Kepshinskaya and the Mzymta river valley

Kepshinskaya and the surrounding environment are well reported in Klapchuk (1970) and Liubin, Burchak-Abramovich, and Klapchuk (1971). These articles do not alter the essence of what has already been summarised in the SUERC volume (pages 166-168) but they do complement that information significantly.

The Mzymta river valley

Klapchuk decided that the palaeolithic environment could best be interpreted by reference to the landscape of today inland from Adler. To this end, he took pollen samples from ten surface locations all along the valley of the Mzymta, including its tributary the Pslukh, as far as the summit of Mt. Achishkho at 2391 metres. There is a map of this area and the location of the samples at Klapchuk (1970) Fig. 1, which is reproduced in simplified form in Liubin et al. (1971) Fig 19. [NOTE. I think it would definitely be worthwhile having the first of these maps re-drawn for the pollen volume]. The ten surface locations, numbered 6-8 and 10-16, are shown schematically in vertical elevation in Klapchuk (1970) Fig. 2 and Liubin et al. (1971) Fig. 18b (compare the SUERC volume Fig. 3.29). At some of the locations (Adler, Kepsha, Krasnaya Polyana, and the meteorological station at 1880 metres) there are indications of height, annual temperature, and precipitation, all of which permit the distinguishing of zones dependent on altitude (sub-alpine, upper mid and lower mountain) characterised by appropriate pollen spectra. [NOTE. I think this diagram would also be worth re-drawing on a larger scale in the pollen volume, and I attach a (not to scale) sketch accordingly].

The four zones were characterised briefly by Klapchuk as follows (see his diagram). Lower mountain, 0-400 metres. Subtropical vegetation up to 200 metres, thereafter dominant Quercus. Mid mountain, 400-850 metres. Dominance of Castanea, then Carpinus and Fagus. Upper mountain, 850-1800 metres. Dominant Abies. Sub-Alpine meadows, 1800-2000 metres. Simplifying matters further, two complexes could be distinguished, the first including samples 6-12 (from Akhshtyr to Krasnaya Polyana, from c.100 to c.700 metres above sea level) with deciduous AP from 91 to 58%, the second with samples 13-16 (from c.1100 to c.2000 metres above sea level) with coniferous AP from 65 to 97%. The present annual average temperatures in these two zones are about 10-14° and 3-8° C respectively. However, as Klapchuk pointed out, there is another regional specificity which complicates the picture, and ensures that results do not reflect altitude alone. In the steep valleys of the Mzymta, Khosta, and Kudepsta rivers there are now examples of deciduous trees which may go all the way up to the Sub-Alpine zone, if only in small islands. Thus, chestnut oak hazel and beech may be found at altitudes of up to 1800, 1900, 2000, and 2100 metres respectively.

Kepshinskaya

There is a better map of the cave and diagram of the main excavated section than the one reproduced in SUERC (Fig. 3.26). This is provided in Liubin et al. (1971) Fig. 16, which in turn is reproduced on a larger scale in Chistyakov (1996) Fig. 84. [NOTE. It is recommended that the latter be used.] The advantage of this map is that it shows the two stages of the main excavation (1966 and 1967) and also the

location of the second trench opened in 1967, even though this achieved little. Bedrock was reached at a depth of 0.25-0.75 m, and no archaeological finds were made. Another advantage of this version of the map is that it shows the North direction, marked by an arrow ("C") pointing to the bottom right. (In other words, the cave as shown is "upside down"). The pollen diagram shown in SUERC (Fig. 3.28) also comes from Liubin et al. (1971) Fig. 18a and seems to be the best available, indicating exactly where the samples were taken.

The stratigraphic details given in the SUERC volume (page 166) do not need amendment, but it should be noted that layer 3 was excavated in 7 artificial horizons only in 1967 (not 1966) which fact is reflected in the table relating to the fauna (Liubin et al., 1971, Table 2). Liubin emphasises that the deposits in the cave obviously underwent severe erosion, and that we are left only with fragments corresponding to disparate periods of time. Thus, layer 1 is likely late Holocene, layer 2 is late glacial, and layer 3 represents a cold stadial within the last glacial.

Details concerning the fauna do not conflict with those given earlier (SUERC, page 167) but this time we have a Table with the complete statistics (Liubin et al., 1971, Table 2). Explanations regarding the Table are as follows. The 17 identified species are on the left hand side. The (undifferentiated) results for layers 1, 2, and 3 for 1966 are given in the next three columns (n=53). The results for layer 3 horizons 1-7 are given next, followed by bones found while cleaning up the profile in 1967 (n=268 for all of this), and then the grand totals. Unidentified bones are indicated at appropriate places in the left hand column. UID large vertebrate bones are at 7/8, rodent bones at 12/13, and bird bones at 16/17. Listed species 9 is meant to read either Microtus gud Sat or roberti Thom.

The commentary is essentially the same as in the SUERC volume (page 168). Of the 314 bones, 14 belonged to layer 1, and 307 to layer 3 (most of the latter being concentrated in the lower horizons). Large vertebrates number 177, rodents 76, birds 60, and Chiroptera 9. The condition of the large vertebrate bones in layer 3, with many broken long bones and unbroken extremities, indicates their use as food. At the time of the excavation, the analysed collection of rodent and bird bones was unique for the Caucasian Black Sea coast, in that it was the first time that any of the birds had been found in such a context, and the same was true for four of the rodents. Tetraogallus, Lyrurus, and Pyrrhocorax, now live at very high altitudes, and other species found in layer 3 also now do not live within the area of the cave, so the palaeoclimatic implications are clear.

The palynological results are summarised in Liubin et al. (1971) Table 3, as well as Fig. 18a. Explanations with regard to the Table are as follows. The taxa are listed in the left hand column. The column immediately to the right is a sample from the present day surface. Then follow columns according to the layers and sample numbers as indicated. 20 samples were collected by Klapchuk in 1967, in Liubin's presence, and there were pollen grains in 14 of them. Sample 1 is followed by 3-14, numbered consecutively, then there is a gap before sample 20, which comes from layer 4. In Klapchuk's view, samples 15 to 19, which produced nothing, could really have corresponded to a time when the landscape around the cave was devoid of vegetation. The first line in the Table gives the pollen sum which was used for calculation purposes. The second line gives the AP% within this sum, and the third

and fourth lines give the coniferous and deciduous %s within that sum. NB. There is a note at the foot of the Table explaining that, because of their frequency, the pollen of Alnus and Corylus has been excluded from the calculated sum. (This is obvious when the statistics are compared). Thus, they appear separately in Fig. 18a (in terms of actual numbers not %s) as hatched areas different from the calculated percentages of the other species which are in black. The list of taxa in order of appearance is as follows.

1. Abies
2. Picea
3. Pinus
4. Betula
5. Acer
6. Castanea
7. Fagus
8. Quercus
9. Carpinus
10. Tilia
11. Rhamnus
12. Ilex
13. Cornus
14. Taxus
15. Tsuga
16. Larix
17. Carya
18. Fraxinus
19. Ribes
20. Alnus
21. Corylus

The interpretation given to this data is essentially the same as reported in the SUERC volume (page 167). At the end of the sequence, samples 1, 3, and 4 indicate the "zenith" of a warm period. Within the predominant deciduous AP, attention is drawn to the figures for oak, hornbeam, lime, alder, and hazel. A comparison is made between these figures and those for the present day surface which seem to indicate that today's climate is a bit more severe than it was then.

With regard to the interpretation of the earlier layers, having regard to Klapchuk's study of the vegetation in the Mzymta valley, it is concluded that:
1, in the lower part of layer 3 (samples 13-14) the temperature will have been equivalent to that now prevailing at an altitude of 1800 metres;
2, in the upper part of layer 3 (sample 7) it will have been equivalent to that at 1500-1800 metres;
3, in the lower part of layer 2 (sample 6) conditions were still relatively cold.

In general, both palynological and palaeontological data indicate that, from the time of the Mousterian occupation onwards, this area witnessed considerable alterations in its landscape and its climatic zonation, as well as significant changes in the flora and fauna which were present at any one time.

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