Notes and News

AN ANGLO-SAXON INSCRIBED FOSSIL ECHINOID FROM EXETER STREET, LONDON? AN ALTERNATIVE INTERPRETATION

The claim of Brown et al. to have found a fossil with an Anglo-Saxon inscription at Exeter Street, London[1] has been examined in the light of similar geological material held by Reading Museum Service. It is unlikely that the putative inscription is of human origin and an alternative hypothesis for this kind of marking on fossil urchins can be given based on known natural phenomena.

A number of species of sea urchin lived commonly in the Chalk sea during the later stages of the Cretaceous period, right across the area that is now England. Many of the fossils in the Upper Chalk rock formation were preserved in durable flint. As a result, flint fossil urchins, usually belonging to the genera *Micraster*, *Echinocorys* and *Conulus*, can be found almost anywhere in southern England. They are common near to where the chalk rock of the right stage is exposed, and particularly so in regions where post-Cretaceous erosion by the sea, glaciers and rivers has weathered out and concentrated flints, such as the Pleistocene river gravel of the Thames Valley and its derived soils.[2]

The fossil sea urchin recently recovered during bulk processing of environmental samples from a rubbish pit at Exeter Street was described as 'small in size, the diameter of the base being c. 25 mm. From a small hole in the apex, five pairs of lines diverge, running close together and roughly parallel over the conical sides of the fossil. They converge again at a small boss on the base. The hole, the pairs of lines and the boss represent original physical features of the echinoid'. Then they describe a number of indented lines in the surface of the fossil, interpreting these lines as inscribed Anglo-Saxon letters. In addition to their description, it can be seen that the fossil is an internal flint cast of the test, or shell, of the white cap urchin, *Conulus albogalerus* Leske.[3] This species has a stratigraphic range from the Upper Turonian, *S. plana* zone, to the Upper Santonian, *M. testudinarius* zone of the Upper Chalk. The apical mark shows the position of the apical plates, the five pairs of lines mark the position of the ten rows of podial pores of the ambulacral plates, the small boss at the centre of the base marks the peristome, or mouth opening, and the larger boss to the top left on the lower figure marks the periproct, or anal aperture. The overall shape of the fossil is somewhat distorted and it has a variety of indented grooves on the surface, in a variety of orientations, some horizontal, some vertical and some oblique, mainly on, but not confined to, the region of the interambulacrum. The grooves shown prominently on the middle figure appear to run along the sutures between the interambulacral plates.

Among more than twenty flint internal cast fossils of *C. albogalerus* in the geology collection of Reading Museum Service, three were found (Fig. 1) which were in a similar

[1] G. Brown, E. Okasha, R. Page and C. Pickard, 'A Middle Anglo-Saxon runic inscription from the National Portrait Gallery and an inscribed fossilised echinoid from Exeter Street, London', *Medieval Archaeol.*, 45 (2001), 203–10.

[2] M. G. Sumbler (ed.), *British Regional Geology: London and the Thames Valley* (London, 1996).

[3] E. Owen and A. B. Smith (eds.), *Fossils of the Chalk* (Palaeontological Association Field Guide to Fossils 2, London, 1987).

FIG. 1

Flint sea urchins showing natural indented grooves. (a) With diagonal grooves marking the position of pre-preservation cracks in the test. REDMG: 1998.55.3. (b) With diagonal and horizontal grooves marking the position of pre-preservation cracks and subsequently abraded by weathering. REDMG: 1998.55.17. (c) With short transverse grooves marking interambulacral sutures, some with cracks along them. REDMG: 1990.3.75. Scale bar = 1 cm. *Photographs: Reading Museum Service.*

state of preservation and had similarly extensive indented grooves to the Exeter Street specimen. The Reading specimens have no known archaeological context and have never been interpreted as having inscriptions. They showed grooves in a similarly wide range of orientations to the Exeter Street specimen, some horizontal, some vertical, and some oblique. On close examination, two types of grooves could be seen. Firstly, there were the grooves marking the natural sutures of the interambulacral plates, which were fine, straight and regular, forming two offset rows of horizontal grooves on each interambulacrum. These were not always present or complete, being easily weathered off. Secondly, there were the grooves that marked the position of cracks in the test of the urchin, which were coarser and finely meandering or jagged. In one specimen that was less weathered, the floor of these grooves was seen to be smooth and evenly curved. These grooves showed that all three urchins had been slightly crushed before their preservation in flint. A range of other flint internal cast fossil sea urchins in the collections were also seen to have flint blebs, hollows and indentations corresponding mainly to the position of natural orifices, sutures and pre-preservation breaks in the test.

The identification of an Anglo-Saxon inscription on the Exeter Street urchin can be considered erroneous for the following reasons. Firstly flint has a hardness of about seven on the Mohs scale which is much harder than steel and most other conceivable Anglo-Saxon scribing implements and so could not have been easily scribed. Secondly, alternative methods of fabrication, such as chipping or grinding with another flint, are not precise enough to have made the 'letters' some of which are only about 5 mm in height. Had these techniques been used, there should also have been evidence in the form of chips or grooves, which have not been demonstrated. Hence, the hypothesis that this is a practice piece is implausible owing to the difficulty of working such a small flint in such a precise way. Thirdly, some 'letters' are ambiguous and together the 'letters' cannot be interpreted, without considerable latitude. Fourthly, an alternative natural explanation is available.

An alternative mode of formation for indented grooves in the Exeter Street urchin seems more likely for the following reasons. Firstly, comparison with the Reading urchins shows that indented groves are consistent with the normal preservation of these fossils, where indentations in the flint are a natural feature marking the position of sutures between the plates of the test, or pre-preservation cracks or fractures. Similar cracks and fractures can be replicated in modern sea urchin shells by gentle pressure. The normal horizontal sutures, the tendency to break along these horizontal sutures and other cracks caused by pre-preservation crushing of the urchin would therefore be sufficient to account for the full range of indented grooves found on the Exeter Street fossil. In particular the alleged letters Es and B fit the pattern of sutures accurately. Secondly, the formation of grooves in the flint mould at the position of cracks in the urchin test is consistent with current theories about the formation of flint.[4] The distribution of flint around fossils has been related to the presence of decomposing sulphurous organic matter and the degree of compacting of the sediment at an early stage of diagenesis. These factors respectively create the chemistry and physical space necessary for silica to be precipitated and would be expected to vary widely over short distances around a forming fossil of a burrowing sea urchin such as *Conulus*, especially at orifices and cracks where organic matter could escape or sediment intrude. Thus, there is a mechanism for the formation of blebs, indentations and grooves in the resulting flint mould at the position of natural orifices, along broken sutures and other pre-preservation cracks in the test which are commonly observed in flint fossils. Thirdly, flint pebbles from fossil marine deposits and the river gravel typical in the region show that additional grooves may be added and existing grooves widened and softened by impact and abrasion against other flints during water transport. Thus, an alternative

[4] C. J. Clayton, 'The chemical environment of flint formation in Upper Cretaceous chalks', 43–54 in G. de G. Sieveking and M. B. Hart (eds.), *The Scientific Study of Flint and Chert* (Cambridge, 1986).

natural explanation is available for the full range of indented grooves on the Exeter Street urchin based on entirely natural, commonly observed and well-known geological phenomena.

If, as argued above, a natural origin is to be accepted for the indented grooves on the Exeter Street fossil, then its archaeological significance must be reassessed. Even if the grooves are natural, perhaps the urchin was still a treasured possession? Can any such archaeological significance be drawn from its presence in an Anglo-Saxon rubbish pit? Unfortunately it cannot, because the occurrence of flint fossil sea urchins is common in the many soils around London derived from weathered flint gravel deposits. It is therefore most likely that the Exeter Street urchin was merely a natural constituent of some soil that was placed in the pit. It certainly does not have the clear human context of some flint fossil talismans[5] and its identification as such must therefore be speculative.

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DAVID NOTTON

ANCIENT GREENS IN 'MIDLAND' LANDSCAPES: BARRINGTON, SOUTH CAMBRIDGESHIRE

Huge greens — occasionally up to 100 acres in extent — are almost a defining characteristic of the 'ancient landscapes' of Suffolk and Norfolk, but in 'Midland' South Cambridgeshire, where open-field agriculture was well-established, sites like Barrington, whose green is one of the largest in the country, are apparently anomalous.[6]

Villages in South Cambridgeshire are not obvious 'green' settlements, although there are some notable exceptions to this generalisation — such as Eltisley, whose triangular green survives intact.[7] Nevertheless, many South Cambridgeshire villages have a small, residual open space near the centre of the settlement and this small space is often the relic of a very large, often irregular, common or green, like those at Great Shelford and Bassingbourn.[8] Where these greens have been investigated, they have generally been shown to have pre-open field origins: that is, they are relics of an ancient landscape, retained when the open fields were laid out in the early Middle Ages, rather than a planned element of the 'Midland' landscape.[9]

Their place in settlement history is not well-understood. In the 'ancient' landscapes of Norfolk and Suffolk, some greens were the focus for settlement of Early, Middle or Late Anglo-Saxon demesne farms.[10] In Norfolk Early and Middle Anglo-Saxon settlement has been found around the edges of low and easily floodable commons away from the higher heavy boulder clay, while in Launditch Hundred there was Middle Anglo-Saxon settlement

[5] D. Wilson, *Anglo-Saxon Paganism* (London, 1992).
[6] Royal Commission on Historic Monuments (England) (hereafter RCHME), *West Cambridgeshire* (London, 1968), 4–5.
[7] RCHME, op. cit. in note 1, 89–90.
[8] C. C. Taylor, *Village and Farmstead* (London, 1983), 131–2; C. C. Taylor and S. Oosthuizen, 'The morphology of Bassingbourn, Cambridgeshire', *Landscape Hist.*, forthcoming.
[9] S. Oosthuizen, 'Saxon commons in South Cambridgeshire', *Proc. Cambridge Antiq. Soc.*, LXXXII (1993), 93–100.
[10] P. Warner, *Greens, Commons and Clayland Colonisation* (Leicester, 1987), 32.