

# Accompaniment

*for* Lithic Analysis Reports

*Version 1.1*



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## Introduction

This Accompaniment is to be read alongside lithic analysis reports produced by **CeártaCloch**. It provides technical appendices which support the principal report. It contains sections relating to chronological divisions, geological materials, and technical terms describing lithic assemblages.

This is the first release of this resource. As such, the information contained here is by no measure exhaustive. There are many terms which have not been entered. Explanations have been simplified. No illustrations are currently provided. References are provided throughout to allow for users to examine more detailed information.

The terms/dates used represent the authors usage. The terms/dates referenced are subject to change depending on most recent archaeological evidence and/or argument. They are presented for the purpose of the client, or other user, adapting to their own report and/or publication.

This document stems from the lack of coherency within Irish lithic studies and reports perceived during M.Litt. research. This is particularly problematic given the presence of lithic studies and reports as a constant within excavations and universities for more than half a century. The individualised nature of such material leads to great difficulty in the comprehension of lithic discussions, and their incorporation into broader archaeological conversations. The Keiller-Knowles publication (Woodman *et al.* 2006) is closest to a manual – though is something of a Schrödingers' guide to Irish lithics: in the one moment it both is and is not applicable. This creates issues related to replicability and reproducibility – issues of paramount concern in scientific research. Without a codified document for Irish lithics, it is the

responsibility of each lithic analyst to make their work understandable, approachable, and reproducible. The presentation of technical terms and additional areas of interest here represents an attempt to counter such concerns.

The Accompaniment is a document in continual progress. It is not complete, and likely never will be. As excavations produce new material and research develops our knowledge

If there is any term or reference that you would like to see included, or that requires further clarification, please contact the author.

An up-dated version is released annually at the end of September. It is available at: .

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## Archaeological Chronology

Lithic artefacts are found throughout the archaeological record.

While mainly associated with prehistoric eras, the use of lithic items continues into the modern period. Later uses occur primarily in the forms of fire flints, gun flints, and plough pebbles. There are also assertions that the manufacture of various lithic forms continued into the Early Medieval (Gibson 2012: 64; Harper 1973). Additionally, the re-use of prehistoric lithics in later periods occurs in various forms. The use of fairy darts/elf-shot in the modern period is an example of this (Dowd 2018).

Sub-sub-periods, e.g.: Early Neolithic I and II (Whitehouse *et al.* 2014), are not presented here. There has been no attempt to categorise lithic use to this level.

The chronology is based on the proleptic Gregorian calendar (ISO 8601). Year 0 is absented from the date range. In general discussions, there is no agreement as to whether Year 0 is included or not. Where it is, it is primarily for mathematical purposes. Since this is not a concern here, it is excluded.

Era	Period	Date Range	
Early Prehistoric	Upper Palaeolithic	30000-8000	BC
	Early Mesolithic	8000-5500	
	Late Mesolithic	5500-4000	
Late Prehistoric	Early Neolithic	4000-3600	
	Middle Neolithic	3600-3100	
	Late Neolithic	3100-2500	
	Chalcolithic	2500-2200	
	Early Bronze Age	2200-1500	
	Middle Bronze Age	1500-1000	
	Late Bronze Age	1000-700	
	Early Iron Age	700-400	
	Developed Iron Age	400-1	
	Late Iron Age	1-400	
Early Historic	Early Medieval	400-1000	AD
	High Medieval	1000-1300	
Historic	Late Medieval	1300-1500	
	Early Modern	1500-1800	
	Modern	1800-present	

Sources:

Dowd, Carden 2016; O'Brien 2012; Waddell 2010; Becker *et al.* 2008; Carroll 2003; Cooney 2000.

## Classification of Artefacts

Four classifications of lithic artefacts are presented. The classifications are based partly on degree of working and partly on finished appearance. The addition of 'Base' classification alters the interpretation of material from that of other analysts. Examples of each classification are presented, in relation to date, on Page 5.

- Base

Denotes lithics that display no secondary modification.

This categorisation does not exclude the possibility of use. Unretouched edges on flakes, blades, and segmented pieces could be utilised if they were sharp enough. Some pieces, e.g.: flakes or chips, can also be produced during manufacture of objects on non-siliceous geologies, e.g.: sandstone.

This category is not used by other analysts. Forms in this category are typically classed under 'Chipped' elsewhere.

- Chipped

Denotes lithics that display secondary modification. This could range from one or more irregular retouch scars to an invasively and extensively retouched sub-form. The alteration could also be due to use, e.g.: wedge.

- Ground

Denotes lithics that display secondary modification where the finished form is smooth, i.e.: displays no scars from previous working. If other forms are decoration are present, e.g.: pecking, this does not exclude categorisation.

- Coarse

Denotes lithics (typically non-siliceous) which display little to no formal modification. Modification may be the result of use, rather than intentional design.

In addition to these, natural (unaltered) lithics can be present on sites. Potential raw materials and manuports are examples of archaeological lithic material that displays no manipulation. The identification of these typologies, especially of singular examples, is difficult.

Forms in each category can be variously sub-divided and further divided. For example, cores can be bipolar or platform or combination. This level of detail is not presented here. The types of arrowheads are listed out, though the various sub-types are not. Information on these aspects are available in the **Glossary of Terms** – though this is still not exhaustive.

The used of adjectival divisions, e.g.: polished, is minimised. The exception is 'polished axehead'. This is due to the high numbers of objects showing this particular finish, as well as axeheads displaying flaked surfaces.

Geology has no influence here. Divisions are often seen based on rock type, e.g.: polished flint axeheads – polished stone axeheads. Such superficial divisions are unhelpful in the general classification of artefacts. As such, this approach is not adopted here. The exception is the use of 'gunflint' and 'fire flint'. Flint has become tied into the name due to its unique ability to create sparks for lighting fires.

## Dating of Artefacts

In only a few instances can lithic artefacts be attributed confidently to a period. This is due to few artefacts recovered from secure, dated contexts. Some objects have sub-types, which may be associated with different periods. Please read sources to see intricacy of diagnostically ascribing artefacts to periods (especially Woodman *et al.* 2006).

Seven periods of dating are presented. There are six specified periods, which correspond to the **Archaeological Chronology** presented above; and a seventh which encompasses non-datable artefacts.

- Generic [G]  
Artefacts cannot be ascribed to any defined period. This is because they appear throughout the archaeological record or in more than one period; or that a lack of research precludes confident dating.
- Upper Palaeolithic / Early Mesolithic [UPL / EML]  
The establishment of Late Upper Palaeolithic activity in Ireland (Dowd, Carden 2016) should be borne in mind when discussing Early Mesolithic lithics, especially where there are no radiocarbon dates. The lack of prior confirmation has meant little discussion of the lithic tradition of the UPL period has taken place (Woodman 2015\1998). Whether there is continuity between the two periods is unknown. It is possible that Irish UPL lithic traditions also involved microliths and blades. Any discussion would need a palaeogeography aspect to establish whether it is possible that components date to this period.
- Late Mesolithic [LML]  
This sub-period is distinct from the preceding by the presence of large blade technology.
- Neolithic [NL]  
A shift is seen with the on-set of this period to flake-based technology, with a series of new typologies introduced.
- Chalcolithic / Bronze Age [CL / BA]  
These two periods are classed together. Many of the diagnostic pieces are traditionally associated with the Chalcolithic or Early Bronze Age. For this reason, they are not separated.
- Iron Age [IA]  
This period is separated from those either side not for any strong lithic association, but rather the paucity of the record compared to the preceding and succeeding ones. The artefact of note for this period is the beehive quern.
- Medieval / Modern [Med / Mod]  
These periods are classed together as the understanding of lithic use in historic contexts is undeveloped (Warren, Little 2017: 483). There are discussions of specific artefact types from these periods (Stevens 2017; O'Connor 1991; Kelly 1984), though there is no comprehensive assessment of the lithoculture.

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The scheme (on the following page) presents classification related to dating. Only when sub-categories of a typology are diagnostic are they listed separately.

This is based on own observations and sources: Carlin 2018; Eogan, Cleary (eds) 2017; O'Brien 2010; Shephard 2009; O'Sullivan, Downey 2006; Woodman *et al.* 2006; Ballin, Will 2005; Bamforth, Woodman 2004; Nelis 2004; Brady 2009\1988; Connolly 1994; O'Connor 1991; Simpson 1996\1990a\1990b\1989\1988; O'Brien 1987; Kelly 1984; Briggs 1983; Fanning 1981; Caulfield 1977; Knowles 1889.

		Lithic				
		Base	Chipped	Ground	Coarse	
Period	<b>G</b>	Blade Chip Core Flake Segmented piece Split piece Tested piece	Awl/Borer (bifacial; robust) Axehead (flaked) Backed blade Bifacial form Discoidal form Fabricator/Rod Invasively-retouched form Notched form Plano-convex form (simple; elongated; symmetric; slug) Preform Re-sharpening flake Retouched blade/flake	Rough-out Scraper (concave; convex) Strike-a-light Tracked stone Transverse/Petit tranchet Transverse/Petit tranchet derivative (oblique/lopsided; elongated) Wedge	Axehead (miniature; polished) Bead Bivalve mould Countersunk pebble Figurine Gaming piece Javelin head Macehead Pendant Spindle whorl	Anvilstone Bedstone – saddle quern (elongated; ovoid) Burnisher Elongated pebble tool (bevelled) Fittings Grinding platform Hammerstone Loom-weight Net-sinker Maul Pebble hammer Pot cover Rubbing stone (egg-shaped; plano-convex) Whetstone
	<b>UPL / EML</b>		Microlith (scalene triangle; rod; obliquely blunted point)			
	<b>LML</b>		End-of-blade scraper Moynagh point Trimmed form (butt; distally; backed)			
	<b>NL</b>	Double-ventral flake	Hollow scraper Leaf-shaped arrowhead Lozenge-shaped arrowhead			
	<b>CL / BA</b>		Barbed-and-tanged arrowhead Disc scraper Hollow-based arrowhead Triangular arrowhead	Axe-hammer Battle-axe Bracer Univalve mould V-perforated button	Cushion stone Touchstone	
	<b>IA</b>				Beehive quern	
	<b>Med / Mod</b>		Fire flint Gunflint		Disc quern Plough pebble Pot quern	

## Invasive Artefacts and Dating

Invasive artefacts are diagnostic lithics which occur in contexts that can be categorically stated as preceding or succeeding their determinate period. Two categories are recognised: residuality; and infiltration. Given the survivability of lithics in the archaeological record, these are of concern on any site where multiple activity periods are present; or when the diagnostic lithic(s) is(are) non-concurrent with the evidenced activity.

The identification of these aspects within the pages of lithic analysis report is spurious. To identify, consultation with the lithic analyst should be undertaken when the excavation report author has all relevant excavation data available to them.

### Residual Activity

Residual artefacts are those which occur in deposits later than the date of their origin and dispersal (Brown 1995: 1).

Class	Title	Sub-class	Title	Description
1	Incidental	-	-	Artefact is introduced to a secure context through disturbance caused by the contexts creation, without regard for the artefact by the contexts' creator.
2	Intentional	-	-	Artefact is introduced to a secure context through the knowledgeable action of the contexts' creator.
		A	Functional	Artefact was gathered by later user, and curated and/or re-used with or without additional modification, until intentionally deposited/discarded.
		B	Heirloom	Artefact was passed down generations, for functional and/or symbolic purposes, with or without additional modification, until intentionally deposited/discarded.

### Infiltrated Activity

Infiltrated artefacts are those which occur in deposits earlier than the date of their origin and dispersal.

Class	Title	Description
1	Incidental	Artefact is introduced to a secure context through disturbance caused by subsequent activity, without regard for the artefact by the artefacts' creator or the enactor
2	Intentional	Artefact is introduced to a secure context through the knowledgeable action of the artefacts' creator or the enactor



## Condition of Artefacts

This section explains the factors that impact the condition of lithic artefacts. They are used more in reference to siliceous material, e.g.: flint, quartz. The condition of other lithic geologies, e.g.: granite, is less well presented in relation to these aspects. Also, in reports condition is more used for chipped lithic material than ground/coarse pieces.

The terms can appear in several forms in reports, e.g.: patina, patination, patinated. They all refer to the same aspect.

### **Broken**

Lithic artefacts can be recovered in a fractured state. Breaks can be the result of archaeological use – intentional or accidental; or post-depositional damage.

The extent of breakage can mask the form of an artefact. If a distal fragment is found, it is impossible to say if it is from a flake or blade.

### **Edge-damaged**

**Edge-damage** refers to the small chipping visible along the edges of artefacts. This may be the result of intentional use or post-discard/deposition processes. It can also be caused after recovery. Placing multiple lithic artefacts into one bag, or multiple bags insecurely packed into a larger container, has been shown to create edge-damage (Andrefsky Jr. 2005: 197).

It is differentiated from breakage by its extent. Some edge-damage can be large enough to resemble crude retouch.

### **Abraded**

**Abrasion** is the dulling of edges and ridges, and a loss of colour. It is often attributed to post-depositional disturbance. After an artefact is discarded, either into a context or on the surface, it is viewed as being subject to trampling or other forms of disturbance, such as water or wind action. Its presence as the result of archaeological use should not be dismissed without proper consideration.

**Rolling** is a more extreme form of abrasion. Edges and ridges are severely dulled, blunted, and there is a greater loss of colour. It can result in the obliteration of retouch, and cause edge-damage (Woodman *et al.* 2006: 98). Flint nodules collected from beaches display rolling on their cortex. This has been polished smooth by the action of water on sand.

### **Ignition Scale**

Lithic artefacts can display indications of exposure to heat. This ranges from a slight lustre to being heavily burnt. The level of exposure is set out on a rising scale of 0 to 4.

0	=	Not heat affected
1	=	Lustre
2	=	Discolouration; lustre
3	=	Strong discolouration; slight crazing; lustre
4	=	Pot-lid fragment; piece displaying pot-lid scar, and/or strong discolouration, and/or crazing

Some of the aspects are variable. Discolouration does not appear on all pieces or is variable, as it is dependent on the presence of metallic oxides (Inizan *et al.* 1999: 24). Lustre will appear on interior surfaces only, not external ones (*ibid.*)

Also known as burning, heat treatment or thermal treatment (Andrefsky Jr. 2005).

### Patinated

**Patina** is any film, rind, encrustation, or layer produced on the surface of siliceous material due to geochemical processes of weathering, which are context-dependent and occur post-deposition (Inizan *et al.* 1999: 91). True exterior surfaces (e.g.: cortex) are not considered as a form (Glauberman, Thorson 2012). The development of patina can vary greatly. Artefacts recovered from the same context can develop patination to different levels.

Patination is best recognised on flint. It appears as a white area on the surface and penetrates into the material. Its presence on other siliceous rocks, e.g.: jasper or quartz, is less understood.

**Iron staining** is indicated by a discolouration on rocks. It is noted here as a sub-form of patination. It is a form of oxidation, that can degrade rock both externally and internally. It can appear from red to dull brown in colour. The effects and appearance can vary depending on the iron oxide mineral that is acting upon the lithic (Lowery, Wagner 2012). In some instances, it can develop into a concretion.

**Weathering rind** is a particular type of patina found on Chert. It is an external layer that forms on surfaces. It does not penetrate into the material (Driscoll *et al.* 2016).

Patination, of any form, has no chronological significance (Inizan *et al.* 1999: 91). In some cases, it can identify the re-use of an artefact. This is indicated by the interruption of the patina by retouch, flakes, or other.

### Gloss

**Gloss** is a shiny surface condition. It can have a natural origin (water, wind, friction due to vibration, etc.). It is also produced by use (Inizan *et al.* 1999: 142). This human-created wear is most associated with sickle gloss.

There may be some difficulty in differentiation between **gloss** and the lustre caused by heat exposure.

## Glossary of Terms

### A

*Abrasion*: see Condition of Artefacts.

*Active percussor*: see *Percussor*.

*Active/passive percussor*: see *Percussor*.

*Adze*: modified type. Lithic where cutting- or chopping-edge mounted perpendicular to shaft. (Ballin 2021).

*Amulet*: see *Pendant*.

*Anvilstone*: inelastic support that a lithic or other item is placed upon and then struck from above. Form can be modified by use or through preparation. Sub-categories: *static* = larger pieces with a flat base, often pyramidal in form, weigh over 10kg; *mobile* = small blocks of varying form. (Goren-Inbar *et al.* 2015; Mora, Torre 2005). See *Percussor – passive*.

*Approach (reduction)*: refers to the general category of reduction applied to a lithic, e.g.: bipolar, freehand.

*Armlet*: see *Bracelet*.

*Arm-ring*: see *Bracelet*.

*Arris*: ridge separating scars of different removals on the dorsal face. (Ballin 2017).

*Arrowhead*: modified type. Lithic for piercing and cutting, mounted onto a shaft. Projectile point. Sub-categories: numerous types and sub-types. (Ballin 2021; Green 1984).

*Awl/Borer*: modified type which displays a pointed projection, which is straight or slightly curved. Sub-categories: *bifacial* = usually on thin flake with retouch on both faces creating a narrow and thin needle-like point; *robust* = on large blades/flakes, trimmed to a sturdy point, retouch on one face, lithic can be thick. (Woodman *et al.* 2006; McConaughy 2003: 483). Also known as: beaked denticulate; nosed denticulate.

*Ax(e)*: broad classificatory term, encompassing several forms – adze, axehead, chisel, wedge. (Cooney, Mandall 1999).

*Axe-hammer*: centrally perforated modified type with one acute end and the other rounded or squared. Finish can vary from rough to ground and polished. Sub-categories: *Type I* = straight or slightly convex profile; *Type II* = concave profile. (Simpson 1996\1990a).

*Axehead*: modified type. Lithic where cutting- or chopping-edge mounted parallel to shaft. Sub-categories: *core* = created through façonnage of cobble/nodule/pebble, sharp front edge with blunt butt, body can have pointed-oval, sub-triangular, rhomboid or trapezoidal cross-section, removal scars on faces; *flake* = created on large flake, will display dorsal and ventral surfaces; *miniature* = length is less than 6cm – does not exclude functionality; *polished* = removal scars have been eliminated through further modification to leave the faces smooth. (Ballin 2021; Cooney 2015; Woodman 2015).

### B

*Backed*: descriptive of retouched edge. Retouch is continuous, regular – and is abrupt enough not to create a cutting edge. (Inizan *et al.* 1999).

*Bangle*: see *Bracelet*.

*Base lithic*: see Classification of Artefacts.

*Battle-axe*: perforated modified type with one acute end and the other rounded. Finish can range from finely shaped and decorated to simpler and plainer versions, with cruder examples similar to axe-hammers. Sub-categories: *Early* = boat-shaped plan, smooth and rounded butt, sharp cutting edge, horizontal or convex outline – some examples dished, perforation mostly towards butt end – some central; *Intermediate* = boat-shaped plan, expanded profile to blade and butt ends, perforation towards butt end; *Late (Bann)* = general expansion of blade and butt end, perforation typically towards centre situated in concavity, often decorated. (Simpson 1996\1990b).

*Beach*: resource term. See *Erratic*.

*Bead*: modified type. Personal adornment. Displays a perforation or perforations through which a cord can be passed for mounting.

**Bedstone:** modified type. Passive percussor – part of a quern. Stone which holds item for grinding. Shaping can range from just the grinding surface to finely shaped bodies. Sub-categories: *irregular* = unworked, except for grinding area; *oval* = rounded, symmetrical shape; *pear-shaped* = one broad end, other tapers to a point; *sub-rectangular* = sub-rectangular shape with rounded top and sides; *trapezoidal* = four unequal sides, one end two-thirds of maximum width. (Connolly 1994). Also known as: lower stone; saddle quern.

**Bifacial form:** modified type. Forms that display retouch on two faces, which is invasive and irregular. Form varies, but rarely worked to acute point. (Woodman *et al.* 2006; Nelis 2004).

**Bipolar reduction:** technique where a hammerstone is used to knap material placed on an anvilstone. Sub-categories: *axial* = impact points of active and passive percussors are aligned; *non-axial* = impact points of active and passive percussors are offset.

**Blade:** lithic artefact with one identifiable ventral surface where  $L \geq 2W$ , and  $W > 4\text{mm}$ . Sub-categories: *microblade* = blade where  $L \geq 2W$ , where  $W < 4\text{mm}$  (Ballin 2017); *retouched* = displays retouch.

**Blank:** refers to all substantial products intentionally removed from a core. (Woodman *et al.* 2006).

**Bracer:** modified type. Stone plaque with perforations at both ends. Personal adornment – worn around wrist/forearm. (Nicolas 2020). Also known as: wrist-guard.

**Bracelet:** modified type. Circular piece of stone, with large central perforation. Cross-section is commonly D-shaped, with round, semi-circular, elliptical, triangular also known. Decoration is rare. Personal adornment – worn on wrist, upper arm, ankle. (Gormley 2017; Stevens 2017). Also known as: armlet; arm-ring; bangle.

**Broken:** see [Condition of Artefacts](#).

**Bulb of force:** see *Bulb of percussion*.

**Bulb of percussion:** a product of the propagation of waves of percussion, extending from the impact point. Can be positive, i.e.: projects out from ventral surface, or negative, i.e.: projects into dorsal surface. Can occur in single (most common), double, or triple. Sub-categories: *diffuse* = flat or very slight occurrence from ventral surface, can be difficult to distinguish; *hinged* = presents with a distinct lip at the bottom of the bulb before merging with ventral surface proper, associated with bipolar reduction; *pronounced* = prominent occurrence from ventral surface. (Andrefsky Jr. 2005; Inizan *et al.* 1999). Also known as: bulb of force.

**Bulb scar:** see *Eraillure scar*.

**Bulbar scar:** see *Eraillure scar*.

**Burin:** broad ranging term. Denotes lithic with distinctive removal that creates a chisel-like edge. (Andrefsky Jr. 2005; Tomášková 2005; Inizan *et al.* 1999).

**Burin spall:** removal from edge of blade/flake – described as longitudinal, straight, narrow, thick. Characteristic of burin-blow technique. (Andrefsky Jr. 2005; Tomášková 2005; Inizan *et al.* 1999).

**Burnt:** see [Condition of Artefacts](#).

**Burnisher:** modified type. Can be on a variety of forms: blade, flake, pestle, water-rolled pebble. Needs to be large enough to be held. Displays a smooth, slightly convex or flat surface which was used for burnishing. (Ionescu *et al.* 2015).

**Butt:** multiple usages. For Axehead (and similar) = end of form which was not active. For Chipped Lithic = see *Proximal*. (Woodman *et al.* 2006; Cooney, Mandal 1998).

**Button:** modified type. Personal adornment – worn on clothing. Sub-category: *v-perforated* = defined by pair of holes drilled from base which converge in a V shape, several sub-types based on form exist. (Shephard 2009). Also known as: v-bored button.

## C

**Chip:** lithic artefact which has a greatest dimension (GD)  $\leq 10\text{mm}$ . (Ballin 2017).

**Chipped lithic:** see [Classification of Artefacts](#).

**Chunk:** see *Indeterminate piece*.

**Coarse lithic:** see [Classification of Artefacts](#).

**Cobble-hammer:** see *Maul*.

**Conchoidal:** type of fracturing. Identified by presence of Hertzian cone. Is demonstrably produced only by human action.

**Core:** lithic artefact with only dorsal surfaces. Sub-category: *bracelet core* = roughly circular piece, with opposing removals around edges (Gormley 2017; Stevens 2017); *tested core* = removals appear to have been conducted to investigate quality of raw material (Ballin 2017).

**Cortex:** chalky exterior surface found on flint nodules. Diminishes once nodule is removed from primary geological context – becomes thin, smoothed, or indented.

**Cortex extent:** degree to which cortex covers dorsal surface. Categories: *primary* = dorsal surface of removal displays  $\leq 90\%$  cortex covering; *secondary* = dorsal surface of removal displays  $>90\%$   $<0\%$  cortex covering; *tertiary* = dorsal surface of removal displays 0% cortex covering. These categories can vary depending by analyst and on analytical protocol.

**Countersunk pebble:** modified type. Small oval stones with two flat/curving opposed surfaces which display broad and shallow hollows. Hollows created by careful pecking. Ends can display significant bruising. Typically on a hard geology, e.g.: quartzite or durable volcanic rock. (Woodman *et al.* 2006).

**Cushion stone:** modified type. Passive percussor used in metalworking. Parallelepiped or sub-rectangular in form. Displays one or more flat, highly polished surface(s). May display facets or indentations, or traces of metal. (Armbruster 2010; Freudenberg 2010; Woodman *et al.* 2006). Also known as: anvil(stone). See *Percussor – passive*.

## D

**Debitage:** the action of reduction; pieces which display dorsal and ventral faces (in most cases); lithic products and by-products that are detached from cores and other pieces ofdebitage (Ballin 2017; Inizan *et al.* 1999).

**Debris:** any shapeless fragment, when the means by which it was fractured cannot be identified, and it cannot be classified further. (Inizan *et al.* 1999). Synonymous with: chunk; shatter.

**Denticulate:** modified type. Displays projection(s) created by a series of adjacent flaked/retouched concavities (shallow or deep). Sub-categories: *beaked* = two adjacent concavities which create prominent projection between, see *Awl/Borer*. (Picin *et al.* 2011).

**Diagnostic:** artefact or technique that is exclusively associated with a particular archaeological (sub-)period.

**Direct percussion:** see *Percussion*.

**Discoidal form:** modified type. Roughly discoidal bifacial lithic. Edges are bevelled and arrises blunted by polishing. Bulb of percussion and platform typically removed. One edge blunted to allow for grip. Categories: *I* = circular; *II* = triangular; *III* = broad leaf; *IV* = rectangular. (Clark 1929). Also known as: discoidal polished flint knife.

**Distal:** section of artefact furthest from striking platform.

**Dorsal:** refers to the face of a lithic that was exterior, i.e.: exposed prior to removal. Can display: arris; cortex; platform preparation; removal scars. (Woodman *et al.* 2006).

## E

**Écaillé retouch:** small scars, irregular in size and occurrence. Present on the active and passive ends of bipolar cores and wedges. Appear similar to formal secondary modification, but created incidentally by hammering. (Peña, Toscano 2013). Also known as: splintered retouch; step scars.

**Edge:** outline of a lithic artefact. (Inizan *et al.* 1999).

**Edge-damage:** see Condition of Artefacts.

**Elongated pebble tool:** modified type. Elongated pebbles which show chipping, pecking, or bruising at one or both ends. Sub-category: *bevelled* = usually elongated beach pebbles where one or both ends have been chipped, pecked, and bruised into a bevel. (Woodman *et al.* 2006).

**Eraillure scar:** unintentional removal that can appear on ventral surface. Varies in size. Located on or below bulb of percussion. Caused by impact of percussor. Also known as: bulb scar; bulbar scar.

**Erratic:** type of resource. Denotes resources that are recovered from outside their primary geological context, e.g.: from soil or beach. Sub-categories: *beach* = typically displays a smooth, polished cortex; *soil* = typically displays cortex which is smooth in parts, worn in parts, and with damage; *water-rolled* = cortex is smooth or polished, either by sea or river. Also known as: remanié.

**Exterior surface:** rough surface that appears on Chert. (Driscoll *et al.* 2016).

**F**

*Fabricator/Rod*: modified type. Elongated lithics displaying steep lateral retouch on one or more sides. Appear on blades/flakes/transverse flake segments. Abrasion on ends and sides is characteristic. (Woodman *et al.* 2006).

*Façonnage*: lithic products where the intended object is also the core, resulting in an identifiable object and blades/chips/flakes but no core.

*Figurine*: modified type. Anthropomorphic or zoomorphic stylised object. Rare. (Fanning 1981).

*Finishing*: final phase of working lithic artefact. Associated with polished surfaces.

*Fire flint*: modified type. Piece of flint that is struck by a steel strike-a-light. Develops chipped and crushed edges. (Ballin, Will 2005). See *Percussor - passive*.

*Fittings*: modified type. Objects for mounting doors, or other. Sub-categories: *door-stone* = piece of stone with perforation through one end for upper section of door to pivot on; *heel-stone* = piece of stone with a hollow present on one end for lower section of door to pivot on, form varies. (Fanning 1981).

*Flake*: lithic artefact with one identifiable ventral surface, GD > 10mm and L < 2W. Sub-categories: *double-ventral* = flake is removed from the ventral surface of another flake, resulting in two unfaceted ventral surfaces; *irregular* = flake that displays no straight edges > 10mm; *regular* = flake that displays a straight edge ≥ 10mm; *re-sharpening* = small form, often with curved profile, dorsal surface may display previous retouch scars, indicates rejuvenation of working edge of lithic object; *retouched* = displays retouch. (Ballin 2017; Woodman *et al.* 2006; Nelis 2004).

*Fragment*: incomplete lithic artefact. Sub-categories: *pot-lid* = semi-hemispherical fragment, typically displaying strong discolouration and possibly pitting, characteristic of intense burning.

*Freehand reduction*: technique where a hammerstone is used to knap material held in hand.

**G**

*Gaming piece*: modified type/manuport. Shaped or natural stone interpreted as used for recreational purposes. Sub-categories: *caidhtí* = roughly shaped plano-convex discs, vary

in diameter; *jackstone(s)* = typically small pebbles, often found in a group, with one stone different from others. (Fanning 1981).

*Gloss*: see Condition of Artefacts.

*Grinding*: form of secondary modification. Involves rubbing against a stone surface, typically fine-grained, with or without the addition of an abrasive agent, in a water matrix. Can also be done using a hand-held stone. Can be the result of purposeful action, e.g.: ground axehead; or as result of use, e.g.: grinding surface of pestle. Distinction between ground and polished depends on degree of working. (Woodman *et al.* 2006).

*Grinding platform*: modified type. Artefact which displays surface used for grinding. Does not conform to quern types.

*Ground lithic*: see Classification of Artefacts.

*Gunflint*: modified type. Piece of flint used as a fire-starter in flintlock weapons. Displays two faces, two laterals, two ends. Sides and ends are typically bevelled. Numerous sub-divisions. (Kohanoff 2019; Ballin 2012). Also known as: gunspall.

*Gunspall*: see *Gunflint*.

**H**

*Hackle*: see *Radial line*.

*Hammerstone*: modified type. Active percussor used in a variety of workings. Sub-category: *triangular-shaped* = flat face opposite a pointed end, associated with metalworking (Armbruster 2010; Freudenberg 2010). See *Percussor – active*.

*Heat treatment*: see Condition of Artefacts.

*Hertzian cone*: conical-shaped force of fracture, which propagates from point of impact. Diagnostic of conchoidal fracture. (Clarkson, O'Connor 2013).

**I**

*Ignition scale*: see Condition of Artefacts.

*Indeterminate piece*: lithic artefacts which cannot be unequivocally identified as either debitage or core. Generally, the problem of identification is due to irregular breaks, frost-shattering or fire-crazing. *Chunk* are larger indeterminate pieces, and in, for example, the case of quartz, the problem of identification usually originates from a piece flaking along natural planes of weakness rather than flaking in a conchoidal manner. (Ballin 2017).

*Indirect percussion*: see *Percussion*.

*Infiltrated*: see [Invasive Artefacts and Dating](#).

*Invasive*: see [Invasive Artefacts and Dating](#).

*Invasively-retouched form*: displays flat invasive retouch on one or more laterals. Form ranges from crude to fine, and incorporates a variety of shapes. (Woodman *et al.* 2006).

*Iron staining*: see [Condition of Artefacts](#).

*Irregular flake*: see *Flake*.

## J

*Javelin head*: modified type. Lithic for piercing and cutting, mounted onto a shaft. Two ends worked to a point Projectile point. L ≥50mm. Sub-categories: *A* = leaf-shaped form; *B* = kite- or lozenge-shaped form; *C* = elongated kite- or lozenge-shaped form. (Woodman *et al.* 2006)

## K

*Knap*: generic term for the reduction of lithic material by percussion methods.

## L

*Lateral*: refers to the side – from the centre line to the edge – of a lithic object.

*Lithoculture*: the presence/use of rock as a raw material within society during an archaeological period.

*Lustre*: see [Condition of Artefacts](#).

## M

*Macehead*: perforated modified type. Appear in Earlier (E) and Later (L) series. Can display decoration. Sub-categories: *bush barrow* = (L) central hour-glass perforation, ellipsoid form; *cushion* = (E) perforation towards butt, elongated form with convex faces, blunt front and butt ends highly polished; *heatherbank* = (E) central parallel-sided perforation, ellipsoid form; *larges* = (L) central hour-glass perforation, elongated form with flattened ends; *ovoid* = (E) perforation towards butt, rounded outline lacking clear facets, widest point near centre; *pebble* = see *Pebble hammer*; *pestle* = (E) perforation towards butt, concave surface around perforation, with expanded terminations, front end bigger than butt end; *unclassified* = does not conform to sub-categories, may display series elements. Transitional forms occur. (Simpson 2006\1989\1988; orkneystonetools.org.uk).

*Manuport*: natural/un-modified lithic object interpreted as archaeologically significant.

*Maul*: modified type/manuport. Large well-rounded stone, typically a water-rolled cobble, displays battering at one end. Often fragmented. Sub-category: *waisted* = displays modification on sides for purpose of hafting. (O'Brien 2003\1987; Briggs 1983). Also known as: cobble-hammer; mining hammer.

*Medial*: refers to the central portion of an artefact. (Woodman *et al.* 2006; Inizan *et al.* 1999). Also known as: mesial; modial.

*Method (reduction)*: an intended sequence of reduction techniques applied to a lithic resource to create a product. (Inizan *et al.* 1999: 145, 157).

*Microblade*: see *Blade*.

*Microlith*: modified type. Small forms displaying retouch. Sub-categories: *needle point* = narrow retouched blade; *obliquely blunted point* = small blade with retouch on oblique truncation; *rod* = blade with retouch along one lateral; *scalene triangle* = geometric form with retouch on short edges. (Woodman *et al.* 2006).

*Mining hammer*: see *Maul*.

*Modial*: see *Medial*.

*Modified type*: artefacts displaying secondary modification, which may be deliberate or result from use; commonly referred to as 'implement' or 'tool' or 'weapon' in literature.

*Mould*: modified type. Block of stone which displays negative impression of a form for casting. Can display multiple recesses. Sub-categories: *bivalve* = used in a pair, each mould displays

one half of negative form, exterior surface can be finished, also known as: two-part, two-piece; *univalve* = single stone displaying recess(es) for casting, also known as: open. (Collins 1970).

*Moynagh point*: modified type. Elongated, thin, pointed implement. Final finish is grinding. Typically of fine-grained Silt or Slate. (Woodman 2015).

## N

*Net-sinker*: modified type. Triangular stones with perforation at one point. (Woodman *et al.* 2006).

*Non-conchoidal*: type of fracturing. Can be a result of human action or natural incidence.

*Notched form*: displays single, or non-adjacent multiple, concavities produced by retouch. (Picin *et al.* 2011).

## O

*Objective piece*: lithic modified by removal of blades/chips/flakes. Associated with: *Façonnage*. Synonymous with: *Core*. (Andrefsky Jr. 2005).

## P

*Passive percussor*: see *Percussor*.

*Patination*: see [Condition of Artefacts](#).

*Pebble hammer*: perforated modified type. Natural small sub-circular stones with central hour-glass perforation, typically on a hard geology, e.g.: Quartzite or durable volcanic rock. (Simpson 2006\1988; Woodman *et al.* 2006). Also known as: pebble macehead.

*Pecking*: form of modification. Involves Can appear on ground lithic artefacts. Can also appear on structural elements.

*Pendant*: modified type. Small, polished piece of stone, various forms, can have perforation. Personal adornment. Could be shaped from a natural stone or a broken larger artefact (Roe, Woodward 2009; Woodman *et al.* 2006). Also known as: amulet.

*Percussion*: the action of striking one object with another. Sub-categories: *direct* = where the active percussor itself strikes debitage; *indirect* = where the impact from the active percussor is directed through an intermediary tool. (Inizan *et al.* 1999).

*Percussor*: item used to cause removals. Sub-categories: *active* = used in motion, i.e.: hammerstone; *passive* = stationary, e.g.: anvilstone; *active/passive* = used in both roles.

*Perforation*: hole with an entry and exit point that has been drilled, bored, or otherwise created, on an object.

*Personal adornment*: denotes object that is worn on the person, either attached to clothing or worn on a string.

*Pick*: modified type. Created through *façonnage* of cobble/nodule/pebble, pointed front edge with blunt butt, body can have pointed-oval, sub-triangular, rhomboid or trapezoidal cross-section, removal scars on faces. (Ballin 2021).

*Piezoelectric*: a naturally occurring form of electricity. Associated with Quartz. It is defined as “the ability of a material to generate an internal electric field when subjected to mechanical stress or strain”. (Berlincourt 1971 in Guldiken, Onen 2012: 120).

*Plano-convex form*: modified type. Unifacially retouched piece, worked to two rounded ends. Sub-categories: *elongated* = any form with a length-breadth ratio exceeding 3:1; *slug* = narrow, elongated form with domed profile; *symmetric* = sides are symmetrically shaped. (Woodman *et al.* 2006). Also known as: plano-convex knife.

*Platform*: surface which receives the force of a percussor. Numerous types. *Opposed* = removals from a platform core that occur from two opposing ends. (Ballin 2021; Clarkson, O’Connor 2013).

*Plough pebble*: modified type. Small pebble displaying one worn or faceted face. Predominantly of Quartz and Flint. (Brady 1988).

*Polishing*: form of modification. Involves burnishing surface with soft leather. Creates high-lustre gloss. Distinction between polished and ground depends on degree of working. (Woodman *et al.* 2006).

*Pot cover*: modified type/manuport. Thin, circular object. Flat and smooth on both faces, edges can be polished. Diameter would be relative to size of pots. (Fanning 1981).

*Pre-form*: a rough-out which has received particularly careful preparation. Prior to the finishing phase. Little additional modification required to achieve final form. Primarily associated with bifacial modified pieces. (Inizan *et al.* 1999).



*Proximal*: section of artefact nearest to the striking platform.

*Punch*: intermediate between hammerstone and core, which controls and directs the fracture force. Can be of antler, bone, ivory, wood, metal. (Woodman *et al.* 2006).

*Pseudo*: prefix used to denote natural material which resembles human-struck objects, produced by natural/unintentional causes.

## Q

*Quarry*: location for the recovery of raw material from a greater geological body.

*Quern*: modified type. Platform used to grind foodstuffs or other material – distinctive shapes.

Can refer to set, e.g.: bedstone and rubbing stone = saddle quern. Sub-categories: *beehive* = dome-shaped upper stone, with central funnel-shaped hopper, can be decorated; *disc* = two flat, round stones, upper stone has a central cylindrical perforation, lower stone has a central spindle hole, also known as rotary; *pot* = lower stone of quern with a cylindrical hollow, in which the upper stone revolved; *saddle* = stone with smoothed hollow on one face, several sub-divisions – see *Bedstone*. (O’Sullivan, Downey 2006; Connolly 1994; Kelly 1984; Caulfield 1977).

## R

*Radial line*: fracture mark appearing on ventral face. They converge on the impact point, so can indicate position of platform. (Ballin 2017; Inizan *et al.* 1999). Also known as: hackle.

*Regular flake*: see *Flake*.

*Remanié*: see *Erratic*.

*Removal*: general term referring to any lithic piece struck from another piece. (Inizan *et al.* 1999).

*Removal scar*: negative imprint of removal, seen on dorsal surface and core.

*Residual*: see [Invasive Artefacts and Dating](#).

*Retouch*: form of modification. Involves a removal, or series of, initiated to obtain a specific form, or (re-)establish a working edge. (Inizan *et al.* 1999). Also known as: secondary flaking; secondary modification.

*Re-used*: denotes a piece from an earlier period which shows modification for/from use in a subsequent period.

*Ripples*: see *Waves of percussion*.

*Rolled*: see [Condition of Artefacts](#).

*Rough-out*: altered piece where shape is close to final form. Primarily associated with bifacial modified pieces. (Inizan *et al.* 1999).

*Rubber stone*: see *Rubbing stone*.

*Rubbing stone*: modified type. Active percussor – part of a saddle quern. Sub-categories: *egg-shaped* = ovoid shape without any pronounced flat areas; *plano-convex* = D-shaped cross-section, slightly convex smooth grinding area. (Connolly 1994). Also known as: rubber stone.

## S

*Scraper*: modified type. Displays reasonably extensive area of regular retouch. Form varies. Sub-categories: *concave* = blank is irregular in shape, scraping edge usually shallow and wide, can have multiple concavities; *convex* = can be made on *Blade* or *Flake*, extent and nature of retouch varies; *disc* = scrapers made on small flake blank, functional edge with low angle, max. L < 20mm; *hollow* = made on thin trapezoidal flakes (earlier examples may vary), can have multiple concavities. (Woodman *et al.* 2006; Nelis 2004).

*Scrubbing*: removal of overhangs and irregularities on a platform edge. Seen as a series of short removal scars abutting platform on dorsal proximal end of subsequent removal. (Woodman *et al.* 2006). Also known as: core-edge preparation; scrub preparation.

*Secondary flaking*: see *Retouch*.

*Secondary modification*: refers to the flaking/retouch, grinding, polishing, or pecking, of a resource to produce a modified type; can be applied in consistent or irregular fashion. (Ballin 2017).

*Segment piece*: removal with one sharp acute edge opposite a less acute edge, roughly triangular cross-section. Resembles orange segment. (Knarrström 2001). Also known as: segment(ed) flake/knife/tool.

*Spindle whorl*: modified type. Centrally-perforated object used with a spindle for spinning. Form varies – weight is important in identification. Can be decorated – varies in quality and degree. (O’Brien 2010).

*Splintered piece*: see *Wedge*.

*Splintered retouch*: see *Écaillé retouch*.

*Split pebble*: see *Split resource*.

*Split resource*: raw material that has been split in halves or thirds. Results in usable material but no clearly defined core or removal.

*Step scar*: see *Écaillé retouch*. (Clarkson, O’Connor 2013).

*Strike-a-light*: modified type. Piece of flint that is struck off a piece of pyrite to create fire. Develops smooth, abraded points. (Ballin, Will 2005). See *Percussor – active*.

## I

*Technique (reduction)*: refers to the specific form of reduction applied to a lithic, e.g: direct percussion, non-axial bipolar reduction, pressure flaking. (Inizan *et al.* 1999: 157).

*Termination*: refers to the form of the distal end of a lithic removal. Various forms.

*Tested core*: see *Core*. Also known as: tested pebble.

*Tested pebble*: see *Tested core*.

*Thermal treatment*: see Condition of Artefacts.

*Tool*: term that implies lithic artefact has definitely been used. Often seen in literature. Can be used in opposition to *weapon*. (Inizan *et al.* 1999: 157).

*Touchstone*: used in assaying of precious metals. Generally small, naturally-rolled pebbles. Typically very fine grained and dark colour stone. May display striations. May have a small perforation. (Armbruster 2010).

*Tracked stone*: modified type. Usually on small, oval, slightly flat pebbles. Display a narrow groove angling across the longitudinal axis. Can be on both faces, at different angles. Often on geology such as Quartzite. Possibly related to *Strike-a-light*. (Woodman *et al.* 2006; Knowles 1889).

*Transverse/Petit tranchet*: modified type. Often on *Flake*, retouched along laterals, trapeze or triangular in shape. Commonly interpreted as *Arrowhead*. (Woodman *et al.* 2006).

*Transverse/Petit tranchet derivative*: modified type. One end retouched to a point, other displays concavity, possibly with barb, sub-triangular in shape. Commonly interpreted as *Arrowhead*. Sub-categories: *elongated* = form is long and narrow; *lopsided/oblique* = form is sub-triangular. (Woodman *et al.* 2006).

*Trimmed form*: modified type. Large blade or flake displaying peripheral retouch in particular areas. Sub-categories: *backed* = heavy retouch along one edge, usually squat thick flake; *butt* = retouched near butt after removal; *distal* = area of oblique retouch at distal end, may have retouch at butt. (Woodman 2015; Woodman *et al.* 2006).

## U

*Unclassified*: a category of lithic material, where pieces cannot be unequivocally determined to be the result of human reduction or the product of natural actions. This is particularly relevant in assemblages where bipolar material is present.

*Utilised*: term used to denote non-retouched piece has been used. Highly speculative when unsupported by use-wear analysis.

## V

*Ventral*: refers to the face of a lithic that was interior, i.e.: unexposed prior to removal. Can display: bulb of percussion; erailure scar; radial line; waves of percussion. (Woodman *et al.* 2006).

## W

*Waste*: subjective description of debitage. Difficult to establish. Can be valid when discussing debitage removals, e.g.: flakes, produced during *façonnage*, or rejuvenation pieces of cores.

*Waves of percussion*: . Sub-categories: *complete* = extent is across the whole ventral surface, associated with non-conchoidal fracture; *neutral* = extent is contained within a Hertzian cone resulting in smooth wings to either side of the platform on the ventral surface, associated with conchoidal fracture. Also known as: ripples.

*Weathering rind*: see Condition of Artefacts.

*Wedge*: modified type. Displays *écaillé* retouch on active end. Passive end displays symmetry. Appears similar to bipolar cores – causes difficulty in identification. (Peña 2011). Also known as: splintered piece.

*Whet stone*: modified type. Piece of abrasive stone used to sharpen metal objects. Shaping can vary from distinctive to minimal. Typically has a regular, block shape, with rectangular cross-section. Two broad faces, which display signs of wear. (O'Connor 1991).

*Wrist-guard*: see Bracer.

X

Y

Z

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