

## Special Section

# Paleopedology and archaeology: Paleopedological evidences of ancient man-induced environmental change

VI. International Symposium and Field Workshop on Paleopedology  
International Commission on Paleopedology, International Union of Quaternary Research (INQUA),  
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## Preface

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Guest editors

Paleopedology is a rapidly developing branch of geoscience that investigates and interprets the carriers and elements of “soil memory” in surface and buried soils to decode the rich and variable paleopedological records of past environmental change. In this volume, *Revista Mexicana de Ciencias Geológicas* begins publishing papers presented at the VI International Symposium and Field Workshop on Paleopedology, held at the Colegio de Postgraduados, Montecillo, Mexico in October 2001 – an event of the International Commission on Paleopedology INQUA-IUSS, which for the first time took place in Latin America. This meeting investigated a wide variety of problems considered by paleopedologists, various case studies, and the methods used for their solution. A large part of paleosol research, whether buried or relict, is interdisciplinary in nature. Among the topics that attract major interest is the investigation of paleopedological indicators of ancient human-induced environmental change and the application of soil science methods in archaeological research. This issue contains the collection of papers presented during Session V of the Symposium: “Paleopedology and archaeology: Paleopedological evidences of ancient man-induced environmental change”, which covers various topics of soil archaeological studies.

Heine summarizes decades of research on the record of human-induced soil degradation and erosion preserved in geofoms and soil sedimentary sequences in valleys, finding strong correlation with archaeological data on the settlement pattern and population density for prehispanic and colonial periods in Tlaxcala, Mexico.

Bronnikova *et al.* and McClung *et al.* present models of landscape dynamics on the regional scale as background for understanding cultural evolution at the famous archaeological sites Gnezdovo (Central Russia, VIII-X century A.D.) and Teotihuacan (Mexico, II-VII centuries A.D.). In both cases, the authors correlated thoroughly the paleopedological data with the paleobotanical records, allowing the derivation of more solid and reliable conclusions about both natural and human-induced landscape change.

Soil profiles under burial mounds (kurgans) of the Eurasian steppe have been fashionable objects for studies of Holocene soil and ecosystem evolution for decades. Golyeva and Khokhlova demonstrated through phytoliths that, in many cases, the soils buried under kurgans suffered strong anthropogenic disturbance before burial, that can alter or mask the signals from natural paleoenvironmental change and thus lead to misinterpretation.

Alexandrovskaia and Panova studied chemical characteristics of soils and archaeological sediments in the ancient urban environment of Moscow – the case of very thick and pervasive anthropogenic soil and landscape transformation. Their data show that buried soils in the ancient city limits contain high values of various microelements derived from anthropogenic materials; the pollution with some heavy metals was higher during the Late Medieval period than at present.

A specific applied aspect of paleopedology is the analysis of buried soil horizons as the source of useful materials for ancient and modern culture. Ramos *et al.* showed that a particular buried soil horizon has provided clay-rich material for traditional ceramic production in Tlaxcala, Mexico.

The remaining papers presented in the VI International Symposium and Field Workshop on Paleopedology will be published in a special issue of *Revista Mexicana de Ciencias Geológicas* at the beginning of 2004.

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