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NATURAL FACTORS AND FEATURES OF THE FORMATION OF THE CARNIVAL IN THE CHECHEN REPUBLIC

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Abstract

The article analyzes the features of development and manifestation of karst processes in the mountainous part of the Chechen Republic, defines the main conditions for the development of karst and the nature of their manifestation, as well as the geography of the distribution of morphological types of karst. Crisis phenomena in mountain-foothill areas associated with the processes of karst development are noted.

Keywords: water, gutter, funnel, factors, slope, weathering, valley.

The development of karst and especially its manifestations depend on many factors, including those belonging to the category of geographic conditions and dynamics that vary in time and space. Some of them affect the speed, others on the conditions, features and character of the karst or are the main factors without which the emergence and development of karst is not possible. The main conditions for the development of karst in the territory of the Chechen Republic and especially its mountainous part include the presence of karst rocks, their ability to pass water, the presence of moving water that can dissolve. In addition to chemical dissolution playing the leading role, other geological processes that are closely interrelated include the erosion, suffusion, weathering, rock razmaking, the redistribution of rock pressure, cracking, flaking, sedimentation, rock collapse, deposits of water-transported dissolved substances and clastic material and other processes [7].

First of all, the karst takes a direct part in the formation of the relief, expressed in the formation of karsts, karst craters, depressions, poles, karstic remains, karst-erosion meadows and beams, karst benches, etc.

A significant role in the formation of karst relief is played by ways of changing the intensity of erosion processes. It is well known that the areas of karst development are characterized by a weak erosion dissection. Erosion processes are reduced due to rapid infiltration and inflation of atmospheric precipitation into the bowels of karst massifs. Some studies obtained in different regions of the republic show that the most widely used karst funnels are common in areas with a weak bias (up to 2-5 °). On the Banduk ridge, composed of Upper Cretaceous limestones, the karst funnels and basins are distributed mainly on slopes with a steepness of about 10-15 ° and more, whereas on its almost flat surface they are usually absent. In the area of the ruins of Yalhara-mokhk, the basin of the Akki-chu river, composed of carbonate rocks of the Lower Cretaceous and the Upper Jurassic, are several small funnels. In the interfluvium of the rivers Gekhi - Shalazhi there are several dozen karst craters and hollows. Most of them are on slopes with a slope of 15 to 20 degrees. The interfluvial rivers Yaryk-Su and Benoy-Iasi are composed of Lower Cretaceous limestones and strongly karstic, and most of the karst craters are confined to the vertex part of the slopes of the watershed spaces. Funnels are usually characterized by small dimensions in diameter, ranging from 3 to 15 m, and depths from 1 to 4 m. Active development of karst, the formation of karst funnels and karst hollows occurs at rather significant angles of inclination of the earth's surface. Often the observed wider distribution of karst craters on weakly inclined areas does not yet indicate a more intensive development of karst as compared to steep slopes. The intensity of karst development depends, first of all, on specific geological and geomorphological conditions and factors, and the angles of slope determine only the morphology of the karst.

In karst areas, the water discharge usually does not correspond to the zonal value of the runoff. In some areas, as a result of infiltration of surface water into karst massifs, the consumption is sharply reduced, while in others it can increase sharply as a result of large karst springs. An example of such a change in runoff can be observed at the mountain rivers Chanty-Argun, Bassa and Hulhulau. The level of the flow of the Chanty-Argun River from the village Itum-Kali to Chishki varies in the direction of increase and to a certain extent, this is due to the confluence of many spring springs and most of the karstic origin. According to the existing opinion, the degree of karst influence on river runoff depends on the moisture content of the catchment area, the degree of its karst formation, and the direction and magnitude of underground water exchange [1,5].

Considering the considerable amount of precipitation falling in the spring-autumn periods, between Bokov and the Main Caucasian ridges at an altitude of 1500-2000 m to 1000 mm / year melting of mountain glaciers and

snowfields, where all the mountain rivers of the republic originate, indicates the validity of the utterance. In favor of this, says that the flood regime of the mountain rivers Chanty-Argun, Sharo-Argun, Sunzha and others has sharply increased. The more intensive karsting in gypsum deposits in sub-sequential valleys is explained by the fact that when cutting a river into these strata, some part of the channel water seeped into fissured carbonates, replenishing underground water. Examples of this intensity can be observed in the vicinity of the villages of Gukhoyskoye, Ulus-Kert, Mahketi, Nashkho [3].

There are also numerous rivers, disappearing among the karst massifs. With a small amount of water, they can completely escape into the subterranean cavities, for example, the Bassa River, which is lost three times in the karst limestones of the Upper Cretaceous. The first time the river goes to the karst 200 meters from the source, which represents the karst spring. After it under the ground flows about 200 m. Comes to the surface in the form of three sources. Then after 100 m it again disappears and comes to the surface, passing 80 m. Still lower the river disappears by 30 m along the current.

The mountainous areas of Veden, Shatoi and Galanchozhsky regions are characterized by the presence of lakes, the genesis of the basins of which is closely connected with the karst processes. Some of the lakes occupy karst funnels or saucers of different origin (surface leaching, failure, suction, etc.) and in this case are usually round in shape. An example is Lake Galanchozh in Galanchozhsky region, Lake Goluboye in Shatoi district and a lake in the vicinity of the village of Borzoy. There are karst lakes of complex shape, the basins of which are formed most often by merging several karstic funnels.

Forms of karst are often encountered in the Czech Republic, such as steeply inclined gutters of periodic and permanent waterfalls in thin-layered Upper Cretaceous limestones, as well as ledges of waterfalls in the massive limestones of the Argun gorge, with the formation of dissolution, simultaneously with mechanical erosion [1,8].

Along with the corrosive and erosive effect of water, the destruction of carbonate rocks on the surface of the day is important to the process of biochemical exposure of organisms. As a result of settlement on the limestone slopes of mosses and lichens, the formation of various fungal raids, the thin surface layer of the rock is destroyed. Repeatedly observed the role of these processes in the formation of niches in limestone and dolomite, carros and forms such as the Argun waterfalls.

An important role in the formation of karst-suffusion forms in sandstones and conglomerates with calcareous or gypsum cement, when the main mass of the rock is removed mechanically, the transferring action of moving water is played by dissolution, releasing sand and clay from adhesion

and preparing them, thus, for transport with flowing water, which also contributes to landslide formation [2,4].

Elementary forms of dissolution of sandstone cement and mechanical sand removal are depressions such as "legends", as well as "honeycomb cells" and "pockets" in the cliffs of the Lower Cretaceous sandstones in the vicinity of the villages of Makhkety, Ulus-Kert and Gukha. Larger forms of niches and shallow caves in the cliffs of the Lower Cretaceous sandstones occur in the middle reaches of the Sharo-Argun and Chanty-Argun rivers. In the vicinity of the village of Chishki, karst formations are found in limestone conglomerates of Quaternary age on the right-bank plateau of the Argun River.

First of all, the karst takes a direct part in the formation of the relief, which is manifested in the formation of karst craters, hollows, poles, karstic remains, karst-erosion meadows, beams and karst benches.

In the fractured karstic rocks emerging on the surface, the falling rain and thawed waters form a variety of depressions in the form of holes, grooves separated by ridges and ridges. Such forms, which are no longer micro forms, but mesorelief are observed in the areas of the middle relief of the Pastbush Ridge and areas of the cuesta relief of the Rocky Range in the villages of Borzoy, Khal-Keloy, Kharachoy.

Karst funnels most often in terms of karst funnels have a circle and an oval, directional shape. To the karst funnels usually include cavities having a saucer-like, cup-shaped and conical shape. Dimensions of typical funnels range from 1m to 200 meters or more in diameter. Their depth varies from 0.5 to 30 m. Karst funnels were observed on the northern slopes of the Andi and Peshkhoi ridges.

In karst areas, along with negative forms, there are also convex formations in the form of various protrusions and hills, which can often be observed in the mountainous part of the Republic. These are karst outcrops in the villages of Guchum-Kale and Gukhaya in the basin of the Chanty-Argun rivers and the Osu-hi of the Nashoha ridge in the Galanchochk district.

Karst trenches and moats have a length of several tens and even hundreds of meters, with a width usually 2-4 m and a depth of 4-5 m. They are closed at the ends and are most often confined to tectonic fissures uncovered as a result of unloading on steep slopes, and also to the cracks of the "onboard rebuff". Karst trenches can be observed on the southern slopes of the Pasture Ridge and on the northern slopes of the Rocky Range. Sometimes karst ditches also develop in areas of covered karst, for example, in the vicinity of Lake Kazenoy-Am.

Canopies and niches are widespread in mountain areas, in particular in places where the Rocky ridge is cut by deep river valleys of the rivers Gekhi,

Roshnya, Chantu-Argun and Sharo-Argun and Pastbishny ridge by the rivers Khulhulau, Aksai and Bassa. Often canopies and niches occur with intensive leaching of individual layers of carbonate rocks running along the cliffs, with a large value of biochemical weathering processes. In the formation of deeper niches, a significant role is played by seepage along the fissures. Corroding activity leads to the expansion of cracks, as a result of which rocks are crumbling and niches are formed.

Caves, karst forms formed as a result of dissolving, eroding and enduring activity of karst waters with a significant role of underground landslides. The caves were met on the southern slope of the Rocky Range in the vicinity of the villages of Guhoy, Mahket, Borzoy, Itum-Kale and in the south-west of the village of Ulus-Kert.

The growth of the underground channel occurs by the collapse of arches of karst voids under the influence of gravitational forces. If this channel is shallow from the earth's surface, then the ceiling may collapse and at some point the cave will be opened. So there is a window. Further collapse leads to the appearance of new windows. The cave cave is gradually destroyed, and the surviving sections remain in the form of bridges, and narrow bridges are called arches. So, in the interfluvium of the rivers Osuhi and Roshnya a karst bridge appeared, a tunnel 8-9 meters long, 13 meters wide and 10 meters high. It is known that the karst, contributes to the "conservation" of erosion-denudation equalization surfaces. The smoothing of steep slopes in the zones of limestone karst is extremely slow. This is due to the lack of concentrated surface runoff of atmospheric water due to the development of karst and the weakness of chemical weathering on steep slopes [9].

In recent years, during the period of global changes in the ecological state of the environment, including physical factors of the karst development, has led to the fact that not only the karst processes in the Republic were activated, but landslide processes associated with the karst. An example of this can be the ecological consequences of landslides, which occurred in Shatoi, Vedenov and Najay-Yurt districts.

Karst has a significant influence on the density of the river network, on the annual natural runoff of rivers, on the thickness and diversity of soil vegetation, and leads to the fact that the area of its development turns into a special kind of landscape in typological terms, so the acute issue is the complex physical and geographical study karst processes of the mountainous part of the republic.

The influence of karst on the landscape is different in different types of karst. Thus, a bare karst with characteristic spaces of carob fields and the whole complex of surface karst forms belongs to a special type of landscape. In this

case, the karst forms create a geomorphological background of the territory, the surface of which differs sufficiently dry. The lagoon karst, developing mainly in the mountains, is often found in the neighborhood or together with the bare karst, the karst formation in the processes of soil formation and the geomorphological "dryness" of the territory is of great importance in the formation of the landscape. Depending on the degree of zakarstovannosti this type can be attributed "to a particular type of landscape, as naked, or isolated in a subtype, related to the mountain, meadow-meadow or other type" [6].

A special landscape, associated with the development of karst phenomena, is an underground landscape. The underworld is not lifeless. Flora and fauna of caves represent the original feature of the underground landscape. Rivers and lakes under the earth constitute a kind of hydrographic network of the underworld, and I bring this world closer to the ground, which is confirmed by the exits of numerous sources in the narrow and deep gorges of the Chantuar and Sharo-Argun rivers and the sub-sequential valleys of the Pasture and Rocky Ridges.

The mountainous part of the Chechen Republic, where not only the zoning factor but also high altitude zones is manifested, it is especially important to study the development of karst, which introduces additional difficulties in understanding the laws of development and dynamics of natural landscapes, and it develops more and more intensively at a time when more and more Natural landscapes are included in economic and recreational activities.

Noticeably the impact of karst processes on the soil and vegetation cover and ultimately on the landscapes of the mountainous part of the Chechen Republic. And this is becoming more and more important due to the active inclusion of mountain landscapes, both in agriculture and recreational activities, in the light of the construction of large recreational facilities.

In a number of areas of development karst leads to the formation of new types of soils and this is due, first of all, to a change in the degree of moistening of the soil cover. The drying out influence of the karst in the interfluvium of the upper reaches of the rivers Benoi-Iasi and Yaryk-Su caused me to dominate the meadow-steppe soils, which seem to be a spot in the mountain belt of the development of brown forest soils.

Environmental factors in the areas of karst development often represent a sharp contrast with the zonal. This leads to the appearance of non-characteristic zones of plant communities and an increase in the variegated vegetation cover. At the same time, vegetation is an important factor in the formation of karst water aggressiveness, and it acts as a hydrological factor. Vegetation, contributing to increased aggressiveness of karst waters and, consequently, increases the intensity of karst processes. The greatest value in

this case is the amount of organic substances supplied by the plant cover to the soil in the form of a bio-nutrient substance.

It is well known that when passing through the forest massif, the atmospheric precipitation involved in the supply of karst water is enriched with organic acids, resins, essential oils, which greatly increases the dissolution of karstic rocks. The root system, producing hydrogen ions, creates an acidic environment, and infiltration waters, passing through this zone, increase their aggressiveness.

Anthropogenic factors have a certain effect on karst formation. A variety of human activities, such as the construction of hydraulic structures, associated with the plans for the construction of a cascade of hydroelectric power stations on the Chanty-Argun River, roads to the high mountain resort of Veduchi, an active, purposeful impact on natural complexes, requires consideration of various factors in the analysis of modern karst processes on the territory of the Chechen Republic.

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