**BIFACES IN A CLACTONIAN CONTEXT AT LITTLE THURROCK, GRAYS, ESSEX**

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Recent thought-provoking papers by McNab and Ashton (1992) and Ashton and McNab (1993) motivated the author to re-examine lithic material collected from temporary sections at Little Thurrock, Grays, Essex (Conway 1965; Hart 1965). Deposits yielding a Clactonian lithic industry were exposed at the Celcon Works, Little Thurrock from mid-1959 to early 1964 during the construction and extension of industrial plant. The Celcon Works occupy the eastern part of Globe Pit, adjacent to Overcliff and Rectory Roads.

The Pleistocene deposits of the Little Thurrock area have been well known for over a hundred and fifty years and have been described by many authors from Morris (1836) to Bridgland (1994, which also see for full bibliography). The main preoccupation of early workers was with the large quantities of mammalian bones and freshwater molluscs found in the once extensive brick-workings. Lithic material was found in 1883 and 1884 (Oakley and Leakey 1937), 1892 (Spurrell 1892), 1904 (Kennard 1904) and in 1910 (Wymer 1957); it was not until 1957 when Wymer excavated gravel containing rich assemblage identified as Clactonian, that serious interest was shown in it. Mr B. O. Wymer found numerous flakes at the site in 1910 (Wymer ibid.) but was unable to explain the presence of bifaces, the Clactonian not having been recognised at the time. The absence of bifaces probably explains the lack of interest shown by early workers in this lithic material. Wymer (ibid.) described the assemblage as comprising unspecialised flake tools, cores and hammer stones of a Clactonian industry. Roé (1981, 143) agreed that the material appeared to be typically Clactonian, but also commented that "there is no clear trace of handaxe manufacture". Were there "unclear" traces of biface production?

Kennard (1904) recorded an Acheulian scraper from the "Middle Gravels" at Globe Pit. The stratigraphic context of this gravel is ambiguous, but may refer to the Upper Gravel, bed 1, Figure 3. Three possible bifaces, found in Globe Pit, have been described by Snelling (1964) as "natural" tools of a type recognised at Clacton by Warren (1951). They are from the same stratigraphic level as Wymer's assemblage, viz. bed 1, Figure 3. Bridgland (1994, 236) has recorded finding two biface slimming flakes, without giving their stratigraphic context.

A series of temporary sections in the Celcon Works, Globe Pit were examined by the author and John McA. Hart between July 1959 and March 1964 which yielded 288 artefacts. These consist of core and flake material (with and without retouch) and have been examined and described by Wymer (1985, 310) as Clactonian and are similar to his material from bed 1. Also within the assemblage were a small number of pebble tools and what I now perceive to be two bifaces of non-classic form (Fig. 1 and Fig. 2a) with two biface slimming flakes (Fig. 2b and 2c).
LT64/D33 (Fig. 1). This large biface measures 17.5 x 11.5 x 6.0 cm and is worked on a wedge-shaped piece of irregularly tabular black flint with dark grey cortex remaining over about two thirds of the surface area. An attempt was made to remove two protuberances by flaking and battering on one face.

LT64/A2 (Fig. 2a). This is possibly a biface, measures 7.0 x 4.0 x 2.5 cm and was made on a small, flattened, elongated nodule of black flint with much white cortex remaining. The base of the piece has been "squared off" by the removal of three or four high angle flakes.

LT59/17 (Fig. 2b). This small thinning flake measures 4.0 x 2.2 x 0.5 cm and was struck from mottled black flint. It has a small area of dark grey cortex remaining.

McA.H. (Fig. 2c). A thinning flake which measures 6.0 x 3.7 x 1.4 cm struck from pale brown mottled flint with about 20% of one surface consisting of "knobbly" brown cortex.
Raw Materials

A majority of the pieces of the artifact assemblage from the Lower Gravel, bed 2, Figure 3, were made on mottled black/grey flint with inter-scar ridges and edges showing very slight abrasion. Their surfaces vary from a lustrous shine to a thin blue/white patina. The raw material derives principally from irregular nodules with a white cortex and some from tabular masses with a dark grey cortex. A small number of artifacts were made on well-rounded black flint pebbles with a thick brown skin.

Nodular and tabular flint was freely available within a few metres of the margin of the Lower Gravel in the Chalk at the cliff face and the overlying Bullhead Bed at the base of the Thanet Sand.

Stratigraphy

The stratigraphic context in which the bifaces and thinning flakes were found is shown in diagrammatic form in Figure 3, modified after Conway (1965). The investigations of Wymer (1957) and of Snelling (1964) were largely restricted to the Upper Gravel, bed 1; Bridgland's examination (1994) extended from the Upper Gravel, bed 1, to the solifluction deposits, beds 3a and 3b, which developed and degraded the cliff face (= channel margin). The author's examination extended the section from the solifluction deposits eastwards to include the Middle and Lower Gravels, beds 5a, 2 and 2a) and remnants of the "Brickearth", bed 4.

The Lower Gravel, bed 2, with a maximum thickness of 0.95 m, rests on an irregular potholed surface of Chalk at 9.0 m OD, the irregularities are infilled with a layer deposit of flint cobbles in a sandy grey clay matrix. The main body of the sandy gravels is matrix dominated, the gravel grade becoming finer in the upper 30 cm. Silt-filled ice-wedge casts are pendant from the upper surface of the gravels and extend to depths of about 50 cm. The surface 5 to 8 cm of the gravels are iron-cemented and it was in this surface, bed 2a, that the large biface illustrated in Figure 1 was found. The small biface (Fig. 2a) and the thinning flake (Fig. 2b) were found in the fine sandy gravel about 15 cm below it. The surface cemented layer, bed 2a, also yielded several large Clactonian flakes with a pronounced white patina. Little by way of faunal remains were found in the Lower Gravel - a number of unidentified weathered bone fragments and a poorly preserved metatarsal of Dicerorhinus.

The larger thinning flake (Fig. 2c) was found resting on the surface of the Thanet Sand, beneath surface materials, north of the northern margin of the Upper Gravels, bed 1.

Fig. 3 Diagrammatic section through the Pleistocene deposits of the central part of the eastern side of Globe Pit, Little Thurrock, Grays, Essex (Based on Conway 1965)

KEY 6. Topsoil and stony loam
5. Yellow cross-bedded sands
5a. Middle Gravel
4. Greenish-grey laminated silty clay (="Brickearth")
3b. Soliflucted gravel
3a. Soliflucted Thanet Sand
2. Lower Gravel
2a. Fe-cemented surface of Lower Gravel
1. Upper Gravel
A. Position of bifaces and thinning flake
B. Position of thinning flake

Dating

Bridgland (1994, 237) argues that bed 1 and bed 2 are one continuous gravel unit and can be assigned to the Lynch Hill/Corbet's Tey Formation of middle-Saalian age - ca. 350,000 years BP. However, the sections cut to the south of Bridgland's by the author, demonstrate that bed 2 underlies the solifluction units 3a and 3b, and sit on a separate lower bench to that of bed 1. Whether this lower bench can also be assigned to the Lynch Hill/Corbet's Tey Formation has still to be ascertained.
Conclusion

The flake and core assemblages found at Globe Pit, Grays previously described by Wymer as Clactonian, contains a small number of non-classic bifaces and biface thinning flakes which appear to form an integral part of the assemblage. Can this site still be regarded as Clactonian?

References


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A REEXAMINATION OF THE BRITISH BIFACE DATA

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Introduction

During the 1960s, Roe (1964, 1968) both defined a new way of measuring biface morphology and, as a result, our current understanding of morphological variability in Lower Palaeolithic bifaces of Great Britain. Roe’s empirical method resulted in the discovery of a bimodal distribution, at the assemblage level, in one aspect of biface shape. Roe then organized the British assemblages into the Oval and Pointed Traditions based on this bimodal patterning. The pattern itself has since been verified by others with more powerful statistical techniques (Doran and Hodson 1975, Callow 1976). Its meaning, however, has remained unclear. At the time, Roe thought that it might reflect chronological change in preferred biface shapes. The lack of well dated sites made this hypothesis difficult to test, though the site of Swanscombe provided some stratigraphic support. Better dates now exist, and it has become clear that the chronological hypothesis is unsustainable (cf. Ashton et al. 1992). Roe (1981) has also suggested that there are possible functional differences between the two groups though this hypothesis remains untested.

New studies have explicitly de-emphasized the importance of traditional stylistic and functional modes of explanation and instead focused on the role of raw materials (Ashton and McNabb 1994; White 1995) and intensity of bifacial reduction (McPherron 1994) in structuring these assemblages. Ashton and McNabb (1994) argue that the shape of the nodule or flake blank has an important and previously understated role in determining biface shape. Thick, long, and narrow nodules, for instance, lend themselves more easily to pointed forms than rounded forms. On the other hand, in instances where the raw material is judged to be more neutral, lending itself equally to an ovate or pointed form, ovates seem to have been manufactured. As a result, both Ashton and McNabb (1994) and White (1994) argue that ovate bifaces were the preferred shape presumable because they maximized the functional utility of the piece.

This paper emphasizes the complimentary role of reduction intensity in structuring the variability documented by Roe. It will be argued that this variability is in very large part due to differences in the intensity of bifacial reduction at these sites. This hypothesis is based on studies of Achelulian assemblages in northern France that show a strong relationship between all measures of shape and a single measure of biface size, namely tip length, where tip length is defined as the distance from the point of maximum width to the tip (McPherron 1994). While the upper limit on tip length is constrained in large part by raw material size, variability in tip length is attributable to the intensity of bifacial reduction. The same patterns are demonstrable at the assemblage