



## **Relic components within the soil cover of Mexico: regional variability**

Elizabeth Solleiro Rebolledo (1) and Sergey Sedov (2)

(1) Instituto de Geología, UNAM, México (esolleiror@gmail.com), (2) Instituto de Geología, UNAM, México (serg\_sedov@yahoo.com)

The case of paleosols persisting on the land surface (non-buried paleosols or relict soils) besides paleoecological interest has specific implications for studies of soil geography, ecology and management. In fact these soil bodies form part of the modern soil mantle and provide ecological services for the current (agro)ecosystems but are neither formed nor re-produced by these ecosystems, conforming locally extinct soils (although similar profiles can develop at present under other bioclimatic conditions). In consequence, they are a heritage of past climatic and biotic conditions now extinct, thus presenting a non-restorable component of the present landscape. Mexico has so abundant and diverse paleosols, both surface and buried, that really could be considered to be a “paleopedological paradise”. Two groups of factors promote generation of this abundance: Major part of territory of Mexico is occupied by mountainous landscapes with high intensity of tectonic, volcanic and geomorphic processes. These processes create a complex mosaic of geological materials and landforms of different age (like alluvial and lake terraces, eroded slopes, and volcanic deposits of various eruptions). Meanwhile younger landsurfaces are occupied by the recently developed soils, the older ones could bear the relict soil bodies. The same processes produce sedimentary strata (alluvial, colluvial, pyroclastic, etc.) which frequently cover the pre-existing landsurfaces and soils, producing series of buried paleosols. In this work we present three study cases of relict paleosols that are integrated to the modern soil cover of Mexico: the case of reddish-brown soils in the arid landscapes of Sonora (in the north); the pedosediments (tepetates) in central Mexico; and the red soils developed under humid conditions in Yucatan (in the south).