

## **Pleistocene Braid-Delta Depositional System in Peri-Adriatic Basin, Italy**

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The Pleistocene stratigraphic succession is studied using facies analysis and biostratigraphic dating indicate that the record of Colonnella deltaic-facies was formed during the Calabrian in age, at the paleo-Tronto river mouth.

A Braid-delta depositional system is widely developed in the "Colonnella foothills" area (Adriatic coast, northern Abruzzi region, central Italy). This study illustrates the braid-delta depositional system in terms of facies sequence and association. Three different facies associations have been distinguished in Colonnella delta sequence: delta plain, delta front, prodelta/offshore. The uppermost part of the Colonnella delta sequence is composed of overbank deposits, while muddy prodelta deposits form the lowermost part of the sequence. Crevasse splays, levees, bays, or abandoned channels occur in the delta plain. The delta front and upper prodelta are occupied by distributary mouth bars. Distal bar and bar front deposits of the distributary mouth bars have a distinct upward-coarsening sequence. Beach facies (foreshore, shoreface) are developed in the delta front to upper prodelta. Tidal influence consisting of wavy bedding and herringbone cross-lamination, often formed in the tidal bar deposits. The prodelta/offshore deposits are characterized by dark-gray, massive or faintly bedded silty mudstone alternated to very fine-grained sandstone beds, containing marine macrofossils and abundant microfauna composed mainly of planktonic and benthic microfossils, including foraminifera and nannoplankton. Bioturbation and burrows also occur. Reddish silty-clay beds bounded at the top by erosive surfaces (paleosol), indicate times of subaerial exposure and weathering processes.

**Keywords:** *Pleistocene, Delta-facies, Peri-adriatic basin*

## **Stratigraphy, Archaeology and Tectonics of the Early Pleistocene in NW Armenia**

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The Quaternary stratigraphy and tectonics of the southern volcanic Javakheti Upland and the adjacent Upper Akhurian and Lori basins (NW Armenia) are studied. The geological and petrological correlation, paleontological, K-Ar and SIMS U-Pb methods and examination of natural remanent magnetization have been used for dating of the stratigraphic units. In the Gelasian, basaltic lava flows from the Javakheti Range covered and smoothed the surface of the basins. Trachyandesites and trachydacites covered the basalts in and near the Javakheti Range at the end of Gelasian. During the Olduvai subchron (not earlier than 1.85 Ma) and the earliest Upper Matuyama chron, the Karakhach unit of pebbles, sands and tuffs was sedimented in the both basins that joint by the common Upper Akhurian–Dzoraget–Debed river system via the Karakhach Pass. At that epoch, the region was occupied by the earliest hominines producing lithic industries of the Early Acheulian aspect (sites of Karakhach, Muradovo and Agvorik). Early appearance and special features of these industries might be caused by natural parting of used trachydacite and basalt to tabulated fragments that gave a possibility to make such macro-tools. The 1.5–1.4 Ma pulse of dacite explosion is expressed by pumice in the SE of the Lori Basin. The Kurtan fine-grained terrigenous unit was sedimented at the latest Calabrian – earliest Middle Pleistocene. The Middle Acheulian artifacts were found in the Kurtan I section of the Kurtan unit. The Olduvai subchrone was characterized by wet climate. It became more arid later and savannah-steppe landscapes dominated. The region underwent the flexure-fault deformation and the 350–800-m uplift during the last ~0.5 Ma.

**Keywords:** *Quaternary, stratigraphy, paleontology, tectonics, archaeology, Armenia*