

Thematic Session 05

Soil minerals in connection with pedogenic processes

Karl Stahr

Hohenheim University, Germany
karl.stahr@uni-hohenheim.de

Selahattin Kadir

Eskişehir Osmangazi University, Department of Geological Engineering, Eskişehir, Turkey
skadir.icc@gmail.com

Selim Kapur

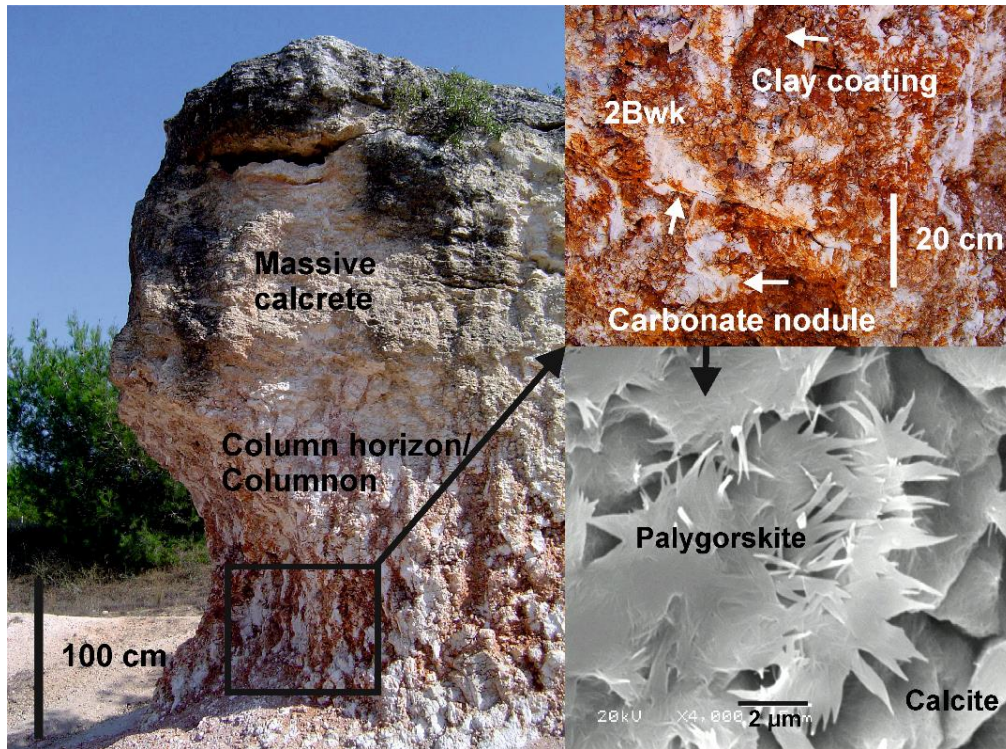
Çukurova University, Soil Science and Archeometry, Adana, Turkey
kapurs@cu.edu.tr

Most pedogenic processes occur under a specific soil/sedimentary environment. This is characterised by the chemical constitution as well as the land use, water, and temperature regime. Weathering, re-crystallization and all transformations need a certain time to develop in soil. Therefore, in most soils we can identify an initial and a derived final mineral constitution. The advantage of the transformation and process-oriented mineral development characterizes the progress of pedogenesis. Pedogenic palygorskite developing on and/or around smectite by precipitation and/or transformation or vice versa bears utmost significance in designating the type of pedogenetic process along with the climatic conditions of the environment. Kaolinite neoformed in the silica-alumina rich matrices of basaltic rocks are also the indicators of initial/primary pedogenesis.

Ultimately, this session will cover pedogenesis (soil/clay mineral formation) in undisturbed (forestal ecosystems/biomes) and archaeo-/recently cultivated soil ecosystems, i.e., the Red Mediterranean Soils (Calcisols, Luvisols and Leptosols) alongside the Technosols and Anthrosols developed in archaeological excavaton sites. Research on initial pedogenic evidence in archaeological artefacts is also part of our interest.

Keywords: Pedology, Soil minerals, Soil processes, Soil archeology, Weathering.

Potential Journals: CATENA, Clays and Clay Minerals, European Journal of Soil Science.



Images from: Kapur, S., Constantini, E., Kadir, S., Zucca, C., Stahr, K. (2018) Preface: A tribute to Ewart A. FitzPatrick (1926–2018), a life for Pedology and Morphology of Soils. *Catena*, 168, 1–4 in Special Issue dedicated to E. A. FitzPatrick. Column Horizon/Columnon/2Bwk horizon rich in palygorskite and calcite developed in calcrete profile under a massive surface crust (term coined by E. A. FitzPatrick, S. Kapur and E. Akça).