

## Mid Grampian Mesolithic Lithics 2023

### EA1 East Aquhorthies (EA1), Moonhaugh (MH1), Manar (MR1)

#### Lithic assessments

### Ann Clarke December 2023

#### *East Aquhorthies EA1*

A total of fifteen flaked lithics were collected (Table 1). Flakes dominate (n=9). There are four retouched tools including three scrapers, one a small thumbnail type and two larger Late Neolithic scrapers. An edge retouched tool has a coarse denticulate edge. Although small, the composition of the assemblage suggests that it was formed in the Late Neolithic and/or Bronze Age.

#### *Moonhaugh (MH1)*

A total of 37 flaked lithics were collected (Table 1). The cores are simple quartered pebbles and a multi-platform flake core. Flakes and blades are both present. The five retouched tools include two notched blades, a microburin, an obliquely blunted blade which date to the Late Mesolithic and an awl which is less easy to date. The presence of blades and the retouched blades indicates Late Mesolithic occupation in the vicinity.

#### *Manar (MR1)*

A total of 86 flaked lithics were collected (Table 1). The cores are mainly blade cores dating to the Late Mesolithic which show the stages of reduction from a quartered pebble to a single platform conical core. A multi-platform flake core and a bipolar core worked on a broad flake date the Late Neolithic or Bronze Age. The retouched tools include four scrapers, two of which are made on flakes from multi-platform cores and date to the Neolithic. A knife with shallow edge retouch is present along with two large flakes which are unretouched but exhibit edge wear from use – both of the flakes have a ‘bruised’ edge where the centre of the edge has been crushed from heavy use (Figure 1, 16 and 89). Based on the flaking technology these are likely to date to the Neolithic. The presence of blades and blade cores indicates Late Mesolithic or Early Neolithic occupation in the vicinity. Flake cores and scrapers and perhaps the utilised flakes indicate the occupation of the area during the Late Neolithic and/or Bronze Age.

| Site | Flake | Blade | Small<br>flake | Core   | Retouched<br>tool  | Chunk/<br>Spall | Total |
|------|-------|-------|----------------|--|--|-----------------|-------|
| EA1  | 9     | 1     | 1              | 0  | Scraper x 3,<br>Edge<br>retouched  | 0               | 15    |
| MH1  | 16    | 6     | 0              | MP/F,<br>Quartered<br>pebble x 2   | Notched blade<br>x 2,<br>Microburin,<br>Obliquely<br>blunted blade,<br>Awl | 7               | 37    |
| MR1  | 36    | 15    | 7              | MP/F,<br>SP/FB x 2,<br>SP/B x 5<br>RA/B<br>Bipolar,<br>Core fragment,<br>Flaked pebble,<br>Halved pebble | Scraper x 4,<br>Notched,<br>Knife,<br>Gun flint                            | 8               | 86    |

Table 1: Composition of assemblages from EA1, MH1 and MR1

Key: SP/B Single platform blade core; SP/F Single platform flake core; MP/F Multi-platform flake core; RA/B Two platforms at right angles



Figure 1: Utilised flakes 16 and 89

## **Boatley's, Kemnay, Aberdeenshire BY1**

### **Assessment of lithics from field walking 2023**

**Ann Clarke and Roslyn Hay, December 2023**

#### *Introduction*

A total of 3467 flaked lithics and three hammerstones were recorded during field walking at Boatley's, Kenmay, Aberdeenshire in 2023 (Table 1). The collection includes all stages in the manufacturing sequence of stone tools, particularly in the production of blades, and there is also some evidence that tools were used in the vicinity. The lithics date predominantly to occupations during the Late Mesolithic. Some Early Neolithic and Late Neolithic flint working is present too.

The assemblage was catalogued by Roslyn Hay and June Armstrong. This catalogue was reviewed by the author (AC) with the queries addressed and typology of cores and retouched pieces checked.

#### *Material and Condition*

Flint is the most common material worked for tools (>99%). It includes grey and brown pebble flint of varying textures such as mottled or translucent. It is likely that the flint pebbles derived from coastal sources as well as from further inland around the flint gravels of the Boddam area.

Small amounts of materials other than flint have been knapped (Table 2). Thirteen pieces of a possible rhyolite have been identified by the inclusion of spherulites within a fine-grained rock. The attribution is not certain, but it is likely to be some sort of igneous rock. Rolled cortex on five of these pieces indicates that the material was probably collected as river-rounded pebbles. Quartzite and quartz were also knapped in small quantities. A blade fragment and a small flake (514 and 515) are made of quartz crystal.

The greater part of the assemblage (84%) is in reasonable condition i.e. it hasn't been seriously affected by heat damage or chemical alteration in the soil. A significant amount of the assemblage (10%) including flakes, blades and cores as well as chunks and spalls, has been burnt resulting in a white, cracked and crazed alteration (calcined) to the flint. A further 5% of the assemblage is also affected by temperature which causes cracks and spalling of the surface of the flint whilst retaining the original colour. Patination and rolling both affect less than 1% of the assemblage (Table 3).

#### *Primary reduction*

Primary reduction steps comprise the preparation of pebbles to make suitably shaped core blanks and the subsequent detachment sequences to produce flakes and blades.

By far the most common reduction sequence is that which creates a suitable core from which to detach blades. A pebble is quartered and one inner face is used as the platform from which to detach flakes and then blades from the edge of the other inner face, towards the cortical back. The result is a single-platform blade core. The core may have been worked all round the platform resulting in a conical or pyramid core, or else worked partially around the platform leaving a back that may be flat, flaked or cortical (Figure 1). Single platform cores with flake, blade or a mixture of removals account for 62% of the total cores – though blade cores are the most numerous (Table 4). The initial pebble shaping is represented by sixteen half pebbles and eight quartered pebbles that haven't been further worked. A number of other blade cores have opposed platforms or platforms made at right-angles (Table 4) and in most cases it appears that a single platform blade core was turned and flaked from another platform in order to remove step fractures that had built up on the core face. For pieces recorded as core fragments the number and direction of platforms cannot be determined but blade scars were present on 12 of the 21 core fragments.

The presence of 12 crested blades indicates a specific core preparation technique to produce blades. Here a ridge is shaped down the core face by flaking (Figure 2); this controls the direction of removal of a blade with the crest on the dorsal face which in turn creates parallel blade scars along which subsequent blades can be removed (Figure 3).

Cores designed to produce flakes are less common. There are 16 multiplatform cores which are simply nodules that have been turned around using the previous flake scar as a platform from which to detach another flake. This flake core technology dates to the later Neolithic and Bronze Age. Three of these cores are more accurately described as 'disc' cores (Figure 4) which here are thick primary flakes flaked around the perimeter to prepare for the detachment of a broad, oval flake. These core forms are distinctively Late Neolithic.

Bipolar working of cores is a simple method of removing flakes from a larger piece such as a pebble, flake, chunk or core fragment. This technique was infrequent here with only ten bipolar cores recorded (Table 4). Amorphous cores and flaked chunks also demonstrate less organised flake removal techniques, and these are few in number (Table 4).

### *Products of core working*

Flakes and blades are the products of core working. At Boatley's numerous flakes and blades were collected with flakes forming 39% of the assemblage and blades 18% (Table 1). The large proportion of flakes with cortex (66% are primary and secondary flakes, Table 5) supports the evidence from the cores (above) that pebbles were reduced and shaped in the vicinity prior to core working. In contrast just 23% of the blades have cortex and these would have been detached when working around the quartered pebble.

Small flakes (<15mm in maximum dimension) form a significant portion (21%) of the assemblage. The inclusion of these small pieces in the collection suggests that a good cross-section sample of the original assemblage has been collected.

### *Tools*

Tools are identified as flakes and blades with deliberately modified edges (retouched tools), or where macroscopic edge damage from use is visible along the edge(s) of the tool. These

latter are termed utilised pieces. A total of 27 blades and twelve flakes has edge damage formed solely from use including serrations and flaking along straight edges. Unmodified blades were preferred for use as knives.

Blades (n=69) and flakes (n=55) and a single core were selected for additional shaping as tools. The range of retouched tools is wide including microlithic forms, knives, scrapers and awls (Table 6).

As well as using small narrow blades to make microliths the presence of nine microburins and fifteen notched blades indicates that microlith blanks were also made by snapping blades using notches to control the location and direction of the break (Figure 5, 638). Five narrow blade microliths were identified (Figure 5) (widths 4mm to 6mm) include two backed blades (633 and 635), a crescent or possibly curved scalene triangle (630) and two fragments with single edge retouch (636 and 3144). Microlithic working is also applied to obliquely blunted blades and this is the most frequent type of modified blade here (n=15). They vary in length and width and in the angle of oblique edge (Figures 5 and 8).

Knife forms are made on blades and flakes equally and usually comprise a blunted edge along one side together with an acute edge, often unmodified along the opposite side which served as the blade edge. These tools vary in age but the large knife (Figure 6 603) is a Late Neolithic type.

Other pieces are described as edge retouched with no specific manner or location of retouch.

Scrapers are the dominant tool type in the collection (n=40 Table 6, Figure 6). They range in shape and size and the majority are made from flakes. Scrapers can be difficult to date out of context but two knife/scrapper forms 656 and 660 and 676 with a semi-invasive scraper edge (Figure 6) will date to the later Neolithic. Two scrapers have concave edges (Figure 6, 645) indicating they had been used in the manner of a spokeshave.

Five awls vary in shape and size of borer tip (Figure 7) and are likely to have been used for different thicknesses or softness of materials.

Two flakes have evidence for invasive flaking (Figure 9, 661 and 1651). They have been altered unilaterally (661) and bifacially (1651 with the application of bipolar trimming around the edge to thin the flake. They both appear to be incomplete leaf arrowheads.

### *Hammerstones*

Three hammerstones were collected. One is a quartz pebble with a flake detached from one end and the other two are spherical flint nodules which have been pecked around the surface during use as a hammerstone (Fig 9).

### *Conclusion*

Most of the collection is formed by activity related to blade production. Pebbles were halved or quartered and then worked to detach blades. Crested blades are present indicating that cores were sometimes shaped more carefully in order to direct the removal of blades. Blades

were used unmodified or else selected for further modification in order to make blanks for microliths, or for microliths and obliquely blunted blades. This activity dates to the Late Mesolithic and is typical of the large Mesolithic flint scatters identified along the Dee at Nethermills and East Park by the Mesolithic Deeside Group.

Flake cores, scrapers and knives demonstrate a presence here dating to the Late Neolithic. Just two possible leaf points suggest earlier Neolithic activity along the river.

| <b>Type</b>           | <b>Total</b> | <b>Percentage of Total</b> |
|-----------------------|--------------|----------------------------|
| Flake total           | 1360         | 39                         |
| Flake Inner           | 461          |                            |
| Flake Secondary       | 740          |                            |
| Flake Primary         | 159          |                            |
| Blade Total           | 631          | 18                         |
| Blade Inner           | 483          |                            |
| Blade Secondary       | 148          |                            |
| Core Total            | 202          | 6                          |
| Pebble Total          | 34           | 1                          |
| Retouched Total       | 125          | 4                          |
| Retouched Blade Total | 69           |                            |
| Retouched Flake Total | 55           |                            |
| Retouched Core Total  | 1            |                            |
| Small flake Total     | 743          | 21                         |
| Chunks Total          | 204          | 6                          |
| Spall Total           | 168          | 5                          |
|                       |              |                            |
| <b>Total</b>          | <b>3467</b>  | <b>100</b>                 |
|                       |              |                            |
| Hammerstone           | 3            |                            |
|                       |              |                            |

Table 1: BY1 Lithic assessment, all materials

| <b>Type</b>          | <b>Rhyolite (?)</b> | <b>Quartz/<br/>Quartzite?</b> | <b>Quartz<br/>crystal</b> | <b>Unknown</b> |
|----------------------|---------------------|-------------------------------|---------------------------|----------------|
| Flake                | 5                   | 3                             |                           | 3              |
| Blade                | 4                   | 1                             | 1                         |                |
| Small flake          | 2                   |                               | 1                         |                |
| Retouched<br>scraper | 1                   | 2                             |                           |                |
| Retouched knife      | 1                   |                               |                           |                |
| <b>Total</b>         | <b>13</b>           | <b>6</b>                      | <b>2</b>                  | <b>3</b>       |

Table 2: BY1 Lithic assessment of materials other than flint

| <b>Type</b>    | <b>% Calcined (burnt)</b> | <b>% Heat/frost shattered</b> | <b>% Patinated</b> | <b>% Rolled</b> |
|----------------|---------------------------|-------------------------------|--------------------|-----------------|
| Flake          | 3                         | 3                             | 1                  | 0.01            |
| Blade          | 4                         | 2                             | 0.1                |                 |
| Core           | 9                         | 3                             |                    |                 |
| Retouched tool | 3                         | 2                             | 1                  | 1               |
| Chunks         | 11                        | 15                            | 2                  | 1               |
| Spalls         | 78                        | 18                            |                    |                 |

Table 3: BY1 Condition of flint

| <b>Core type</b>                 | <b>Total</b> |
|----------------------------------|--------------|
| Single platform blade core       | 78           |
| Single platform flake core       | 24           |
| Single platform flake/blade core | 23           |
| Opposed platform core            | 9            |
| Right angled platform core       | 10           |
| Multi-platform core              | 16           |
| Bipolar core                     | 10           |
| Amorphous core                   | 2            |
| Flaked chunk                     | 9            |
| Core fragment                    | 21           |
|                                  |              |
| Complete pebble                  | 3            |
| Flaked pebble                    | 5            |
| Pebble halved                    | 16           |
| Pebble quartered                 | 8            |

Table 4: BY1 Cores and Pebbles

|       | <b>Primary</b> | <b>Secondary</b> | <b>Inner</b> |
|-------|----------------|------------------|--------------|
| Flake | 12             | 54               | 34           |
| Blade |                | 23               | 77           |

Table 5: BY1 Percentage of cortex on flakes and blades

| Type                    | Retouched Blade | Retouched Flake | Retouched Core |
|-------------------------|-----------------|-----------------|----------------|
| Notched                 | 15              | 3               |                |
| Microburin              | 9               |                 |                |
| Microlith               | 5               |                 |                |
| Obliquely blunted blade | 15              |                 |                |
| Edge retouched          | 9               | 8               |                |
| Knife form              | 7               | 7               |                |
| Scraper                 | 8               | 31              | 1              |
| Awl                     | 1               | 4               |                |
| Invasively flaked piece |                 | 2               |                |
|                         |                 |                 |                |
| <b>Total</b>            | <b>69</b>       | <b>55</b>       | <b>1</b>       |

Table 6: BY1 Retouched tool types.



Figure 1: BY1 Single platform cores – NB the cores are turned upside down here.





Figure 2: BY1 Cresting ridge on single platform blade core.



Figure 3: BY1 Crested blades 517 and 509.



Figure 4: BY1 Late Neolithic flake cores 702 and 730.

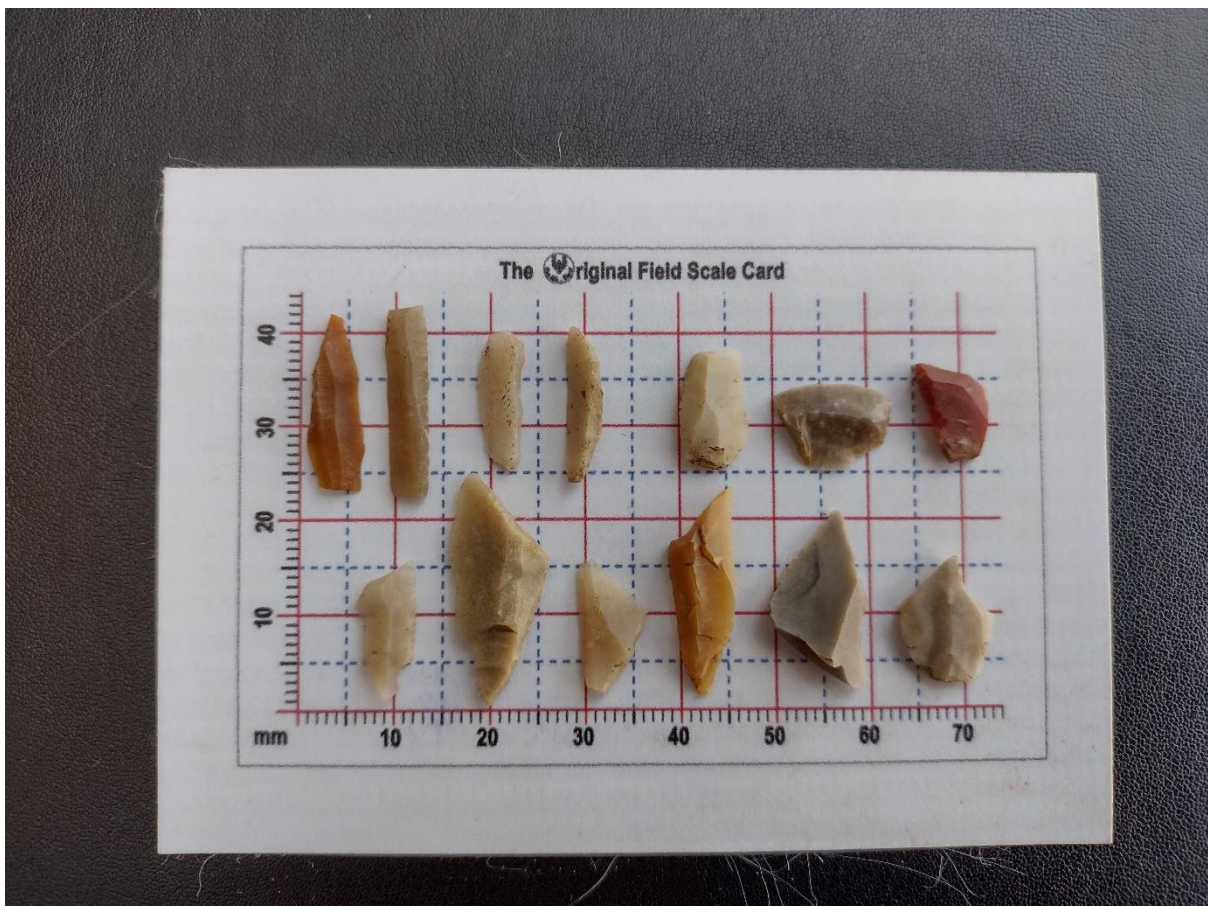


Figure 5: BY1 Various retouched pieces.

Top L -R 635 Backed blade, 636 microlith fragment, 633 backed blade, 630 crescent/scalene triangle, 593 edge retouch, 592 obliquely blunted blade, 628 edge retouch.

Bottom 3144 microlith fragment, 634 obliquely blunted blade, 629 obliquely blunted blade, 631 obliquely blunted blade, 632 edge retouch, 638 microburin.



Figure 6: BY1 Top row scrapers. Bottom row scrapers except for 1000 edge retouch and 603 knife.

Top L-R 676, 667, 648, 673, 660, 644, 645, 1229

Bottom L-R 656, 666, 664, 1281, 649, 655, 1000, 523, 603

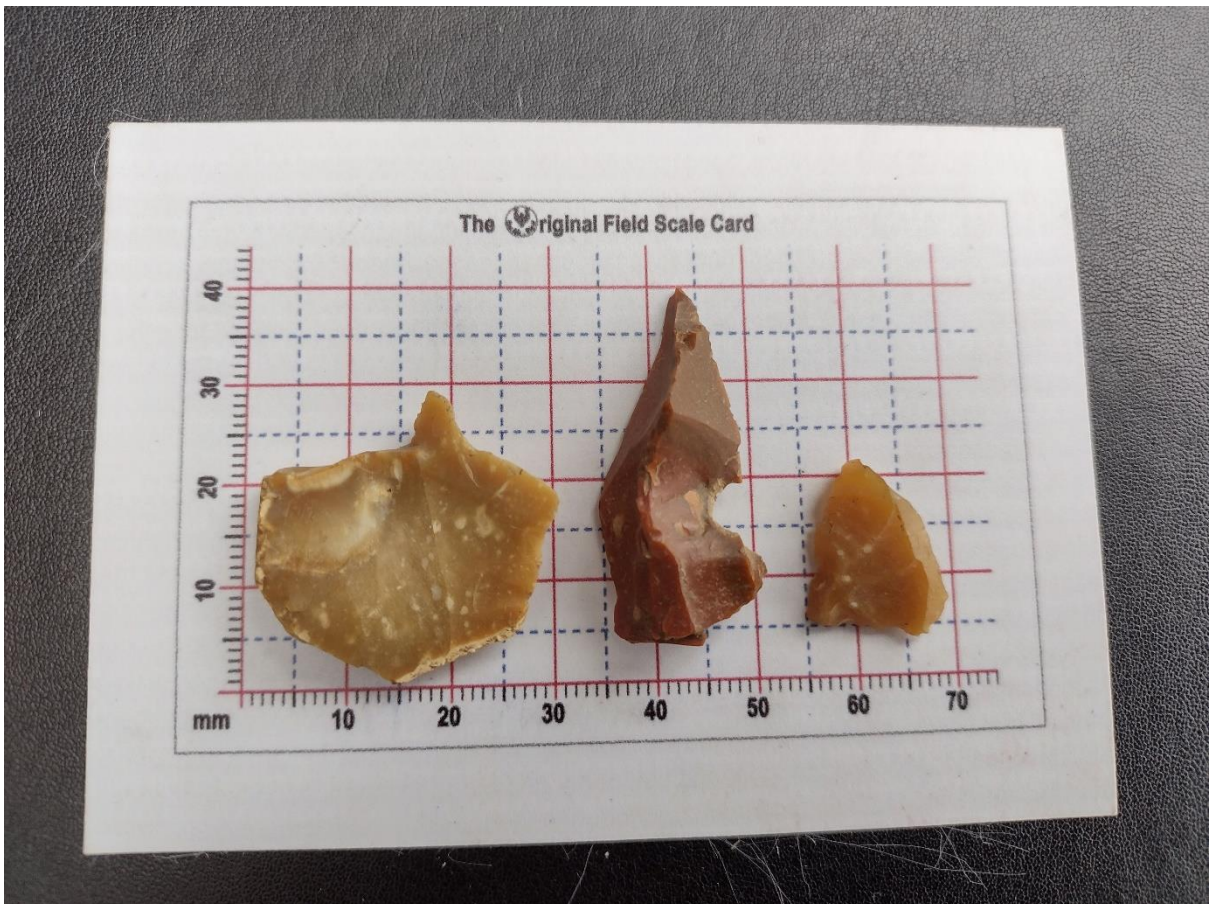


Figure 7: BY1 Awls 2061, 625, 1246

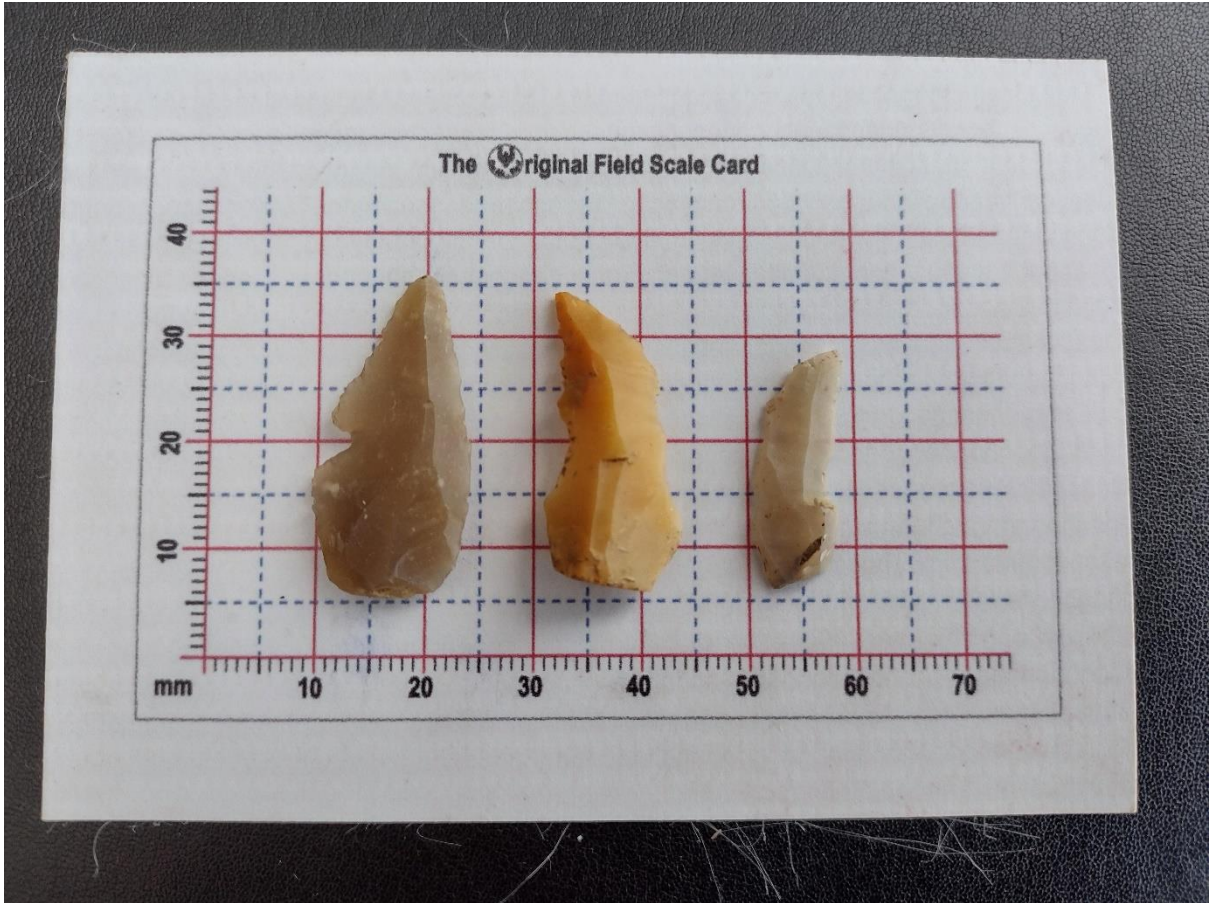


Figure 8: BY1 622 Utilised blade, 594 Utilised blade, 626 Obliquely blunted blade.



Figure 9: BY1 Invasively flaked pieces 1651 and 661.



Figure 9: BY1 Hammerstones 677 and 678