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Palaeoenvironment of the Middle and Upper Neopleistocene at the Gornovo Upper Palaeolithic site (Southern Ural foreland, Russia)

Guzel Danukalova ^{a,b,*}, Ravil Kurmanov ^a, Anatoly Yakovlev ^a, Eugenija Osipova ^a,
Eugeniy Zinovyev ^c, Khikmatulla Arslanov ^d

^a Institute of Geology of the Ufimian Scientific Centre, Russian Academy of Sciences, Ufa, K. Marx St., 16/2, 450077, Russia

^b Kazan Federal University, Kazan, Russia

^c Institute of Ecology of Plants and Animals, Ural Branch, Russian Academy of Sciences, 8th March St., 202, 620008, Ekaterinburg, Russia

^d Saint Petersburg State University, Universitetskaya nab., 7/9, St. Petersburg, 199034, Russia

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ABSTRACT

Complex biostratigraphical methods and radiocarbon dates were used to reconstruct the Middle (late Middle Pleistocene) and Late Neopleistocene (Late Pleistocene) palaeoenvironments covering the Palaeolithic period in the western foreland of the Urals. The Gornovo Palaeolithic settlement is located on the lowest terrace of the Belaya River. From the base to the top, this terrace consists of fluvial and lacustrine deposits of the Belaya horizon (Middle Neopleistocene; 427–364 ka), alluvial and lacustrine deposits of the Larevka horizon (Middle Neopleistocene; 364–334 ka), fluvial and lacustrine deposits of the Tabulda horizon (Late Neopleistocene; 57–24 ka), water-slope deposits of the Kudashevo horizon (Late Neopleistocene; 24–11 ka) and chernozem soil of the Holocene. The small and large mammals, insects, molluscs, and ostracods discovered in the deposits complete the palaeoecological characteristics of these periods. A diverse herbaceous steppe vegetation dominated during the Belaya Interglacial (a mixed coniferous forests with broad-leaved trees occurred in wet areas). The ostracoda species clearly indicate a cooling at the end of this time span. Molluscs inhabited the rivers and shores of freshwater ponds. The large mammals belong to the Middle Pleistocene fauna complex. During Larevka time span vegetation and fauna indicate cold climate conditions. The cold steppe communities typical of the beginning of this period changed gradually into communities that show an increasing role of the taiga. The ostracoda species confirm these cold conditions. Forest-steppe landscapes dominated during the second part of the Tabulda time span. Numerous ostracods as well as molluscs populated the lakes and floodplain basins. Entomological data show that the palaeoenvironment conditions were somewhat cooler than modern environment existing in the Southern Ural foreland. The large mammals of the Gornovo site belong to the Late Palaeolithic complex with the specific presence of *Camelus* sp. The Gornovo forest-steppe small mammalian fauna developed in cool continental climate conditions when coniferous forests grew in the river valleys and when forest-steppe landscapes dominated in the water interfluves. The artefacts are characteristic of the beginning of the Late Palaeolithic (32–24 ka). The Kudashevo time is correlated with the late Valdai (late Late Pleistocene; 24–11 ka). The herbage-*Artemisia*-*Chenopodiaceae* grassland-steppe association covered most of the territory and a *Picea* forest with *Betula* and a small quantity of broad-leaved trees grew in wet depressions. The climate at the end of this period became colder. Freshwater and terrestrial molluscs were represented by rare widespread species while the ostracoda species indicate cold conditions.

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* Corresponding author. Institute of Geology of the Ufimian Scientific Centre, Russian Academy of Sciences, Ufa, K. Marx St., 16/2, 450077, Russia.

E-mail addresses: danukalova@ufaras.ru (G. Danukalova), ravil_kurmanov@mail.ru (R. Kurmanov), a_jakovlev@mail.ru (A. Yakovlev), jane.morozova@gmail.com (E. Osipova), zin62@mail.ru (E. Zinovyev), arslanovkh@mail.ru (K. Arslanov).

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