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Micromorphology of the soil materials from the Moon Pyramid, Teotihuacan, Mexico

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The city of Teotihuacan (Central Mexico) that flourished in the I millennium A.D., is thought to be the greatest urban center of the pre-Hispanic Mesoamerica. Until now various aspects of the society-environment interaction associated with the development and decline of this civilization are not well understood. We studied the redeposited soil materials in the fill of the Moon Pyramid (one of the most important elements of the Teotihuacan Ceremonial Center) to detect its sourse and reconstruct soil and environment conditions in the time of the Pyramid creation.

Earlier the observations in the tunnels, made by archaeologists in the Moon Pyramid demonstrated, that it consists of 7 buildings constructed one upon the other between II and VII centuries A.D. We had an opportunity to sample th fills of the Buildings 1, 2 and 4 and compare them with the modern surface soils in the vicinities of the Pyramid. Each studied fill consisted of stones ($\sim$40%) and soil materials ($\sim$60%); in the latter we could recognize macromorphologically the blocks of different soil genetic horizons: Ah, Bw, Bk, BC (tepetate) and sample them separately.

In general the micromorphology of the fill soil materials are similar to that of the surrounding soils, that point to their local origin. The reconstructionof the hypothetic soil profiles from the horizon fragments presented in the fill suppose domination of the ancient soil cover by Cambisols and Kastanozems indicative of rather dry environment, similar or even more arid than the present day one. The micromorphology of the different Ah horizon fragments varies: some have well developed granular microstructure, spongy fabric, more organic pigment and abundant phytoliths whereas others are more compact, paler and contain artifacts. We relate this variability to the differences in the intensity of the ancient human impact. Strangely enough, the Ah

materials which seem to be more transformed by man were found in the fill of the most ancient Building 1. We observed conspicuous micromorphological features in the cover layer of the building 2: all pores in it are occupied with abundant and thick clay infillings. These features have no analogues in the modern soils and could be related to some unknown ancient construction practices.

The paleoenvironmental inferences from the micromorphological observations agree with the soil chemical and stable carbon isotope data from the soil materials of the Moon Pyramid.