Quaternary International 355 (2015) 24–33

Contents lists available at ScienceDirect

Quaternary International

journal homepage: www.elsevier.com/locate/quaint

The molluscs record: A tool for reconstruction of the Late Pleistocene (MIS 3) palaeoenvironment of the Bol'shoj Naryn site area (Fore-Baikal region, Eastern Siberia, Russia)

Guzel Danukalova [a, b, *], Eugeniya Osipova [a], Fedora Khenzykhenova [c], Takao Sato [d]

[a] Institute of Geology, Ufa Scientific Center RAS, Ufa, Russia
[b] Kazan Federal University, Kazan, Russia
[c] Geological Institute, Siberian Branch RAS, Ulan-Ude, Russia
[d] Department of Archaeology and Ethnology, Faculty of Letters, Keio University, Tokyo, Japan

ARTICLE INFO

Article history:
Available online 13 September 2014

Keywords:
Terrestrial molluscs
Late Pleistocene
Karginian Interstadial
Fore-Baikal region

ABSTRACT

A representative mollusc fauna attributed to the late phase of the Karginian Interstadial (MIS 3) has been found in the Bol'shoj Naryn Palaeolithic site (Fore-Baikal region). The general organization of the strata at the Bol'shoj Naryn site has been established through excavations realized during the previous field seasons. It shows a modern soil made of sandy loess deposits 1 m thick, dated from the Sartan glacial stage, and underlined by a high viscosity paleosol layers which is up to 1 m thick developed during the Karginian Interstadial. The "cultural layer" has been correlated with the upper Karginian soil contains numerous stone tools and animal fossils. This paper focus on the mollusc assemblage attributed to the upper Karginian sediment.

The mollusc assemblage (2460 determined specimens) consists of six species and five genera of terrestrial molluscs. *Succinella oblonga*, *Pupilla muscorum* and *Vallonia tenuilabris* are the best represented species. The molluscs suggest the existence of landscapes corresponding with humid meadows and forests located in the relief depressions or along banks of the river. Molluscs of the Bol'shoj Naryn site have been compared with equivalent mollusc complexes from Siberian and Southern Fore-Uralian localities. They display a distinctive poverty in the species composition and show similarity with the complex of the Gornovo locality (Southern Fore-Urals region). Comparison of the mollusc complex from the Bol'shoj Naryn locality with molluscs from the last glacial period also showed similarity with the complex of the Gornovo locality (Kudashevo period in the Southern Urals – last phase of the Late Valdai equivalent MIS 2). The climatic conditions which prevailed in the surroundings of the Bol'shoj Naryn locality during the late phase of the Karginian interglacial period (32–25 ka BP) of the Fore-Baikal region were cooler than those existing at the same time in Europe and Southern Urals. Correlation between the data obtained after malacological investigations and other paleontological data obtained from palynology and vertebrate records suggest a moderate cold and humid climate in the Fore-Baikal region during the second part of MIS 3, with predominance of open landscapes of steppes and relatively limited taiga forest, tundra, and wetlands.

1. Introduction

The Fore-Baikal region is located mainly inside the Baikalian structural zone, which was tectonically active during the Neogene and Quaternary (Florensov, 1960). Cenozoic deposits filled this wide depression (for example the Baikalian rift zone) where they are several kilometers thick. Other smaller depressions (for example the Fore-Baikalian foredeep) display only thicknesses of several hundred meters. The sedimentation started in this region in the Oligocene. Quaternary deposits close to the mountains are represented by conglomerate, gravel, and sand. Large depressions are occupied by lakes where thin lacustrine sediments were deposited. The Fore-Baikalian and the Fore-Sayanian foredeeps are filled by alluvial deposits. Glacial, deluvial, and other types of

* Corresponding author. Institute of Geology, Ufa Scientific Center RAS, Ufa, Russia.
E-mail addresses: guzel59@mail.ru, danukalova@ufaras.ru (G. Danukalova), myrte@mail.ru (E. Osipova), khenzy@mail.ru (F. Khenzykhenova), sato@flet.keio.ac.jp (T. Sato).

http://dx.doi.org/10.1016/j.quaint.2014.08.034
1040-6182/