Kabazi II

Part 1

The site is described in the three ERAUL volumes on the Palaeolithic of the Crimea edited by Chabai *et al.* vol. 1 (1998) vol. 2 (1999) and vol. 3 (2004). These will be referred to as ERAUL 84, 87, and 104. ERAUL 84 chapter 8 provides an introduction to the site by Chabai, chapters 9 and 10 deal with the artefacts, chapter 13 by Jack Rink *et al.* deals with the ESR dating and chapter 14 by Curtis McKinney deals with the uranium series dating. Chapter 15 is a preliminary synthesis by Chabai and Marks. ERAUL 87 contains a valuable chapter 6 by Natalia Gerasimenko on the palynology and geological correlation of the site. Chapters 3 and 11 by M. Patou-Mathis and by Chabai *et al.* are relevant. The last chapter 25 in ERAUL 104 by Chabai *et al.* should also be consulted.

The site is on the northern valley wall of the Alma river, on the southern slope of Kabazi mountain, at a height of 300 metres above sea level. Kabazi is part of the second ridge of Crimean mountains. Limestone, chalk, and marl form the bedrock. Excavations commenced in 1986. The Lower Excavation Area (60 square metres) now provides the principal section to a depth of about 8 metres, a continuation to a depth of 13 metres being provided by the 2 square metre sondage (S1) immediately to the north-west of it (ERAUL 84, Figure **8.4**). The site was at first believed to be a collapsed rock shelter, but this has proved not to be the case. Unusually, it formed in the open on the hill slope, as a result of sediment becoming trapped behind a large limestone slab or barrier (ERAUL 84, Figure **8.2**). At least two more limestone blocks fell or rolled onto the site later (nos. 8 and 12 in the above Figure, as distinct from no. 17). Colluvium filled in behind the limestone barrier, thus constituting the 'unique topographic setting' of the site. J. Rink *et al.* commented with regard to Kabazi II (as well as Starosele and Kabazi V) that 'no wind blown sediment was found, which precluded the application of optical luminescence dating at these sites' (ERAUL 84, page 323). By contrast, Gerasimenko labels at least two strata at Kabazi II as 'loesses', which would be not unexpected at an open-air site (ERAUL 87, Table **6.1**). A full description of the 13 strata in the Lower Excavation Area was provided by C. R. Ferring (ERAUL 84, Table **8.1**). This should be seen in conjunction with the drawn section. Ferring commented on the main features as follows.

Strata 1 and 2 are young colluvial. There is an erosional break between 2 and 3. Strata 3-6 show prolonged weathering indicated by pedogenic features. There is a further major erosional disconformity between 6 and 7. Strata 7-11 are said to be indicative of 'rapid' colluvial deposition, behind the limestone barrier. The uranium series dates are quoted in evidence to support the idea of rapid accumulation (but see below for further discussion of this point). 12 is one of the fallen limestone blocks. 13 is quite different from the strata above, with the highest clay content, indicative of warmer and moister conditions at the site.

Chabai described the archaeological succession in terms of five main archaeological units, subdivided into levels and horizons (ERAUL 84, pages 181-183). The position of these units and subdivisions is most usefully indicated by Gerasimenko in relation to the lithological strata (ERAUL 87, Table **6.1**). It should be noted however that in support of her diagram she quotes only some of the U and ESR dates, whereas the radiocarbon dates (OxA series) are given in full. Chabai's description of the archaeological material is as follows.

Unit (I). Horizons 1-4, derived, i.e., not in situ. To these may be added Horizon 5 '-195' which had a very little archaeological material. This was first called 'Staroselian' but it is not quite clear whether this appellation has now been dropped.

Unit (II). 14 subdivisions. Stratum 6 contained unit II/1A. Stratum 7 contained unit II/1-7E and 8-8C. All were attributed to the Western Crimean Mousterian (WCM), part of the Levallois Mousterian sensu lato. Chabai commented that there were no fireplaces, charcoal, or burned bone. (Stratum 8 can apparently be amalgamated with 7).

Unit (IIA). 8 subdivisions. Strata 9 and 10. Unit IIA/1-4B. Crimean Micoquian (Ak-Kaya).

Unit (III). 4 subdivisions. Upper part of stratum 11. Unit III/1A-3. Crimean Micoquian (Ak-Kaya).

Unit (IV). Upper part of stratum 13. At first compared with Kiik-Koba lower layer, now called Last Interglacial Micoquian (pace Stepanchuk, not Taubachian).

There are six more archaeological horizons in stratum 14 in the sondage (not as yet published in detail) whereas strata 15 and 16 are sterile. All together this constitutes the 'longest palaeolithic stratigraphic sequence' in the Crimea.

The ESR dates obtained by Rink *et al.* were listed in terms of archaeological unit (ERAUL 84, Table **13.4**). Three mean values were given for II/1A, II/7B, and III/2. Single values are available for II/8 and III/3. Some U-series ages for dentine were also given (Table 13.5) but they have not featured in any subsequent discussion. Subsequent discussion has also focussed entirely on the Linear Uptake (LU) ESR dates (and not the younger EU).

The uranium series dates obtained by McKinney were also listed in terms of archaeological unit (ERAUL 84, Table **14.1**). As he said in respect of his results in general, there were 'surprises and unexpected problems'. For unit I/3 there was an 'average' date of 31 +/- 3 ka and a 'plotted' date of 38 +/- 2 ka. This has not featured in subsequent discussion, presumably because of the displaced nature of the deposits. Unit II/1-7F8 produced eight dates and unit III/2 six more. In McKinney's opinion, the period of accumulation of Unit II was 'not a rapid event'. He suggests that it may have occupied about 15,000 years, and that treating it as a 'single unit' its average age will have been 39.8 +/- 5 ka. In her diagram however (ERAUL 87, Table **6.1**) Gerasimenko uses McKinney's individual U series dates for II/1A, II/1, and two for II/7F8, to give a range from 32.1 +/- 6.5 to 65.5 +/- 2.5 ka for this unit. Clearly this is double the amount posited by McKinney, and if true would definitely not constitute a 'rapid' event. McKinney's 'average' date for III/2 comes to 60 +/- 3 ka whereas his 'calculated' date is 54 +/- 3 ka. Both feature in subsequent discussions of the site. Again Gerasimenko quotes the minimum and maximum ages given by McKinney for this unit, 41.1 +/- 2 and 117 +/- 13 ka (ERAUL 87, Table **6.1**).

Gerasimenko herself has produced a complete pollen diagram for the entire section including the deep sounding (ERAUL 87, Figure 6.1). She took 48 samples of which 42 were usable. She distinguished 14 pollen zones numbered from the base up. They have been correlated with general European phases of the last interglacial and glacial periods. Three main intervals were identified, but the general trend was for a proportional decrease of AP in relation to NAP through time. (See comments above for her use of absolute dates in the construction of her Table **6.1**).

Chabai *et al.* attempted to sum up the dating and environmental evidence in the concluding chapter of the second ERAUL volume. In doing so, they broadly accepted Gerasimenko's framework, and were quite critical of some of the dates when they did not fit this scheme (ERAUL 87, Table **11.1**). Specific criticisms were as follows. With regard to Gerasimenko's pollen zone V, the Early Glacial Stadial, they commented that the ESR date of 69 +/- 5 ka for unit III/3 seemed 'too young' since they would expect it to date >100,000 BP. For unit III/2 their comment was that 'neither the ESR nor U-series dates correspond to the generally accepted dates for the Early Glacial Interstadials' represented by Gerasimenko's zone VI. They do not dispute the ESR date of 39 +/- 3 ka for unit II/8, which corresponds to Gerasimenko's zone X and is supposed to equate with the Hengelo Interstadial (although they pass over in silence the two older U series dates shown by Gerasimenko on her diagram of 48 +/- 17 and 65.5 +/- 2.5 kyr for unit II/7F8). For Gerasimenko's zone XI, their comment is that 'the ESR and U-series ages for Levels II/7B and II/7 are not completely reliable'. They do not dispute the ESR or the AMS dates relating to Gerasimenko's zone XII, which is correlated with the Main Glacial Stadial. In their view the Middle Palaeolithic occupation of the site does indeed extend up to about 32,000 years ago

In the light of the above, it seems that, in spite of the amount of work already done at Kabazi II, there are still some problems with the dating of the site. Some of the dates do not fit the environmentally generated scheme of Gerasimenko. Within each dating method, there are very broad ranges for certain of the units and levels, and there are some apparent stratigraphic reversals; and there are some problems in comparing the results from one method with those from another. These problems have been particularly highlighted for the early part of the sequence. For the end of the sequence, there is the further question of how reliable radiocarbon dates are in this time range, and what effect their calibration would have.

Part 2.

Part I describes the information that was available to us thanks to the ERAUL volumes when we went to the Crimea in August 2004. We found a situation that had advanced somewhat beyond that. More up to date information is to be found in Chabai's book on "*The Middle Palaeolithic of Crimea*" (2004). This deals with the Crimea as a whole, but there are sections dealing with Kabazi II in particular (Chabai, 2004, 7-13, 81-89).

The stratigraphy had earlier been described by reference to the section along the line of squares 8/9 (the north-western face) of the Lower Excavation Area (ERAUL 84, Figure 8.4). An updated version of this section is given in the new book (Chabai, 2004, Fig. III.1). It is particularly relevant for the lower portions of the sequence that hitherto had been accessible only in the sondage (S1). However, the stratigraphic record is now more fully and clearly manifest on the opposite (south-eastern) face of the Lower Excavation Area along the line of squares 3/4, and this is where our efforts were concentrated. The full sequence here is shown in Chabai's book (Figure **I-2**) and in more detail for the lower portion (Figure **III.2**). Both figures are reproduced here.

The geological characteristics of layers 1-13 were described in detail by C. R. Ferring (ERAUL 84, Table 8.1), and these remain as before. Briefly, the layers below are characterised by Chabai as follows.

(13A). Rhythmically alternating lenses of clay and sand (sandy in the lower part, clayey in the upper part), up to 0.5 metres thick, constituting the remains of temporary water flows, the product of what Ferring has called a "low-energy water process".
(14A). Dark grey humified loam, with small-sized angular rubble. This unit is sharply distinct from both overlying and underlying layers. Not hitherto dated, but regarded as belonging to the last interglacial.
(14B). Grey compact loam, with a considerable clay content and some angular rubble. The base of the layer pre-dates the emplacement of the large barrier slab, which subsequently had such a marked effect on the accumulation of deposits at the site.
(14C-F) (15) (16). Slope deposits formed prior to the emplacement of the slab.

The pollen zones previously described by Gerasimenko and their relation to the geological layers remain as before (ERAUL 87, Table 6.1). Some of Chabai's comments concerning the lower part of the sequence are as follows.

Pollen zone VI. Geological layer 11. Archaeological horizon III-2. Upper Pryluky, equivalent among other things to the Krutitsa interstadial recognised on the Russian Plain. Apparently Jack Rink ("having analysed all the available data") now believes that this horizon dates to between 75 and 105,000 BP (Rink, Ferring, Chabai, JFA, in press).
Pollen zone IV. Geological layer 13. Archaeological horizons IV-1 to 5 (as well as overlying III–8A to E, and underlying V–1 to 2A) are all regarded as displaced. This does **not** apply to archaeological horizons V–3 to 6, in geological layer 14A (and Pollen zone III), which are in situ.
Pollen zone II. Geological layer 14B. Archaeological horizons VI-1 to 17 are likewise regarded as being in situ.

Summing up the site as a whole, Chabai comments that this 13 metre thick section contains 17 geological layers and 55 in situ archaeological horizons as well as 20 which are more or less displaced. Of the former, 20 are Western Crimean Mousterian (A3A-IIA/2) and 35 are Crimean Micoquian (IIA/2-3 – VI/17). The earlier phase of the Micoquian (Ak-Kaya facies) corresponds to a number of very brief visits by people to the site.

Figures 5.6 and 5.7 here show the positions where samples were taken in 2004 from the south-eastern section along the line of squares 3/4. The corresponding luminescence sample numbers are 266-275. The notes made at the time incorporate information which was imparted in the field by V.P. Chabai. Samples 266, 267, 271, 272, 273, 274, and 275 are uncontroversial and correlate respectively with geological layers 7, 9, 13, 13A, 14A, 14B, and 14B(1) [though the (1) does not seem to be a standard part of Chabai's system and this requires clarification]. Layer 13A is said to correlate with the third terrace of the Alma River. Chabai emphasises the importance of layer 14A, because (in the case of success) that would be the first Last Interglacial archaeological occurrence in the Crimea to be absolutely dated. There are some questions which arise in relation to samples 268, 269, and 270, attributed respectively to geological layers 10 and 11. There is apparently a difference of opinion between Chabai and Ferring as to where the boundaries between these layers should be drawn, and this is reflected in the notes which accompany the samples. The line drawn between samples 269 and 270 presumably reflects the dotted line which appears at depth –800 on Chabai's sections [but the significance of this line and the boundary between layers 10 and 11 would probably need to be discussed with him if dates were successfully obtained for this part of the sequence].

Part 1 completed 8 August 2004; Part 2 completed 18 August 2005.