Recognising man-made flints: a short guide

These notes are intended to provide CAFG members with guidance on how to distinguish man-made flint tools from the many natural broken and fractured flints seen when fieldwalking. Mastering this subject requires expertise and a great deal of experience – this short guide provides a simple starting point and an introduction to the terminology used. Photos are from items held in the CAFG flint collection.

Why flint?

Flint is a remarkable natural material. It is one of the most durable of rocks: providing an edge sharper than a metal razor and second only to diamond in hardness. It is of particular value in making tools because, when struck, it fractures in a predictable way. Flint has a softer outside skin known as the ***cortex***. Generally white or buff, this can acquire a brown or greyish stain depending on soil and its mineral content.

Although flint is quite widely available, especially in the south of England, in some cases alternative materials were sometimes used in a similar way – for example chert which has a coarser crystalline structure.

Making flint tools

In order to identify man-made flint tools it is helpful to understand how they were prepared from ***flakes*** struck from a flint nodule. To make a flake successfully it is necessary to have a flat surface called a ***striking platform,*** as shown in Figure 1. This might be a natural feature of the flint nodule or prepared by removing material with a blow from a ***hammerstone***.

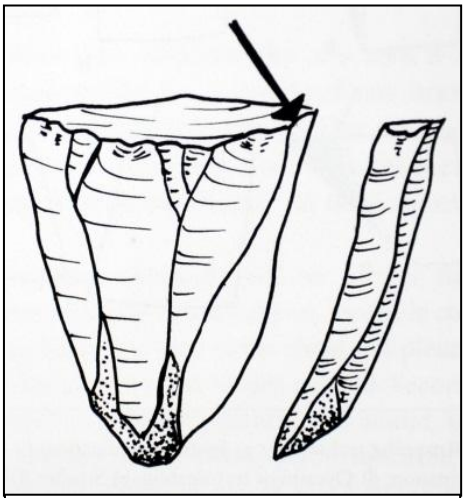

Figure 1. A diagram of a core, showing the flat striking platform at the top, and a struck flake.

The arrow shows the angle necessary to strike off the flake. The remaining nodule shows traces of removed flakes and is known as the ***core***. Most of the man-made flints we see when fieldwalking are either flakes or cores. Photo 1 shows an example of a core.

Flakes that are man-made show key features that result from this knapping process and they are shown in Figure 2. Expect to see ridges on the dorsal (outside) part of the flake and ripples on the inner (ventral) side. There will also be a ***'bulb of percussion'*** at the point where the flake was struck off and from which the ripples radiate. The profile of the flake will often have a gentle curve.

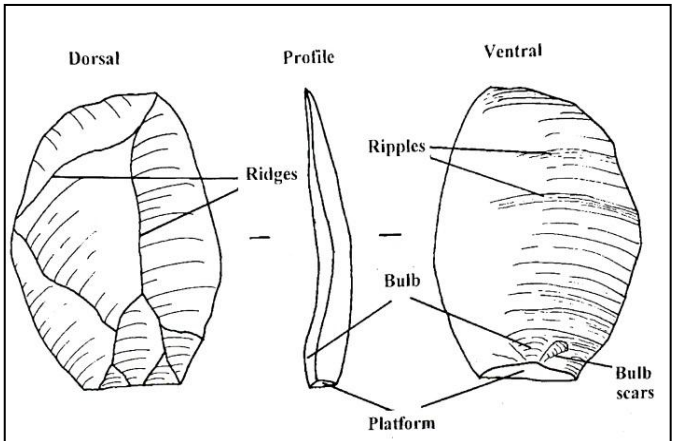

Figure 2. Characteristic features to be found on a man-made flake.

A flake is called a ***blade*** if its length is twice its width and it has parallel edges and ridges on the dorsal side while blades less than 12mm wide are known as ***bladelets***. Some examples of bladelets are shown in Photo 2. The unwanted pieces of flint struck off in the manufacturing process are called ***debitage***.

Photo 1. An example of a flint core found at Lode.

Photo 2. Examples of bladelets found at Over.

A flake will usually have a sharp edge which can be used as a blade for cutting without any further work. However, depending on the type of use to which it will be put, the flake may have been subject to further shaping to create the ideal shape or re-

sharpening to create a suitable edge. This is called ***reworking*** and Photo 3 shows this quite clearly.

Types of tools

Nodules and flakes can be developed into a number of different tools. For example:

- ***Scrapers*** are a commonly found flint tool. They vary considerably in quality and shape. They may have been used for a variety of tasks, such as scraping fat from skins and for working wood. Two examples are shown in photos 3 and 4.
- ***Piercers*** and ***awls***. Used for making holes in skins and wood. A small example is shown in photo 5.
- ***Knives*** – for all purposes. Often a simple flake with an un-retouched straight cutting edge – but they may also have been retouched.
- ***Axes***, including hand axes for cutting meat and hafted axes for tree and other cutting and chopping tasks. See two examples in photos 7 and 8. More ceremonial axes, like that shown in photo 7, were ground with sand to produce smooth surfaces and idealised shapes.
- ***Microliths*** – small pieces of flint which were attached to wood to make cutting edges e.g. for arrow heads and scythes. These can be hard to see when fieldwalking. See photo 6.
- ***Arrow heads*** – these often represent the pinnacle of flint working, requiring much re-touching to achieve the ideal shape. See photo 9 and 10 for examples.

Photo 3. A scraper found at Willingham

Photo 4. A scraper found at Landbeach.

Photo 5. An awl found at Granchester.

Photo 6. A series of microliths found at Hawkecombe.

Photo 7. Polished Neolithic stone axe found in Landbeach.

Photo 8. Paleolithic hand axe found in Histon.

Photo 9. Leaf-shaped arrowhead found in Lode.

Photo 10. Tanged and barbed arrowhead found in Lode.

How to distinguish worked flint from natural flakes

There are a number of features to bear in mind when examining a likely looking flint. You should ask yourself:

- Does the flint have a ***bulb of percussion*** and ***striking platform***?
- Are there ***ripples*** radiating across the inner face of the flake?
- Are there any signs of ***retouching***? Many flints used as tools show evidence of retouching.
- Is the flake the result of modern mechanical action? Ploughs can produce quite convincing flakes with prominent bulbs of percussion – but usually there is no associated striking platform or any signs of re-working.
- Does it have a crazed surface? ***Burnt flint*** is thought to have been used to heat water in containers.
- Are the small circular scars caused by frost fracturing?
- Is it a 'pot lid'?

If in any doubt, ask a more experienced colleague**.**

Photo 11 shows an example of burnt flint. They have a crazed surface and are often grey/white in colour. They are believed to have been used to heat water and the presence of quantities of burnt flint may indicate the presence of an occupation site. Photo 12 shows frost pitting: one of the effects weathering can have on flints

Photo 11. Typical piece of burnt flint found in Lode.

Photo 12. Frost pitting of a flint nodule found in Lode.

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Flint tools were manufactured for over half a million years. Once made, they never decayed so it is, therefore, not surprising that they can be found when fieldwalking. Dating flint requires a great deal of practical experience. However, the following gives a broad indication of the historic periods and tool types associated with them.

- *Palaeolithic – 600,000 to 10,000 Before Present*
  Hand axes predominate (useful for many purposes including butchering animals – a reflection of the hunter gatherer life?) Later, long blades were used to make a whole range of different tools.

- *Mesolithic 10,000 to 5,400 BP*
  New designs were developed based on hunting equipment. Microliths were used to make tools. The adze, rather than the axe, was mainly used. The range of tools probably reflected changes in the way people lived.

- *Early Neolithic 5,400 to 5,000 BP*
  The adze largely disappears to be replaced by the polished or flaked axe. Microliths and other composite tools disappear. Leaf shaped arrow heads make their appearance (perhaps the clearance of woodland meant more effective arrowheads were required). Some polished axes move beyond the purely practical and become desirable status objects.

- *Late Neolithic & Early Bronze Age*
  Metal tools appear. There is a general decline in the quality of flintwork. However, tanged and barbed arrow heads are linked with early Bronze Age or Beaker period.

There is a great deal of written information, academic, on this subject but the following are recommended as a starting point for the interested amateur:

Butler, Chris. 2008 *Prehistoric Flintwork*, The History Press Ltd.

Oakley, Kenneth P. 1972 *Man the toolmaker*, Natural History Museum Publications; 6th Revised edition.

Lord, John W. 1993. *The Nature & Subsequent Uses of Flint*. Published by author.

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