THE SAVILLE GRANT AWARD: THE LITHIC ASSEMBLAGE FROM EAST PARK, DRUMOAK, ABERDEENSHIRE FIELD WALKING (2019)

Ann Clarke

INTRODUCTION

East Park is a farm on the north side of the Dee immediately west of Park Bridge. The site was initially recognised by Dr John Grieve in the 1970s. Between 2016-19 Mesolithic Deeside volunteers walked the field. The lithics report below is based on the 2019 campaign of walking the entire field made possible by the Saville Grant.

The field (field code EP1) encompasses what appears to be three river terraces and test-pitting in 2018 explored some of these geomorphological features. The highest terrace, more than 34m asl, covers the northern part of the field and is a broad glaciofluvial terrace of Upper Palaeolithic age. Grieve's collection came from this terrace surface, in the north-east of the field. Test-pits dug on this terrace surface had thin topsoils on to gravel. However, TP 37 was positioned in a shallow river channel where nearly 60cm of 'clean' sand underlay the topsoil and the evidence suggests there is a high likelihood that Mesolithic artefacts or features may be preserved in areas of thick sand accumulation (Richard Tipping pers comm). The density of finds in Grieve's collection might also suggest this.

Terrace 2 is poorly preserved: it has not been related to sea level and it is not known whether the lithics are in situ. Terrace 3 is around 30m asl. The age of this terrace is not known but is thought, this close to the river, to be post-Mesolithic in age, so the Mesolithic lithics may have been washed onto this surface from above.

PIRSL/OSL data was collected by Tim Kinnaird, University of St Andrews and geological advice was given by Dr Richard Tipping, University of Stirling.

The results of the 2019 lithic collection below have not yet been plotted against the three terraces identified.

A total of 2868 flaked lithics was recovered during field walking of the entire field at East Park in 2019. Preliminary results, presented here, indicate occupation of this area from the Late Upper Palaeolithic through to the Late Neolithic. The lithics were identified and catalogued by material, condition, type, sub-type and classification and measured where appropriate. This report serves as a first step towards the understanding of how and when the lithics were deposited in the area and no detailed analysis has been carried out on the raw materials or tool types present.

RAW MATERIAL

Most of the flaked lithics are flint and there are nine pieces of quartz or quartzite, three pieces of rhyolite and a flake of chalcedony (Table 1). Most of the flint would have come from gravel sources in the region.

Several colours of flint were identified and summarised into five main colour groups in Figure 1. Grey flint was the most common followed by brown flint and both encompassed many shades and textures including mottled grey and mottled brown flint. Rolled pebble cortex was present on a large proportion of this flint; visible on primary and secondary flakes (Figure 1) as well as the cores, which indicates the main source for this grey and brown flint to be inland gravel ridges such as Buchan.

Some of the identifiable Late Neolithic flint working at East Park used a mottled grey flint and it is possible, though not quantifiable here, that this flint came from a

Table 1: EP19 assemblage composition.

	Flint	*Rhyolite*	*Quartzite*	*Chalcedony*	*Total*	*Burnt Flint*	*Frost-shatter flint*
Blades	683				683	55	3
Flakes	691		5	1	697	26	9
Flake fragments	469	1	1		471	140	25
Retouched tools	92				92	3	1
Cores and pebbles	184				184	18	4
Small flakes	410				410	46	1
Chunks	228	1	2		231	101	13
Spalls	98	1	1		100	70	19
Total	2855	3	9	1	2868	459	75

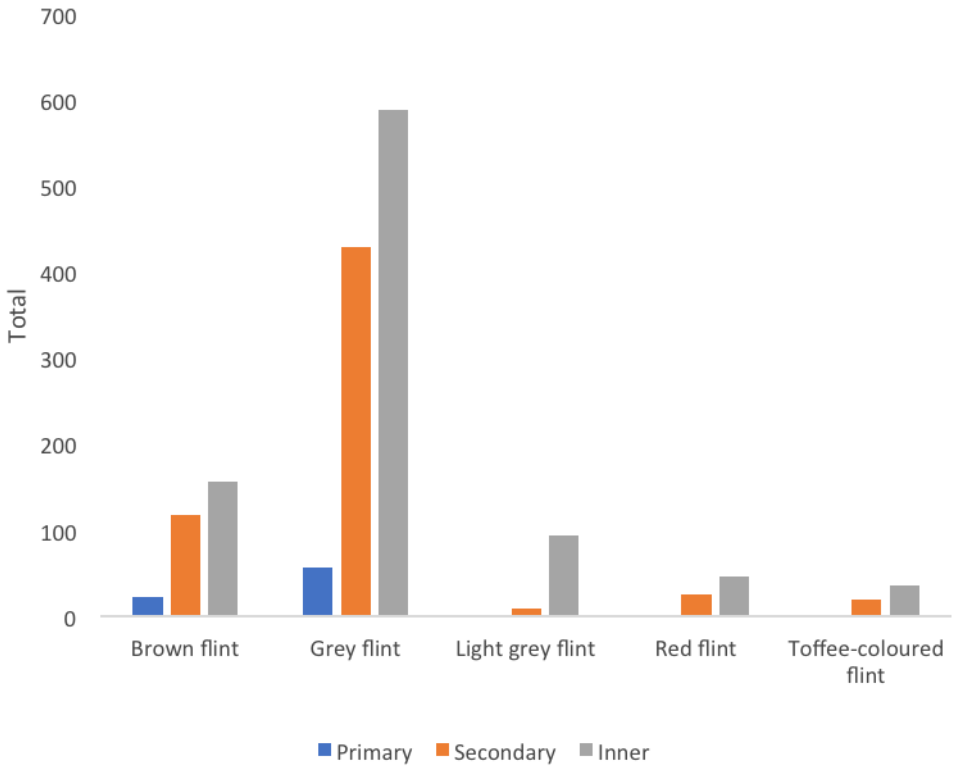

Figure 1: Flint type and cortex.

different source to the local gravels and was brought in from outside the area, perhaps further south down the east coast.

A few lithics were made from flint which was not immediately recognisable as being local. These included a core (EP-137-19). Blade tools were made from an unusual banded grey flint (e.g. Illus. 1 607.9, Illus. 2 743.2) (see Discussion).

A specific material - light grey flint - is identifiable from the rest of the grey flint (Figure 1). This material is an almost luminous light grey in colour and mottled with white. It was used mainly for blades and retouched tools (Figure 2) and was likely brought in from outside the region. An unusual pink flint used to make an obliquely blunted blade (Illus. 3 1789.2-19) would also have been acquired from elsewhere.

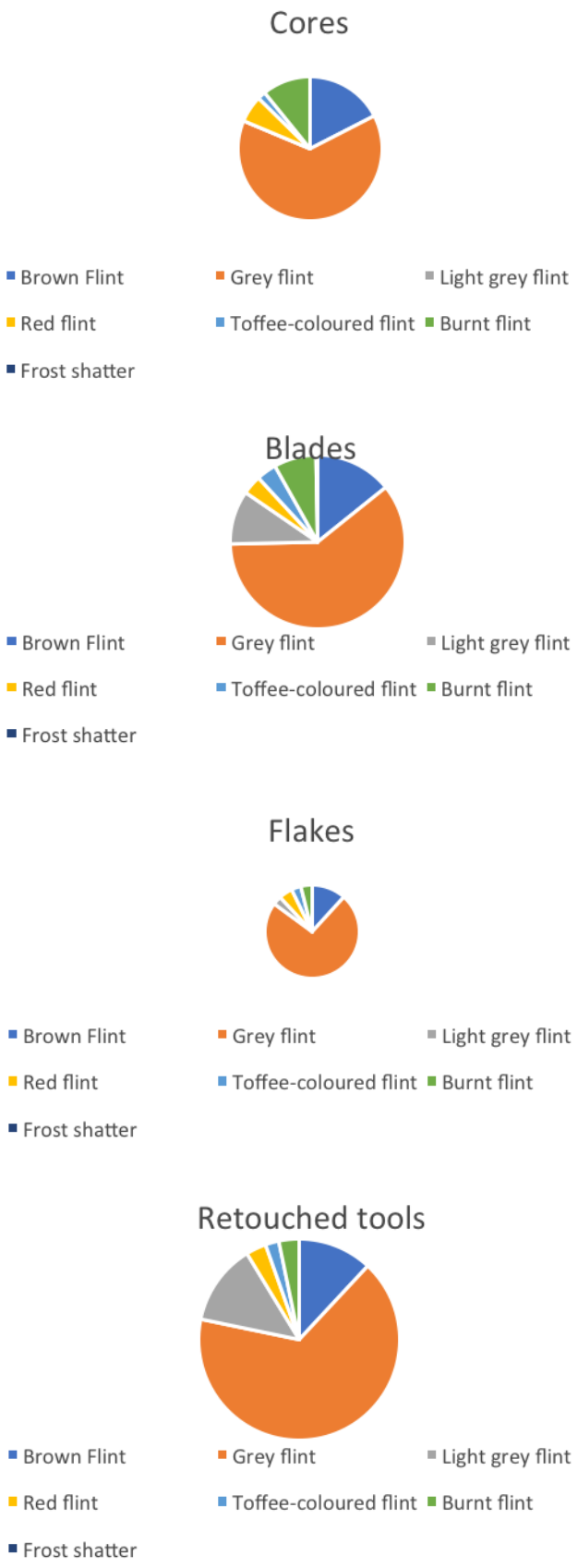

Figure 2: Proportions of material and artefact type.

Another source for the flint is the beach deposits along the Aberdeenshire coast from which pebbles of grey, red, yellow and brown flint can be collected. This knapped material cannot confidently be separated visually from the gravel flint as it is a subjective analysis but in general the beach pebble flint is purer in colour and texture than flint from the gravel source.

There is little evidence that rhyolite was exploited. A flake fragment, chunk and spall were identified as well as some natural chunks but nothing suggested the deliberate use of a resource. Pebble cortex on the chunks indicate a secondary source for rhyolite which was likely part of the natural river gravels.

A small amount of quartz and quartzite was knapped (Table 1), including a flake of an unusual quartzite from a broad blade core (EP-180-19).

Chalcedony was present as one flake. This had 'country rock' adhering to it indicating a vein source, as oppose to a rolled source, for the chalcedony.

The assemblage was in reasonable condition: the flints were not heavily rolled, or patinated but 19% had been affected by thermal alteration. Burning clearly affected 16% of the assemblage leaving a white calcined surface and breakage whilst a further 3% were cracked either by frost shatter or heat. All the artefact types had a proportion of burnt pieces but the flake fragments, chunks and spalls had higher numbers because of the breakage and spalling caused from heat damage (Table 1). The burning and frost shatter could have occurred whilst the lithics were on the surface of the plough soil and exposed to crop burning and winter temperatures.

PRIMARY WORKING

A wide range of cores and flaked pebbles are represented in the collection. The most common type (half of all the cores) is the single-platform core from which blades were removed (Table 2). They were quickly produced by quartering a large pebble and, using one fractured face as the platform to flake from the other fractured face towards the back of the pebble. Initially flakes were removed in order to prepare the core for blade removals (hence the numbers of these cores with flake removals (Table 2)),then blade removal took place around the platform perimeter. The cores were worked towards the back of the quartered nodule and on two-thirds of these cores a patch of pebble cortex remains on the back. Five

Table 2: Core types.

Core types	*Blade removal*	*Flake removal*	*Blade and Flake removal*	*Total*
Single-platform core	75	10	6	91
Opposed platform	9			9
Right-angled platforms	2	1	1	4
Multi-platform core		13	2	15
Disc core		6		6
Bipolar core		10		10
Core fragment	n/a	n/a	n/a	22
Flaked chunk	n/a	n/a	n/a	1
Flaked pebble	n/a	n/a	n/a	2
Half pebble	n/a	n/a	n/a	8
Quarter pebble	n/a	n/a	n/a	15
Complete pebble	n/a	n/a	n/a	1

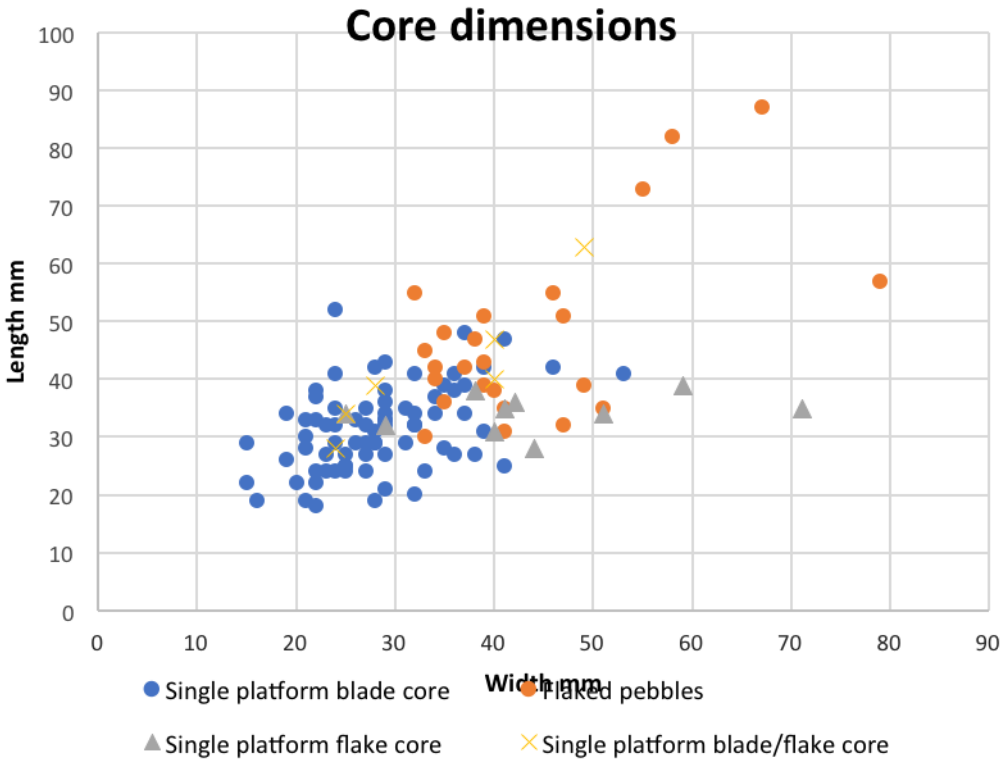

Figure 3: Dimensions of single platform cores and flaked pebbles (including halved and quartered and lightly flaked pebbles).

cores were worked towards a prepared flat inner back. The rest were worked around the whole of the platform. All stages in this simple but specialised reduction process are present in the collection including the halved and quartered pebbles (Table 2) as well as the range of single platform cores showing the various stages of removal from flakes to blades. This is well illustrated in Figure 3 which shows how the nodule became reduced in size throughout the knapping process from flaked pebble to single-platform blade core.

Other blade cores are slightly more complex with opposed platform working or with platforms made at right angles to each other (Table 2, Figure 4). These occur in the mid-range of sizes for the single platform cores and were not reduced to the same extent.

The multi-platform cores and disc cores were knapped to produce flakes (Table 2) and are indicative of Late Neolithic flint working. These vary in size but tend to have larger dimensions than the single-platform cores (Figure 4). Ten bipolar cores were also collected (Table 2) and are amongst the smallest of all the cores (Figure 3) reflecting the tendency to use this reduction technique on previously manufactured flakes and chunks.

THE PRODUCTS OF KNAPPING

Blades were the intended products of single platform and opposed platform core working. There is a wide range of lengths and breadths which suggest the assemblage was produced from different chronological occupations. Lengths of complete blades range from 12mm to 97mm with a concentration between 24mm and 30mm (Figure 6). Half of the blades were broken and these attenuated lengths also show a wide size range.

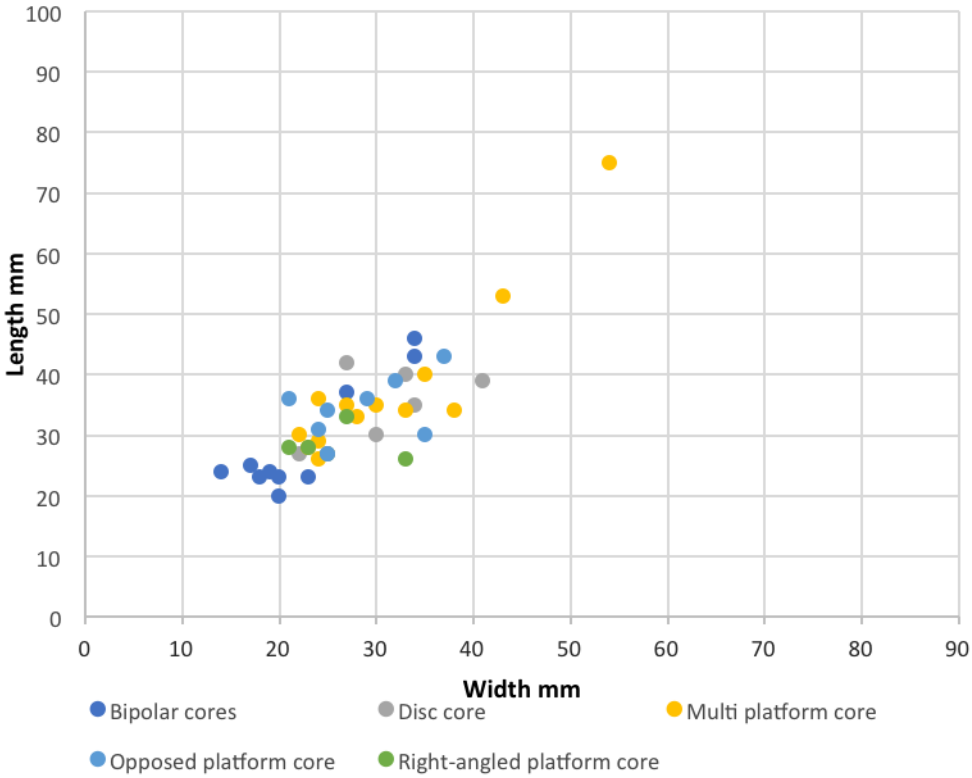

Figure 4: Core dimensions.

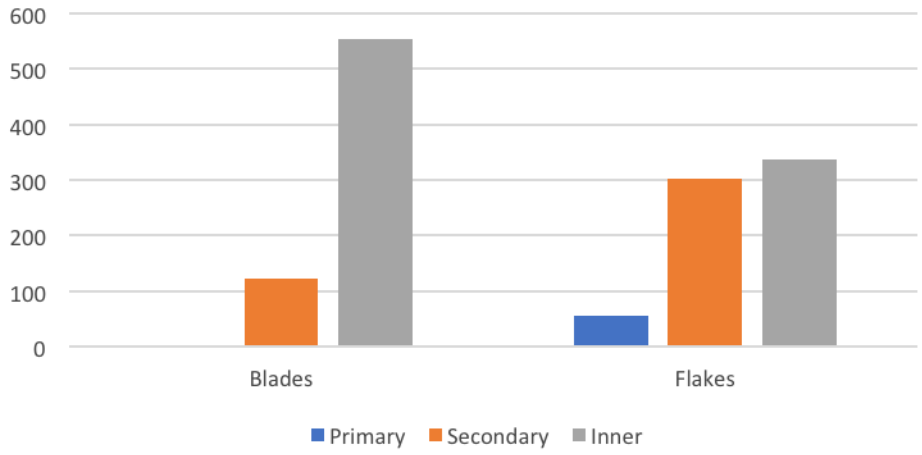

Figure 5: Cortex on blades and flakes.

The blade widths had a wide range from 4mm to 33mm with a concentration between 10mm and 14mm (Figure 7). This shows that the blades collected during field walking were in the broad blade category (broad blades are >8mm in width).

The thirteen crested blades are evidence for a specialised means of shaping and controlling the direction of blade removal. These are amongst the widest and longest of all the blades ranging 13mm to 33mm wide and 33mm to 97mm long (Figure 6 and 7 and see Illus. 4 314). The lengths of the crested blades place them at the higher end of the lengths of blade cores and within the size range of the simple halved and quartered pebbles (Figure 3) which demonstrates that most of the crested blades were removed from larger cores than those

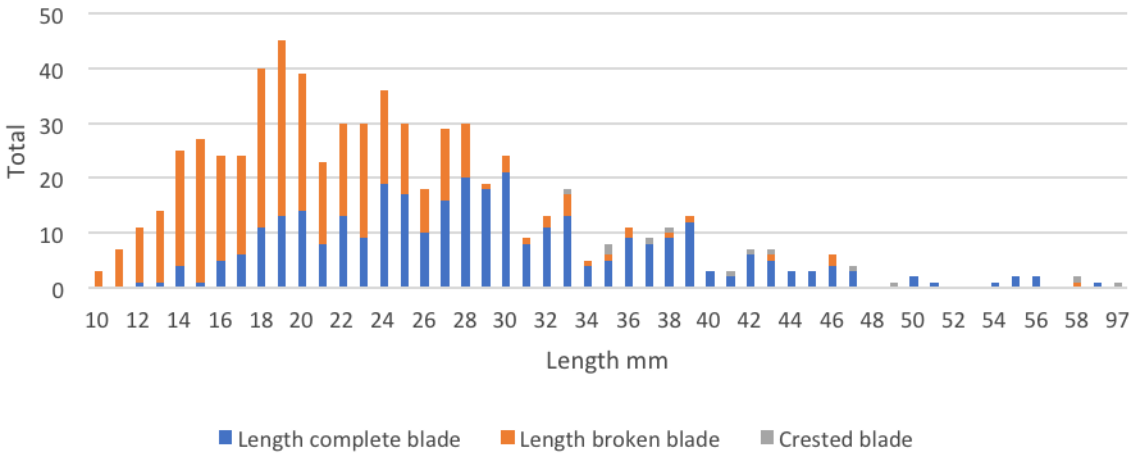

Figure 6: Lengths of blades.

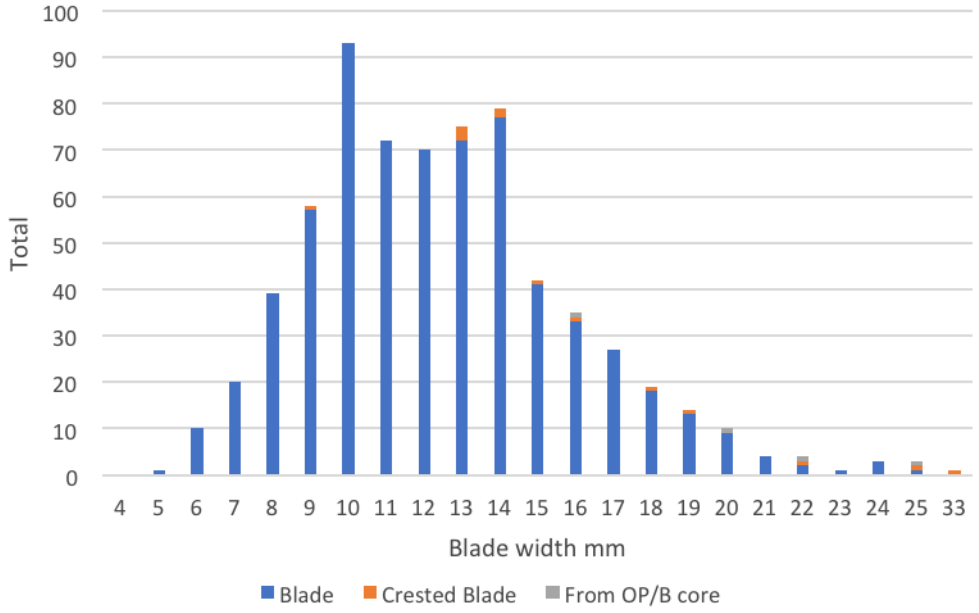

Figure 7: Blade width.

found here. This could be evidence for a different blade reduction strategy to the one that is dominant in the collection.

Flakes, excluding flake fragments were as numerous as blades in the collection (Table 1). Primary, secondary and inner flakes are all present and support the evidence for the knapping of pebble flint in the area (Figure 5). There is a wide size range within the flakes 15mm – 66mm in length (Figure 8) and the flakes with cortex (primary and secondary) tend to be the largest in size. There is little evidence for core maintenance flakes – there are just 15 core trimming flakes and one core tablet (EP1-502-19) which, at 48mm x 51mm, is one of the largest flakes (Figure 8) These support the evidence from the cores for a simple knapping strategy. Evidence of faceted platforms on three flakes (1604; 1745.3; 1825.1) and multi-directional flake scars on 11 flakes demonstrates Late Neolithic flint working in the collection.

Small flakes (flakes <15mm in maximum dimension) were also collected and comprised 14% of the total assemblage

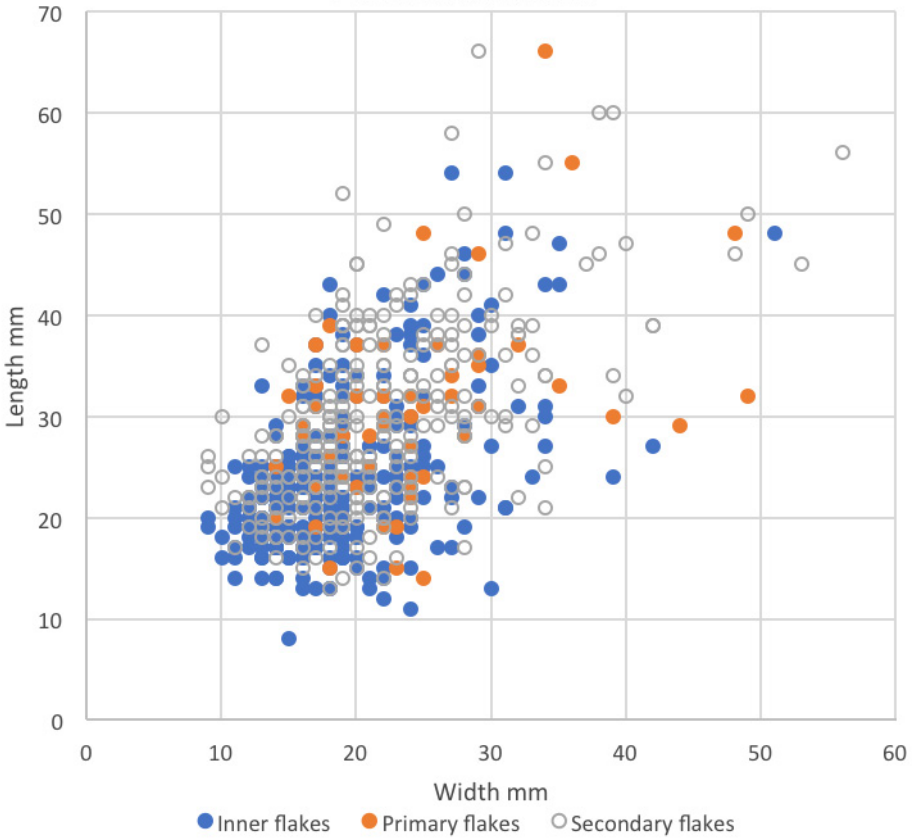

Figure 8: Flake dimensions.

(Table 1). The identification of this small fraction demonstrates the thoroughness of the field walkers' collecting method.

Retouched Tools

Blades (n=55) and flakes (n=37) were selected for further shaping into formal tools (Table 3).

Broad blade microliths

These are made using blades of 9mm to 12mm in width. A broad isosceles triangle (601.1) is the clearest form. Blade 1466.2 has the angled edges of an isosceles triangle but the distal angle is formed of a natural flat, cortical edge. The narrower blade (844) is a large scalene form (Illus. 5).

Narrow blade microliths

Three crescents, two backed blades and a scalene triangle are present together with six microlithic fragments. One backed blade (1062.1) is a fine elongated form at 27mm in length.

A lamelles a cran (1465) is waste from the production of narrow blade microliths. A possible microburin (551.3) was also found.

Backed blades

The five backed blades are blades with abrupt edge retouch down one side. All are broken and they range from 8mm to 15mm in width.

Obliquely blunted blades

Seven blades ranging from 7mm to 15mm in width and 23mm to 29mm in length bear abrupt retouch obliquely across the distal end of the blade (Illus. 3). One (1789) is of an unusual pale pink flint and the oblique edge is not straight but bears a slight convex curve.

Illus. 1: End scrapers: top 705.2; 607.9; 653; bottom 785; 858.1; 621.2.

Table 3: Retouched tool types.

	Blade	***Flake***
Shouldered point	1	
Bec?		1
Broad blade microliths	3	
Narrow blade microliths:	11	
Crescents	3	
Scalene triangles	1	
Backed bladelets	2	
Microlith fragments	6	
Backed blades	5	
Obliquely blunted blades	7	
Knife form	5	3
Edge retouched	3	2
Scrapers:	8	31
End scrapers	8	5
Thumbnail scrapers		5
Angular scrapers		4
Robust scrapers		6
Concave scraper		1
End and both sides scraper		1
Side scraper		2
Miscellaneous scrapers		4
Scraper fragments		3

Illus. 2: Knife form 743.2.

Illus. 3: Obliquely blunted blades: 1039; 1789.2; 1072.1; 1828.1; 319.1; 417.

Illus. 4: 314; 844; 315.2.

Illus. 5: Broad blade microliths 601.1; 1466.2; 844

Scrapers

Scrapers are the most common tool type in the collection (n=39) and there are several different forms are present (Table 3).

Eight end scrapers are made on blades and at least six of these (Illus. 1) are similar to those dating to the Late Upper Palaeolithic at Howburn, Lanarkshire (ref) . The use of banded grey flint is note for one of these scrapers (607.9) supporting the suggestion that this material was brought in for use at this early prehistoric period.

The rest of the end scrapers are made on blades and broad flakes (Illus. 6). They are less distinguishable by period as those above but Illus. 6 1245 is likely to date to the Late Neolithic.

Five thumbnail scrapers are sub-circular in plan and range from 18mm to 21mm in maximum dimensions (Illus. 7).

A group of six scrapers are made on thick (up to 18mm) primary flakes and present a robust curved scraping edge (Illus. 8).

Illus. 6: End scrapers top 408; 912, bottom, 1473.5; 1245; 1345.

Illus. 7: Thumbnail scrapers.

Illus. 8: Robust scrapers

Three other scrapers are distinctively Late Neolithic in style with invasive steeply flaked sides (Illus. 9).

The rest of the scrapers are made on flakes and present angular, curved and concave scraping edges or are more miscellaneous forms (Table 3).

Knife forms
Four blades have light blunting retouch and/or semi-acute edge retouch along one edge of a blade. They are similar in dimensions and were probably used as some form of knife. These most likely date to Late Mesolithic or Early Neolithic.

A robust blade and three flakes were retouched more heavily using acute, semi-invasive flaking to shape the edges (Illus. 10). These resemble Late Neolithic forms of knives.

Notched blades
Five blades retained a worked notch on one side of the blade.

Edge retouch
Miscellaneous edge retouch is present on three blades and two flakes and is formed of light, irregularly placed flaking forming no clear tool type.

Shouldered point
This is a fine shouldered point dating to the Late Upper Palaeolithic (Illus. 11). The exact cultural typology has not yet been assigned for this report.

Bec?
This broad flake thick flake has steep edge retouch around the entire piece shaping it to a point on one end (Illus. 12). Initially this was assigned a Late Neolithic date but it resembles a Late Upper Palaeolithic tool called a Bec. The surface has been damaged from burning.

Illus. 9: Late Neolithic scrapers.

Illus. 10: Late Neolithic knives 147; 93.2; 1740.3

DISCUSSION

This large field collection has several interesting features which are highlighted below to promote discussion and research in this area.

- The location was used in some form or another throughout prehistory. The evidence from the lithics indicates occupations dating to the Late Upper Palaeolithic (LUP), Early Mesolithic, Late Mesolithic and Late Neolithic.

- The identified Late Upper Palaeolithic lithics comprise end scrapers, a shouldered point, and a possible Bec. Three large unworked blades are likely to date to this early period too. There is almost no evidence that flint was knapped in this location during this period. A core fragment (137) from the base of a multi-direction flake/blade core is of banded grey flint and may date to the LUP but there is no other evidence for the working of large cores.

- The Early Mesolithic is identified from three broad blade microliths. As with the LUP it is not clear if flint was worked in the area at this period or whether the tools were brought in for use.

Illus. 11: Shouldered point 513.2.

Illus. 12: ?Bec 738.2.

- The most extensive occupations relate to blade production using the gravel pebbles. This is likely to date to the Late Mesolithic and is accompanied by narrow blade microliths.

- The Late Neolithic period is identified through the specific knife and scraper forms as well as evidence for flake core working and faceted platforms. This period is also known for less-organised flint working, particularly the use of bipolar core working on flakes and chunks.

- The location of the gravels from which the flint pebbles came is not clear. Extensive gravels form the Buchan ridge in the NE of Aberdeenshire, some distance from the River Dee. There is a sense from the assemblage that flint was plentiful – as shown by the number of quartered pebbles, and the lack of evidence that many of the cores were exhausted before abandonment. This suggested to members of the Mesolithic Deeside group that there may be flint-bearing gravel sources closer to the site.

- Some flint is not local and was brought in from coastal sources or, in the case of the banded grey flint used in the Late Upper Palaeolithic acquired from yet unknown sources beyond the mainland.

- The dominance of scraper forms, from all main periods, is of interest. This could simply be a function of the identification of larger flints during field walking but it has been demonstrated from the fraction of small flakes and microliths found that these small pieces were also collected.

- Field walking of Nethermills 4, further upstream in 2018 produced a similar sized collection to that at East Park and a similar proportion of retouched tools with almost equal numbers of scrapers. It also had evidence for LUP to Late Neolithic occupation and in most respects the East Park and Nethermills field collections are similar enough to suggest that the River Dee was a resource that was intensively used at several locations, and in a similar manner, along its course throughout prehistory.

- The identification of the full extent of the earliest prehistoric activity is blurred to a great degree by the later extensive spreads of lithics from Late Mesolithic activity. We cannot yet say whether the LUP and EM lithics are from short or long-term occupations, and to what extent they made use of the sources of gravel flint. Excavation would be the only means to understanding the impact that the hunter-gatherers of these different periods had upon this landscape.

ACKNOWLEDGEMENTS

Thanks to members of the Mesolithic Deeside, the Lithics Studies Society for providing the Saville Grant, Richard Tipping and Tim Kinnaird for their help and advice during this project.