‘The Oldest British Industry’: continuity and obsolescence in a flintknapper’s sample set

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A set of gunflints and other artefacts produced by Fred Snare at Brandon is an example of ways in which craftsmen in a declining trade attempted to create new markets by introducing new techniques and forms, and finding new ways to sell traditional skills. Sample sets and artefacts made for collectors reflect how some gunflint knappers, drawing on romantic conceptions of their craft as ‘heritage’, assigned new meanings to the flint industry as part of a survival strategy for an obsolescent trade.

Key-words: Brandon, flintknapping, romanticism, heritage, obsolescence

Introduction
In the closing years of the gunflint industry, Fred Snare of Brandon made sets of gunflints and related material for collectors. A set by Snare, now in the Museum of London, reflects consistent trends in obsolescent technologies, including a reduction in the range of normal products. However, by including imitations of prehistoric tools, Snare and other knappers expressed some of the meanings that late knappers attached to the craft, specifically a romanticized connection with prehistory, reflecting their attempts to survive as artisans by using both continuity and innovation.

The gunflint industry
The gunflint industry in Britain and France developed as flintlock firearms became important in the 16th century. It flourished in Brandon and other towns in southern Britain into the 19th century, until flintlocks were replaced by percussion locks after the early 1800s and modern cartridge firearms in the later 1800s. An industry that supported a couple of hundred knappers and flint miners in Brandon during the Napoleonic Wars had declined to 70–100 in the 1830s and 1840s, then rapidly to 36 in 1878, 22 in 1907 and 7 in 1904 (Clarke 1935; Gould 1981; Skertchly 1879; Shaw 1981: 160). After World War II there were only about 5 remaining knappers, and after arms embargoes ended their trade to Africa in the 1960s, only Fred Avery remained as the last Brandon knapper. Avery died in 1996 (Ruhe 1996). As the gunflint industry faded away, along with it went a specialized set of tools, an esoteric vocabulary and a community of craftsmen and supporters.

The manufacturing process has been described in detail elsewhere (Skertchly 1879; Clarke 1935; Gould 1981) but a few basics are necessary to understand the specimens described below. Gunflint making was a true cottage industry, organized by individuals and small groups working in homes and workshops, with middlemen who bought flints at markets for export and to fill government contracts. Flint was mined locally by hand, dug from Cretaceous chalks using a distinctive single-ended pick. Labour was usually organized according to three main steps. The cracker or quarterer broke raw nodules into suitable sizes for making cores. The flaker worked the cores, systematically producing long flakes (‘blades’ in archaeological parlance). This was the most difficult step. The knapper segmented the blades, and trimmed the finished gunflints. The tools used were specialized iron hammers.

Gunflint manufacture was remarkably productive. A good flaker could make 10,000 flakes a day, keeping a couple of knappers busy. A good knapper produced 3000–4000 finished flints a day, and Brandon exported millions of
flints yearly. For instance, in 1804 seven merchants were under contract to supply a total of almost 400,000 flints a month to the Board of Ordnance alone (Lotbiniere 1977).

By the 20th century, the traditional system had collapsed. In 1993 when I interviewed Fred Avery, he worked part-time at home, bought his flint from a chalk quarry, and performed all the steps in manufacture himself. He sold flints to museums and suppliers to black-powder firearm enthusiasts, with his largest market in the US. Already by the late 1800s and into the early 20th century, the gunflint industry was struggling. It is in this context that Fred Snare and other knappers began to make and sell sets of flints.
The flints
The Fred Snare set at the Museum of London includes gunflints, other normal products of the industry and some replica antiquities. It was acquired by B.F. Rawlins in the 1930s, and sold with a collection of other flint artefacts to the Museum in 1999. Mr Rawlins informed me that he did not buy directly from Snare at Brandon, but most likely from another collector advertising in Exchange and Mart. Similar sets are known (Mason 1978), but as far as I know, none has been documented by a modern archaeological knapper.

Fred Snare (1858–1934) was descended from at least several generations of knappers (Forrest 1983). He certainly knew archaeologists and talked to them, and this set was plainly made with an antiquarian collector market in mind. It is packed in a small box, with Snare’s card pinned to the lid: ‘OLDEST BRITISH INDUSTRY, FRED SNARE, FLINT WORKS, BRANDON, SUFFOLK.’

Gunflints
All nine gunflints (FIGURE 1: 1–9) are of the typical late British type, carefully made from segments of blades. All are ‘double backed’, that is, having a wide flake scar surface on the dorsal face, defined by two other parallel flake scars, giving a trapezoidal cross-section. In knapper argot recorded by Sketchly (1879: 47) flints like these would be considered ‘bests’ or, if they were slightly too thin or of inferior workmanship or material, ‘seconds’. Double backed flints were held more firmly in the jaws of the cock, while flints with a single ridge across the back were ‘commons’ and of third rank. The blades were segmented by laying them across an iron ‘stake’ and striking the ventral (interior) face with a hammer often made from an old file. This commonly produced a bulb of percussion on the back (dorsal face) of the gunflint where it was in contact with the stake. All except number 6 have well defined edge and heel, with the heel showing coarse or fine retouch on the dorsal face of the blade and the edge very fine retouch on the ventral face, in both cases serving to straighten the two margins of the flake. The edge (always down in FIGURE 1) would normally be the part contacting the frizzen (the upright steel plate of the flint lock), so the straighter it is, the better the shower of sparks.

Sketchly gave an exhaustive list of 32 types of gunflints: about 8 sizes, each with several variants reflecting quality of flint or workmanship. Snare’s specimens are labelled in FIGURE 1 according to Sketchly’s descriptions and measurements. Number 6 has a pencil note on the interior face: ‘gunflint strike a light’ and both flake margins have relatively heavy retouch on the interior face, possibly from use for this purpose. The flint varies from the finest flawless black ‘floorstone’ flint (2, 6, 9) to good dark flint with grey spots (1, 3, 4, 5, 8) to light grey and slightly coarse (7).

Other observers (Woodward 1960; Tomlinson 1897; Wilson 1952; Wyatt 1870; Stevens 1870; Witthroft 1966; Rogerson 1927) recorded similar lists of gunflint sizes and varieties, but the numbers of both diminish through time. Fred Avery told me in 1993 that he made 5 sizes: pistol, bigger pistol, horse pistol, rifle and musket, but remembered formerly making more. Gould (1981: 275) reported Avery making only three sizes of flint. This is what we might expect in a dwindling industry, in part because demand for some products disappeared, but also because as the number of knappers declined and the social setting of knapping changed, knappers were likely to be trained less, and it would be more efficient to make a narrower range of products.

Other normal products of the gunflint industry
Gunflint blade (FIGURE 2: 10)
This is probably intended as an example of the blades used to make the gunflints; it is the right thickness, with a good ‘double back’ dorsal ridge. One corner of the platform has split off at the point of percussion, as occasionally happens with a hard hammer.

Strike-a-lights (FIGURE 2: 11, 12)
Sketchly (1879: 64) described 5 forms of tinder box flints made at Brandon, ‘ordinary, like large French or old English gunflints; horse-shoe; straight-sided round-edged; half-round; circular’. Number 11 appears to be a good example of the circular form, which Evans (1897: 17) described as the normal Brandon tinder-box flint, about two inches across. Number 12 is in the form of large French gunflints; Sketchly’s illustrations show that horse-shoe shaped flints were more oval.

Building flints (FIGURE 2: 13, 14)
As well as gunflints, the Brandon knappers prepared flint for facing buildings in the form of irregular chunks of nodules with a clean flake
surface exposing dark flint and an irregular back to set in the mortar, cores set platform out, or pieces worked to a more careful rectangular form with a pyramidal back. Number 14 is a miniature example, thick and shaped by steep retouch around the edges and with cortex on the back. Normal building flakes would be at least twice this size. More complicated decorative effects, called flushwork or diaper work, were produced by using carefully shaped flakes offset by light stone or brick. Number 13 is probably an example of a round flushwork piece, also miniaturized.

Replicas
Arrowhead (FIGURE 3: 15)
This is the most obvious replica, a hollow-based Neolithic point made of dark flint. It is bifacially worked to a biconvex cross-section, randomly flaked, but carefully done. It was surely made by pressure flaking, a technique which was not part of the normal
gunflint repertoire, and presumably with metal tools, although I saw no visible traces of metal on it under a 10X lens.

**Scraper** (Figure 3: 16)
The scraper was made on an irregular blade of coarse grey flint, with regular steep unifacial retouch around the margin except at the platform. In shape it resembles some of Skertchly's strike-a-lights, but leaving the platform unmodified would not be normal for a strike-a-light, and they should be made of better flint. The inclusion of a scraper in the collection, and its similarity to tinder-box flints, is not coincidental, as we will see. The platform of the blade is also interesting because it shows characteristic traits of flakes struck with metal hammers: it is flat, with a large bulb of percussion, a circular 'ring crack' delineating the point of impact, and a distinct streak of iron oxide left by the metal hammer across the platform.

**Blade** (Figure 3: 17)
This irregular flat blade is too thin and curved for a good gunflint flake. I suspect it is included to represent an ancient blade. It is snapped in half, with a bending fracture, perhaps from handling or transport of the collection, not the intentional percussion break used to segment blades into gunflints.

**Romantic flints: the meaning of the set**
As the idea of prehistory developed in the 18th and 19th centuries, the technological connections between making gunflints and making stone tools were slowly made. Edward Simpson 'Flint Jack' (Blacking 1953) is one of the few documented early artefact fakers, known because he came to the attention of British antiquaries in the middle 1800s. It was not until a bit later that archaeologists like Evans, Pitt-Rivers and others began replicating prehistoric crafts as a way to understand archaeological remains. At this point, the connection between existing crafts with prehistoric antecedents and prehistory could begin to be appreciated by archaeologists. Skertchly's (1879) study of the gunflint industry represents an early and excellent example. At what point, however, did the knappers themselves begin to use the past for their own purposes?

Skertchly (1879) and other 19th-century accounts (e.g. Evans 1897; Wyatt 1870) do not suggest that the Brandon knappers made anything but gunflints, strike-a-lights and building stones. In fact, Skertchly says (1879: 41):

The beautifully even surface chipping of such [barbed and tanged] arrow-heads is a triumph of skill and a
proof of luxury; and the art is lost to us. No Brandon knapper can in any way approach it. . . . So far there has been a degeneracy in the working of flint.

Lovett (1887: 221) tried to have Brandon knappers reproduce Neolithic ‘face-flaking’, and ‘was assured the thing was quite impossible’.

Figure 4 shows two of ‘six copies of arrowheads made at my request’ (Lovett 1889), part of a collection acquired by the Putnam Museum in Davenport, Iowa. Two knappers appear to have tried, each making three points. One made large thick points, bifacially worked, but with deep irregular scars and crushed, uneven edges. The points show poor understanding of bifacial flaking; apparently the knapper stood a thick flake on edge and whacked it with his hammer. The other three are nicer but show an equal lack of understanding. Segments of thin blades have been trimmed to the outline of barbed-and-tanged arrowheads, with steep and mostly unifacial retouch. The first knapper tried an unfamiliar technique, the second applied gunflint technology to a prehistoric form.

Nevertheless, at some point the Brandon knappers began to make various whimsies and replica prehistoric tools. Rainbird Clarke (1935: 56) expressed some ambivalent feelings:

It is for the fabrication of implements of flint that the knappers have earned notoriety in the eyes of prehistorians, for though arrowheads, axes, and scrapers of Brandon make rarely deceive an expert they are calculated to entrap the unwary amateur. Besides the production of copies for museums, the knappers also make ground and polished axes from cement, chalk, and burnt umber coated with soda and then with gum shellac. The prehistorian owes a deep debt of gratitude to the knappers for initiation into the mysteries of flint working. Among the many tours-de-force of the most cunning flint workers may be mentioned the production of fish-hooks with which perch have been caught in the Little Ouse; the fashioning of the alphabet in flint, and the creation of a necklace of flint bangles struck from solid discs of flint with infinite labour and patience.

Made by Bill Basham in the 1920s, one example alphabet and a necklace of flint rings are on display in the Ancient House Museum, Thetford (photos in Mason 1978; Forest 1973: 113).

According to Rogerson (1927: 529) ‘Fred Snare was the maker of most of the “sets of copies of ancient weapons . . . now to be seen in museums all over the world”, having “studied the art of prehistoric flint work to such purpose that with modern implements he can surpass his originals”. Snare made replicas of North American antiquities as well as British, and used crystal, obsidian, and Bovril bottle glass as well as flint (Rogerson 1927: 530). Whimsies and replicas require techniques that were not part of the gunflint knappers’ usual repertoire. Letters, rings and arrowheads involve pressure flaking, while percussion sufficed for all the normal operations of gunflint manufacture. Neolithic axes were flaked to shape, but finished by grinding and polishing.

The new forms and new techniques reflect a short burst of innovation in a moribund
dustry. This was, of course, largely inspired by the development of a market for fake and replica antiquities, at a time when the gunflint was a marginal commodity. However, the knappers responded to the market opening with more than just material products.

Photographs show Fred Snare in the 1920s or 1930s as an active-looking old man with a vigorous white mustache. He was also evidently not only proud of his craft, but shrewd to use notions of the time to market it. The knappers were acutely aware that their trade was on its last legs. Gunflint sales to less developed countries where flintlocks were still used were dwindling. The flintlock firearm was already a thing of history to most Britons and Americans, not exactly ancient, but associated with the glory of the Empire for one, and the romance of the pioneer and Revolution for the other. As such, gunflints were saleable to collectors, historians and antique weapon aficionados, providing a new outlet. An even deeper connection with the past was even better, and further broadened the market. Gunflint knappers could also make prehistoric stone tools, and appeal to the romance of distant prehistory and the British love of tradition and continuity with a distinctive heritage. The knappers at Brandon were soon ‘The Oldest British Industry’, or even ‘The Oldest Industry in the World’.

Ironically, archaeologists were partly responsible for the knappers’ claim to antiquity. Some of the techniques used in the stone tool replicas may have been learned or inspired by contact with archaeologists, but certainly the case for the ancient tradition of knapping was made on archaeological grounds. Skertchly’s 1879 study of the knappers, cited by most subsequent archaeologists, was subtitled ‘the Connexion between Neolithic Art and the Gun-Flint Trade’. (Skertchly 1879: 69):

I think it can be confidently asserted that at Brandon we have, as it were, an oulier of the Stone Age — that the flint-knappers are the direct descendants of the old workers in stone, who dug the ancient flint-pits at Grimes Graves, having preserved to this day the method of mining, the shape of sundry tools, and the peculiarities of certain flint implements.

Specifically, he believed that flint mine shafts were similar, the single-pointed iron picks reflected Neolithic antler picks, knapping hammers were iron versions of hafted hammerstones, and flints for strike-a-lights were direct descend-}

ants of prehistoric scrapers. He admitted that there was no direct archaeological evidence to fill the gap between the Neolithic and the Napoleonic eras, but argued that since lighting fires would have been a continuing necessity, strike-a-light manufacture should have bridged this gap. Lovett (1887) takes a similar line. Later archaeologists have found this argument less than convincing (Clarke 1935; Goodwin 1983), and there is still no hard evidence of continuity in the 3000 or more years between the last flint working at Grimes Graves and modern times.

Nevertheless, the antique antecedents of gunflints were seized upon by numerous writers and the knappers themselves. Rogerson (1927), writing for Blackwood’s Magazine, expresses the romance of prehistory that became attached to the gunflint industry. He describes ‘an industry which was immemorially old when Stonehenge was still fresh from the builders hands’, thus making a symbolic connection with the most romantic of all British monuments, and going one better. He connects Brandon to the Middle Ages with the claim that Brandon knappers shaped the flints to build famous churches. Britain’s imperial age was also ‘the years of Brandon’s greatness... At no other time, nor in any other country, perhaps, were the State’s defences dependent upon the energies of one small body of men, without whose all-important products not a gun could be fired in Army or Navy!’ In discussing the knappers themselves, he emphasizes their primitive outlook and illiteracy, which produced an ingenuous but simple and traditional accounting system in which ‘the only conventional numeral he can make is a 7, for the sole reason that this is shaped like a pick!’

In Rogerson’s piece, Fred Snare emerges as his prime informant, the only knapper described in detail and named. Not only does Rogerson portray his prowess at making prehistoric tools, he publicizes Snare’s personal connection with the past:

More remarkable still, Snare was then [11th century], as it is today, a well-known name among the flint-working families. The same name and the same trade have survived more than ten centuries of progress.

And the same promotion and exploitation of ancient roots appears in Snare’s set of stone tools with his business card for the ‘Oldest British Industry’.
Fred Snare was not the only knapper claiming Stone Age roots. Mason (1978: 9) illustrates a similar set of flints, made by Vic Edwards in 1921. Tied to a hand-labelled card, these include seven gunflints, a flake and a round strike-a-light. The other eight pieces are all replica ‘Neolithic’ tools: Knife, Scraper, two different Arrow Heads, Spear Head, Chisel, Saw and Hollow Scraper. The two arrow heads appear bifacially pressure flaked, but all the rest are unifacially worked on blades or blade segments. The top of the card reads ‘The World’s Oldest Industry, Flint Knapping’.

Various members of the Edwards family were responsible for keeping the knapping trade going in Brandon. A photo in the Flint Knappers pub, apparently from the 1920s, shows an advertising sign for F. and H. Edwards, Gun Flint Manufacturers. Portrayed and labelled on the sign are rows of gunflints for Musket, Carbine, Pistol and Single, with Flakes, and some unlabelled axes, arrowheads and a necklace below. Fred and Herbert Edwards were father and son, proprietors of the last of the gunflint firms that employed knappers and marketed flints (Forrest 1983). After the Second World War, a few knappers, employed by H. Edwards, worked behind the Flint Knappers pub. The replica industry seems to have faded, but Edwards was still quick to market the industry’s heritage for publicity, and Forrest (1983: 123) reproduces a photo of him with gunflints presented to the Queen to accompany a historic pistol. After Edward’s death in 1973, his son-in-law James English continued the business with only one knapper into the 1980s. This was Fred Avery, who had learned under Edwards in the 1950s.

In the final days of the Brandon industry, the prehistoric connection had been entirely dropped. Avery told me in 1993: ‘I’ve had several people up to ask if I can make an arrowhead for ‘em. I don’t know how to tell ‘em, I’ve never even tried.’ He told Ruhe (1995: 7) and Gould (1981: 279) essentially the same thing. His only interest was in gunflints and building flints, although he had been interviewed by a number of archaeologists and was aware of prehistoric tools and techniques. Avery worked on his own on a part-time basis, produced only a limited range and quantity of products, and was not actively promoting them. When I asked him what it was like to be the very last of the industry, he just chuckled.

Conclusions: innovation and obsolescence

After working with Fred Avery, Richard Gould (1981: 280) proposed a ‘principle of archaisms’, applicable to many obsolescent technologies. ‘As a cultural institution becomes archaic, the technologies supporting that institution assume an increasingly standardized and stereotyped character.’ While the basic truth of that is apparent in the history of the gunflint industry, the situation is actually a bit more complicated.

As the gunflint industry diminished, with fewer centres of manufacture, fewer workers in each centre, an increasingly limited range of products and the loss of associated cultural phenomena such as specialized tools and vocabulary, it nevertheless saw a brief spurt of innovation. New techniques were introduced or reinvented to produce new artefact forms. In this case, they were imitative, copying prehistoric forms, and an explicit symbolic value was assigned them: they made a connection between the past and modern times, between the romance of prehistory and the machine age, between a dying technology and its ancient greatness. The few survivors in the knapping industry promoted themselves as ‘the unbroken link connecting this engine-ordered twentieth century with those misty primaeval ages thousands of years before history was born’ (Rodgerson 1927: 525).

Perhaps a biological metaphor is relevant here. Artefacts, like organisms, compete for a niche. For a couple of centuries, a limited lithic technology survived in an age of steel because a stone tool provided the most effective way of firing a gun, but with the introduction of modern firearms, the gunflint was out-competed. The gunflint niche was reduced to a few markets. In some, the gunflint retained its main function as a necessary component of weapon technology, but in others, its ‘adaptive’ advantage shifted from the functional to the symbolic, arming flintlock guns that were desired for their various values as antiques. The knapping industry innovated in order to expand on this niche. The function of prehistoric stone tool replicas, which keeps them current in modern computer-age society, is their symbolic connection with the past, which creates their desirability for archaeologists and collectors. But here, too, Gould’s principle of archaism applies: the Brandon knappers of the 1920s and 1930s, like modern recreational and market knappers
(Whittaker & Stafford 1999), select a limited and stereotyped range of prehistoric forms to copy.

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References