

Archive Report: The lithic assemblage from the Antonine Wall Roman fort at Croy Hill, Croy, North Lanarkshire

Introduction

The lithic assemblage from the excavations at Croy Hill Roman fort comprises 19 pieces of chipped stone.

Methodology

The methodology, type and attribute terminologies employed for the analysis of lithics from Croy Hill follows the format devised and adopted for the *Southern Hebrides Mesolithic Project* (Finlayson *et al.* 1996, 2000). This built upon the research design used for the analysis of the lithic assemblage from Kinloch, Rùm (Wickham-Jones 1990), which was itself derived from the terminologies of technological analysis put forward by Tixier *et al.* (1980); subsequently enhanced (Inizan *et al.* 1999). It also incorporates aspects of Madsen's (1992) classification scheme for primary technological attributes. This format lends itself to the incorporation of later prehistoric forms such as Neolithic and Bronze Age projectile points and certain types of scrapers. A glossary of terms may be found at Appendix 1.

The database for the typological and technological analysis of the lithics has been compiled using Access™ 2010. References to specific artefacts will cite the catalogue number followed by the small finds number.

Raw materials

Flint dominates the assemblage; 15 lithics representing 78.95%. The other raw materials present are chert (15.79%) and tuff [5.26%] (Table 1).

There are no known flint sources at Croy. The nearest sources of drift flint are recorded at Kilwinning in Ayrshire, Wormit in Fife, and Lammerlaw in Berwickshire. Blue grey flint is noted at Wormit and grey and black flint at Lammerlaw (Wickham-Jones and Collins 1977, 11). There are nine fresh flint artefacts, of which eight are grey and one is blackish grey. Flint nodules eroding out of the offshore cretaceous sediments are generally of grey hues (after Hall 1991, Figure 3) potentially indicating the use of beach pebble resources. Caution needs to be taken when assigning the source of flint based on colour alone. For example, the variation in the hues of flint from Buchan include greys, reds, browns and yellows (Warren 2006, 35). Five flint artefacts present with cortex. One has a pitted cortex which may indicate the use of beach pebbles (cf. Wright 2012). The remainder have a smooth and chalky cortex which has been rolled smooth and hard suggesting that those pieces may have derived from local fluvio-glacial sources,

although the movement of raw materials from elsewhere cannot be discounted entirely.

Condition

Thirteen (68.42%) of the lithics are fresh; burnt 31.58%. The frequency of burnt pieces is probably understated. Experimental work undertaken by Finlayson (1990, 53) on flint indicated that some burnt pieces would not be classified as such due to the absence of burnt attributes.

The absence of any of the stages of patination suggests that the lithics have been recovered from either moisture retaining soil matrices or similar. The process of patination refers to the change of the original inner colour of raw material to white, which results from the loss of water from the internal crystallite structure of siliceous materials. For example, a predominantly sand matrix will produce white cortication (after Shepherd 1972).

Character

The character of the assemblage and the percentage frequencies of artefact types are shown at Table 1.

Croy Hill	Total	Flint	Chert	Tuff
Tested Split Pebbles	1		1	
Core fragment	1	1		
Flakes	7	5	1	1
Primary				
Secondary	2	2		
Tertiary	5	3	1	1
Primary regular				
Primary irregular				
Secondary regular				
Secondary irregular	2	2		
Tertiary regular				
Tertiary irregular	5	3	1	1
Blades	2	1	1	
Primary				
Secondary				
Tertiary	2	1	1	
Primary regular				
Primary irregular				
Secondary regular				
Secondary irregular				
Tertiary regular	1	1		
Tertiary irregular	1		1	
Modified	8	8		
Total	19	15	3	1

Table 1: Character of the lithic assemblage.

Primary technology

The unmodified artefacts comprise of one flint core fragment, six flakes, one flint blade and one chert tested split pebble.

The only products of a bipolar reduction strategy are the chert tested split pebble (007:702), and a secondary, irregular flint flake fragment (011). Generally, bipolar blanks will be under-represented because not all debitage products will present with attributes associated with a bipolar reduction strategy (after Kuijt *et al.* 1995, 117).

The blanks produced by platform reduction comprise of three flint flakes, one chert flake fragment (001: 003), one tuff flake fragment (006), and one flint blade (016). The blade is regular and all of the flakes are irregular. Regularity is determined by a blank with a straight edge greater than 10mm. Blanks with a

straight edge of less than 10mm are classified as irregular (Wickham-Jones 2004, 71).

There are five blanks where it is possible to determine the classification of the bulb of percussion. The use of a soft hammer is suggested for four of them based on the attributes of the bulb; one diffuse, one flat and two with lips. The tuff flake fragment (006) has a pronounced bulb of percussion with a rippled ventral surface indicating the use of a hard hammer. It has been struck from a Group VI Great Langdale polished stone axe. All five of the blanks where it is possible to determine the striking platform have a simple or plain platform.

Secondary technology

All of the modified artefacts are flint and may be summarised as two composite tool forms (005:220, 009:813), two denticulates (003:204, 008: 816), two scrapers (004:205, 010:922), a bifacial 'knife' (002:102), and a barbed and tanged arrowhead (013).

002: 102 Bifacial 'knife'

The artefact has been modified from a secondary, irregular, bipolar flake. There is bifacial (i.e. direct and inverse), semi-invasive retouch to the left hand side from the lower proximal to the medial. Below this, from the medial to the distal end is inverse, short, scalar retouch. The quality of retouch is poor and may be described as perfunctory to create a cutting edge.

003: 204 Denticulate

A medial fragment of a bipolar flake has fine, short, abrupt trimming/blunting retouch to the right hand side to create a denticulated edge. There is no evidence of edge damage.

004:205 Scraper

A short convex scraper with direct, semi-invasive, stepped scalar retouch across the greater part of the dorsal surface.

005: 220 Composite

An irregular cutting edge has been crafted on the left hand side of a bipolar flake. This was achieved with bifacial, semi-abrupt retouch, which may be said to be expedient and of poor quality.

Abrupt, scalar retouch to the right side of the flake has created two separate concave (hollow) scraping edges. One is from the proximal to the lower proximal and the other from the lower proximal to the upper distal. There is a relatively straight scraping edge from the upper distal to the distal end, which the result of semi-abrupt, scalar retouch.

008: 816 Denticulate

The denticulate has been modified from a tertiary, irregular flake fragment. The proximal end is missing. At the left hand side from the break to the distal end is a denticulated edge, which has been created by bifacial, abrupt, scalar retouch.

009: 813 Composite

The left hand side of a secondary, irregular, bipolar flake has a direct, semi-invasive, scalar retouch to create a cutting edge from the lower proximal to the distal end. There is direct, semi-invasive, scalar retouch which has produced a scraping edge from the proximal to the lower proximal.

There are two shallow concave scraping edges on the left hand side of the artefact. There were two flake shaping removals from the ventral surface prior to the application of direct, semi-invasive, scalar retouch to create the scraping edges which are located from the lower proximal to the upper distal.

010:922 Scraper

This artefact is a modified tertiary, burnt flake. On the right side is alternate, bifacial, semi-invasive, scalar retouch at the medial. The edge has been trimmed/blunted from the medial to the distal end. There is inverse, semi-invasive, scalar retouch creating an irregular scraping edge from the lower proximal to the upper distal of the left hand side. The retouch to sides of the artefacts is generally of poor quality and may be described as expedient.

An angled scraping edge has been created at the distal end by direct, semi-abrupt, scalar retouch.

013 Barbed and tanged arrowhead

One of the barbs is broken. According to Green's (1980) typology the barbed and tanged arrowhead is classified as small and Kilmarnock by type.

Edge damage

017 Flint flake fragment

The flake is tertiary, irregular and fresh. It was struck from a platform core with a simple platform and using a soft hammer. There is an irregular denticulated edge to the right hand side. A macroscopic examination cannot ascertain if this has been caused by either use, or as a result of its detachment from the core.

019 Chert blade

The blade is tertiary, regular and fresh, and removed from a platform core using a soft hammer. The striking platform was simple. There is edge damage to the left hand side which may be as a result of irregular proximal spalling when detached from the core.

Discussion and summary

The finds location for the artefacts recovered from Croy Hill may be said to derive from unknown taphonomic processes and events.

The Kilmarnock type barbed and tanged arrowhead (013) can be ascribed to the Bronze Age period (after Edmonds 1995; Green 1980 and others). Sherds of beaker pottery were also recovered from Croy Hill and, it is possible that these sherds together with the arrowhead have come a disturbed beaker burial. Typology may also assign the rounded convex scraper (004:205) to the Bronze Age (Edmonds 1995, 159).

The tuff flake fragment (006) was struck from a Neolithic Group VI Great Langdale polished stone axe. The structured disposal of fragments of a Group VI polished stone axe in a pit has been noted at Carzield, Dumfriesshire (cf. Maynard 1993, 27). A Group VI fragment was recovered from a pit at Maybole, Ayrshire. Organic material from the pit was radiocarbon dated to the Early Neolithic 3780-3650 BCE [SUERC-18866] (Becket and MacGregor 2012, 54-56). A flake from a Graig Lwyd, Penmaenmwar Group VII polished stone axe and a scraper made from a flake from a Group VI axe were recovered from the surface at Cairnpapple, West Lothian (Piggott 1948, 102-103).

The tuff flake raises a number of interesting questions where answers are elusive. For example, was the flake struck from the axe as part of the ritual decommissioning of the axe prior to a structured disposal? If so, why was the flake not part of the fragments for structured disposal? Conversely, is the flake residual from a disturbed pit feature? Secondly, was there a utilitarian transformation of the axe into a core to produce blanks either for either modification, or use without modification? Thirdly, when was the flake struck from the axe? The evidence from Maybole and elsewhere would indicate a Neolithic event.

The larger artefacts such as the composite tools (005:220, 009: 813), scraper (010:922), and bifacial 'knife' (002:102) generally display poor quality retouch, and can be described as perfunctory. Apart from the bifacial, they could be classified as irregular which tentatively may suggest a Late Neolithic provenance (after Edmonds 1995).

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Appendix 1: Glossary of Terms¹

Introduction

The definitions of terms is a composite from a number of different sources (i.e. Finlayson *et al.* 2000; Inizan *et al.* 1999; Wickham-Jones 1990, 2004). If other sources are used then the relevant section is referenced accordingly.

Glossary

Anvil: These coarse stone artefacts are recognised by distinctive wear patterns (Clarke 1990, Illustration 78). They may have also used as percussors (Finlayson *et al.* 2000, 72).

Anvil support: Refers to those occasions where the platform core is placed on an anvil for support to facilitate blank removals.

Blade: A blade is arbitrarily defined as an artefact which is twice as long as it is wide usually with straight parallel sides. Such examples may sometimes be referred to as 'true blades' to distinguish them (Wickham-Jones 2004, 69).

Blade-like flakes: The blade fits the metric parameters to be categorised as such, however, the morphology of the piece is more in keeping with that of flakes, e.g. they may often be irregular and do not have parallel sides.

Blanks: Collective term for blades and flakes (Wickham-Jones 2004, 69).

Bulb of percussion: This attribute signifies where the core was struck to detach the blank. A pronounced bulb may indicate the use of a hard hammer, and a diffuse bulb invariably indicates the use of a softer hammer (Wickham -Jones 2004, 69). Bulb and lip and pronounced lips are associated with the use of soft hammer. Lip attributes may suggest the use of an antler percussor (Madsen 1992, 104-105). Experimental studies confirm this, although such studies are usually undertaken using flint of exceptional quality (cf. Ohnuma and Bergman 1982). Bulb attributes will vary with different raw materials (cf. Costa *et al.* 2005).

Chunk: These artefacts are generally a by-product, and do not have a platform or ventral face. Some chunks may have been used, e.g. *pièces esquillées* (Wickham-Jones 2004, 69).

Cores: The core is the artefact from which blades and flakes are struck.

Bipolar/bipolar cores: Indicates that cores are worked utilising an anvil. They may present with removals from both the proximal and distal ends due to the strike of

¹ Wright 2014

the hammerstone and the shock reverberation from the anvil, and there may be evidence of severe crushing damage, percussion ridges from repeated strikes, step and hinge terminations and the presence of cortex (Hayden 1991, 3).

Platform/platform cores: The term refers to the utilisation of a plain or simple platform which is struck to detach blades and flakes. These cores can be predominantly for either blade or flake production. A distinction that is ascertained by determining the most common form of blank removed. Some cores will be classified as non-specific platform referring to the removal of blades and flakes in broadly equal frequencies. The remaining category is for cores described as amorphous which represent irregular knapping sequences (Wickham-Jones 2004, 70; Finlayson *et al.* 2000, Table 2.5.3).

Core rejuvenation strategies: Knapping accidents will occur resulting in negative step and/or hinge terminations on the flaking surface of the core, which may be removed by a core rejuvenation blank to leave a clear flaking surface for future removals. Accumulations of material at the distal end of the core can be removed by the blank with a plunging termination. Strategies are also encountered when part of the platform surface is removed by a side blow (after Inizan *et al.* 1999, 153).

Cortex: Refers to the original surface of the nodule or pebble, which may be fresh, rolled, abraded, pitted or battered. Cortex may be either smooth/chalky or smooth/hard. The cortical attribute may indicate the possible source of the raw material (Wickham-Jones 2004, 69).

Dorsal and ventral faces of blanks: The upper face or dorsal is the flaking surface of the core prior to the removal of the blank. The lower face or ventral represents the fracture face of the blank having been detached from the core. The ventral and the core will conjoin.

Edge damage: Edge damage may result from the reduction strategy, use and other post-depositional factors such as ploughing, trampling, natural abrasion, and other unknown taphonomic processes (Finlayson *et al.* 2000, Table 2.5.1; Mallouf 1982; McBrearty *et al.* 1998; Neilsen 1991).

Flake: A classification of a blank. Metric variants distinguish flakes from blades. Flakes are also generally less regular than blades. They may be either modified or unmodified for use (Wickham-Jones 2004, 69).

Hammerstone: Hammerstones vary in hardness which may be indicated by the bulb of percussion on blanks, and the negative bulb of percussion visible on cores (Wickham-Jones 2004, 69-70).

Languette: Represents a knapping error creating tongue-like distal termination. They are associated with a soft hammer (Inizan 1999 *et al.*, 144).

Original pebble/nodule size: A medium sized pebble has been categorised as fist-sized. An approximate term based in the size of pebbles recorded on Islay (Finlayson *et al.* 2000, Table 2.5.2).

Patination: Discolouration of original fresh colour artefacts. Variations in patination may arise because of the nature of the soil matrix from which they were recovered. It may also indicate ground disturbance (Inizan *et al.* 1999, 147; Wickham-Jones 2004, 69).

Platform type: There are four types of platform referred to (Finlayson *et al.* 2000, Table 2.5.4).

Cortical: The entire blank platform is covered in cortex.

Simple/plain: Represented by a simple flaked surface.

Complex/faceted: Multiple flake removals define this form of platform. Examples of this strategy during the Mesolithic period are likely to be accidental.

Crushed: A collapsed platform associated with bipolar reduction.

Primary material: Cortex covers the dorsal surface of the artefact (Wickham-Jones 2004, 70).

Primary technology: Refers to the procurement of raw material, preparation of cores and debitage products, such as blades, flakes, chunks and small fraction debitage (Wickham -Jones 2004, 70).

Reduction strategy: Refers to the use of either bipolar or platform reduction strategies (Wickham-Jones 2004, 71).

Regular/irregular blanks: Regularity is determined by a blank with a straight edge <10mm. Blanks with a straight edge of <10mm are classified as irregular (Wickham-Jones 2004a, 71).

Remaining platform size: This schema is taken from Madsen (1992, Figure 70).

Point: Where remaining platform represents <33.33% of blank width.

Small/narrow: Remaining platform width is c.33.33% of blank and length is <33.33% and >66.67%.

Broad/narrow: Remaining platform length is >66.67% of blank.

Large: The width and length of the remaining platform is >66.67%.

Retouch, angle of: There are four forms of retouch referred to in this study (cf. Inizan *et al.* 1999, 129-130; Woodman *et al.* 2006, 95). The first three categories are focused on the edge of the blank.

Abrupt: Marginally less than 90°.

Enclume: Use of anvil with angle at 90°.

Semi-abrupt: angle at approximately 45°.

Semi-invasive: Similar to semi-abrupt, although retouch extends across the surface of the blank.

Retouch, extent of: The extent of removals are classified as either short, semi-invasive, invasive or covering.

Retouch, position of: Direct retouch is visible on the dorsal face, conversely inverse retouch is seen on the ventral face. Alternate is where a blank has been modified by both direct and inverse retouch.

Secondary material: Artefact with cortex visible on the dorsal surface (Wickham-Jones 2004, 71).

Secondary technology: Refers to the modification of blanks into tools (Wickham-Jones 2004, 71).

Scrapers: Scrapers present with a blunt working edge (cf. Finlayson *et al.* 2000, Table 2.5.8).

Short convex: Convex scraping edge <10mm thick.

Short convex flared: As for short convex but where artefact narrows from scraping edge.

Short thick convex: As for short convex with scraping edge <10mm.

Short thick convex flared: As for short thick convex but flared.

Long convex: Scraper which is twice as long as it is wide with a scraping edge of <10mm.

Long convex flared: As for long convex but flared.

Long thick convex flared: Scraper which is twice as long as it is wide with a scraping edge of >10mm.

Disc: Continuous retouch to circumference of scraper.

Concave: Scraper with concave scraping edge.

Denticulate: Scraping edge is denticulated or presents with multiple notches.

Angled: A scraper with more than one scraping edge which meets to form an angled corner(s).

Sub-angled: As for angled but with rounded corners.

Straight: The edge is neither convex nor concave in plan.

Wide convex: A side scraper with retouch to longest axis.

Irregular: Scrapers which do not into the other classifications.

Fragment: Refers to a scraper fragment.

Siret fracture: Refers to a knapping error where the width of the blank is split. This may or not extend the full length of the blank (Inizan *et al.* 1999, 156).

Small fraction debitage: Debitage where metric variants are all <10mm (Finlayson *et al.* 2000, Table 2.5.5).

Tertiary material: Artefact without any trace of the original cortical surface present (Wickham-Jones 2004, 70).

Tool form types: General term for all tool forms. Apart from microliths and scrapers other tool forms are set out below (cf. Finlayson *et al.* 2000, Table 2.5.1).

Abruptly backed: Any artefact which has abrupt retouch to blunt edge.

Thin-backed: Refers to any artefact with fine retouch to blunt edge.

Point: Two or more convergent edges with retouch.

Denticulate: Edge is formed as a series of notches. Each notch may be as a result of single or multiple removals.

Thick denticulate: As for denticulate but where modified edge is >10mm.

Notch: Artefact with non-contiguous notch attributes. The notch may be as a result of single or multiple removals.

Miscellaneous retouch: Artefact with retouch that do not fit into any of the other categories.

Awl: Generally awls are fashioned on thick blanks and comprise of abrupt retouch on two sides to form point.

Trimming: Relates to the abrasion of an unretouched edge producing semi-invasive scalar removals. It is associated with the shaping of artefacts.