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PALEOENVIRONMENT. THE STONE AGE

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EVIDENCE OF ENVIRONMENTAL INSTABILITY OF THE LAKE BAIKAL AREA AFTER THE LAST GLACIATION (BASED ON POLLEN RECORDS FROM PEATLANDS)*

Pollen analysis of two dated sedimentary cores from lacustrine-boggy sediments in various parts of the Lake Baikal area yielded the first complete record of deep changes in the lake catchment area during the Late Glacial and Early Holocene. The Early Middle Holocene record shows an optimum – a humid and mild climate with warm winters between ca 10,000 and 7000 BP. During the Late Holocene, the climate grew more and more continental, and dark coniferous forests were replaced by light coniferous ones. Comparison of variation ranges of paleogeographic events in the Late Pleistocene and Holocene recorded in our samples with previously known records for the Lake Baikal area and other regions of Eurasia indicated that major changes of vegetation and climate mostly correlate with the global ice retreat, solar radiation level, and the concentration of carbon dioxide in the atmosphere. Less significant short-term fluctuations of vegetation and climate recorded in our archives can be regarded as regional ecosystem responses to solar activity changes of a quasi-millenary scale. Regional pollen records demonstrate a distinct relationship with the climate of the Northern Hemisphere as a whole. The amplitude of these changes is higher in the northeastern Lake Baikal area than in its southern part.

Keywords: *Pollen analysis, paleoclimate, paleoecology, Late Glacial, Holocene, Lake Baikal catchment area.*

Introduction

To evaluate the anthropogenic climatic changes and their relationship with natural environmental changes, one must first of all assess the directionality of the evolution of the climate during the Late Glacial and in the Holocene (Rind, Overpeek, 1993). Before the natural dynamics of the recent past, i.e. of Termination 1 and of the Holocene, universally represented by sediments, has been adequately described and interpreted, it will be impossible to evaluate the magnitude of the anthropogenic impact on the environment and climate. Our knowledge of the recent geological past is limited. Currently, the most reliable oxygen-isotopic record

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