News & Notes

FxJj43: an Early Stone Age locality in northern Kenya

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FxJj43 is an Early Stone Age locality that lies towards the top of the Okote Member in the Koobi Fora Formation, in northwest Kenya, a geological formation famous for the extraordinary array of hominin remains it has yielded, together with abundant traces of their activities (Leakey & Leakey 1978; Wood 1991; Isaac 1997). The archaeological research conducted there during the 1970s helped to forge new approaches to the problem of generating behavioural information from the remote portions of the Palaeolithic record and established new expectations about the potential of the archaeological record for contributing to the narrative of hominin evolution. However, in the intervening decades only limited consensus has been achieved about the behaviours that can be reconstructed for the early stone-tool users. FxJj43 is the focus of a new generation of research that aims to come to a better understanding of the empirical structure of the Early Stone Age record and hence, the behavioural and palaeoecological information it encapsulates.

It is the unusual geological setting of FxJj43 that lends this locality to this exercise: it comprises a 50–200-m wide strip of outcrops that can be traced around the edge of the modern erosion scarp for more than half a kilometre (FIGURE 1). Chipped stone artefacts and broken-up animal bones are strewn all the way along the eroding surfaces of these outcrops, all of them derived from a narrow stratigraphic horizon, immediately overlying a prominent layer of volcanic ash (FIGURE 2). An initial round of fieldwork aimed at documenting the depositional history of the locality, the palaeolandscape features represented there, the stratigraphic and palaeotopographic context of the archaeological debris and their age, has now been completed.

This work shows that the outcrops at FxJj43 are made up of approximately 8 m of flat-lying fluvial deposits, the oldest of which is a small body of unconsolidated channel sands laid down by a westerly flowing channel. In most parts of the site the base of the sequence is actually defined by a distinctive volcanic ash, known informally as the 'blue' tuff, whose 3-dimensional geometry picks out the interlocking palaeolandscape features preserved: a sandy channel, its southern bank, a mid-channel bar, a levee and the adjacent floodplain (Stern *et al.* 2002: 370–78). In contrast to other Okote Member sites, this one preserves a related set of palaeotopographic features (FIGURE 2).

^{40}Ar–^{39}Ar age determinations on single crystals of alkali feldspar extracted from pumices found at the top of the blue tuff show that it was deposited 1,468,000±16,000 years ago (Stern *et al.* 2002: 381–5). The blue tuff represents a massive flood event (probably the 1 in 500 year flood), caused when a viscous slurry of ash and water choked the channel, topped its banks and draped the surrounding landscape in up to 2 m of sediment. This destroyed the local vegetation cover and initiated an episode of bank erosion coeval with the infilling of the channel and with the accumulation of both chipped stone artefacts and broken-up animal bones in a variety of settings, but most conspicuously on the levee (Stern *et al.* 2002: 370–81) (FIGURE 3).

The activity traces were covered over by floodplain sediments whose characteristics reflect the gradual resumption of terrigenous sedimentation and intermittent overbank flooding. Estimates of average sedimentation rates, combined with data on the distribution of archaeological material through the stratigraphic profile, suggest that these activity traces accumulated over a relatively short span of time, 100–1000 years (Stern *et al.* 2002: 387–8). Although another 2–3 m of floodplain sediments accumulated at this locality no archaeological material is contained in any of the younger beds (Stern *et al.* 2002: 363–70).

The excavations completed so far were intended to provide information about the stratigraphic and palaeolandscape context of the archaeological debris and only small samples of artefacts and bones have been generated. The largest area of excavation (BT/1) uncovered a high-density cluster of artefacts and bones that accumulated on the levee (FIGURE 3); these provide evidence for *in situ* knapping of water-worn cobbles and for hominin involvement with the associated animal bones (FIGURES 4 & 5).

Further along the levee, a partial bovid skeleton has been preserved, but so far no evidence for hominin interference with the carcass has been identified. Nearby a small, discrete cluster of artefacts and bones has been uncovered, suggesting a continuous but variable density scatter of debris all the way along the levee. A geological trench excavated at the eastern end of the

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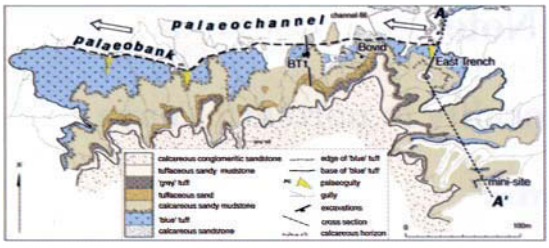

FIGURE 1. *Geological map of FxJj43 showing outcrops of the 'blue' tuff and the overlying floodplain sediments (including a second episode of volcaniclastic deposition represented by the 'grey' tuff), the locations of excavation trenches and the cross-section shown in FIGURE 2.*

FIGURE 4. *Stone-tool inflicted cut-marks provide unequivocal evidence that hominin activities contributed to the bone assemblage. (Photo David Wines.)*

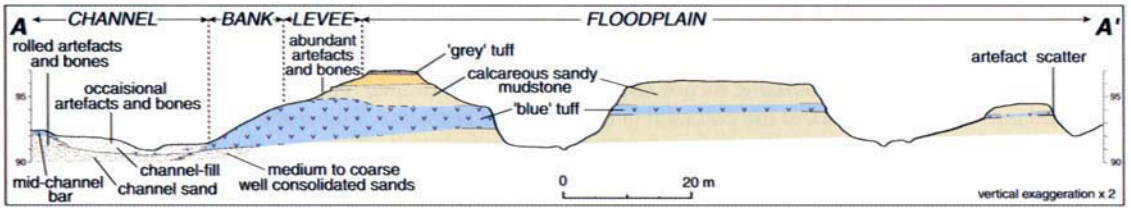

FIGURE 2. *Schematic cross-section through the eastern edge of FxJj43 showing the main palaeolandscape features preserved. See FIGURE 1 for the location of this section.*

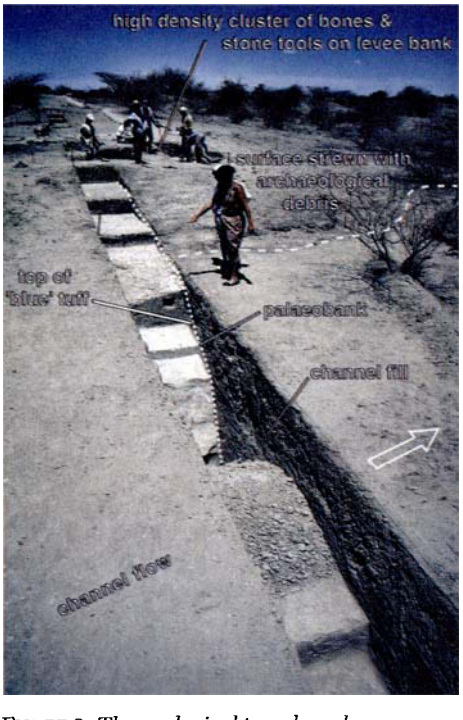

FIGURE 3. *The geological trench and excavation of a high-density cluster of debris on the levee (known as BT/1).*

FIGURE 5. *17% of the bones from the high-density cluster at BT/1 have been refitted and some of these exhibit percussion marks as well as stone-tool inflicted cut-marks. (Photo David Wines.)*

outcrops shows that some archaeological material is also preserved in the channel-fill sediments and in the underlying channel sands. A discrete cluster of artefacts preserved on the distal edges of the floodplain seems to represent the knapping of a single rhyolite cobble; unfortunately, much of the original cluster has been eroded away and none of the remaining artefacts can be refitted (FIGURE 1).

It is evident that the archaeological traces scattered across the 'blue' tuff palaeolandscape occur in clusters of varying size and density. The next round of research at FxJj43 will investigate the relationships that exist between the discrete clusters of debris representing limited activity sets and the larger, denser agglomerations of debris representing overprinting of varied activities, and the behavioural information embedded in both.

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