the excavation of the passage tomb. To facilitate this comparison, the analysis of this assemblage follows that used by Dillon in her work on the Knowth assemblages (1997), which itself was based on the classification used by Peterson (1990, Table 4).

Raw Material

The assemblage is dominated by flint but there is a range of other lithic materials present. Dillon, in her analyses of the assemblages from Knowth, subdivides flint into chalk flint, pebble flint and burnt flint (Dillon 1997). This seems to have been done on a somewhat subjective basis taking into account such factors as artefact size, colour, flint quality and cortex texture. While a more empirical approach would have been preferable for the purposes of replication, it appears that Dillon's assessments have a high degree of validity as key patterns she identified at Knowth also appear to be repeated in the assemblages from Newgrange (Brady 2006, 210). An attempt was also made here to identify separate raw material components in the flint assemblage using the same criteria, but this was unsuccessful due to the nature of the assemblage.

Table 4: Assemblage raw material composition

Raw Material	Frequency	%
Flint	352	60.9
Quartz	200	34.6
Chert	2	0.3
Jasper	6	1.0
Chalk	1	0.2
Sandstone	2	0.4
Unknown	15	2.6
Total	578	100.0

Only two of the artefacts in the present assemblage have a cortex texture approaching chalkiness, which indicates an *in situ* origin for the flint. These are an incomplete secondary blade (255a), one of the largest pieces in the assemblage, and a bipolar flake (255b). Of the rest of the flint artefacts, a number of them are large pieces, e.g., a complete tertiary flake (198) with a length of 77mm and a breadth of 38mm; a worked chunk (257) with a maximum dimension of 63mm and the incomplete blade mentioned above with a length of 59mm. However, there was also an unworked pebble in the assemblage (30) which had a maximum dimension of 57mm, indicating that flakes close to this length could be derived from pebble flint. Flint pebbles collected in the area are known to occasionally reach dimensions of 70mm, indicating that quite large flakes can be the result of the knapping of pebble flint and cautioning against the automatic assumption that size implies a chalk source. It is likely that much of the pebble flint exploited for tool-making in the Bend of the Boyne area was sourced from shingle beach deposits along the Louth and Meath coasts (Brady 2006, 259–60). The remaining cortical pieces in the assemblage suggest a pebble flint origin for the raw material but, although unverifiable with only macroscopic examination, the possibility exists that some proportion of the non-cortical material may derive from a chalk source.

Analysis of the range of colours present in the flint assemblage reveals a wide diversity (Table 5). Generally chalk flint is taken to be white to grey, alternatively reddish-brown (often referred to as 'caramel' which also occasionally implies a degree of translucence). Shades of yellow account for 15% of the assemblage, shades of grey a further 15 per cent, shades of brown 65% with the remaining 5% being accounted for by various shades of red. Some of the grey and reddish-brown artefacts could have come from an *in situ* chalk raw material source but as these colours also turn up in pebble flint assemblages, without further indication of raw material type, it is unsafe to assume that these are from a chalk source.

Somewhat surprisingly, chert is very poorly represented in this assemblage with only two pieces present, just one of which is clearly worked. Chert is almost

Table 5: Flint colour analysis.

Flint Colour	Frequency	Subtotal	%
Pale yellow	10		
Olive yellow	1		
Reddish-yellow	1		
Brownish-yellow	10		
Yellow	7	29	14.6
Light grey	11		
Pinkish-grey	3		
Light brownish-grey	11		
Grey	4	29	14.6
Very pale brown	15		
Pale brown	11		
Light brown	1		
Light olive brown	7		
Light reddish-brown	1		
Light yellowish-brown	10		
Greyish brown	7		
Olive brown	2		
Reddish-brown	1		
Yellowish-brown	31		
Dark yellowish-brown	9		
Dark greyish-brown	1		
Brown	10		
Strong brown	23	129	65.2
Yellowish-red	8		
Red	2	10	5.1
Pink	1	1	0.5
Total	198	198	100.0

constantly present in small but significant quantities in all assemblages from the Bend of the Boyne and is almost certainly available in the local glacial tills (Brady 2006, 262). In the assemblages from the main monument at Knowth, for example, the proportions range from zero in the earlier 'Western' Neolithic to a high of 18% in the 'Decorated Pottery' complex (Dillon 1997, Fig. 39, 199). Another anomalous figure is that for quartz which is over-represented relative to other excavated assemblages from the Bend of the Boyne area. Again, the figures from the analyses of the Knowth assemblages indicate figures in the order of between 1% and 5% (*ibid.*). In this assemblage, almost 35% is quartz. Of this group over 50% may not have been knapped, although recognition of deliberately worked quartz from prehistoric contexts is difficult compared to finer-grained stone types like

Table 6: Assemblage composition.

Flint	Quartz	Jasper	Sandstone	Subtotal	%				
	Chert	Chalk	?	Total					
Selection of Material									
pebble	30	38	1	3	1	4	77		
split pebble	3	12		2			17		
tested pebble	2	1					3	97	16.6
Production of Tools									
single-platform core	3	1					4		
multi-platform core	8	2					10		
bipolar core	6						6		
core rejuvenation flake	10						10		
trimming flake	10						10		
bipolar splinter	1						1	41	7.3
Discarded Pieces									
unutilised flake	63	9					72		
unutilised bipolar flake	1						1	73	12.7
Unmodified Tools									
utilised flake	38						38		
utilised blade	7						7		
utilised bipolar flake	2						2	47	8.2

flint and chert (Warren and Neighbour 2004). Quartz does not turn up in such quantity in the local soils so much of the material present may have been sourced outside the area and transported to the site and as a result would have had a particular value. The material was brought in some quantity to the tombs in the area for inclusion in features and settings on the monuments themselves and it is a small step for the inhabitants of the area to take, either at the time of the construction of these features or subsequently, to use some of this as a raw material for tool manufacture. Indeed, it is remarkable that more use is not made of this material for tool making given the quantities that were brought into the area. The quartz found at Site M may represent opportunistic gathering of conveniently available stone some time after the initial transportation of the material to the major sites at Knowth and Newgrange or there may have been a more charged symbolic role invested in the material. It may be analogous to the chert-working area discovered during the excavation of the henge at Monknewtown and may reflect specific cultural and contextual attitudes towards the appropriate use of particular raw materials (Sweetman 1976, 68).

Table 6: Assemblage composition (continued).

Flint	Quartz	Jasper	Sandstone	Subtotal	%	
	Chert	Chalk	?	Total		
Modified Tools						
button scraper	4			3		
concave scraper	5			5		
end scraper	5			2		
side scraper	2			5		
end and side scraper	2			2		
scraper	13			13		
knife	3			3		
retouched flake	33			33		
retouched blade	2			2		
retouched chunk	1			1		
serrated flake	1			1	71	12.3
Miscellaneous						
angular chunk	90	73	1	1	4	169
angular chunk, unworked	63				4	67
chip	4					4
spall	3				3	6
water-rolled cobble				2		2
					248	43.0
Total	352	199	2	6	3	15
					577	577
						100.0

A small number of other material types are represented in the assemblage. Jasper is a material that commonly turns up in passage tomb contexts and was used for the manufacture of beads and small pendants. Some of the pieces here were apparently deliberately worked and while none showed clear signs of shaping, drilling or grinding, they may be related to attempts to manufacture such objects. The chalk pebble may also be of significance in this regard. This example was unworked and it was also not close to being spherical but chalk balls are also common among the grave-goods from passage tombs (Eogan 1986, 142–4; Herity 1974). Other materials are also present and although it is difficult to see these as being artefactual, they may nonetheless have been gathered for their value as unusual or distinctive materials.

Table 6 indicates that the assemblage is dominated by miscellaneous artefacts. Most of these are angular chunks but of these, many are quartz and a significant proportion appears not to have been formally knapped. A large proportion of the quartz pieces are angular chunks (68%). Worked chunks represent 37% of the total number of quartz pieces and unworked chunks represent 32%.

There are many unworked flint pebbles present and a small number of these have been tested or worked to a small degree. However, the initial selection and testing of raw material is likely to have taken place elsewhere. There is some evidence for the production of tools on the site in the form of a range of core types, mainly multi-platform but including some single-platform. Four of the cores were quartz. A range of debitage was also identified and, although soft hammer percussion dominates, some bipolar cores and related material are also present.

Flakes are common in the assemblage, accounting for just over 18% and a small number of blades are also present, all of which show macroscopic signs of having been utilised. Nine clear examples of quartz flakes were identified. 19% of the flakes are primary, 26% are secondary and 55% are tertiary. The dominance of tertiary flakes and the relatively small number of cores in the assemblage again suggest that production activities were carried out elsewhere.

Tools account for just over 20% of the assemblage. There is a wide range of retouched forms present although the categories that dominate are less formal pieces like retouched flakes and blades. Five concave scrapers were found (90, 94d, 137c, 172c, 218); all were of flint. None were of Herity's 'classic' type with a well-formed concavity and parallel dorsal ridges and are thus referred to as 'concave' rather than 'hollow' scrapers (1987, 137). They are a frequent find in court tombs and they make frequent appearances in the Bend of the Boyne assemblages (Brady 2006, 221, Fig. 4.19). Woodman argues that hollow scrapers are most frequent on sites after 3,500BC and includes them in a Later Neolithic toolkit, and further suggests that the concave scraper is present in Earlier Neolithic assemblages in some numbers (Woodman 1994, 215). Both of these scraper forms are also present in post-Neolithic levels in the Bend of the Boyne and, because of their longevity, are of limited use as chronological indicators (Brady 2006, 221–2).

Four button scrapers were found (25f, 161a, 194a, 270), which are common finds in the Bend of the Boyne assemblages and especially from Knowth. Caution is advisable in regarding these tools as chronologically diagnostic, especially where a small pebble flint industry is being practiced. Dillon refers to these artefacts as 'small rounded scrapers' having maximum dimensions of 20–30mm and a symmetrical cross-section. She argues that these are a 'miniature' form of scraper and that their small size is related to their function (Dillon 1997, 254–5). In all cases in the Bend of the Boyne they turn up in Late Neolithic/Beaker contexts and may be regarded as reliable indicators of Late Neolithic/Beaker Period activity (Brady 2006, 222, Fig. 4.19).

A range of other scraper forms is present, including end (74, 97a, 123a, 159c, 205), side (70, 84h, 159d) and end and side scrapers (69, 98a). All are frequently found in the Bend of the Boyne assemblages and all forms are present in more than one chronological period. End and side scrapers do not appear in the Bend of the Boyne assemblages until the Middle Neolithic when they occur in the

Newgrange Sites K and Z and Knowth Beaker and Grooved Ware assemblages (Brady 2006, Figure 4.19). Scrapers are common, with 13 examples in the assemblage (81c, 84d, 92e, 94h, 97a, 100b, 135, 160b, 161b, 186, 213a, 248a, 249). Knives are also present (2, 108) and, again, these are found in assemblages of all periods from the Bend of the Boyne. 33 retouched flakes are present in the assemblage and are the single most numerous form of modified tool, while there are also two retouched blades (122a–b) and a retouched chunk (137b). An unusual piece is the serrated flake (274c), which is bifacially retouched with alternating large, relatively crude flake removals along two sides.

Conclusion

It is difficult to see any of the pieces in this assemblage as being directly related to the early medieval features recorded during the excavation and it is likely that it represents activity at the location during prehistory. As no prehistoric features were recognised during the excavation, these pieces are in all likelihood residual, although few pieces show signs of abrasion. Another possibility, albeit improbable as there is generally little convincing evidence of large-scale exploitation of lithic resources for tool making after the prehistoric period (see Edwards 1990), is that they were transported during the early medieval period from the main monument at Knowth, where considerable early medieval activity is known to have taken place involving the disturbance of prehistoric levels.

Assuming that this assemblage was deposited in prehistoric times, it is likely that it represents activity spread over a number of time periods. Given the location of the site in the landscape, it is unlikely to have been an attractive location for any form of prolonged residential or domestic activity and probably represents a range of task-specific off-site activities.

In spite of these problems, the assemblage is of significance in that it adds to the picture of knowledge of prehistoric activity in the Bend of the Boyne. The assemblage is especially important as it represents off-site activity and, unlike most of the lithics assemblages from the Bend of the Boyne, was not recovered from the immediate vicinity of one of the major prehistoric monuments.

REFERENCES

- Brady, C. (2006) A landscape survey of the Newgrange environs: earlier prehistoric settlement at Brú na Bóinne, Co. Meath. Unpublished Ph.D. dissertation, School of Archaeology, University College Dublin.
- Brady, N. (1988) 'The plough pebbles of Ireland', *Tools and Tillage*, 6, 47–60.
- Dillon, F. (1997) 'Lithic assemblage', in G. Eogan and H. Roche, *Knowth (2): settlement and ritual sites of the fourth and third millennia BC*, 77–85, 193–6, 199, 250–5, 254–5. Royal Irish Academy, Dublin.
- Edwards, N. (1990) *The archaeology of early medieval Ireland*. Batsford, London.

- Eogan, G. (1986) *Knowth and the passage tombs of Ireland*. Thames and Hudson, London.
- Herity, M. (1974) *Irish passage graves*. Irish University Press, Dublin.
- (1987) 'The finds from Irish court tombs', *PRIA*, 87C, 103–281.
- O'Kelly, M.J. (1976) 'Plough pebbles from the Boyne Valley', in C. Ó Danachair (ed.) *Folk and farm: essays in honour of A.T. Lucas*, 165–75. RSI, Dublin.⁷⁷
- Peterson, J.D. (1990) 'From foraging to food production in south-east Ireland: some lithic evidence', *PPS*, 55, 88–99.
- Sweetman, P.D. (1976) 'An earthen enclosure at Monknewtown, Slane, Co. Meath', *PRIA* 76C, 25–73.
- Warren, G. and Neighbour, T. (2004) 'Quality and quartz: working stone at a Bronze Age kerbed cairn at Oldcote, near Calanais, Isle of Lewis', *Norwegian Archaeological Review*, 37, 83–94.
- Woodman, P.C. (1994) 'Towards a definition of Irish Early Neolithic lithic assemblages', in N. Ashton and A. David (eds.), *Stories in stone*, 213–8. Occasional Paper 4. Lithic Studies Society, London.