

Kostenki 12: stratigraphy

The current situation with regard to Kostenki 12 is set out in Anikovich et al. (2004 and 2005), with additional information in Anikovich (2005), Levkovskaya et al. (2005), Holliday et al. (in press), and Housley et al. (in press). The general position of the sites at Kostenki-Borshchevo, on the west bank of the river Don, is shown in the attached map (Anikovich et al., 2005, Fig. 1, drawing by A.A. Sinitsyn). Kostenki 12 is on a promontory on the south side of Pokrovskii ravine, at its eastern end, where it merges with the floodplain of the Don. The site was discovered by A.N. Rogachev in 1950. It was excavated intermittently between 1951 and 1984. New excavations commenced in 1999. The position of the trenches on the promontory is shown in the attached diagrams (Anikovich et al., 2005, Figs. 2 and 4). Recent work (140 m²) has concentrated on the upper part of the promontory because it is believed that the lower layers at the site are better represented in this area. The eastern wall of the 1999-2004 excavation is shown in the attached sections (Anikovich et al., 2005, Figs. 8 a and b). 8a shows the northern part (squares 71-75) and 8b the southern part (squares 76-83). The key is based for the most part on the first volume (Anikovich et al., 2004, Fig. 2) since the one in the second volume is defective (Anikovich et al., 2005, Fig. 8a; except that [14] and [16] shown there replace the earlier [21] and [22]). The sections in the earlier volume should however not be used, since the layer numbering is incorrect (out by 1) (Anikovich et al., 2005, note 9, page 82). The section is described in some detail in the second volume (Anikovich et al., 2005, pages 68-71 and 74-75) and this provides the basis for the summary here. The layer numbers represent the lithological (not the cultural) entities.

Layer 1. Building construction horizon.

Layer 2 a and b. Present day soil horizon.

Layer 3. Dark brown loess-like loam. IRSL 19,890±1730 (UIC-1418).

Layer 4. Light to dark brown humic loam. Upper fossil soil, observed as a continuous horizon in squares 71-83. Named as Gmelin soil (compare Holliday et al., in press, Table 2).

Layer 5. Light to dark brown loam, whitish in places, with chalk fragments in lenses, particularly in the lower part. "Upper" archaeological horizon, with a few flints, which may or may not be derived from layers beneath. IRSL 25,770±2250 (UIC-1419).

Layer 6. Light to dark brown loam, laminated. Another fossil soil, according to M.I. Skripnikova.

Layer 7. Top of Upper Humic Bed. Alternating lenses of intense humic black and lighter coloured weakly humic material (greyish-brown to yellowish-white). A few cultural remains evidently derived from the layer beneath.

Layer 8. UHB. Brownish-grey medium humic loam with varying degrees of lamination. Cultural layer I (Gorodtsovskaya culture). IRSL 27,360±2360 (UIC-916). RC: 23,600±300 (GIN-89) 24,000±800 (GIN-8019) 26,300±300 (GIN-8574).

Layer 9. Base of Upper Humic Bed. Intense black lenses of humic loam alternating with medium humic or non-humic lenses of other colours (brownish-grey, whitish, pale yellow). Cultural layer Ia (Kostenki-Streletskaya culture). RC: 28,500±140 (GrA-5552) 28,700±400 (LE-1428a) 30,240±400 (LE-1428b) 31,150±150 (LE-1428v) 31,900±200 (LE-1428g) 32,700±700 (GrN-7758).

Layer 10. Horizon of redeposition, discontinuous. Whitish laminated loam fills the bed of old gullies, contains many chalk fragments and partially sorted gravel, and is soliflucted to some extent. The gullies affected layers 11 and 12, and there are some cultural remains which typologically at least resemble those from cultural layer III.

Layer 11. Grey-brown loam with admixture of chalk fragments and traces of volcanic ash. This horizon divides the Upper and Lower Humic Beds and can reach a thickness of 70 cm, but in parts is laminated and reworked, and in parts is entirely absent. Volcanic ash was not observed in the section, but was detected in the laboratory in the samples studied by Dr B. Carter. Cultural layer II (Spitsynskaya culture) was detected in this position in the excavated areas in the lower part of the promontory but not here. A volcanic horizon as such was also observed in the lower part of the site by Rogachev in 1954 and 1961-62.

Layer 12. Top of Lower Humic Bed. Laminated humic loam. Soil horizon "A". Alternates with intense black lenses of humic material, mainly at the base, and medium or non-humic greyish-brown and lighter coloured lenses. Cultural layer III (Kostenki-Streletskaya culture) in situ. RC: >31,000 (GIN-8021) 36,280+360/-350 (GrA-5551). New Oxford date (excluding OxA-X-2158-14): 35,820±230 (OxA-15482).

Layer 13. LHB. Pale yellow loam, homogeneous, not laminated.

Layer 14. LHB. Light to dark brown humic loam. Soil horizon "B". Cultural layer IV, a few finds of Upper Palaeolithic character which may be compared to Kostenki 14 cultural layer IVb. New Oxford date: 35,540±260 (OxA-15555).

Layer 15. LHB. Pale yellow loam, slightly darker than layer 13. IRSL 43,990±3670 (UIC-915) 43,470±3670 (UIC-946) 46,910±3860 (UIC-947).

Layer 16. LHB. Brownish-grey medium humic loam, laminated. Soil horizon "C".

Layer 17. LHB. Pale yellow loam, analogous to layers 13 and 15.

Layer 18. Base of Lower Humic Bed. Light to dark brown humic loam, laminated. Soil horizon "D". Cultural layer V, a few finds which could be either EUP or final Middle Palaeolithic. IRSL 44,150±3780 (UIC-945). New Oxford dates (excluding OxA-X-2158-15): 41,300±450 (OxA-15556) and 38,410±300 (OxA-15902).

Layer 19. Grey to white loam with gravel lenses. IRSL 50,520±4380 (UIC-917).

Layer 20. Colluvial chalk.

Anikovich comments in general on the stratigraphy as follows. Previously the Upper and Lower Humic Beds were considered to be redeposited and therefore of little stratigraphic significance, but now it is thought that there was a series of soil formation horizons which can be “written in” to the general geological history of the Middle to Late Valdai (Würm). The dark brown loess-like loams overlying the UHB were previously considered homogeneous, but there are in situ traces of a fossil soil. The Gmelin soil was originally distinguished by N.D. Praslov at Kostenki 21 on the first terrace above the floodplain of the Don. There is a complication in that there is more than one such horizon on the second valley terrace of Pokrovskii ravine. M.I. Skripnikova claims that there is a second soil above the UHB at Kostenki 12, and Sinitsyn has identified four such horizons at Kostenki 14. So the question is still unresolved at the moment. It is said that horizons A-D in the Lower Humic Bed may equate with interstadials such as Oerel, Glindé, or Moershoofd, as well as one that is not identified; but no specific recognition of these horizons as fossil soils is contained in the geological study by Holliday et al. (in press, Table 2).

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