

Field campaign 2 – Upper Eocene–Recent unconformity (September 24-27, 2020)

Upper Eocene–Recent unconformity is accompanied with various sediments and soils/palaeosols among which terra rossa, loess–palaeosol sequences and pedo-sedimentary complexes predominate. This unconformity was of a very long duration even in the areas characterized by the longest deposition – up to the flysch in the latest Eocene (resulting in stratigraphic hiatus of approximately 35 Ma). However, on the limbs of the Western Istrian Anticline due to the synsedimentary tectonics hiatus was longer since there was probably no younger deposits than Middle Eocene foraminifera limestones (40–45 Ma), while it is possible that in the apical part there was no carbonate deposition since the Lower Cretaceous times, so duration of stratigraphic hiatus could be more than 100 Ma.

During this campaign we investigated one pedo-sedimentary complex and terra rossa type of soil/palaeosol. The pedological pit was opened near Rovinj in an area built of reddish materials that actually represent pedo-sedimentary complex. Terra rossa profile is situated in Kanfanar Quarry.

Detailed sampling was performed on both locations. Multidisciplinary approach to investigation of pedo-sedimentary complex and terra rossa includes detailed analysis of: (1) morphological properties, (2) micromorphological properties, (3) physical properties, (4) chemical properties, (5) bulk mineralogy, (6) clay mineralogy, (7) structural and morphological properties of the mineral particles, (8) heavy and light mineral fraction analysis, (9) mineralogical indicators of provenance, (10) major and trace elements, (11) geochemical indicators of weathering and provenance and (12) palaeoclimate (palaeoprecipitation and palaeotemperature indicators). After attributes (1)–(12) will be accomplished pedo-sedimentary complex and terra rossa will be classified and their formation interpreted.

Rovinj pedo-sedimentary complex

With the help of an excavator (courtesy of Milan Mihovilović from the Geo-5 company), a 5-meter-deep pit was excavated in pedo-sedimentary complex until the contact with a hard rock – the Rovinj lithostratigraphic unit (Fantasy dolomite). The total thickness of the complex from contact with the dolomite to the ground surface is 9 meters.





Field work on the selected outcrop comprise cleansing of the profile surface, detailed field description of the profile and sampling (positions of Kubiena boxes for micromorphological studies in the upper and lower part of the profile are presented).



An interesting wild life in the pit was observed (see also contact with bedrock).



Terra rossa in the Kanfanar Quarry

Approximately 3 m thick terra rossa situated on limestones of Cretaceous age was sampled in detail in the Kanfanar Quarry. Field work on the selected outcrop comprise cleansing of the profile surface, detailed field description of the profile and sampling (positions of Kubiena boxes for micromorphological studies are presented).





