

عنوان مقاله:

The role of the aeolian factor in the formation of the landforms of the Lower Volga region

محل انتشار:

دومین کنفرانس بین المللی کوآترنری (سال: 1400)

تعداد صفحات اصل مقاله: 2

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خلاصه مقاله:

The history of the study of Baer knolls (BK) goes back more than a century. Baer knolls are ridges oriented mostly in WNW-SW direction, widespread in the lower reaches of the Volga and more pronounced in the Volga delta. BK in the Volga delta have morphology different from other areas of their distribution due to the impact of exogenous processes such as erosion by the Volga and its channels, abrasion (during Novocaspian transgression) and wind-wave processes, which simulated, as a rule, latitudinal spreading of ridges. BKs are absent in some meridional parts of the central part of the Volga delta and near its eastern margin. During the Mangyshlak regression, actively incising watercourses eroded the ridges that had already existed by that time. It has been revealed that some isolated massifs of BK have remained, probably, due to their location on more elevated areas. Up to now the genesis of these notable landforms has not been determined with sufficient precision to prove one of the existing hypotheses. Currently, the best known and most widely accepted scientific hypothesis is the aeolian hypothesis of the origin of the BK, which are largely similar to the sandy ridges in the deserts of Turkmenistan, which allowed a number of researchers to consider them as aeolian forms. The purpose of this paper is to attempt to show the weaknesses of the aeolian hypothesis of the origin of the Northern Caspian Sea Baer knolls. The authors of the aeolian theory state that the BKs are formed as a result of the equilibrium of winds from several directions. However, the contemporary picture is somewhat different, and the dominant wind direction is difficult to identify: it varies from west to east rumba, sometimes shifting to south or north rumba depending on the season of the year. It is likely that the pattern was similar at the end of the Pleistocene as well. Other researchers, also supporters of the aeolian origin of BK, assume that at the time of their formation the winds of one direction prevailed, either east or west, without giving any arguments to support this assumption. Also it should be noted that BK are absent on some local elevations, for example on salt domes. The aeolian hypothesis does not explain the following lithological features of the hillock strata: high cementation of sediment, a wide variety of layering types, the presence of interlayers and lenses of detritus and individual shells, and a sharp erosion boundary between the upper and lower hillock strata of sediment. In addition, there is frequent erosion ... of the hillocks from the sides and then, in some cases, accumula

کلمات کلیدی:

Baery knolls, Lower Volga, Caspian Sea, Late Quaternary, Northern Caspian lowland. References

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