Paleocatena - inter-connected geochemical combination of soils and landscapes along the slope.

Paleocatena - ancient catena formed in the paleoecological conditions of the past.

Paleocatena - mated a number of reconstituted paleolandscapes and their components on the slope.

Paleocatenas and their meaning:
1. Stratigraphic (high-resolution stratigraphy)
2. Evolutionary (soil, soil structure, micro- and macorrelief)
3. Paleoeological (reconstruction facies, local and regional landscapes)
4. The safety and diagenetic convert paleosols (fossilisation of soils).

The lower paleosols sections (LPS) situated on flat interfluves integrally reflect the soil characteristics of paleolandscaes and climate change of large-scale rank such as interfacial-glaciation, megamontastal-stadal. However, they do not reflect small-scale climatic fluctuations and the local diversity of paleocological conditions. Geochemical combinations of soils and sediments along the slopes of the pedo-slope, i.e., paleo-catena, make it possible to supplement the missing links of the paleogeographic history and to detail the paleogeographic events. Pedosedimental archives of slopes and depressions allow reaching a qualitatively new level of resolution for the reconstruction of paleoclimatic events and landscape changes over the last thousands and hundreds of years.

In support of this idea, we show the results of study of paleocatenas of the Ryshkov pedolithocomplex formed in the Mikulino interglacial (MIS 5e) and presented in the Alexandrov quarry near the city of Karos, the Central Russian Upland. In the section, the Moscow-Mikulino burial balka was opened. The Ryshkov paleocatenas are analyzed along the slopes of the northern and southern exposures in the paleosols' upper course. Outside the paleosols' forming, the interfacial paleosols were not preserved. The change of soils in the studied catena does not differ in sharp contrast. The variability of the Ryshkov pedoleosols fits into the framework of our genetic soil type. Its closest analogue is soil-podzolic texture-differentiated soil of mixed forests (Lorn; Rorlsoils). The main differences between the soils developed in the paleocatena are related to the degree of detail of the evolutionary development record due to various combinations of soil forming and denudation-sedimentation processes. Paleosol 1 along the slope facing to south is distinguished by the simplicity of soil profiles. Paleosol 2 of the northern exposition slope is more diverse in the completeness of the structure of paleosol profile. It is complicated by micro-catena along a buried coastal ravine. Based on the study of the Ryshkov paleosols, the following stages of soil development in the Mikulino interglacial (130-117 ka BP) are reconstructed: 1) the lower meadow soil (the first soil stage) is recorded throughout the paleosol 2 (i.e., in the bottom and on the paleo-balka slope); 2) the formation of bottom and coastal ravines, their subsequent filling with material of a humus horizon, carried away from the slopes during the climatic cooling within the interglacial (the first morpholithogenic stage); 3) the formation of the of soil-podzolic soil profile (the second soil stage) is recorded in the fillings of the coastal ravine; 4) subsequent erosion and accumulation of humus material in the bottom of the balka and ravine (the second morpholithogenic stage); 5) soil-podzolic soil (the third soil stage) is detected throughout the catena; 6) stressful restructuring of the paleogeographic situation before burial is recorded in traces of a strong fire and a post-fire storm erosion at the end of the interglacial period when the climate became cooler (the third morpholithogenic stage). Thus, in the catena along the northern exposition slope and especially in the bottoms of the ravine and the main channel of the balka, the detailed change in the stages of development of local landscapes is reflected: three soil-forming stages separated by two erosion stages, and the most intense final (third) erosion stage. A complex combination of soil and relief-forming processes is reflected in the physicochemical properties of the Ryshkov pedolitho-complex, especially in its upper humus-accumulative and erosive parts. The revealed cyclicity is associated with climate variability within the Mikulino interglacial. This cyclicity was also reconstructed using other biostratigraphic indicators, precisely, changes in spore-pollen and physiodil spectra.

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