

SUMMARY

Kazlų Rūda sandy lands: origin and structure /KAZLŲ RŪDA

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The plain of Užnemunė (beyond the Nemunas River) in its eastern part make up a compact sand landscape called after the Kazlų Rūda region that distinguishes itself by farming and ethnic peculiarity.

The relief lowers 30 m/25 km and the rivers flow south-west. There are characteristic large dune masses of several generations and swamps among the dunes.

The role of lineaments, straight lines, is rather vivid in the landscape structure. That is a primary indication of the earth entrails structure and tectonic breaks in the crystalline foundation lying in the depth of 1,200–1,400 m. The diagonal line direction predominates; the orthogonal, parallel direction is spread as well. The submergence of Lithuanian–Polish syncline began in the Ordovician, it continued in the Silurian and finished in the Upper Devonian, when the earth entrails differentiated regionally. The decomposition was predetermined by the block system. The Upper Cretaceous sea transgression greatly influenced the foundation of Kazlų Rūda plain.

The left Prequaternary river net direction still remains a problem. Only double negative forms of different genesis can be seen: river valleys and eroded local lowlands; level structure is also vivid. The Prequaternary structure is reflected even in the relief elements formed by the last glaciations, e. g. in the crest of Veiveriai and in the old valley of Išlaužas which are not compact, multistrata and the work of more than one glaciations.

The post-sand loam stratum covering the plain is re-covered (decomposed) in its own way by 2 or 3 sand and gravel interlayers and make up the thickness of 60–80 m. The origin of Užnemunė plain aquaglacial (clay and sand) deposits is also rather problematic. So far the viewpoint dominated that they were the glacial lake sediments of the last degrading glacier, and the sands of Kazlų Rūda are deposited in the delta of the glacier's main water-way into that lake. The author introduces some hypothetic corrections: the limnoglacial clay deposits compact and divided into belts were settling in the subglacial lake, and the sand deposits with aleurite insertions were settling in the eastern part of the glacial lake due to hydrodynamic melting in summer. An important correction of the new model is the plasticity of the ingression flat surface of low mineralicity and the possibility to turn into an ice shield over the plain lake. Not only hydrodynamic but also hydrochemical change of the lake predetermined often occurring sedimentation diatacticity and stratification.

The first generation of dune crests could originate from thick ice-floe and lump deposits left at the glacial lake and the late one, already from the Holocene beginning, the dry Boreal period. Aleurite intrusions into sands predetermined the formation of swamps. The relation of dune masses and swamps with ice blocks is

shown by their rhombic (diamond-shaped) and rectangular form. Four larger marshlands should be picked out. The strata of bogs reach 7 m thickness (in the North-West part of the Ežerėlis and Žiemelis marshlands). Some marshes, e. g. those of Naudžiai coincide with the intersection of tectonic breakings.

The mineral limonite and marshy land ore deposits are characteristic of the swamps. The formation of Fe_2O_3 in low-lying marshy lands and river valleys is almost everywhere present. The washing out of underground water iron is predetermined not only by carbon dioxide but also by organic acids, mostly acid swamp water. Thus, a rather clear syngensis of ore deposits and marshy lands exists. The ore carrying out into marshes strengthened very much in the last climatic period – the Subatlantic period, especially during its historical part. The iron extraction from limonite, the blacksmith's work, the blacksmith's pond building became the most essential trade of river-side villages.

The author observes the thesis that the Sūduva culture of the Užnemunė plain is inherited from the ancient 2nd–13th centuries and the Crusaders' War didn't stop it.