

# HILLS OF KALNIK IN EARLY MODERN AGE: CONTRIBUTIONS TO ENVIRONMENTAL HISTORY

## KALNIČKO GORJE U RANOME NOVOM VIJEKU: PRILOZI POVIJESTI OKOLIŠA

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### Summary

*This paper brings an overview of Mt. Kalnik natural and geographical characteristics, with an attempt to reconstruct what it was like in the early Modern Age, with further anthropization processes of Kalnik. The paper tries to define models of environmental history research in peri-Pannonian hills in the Early Modern Age, shown on a study case of Kalnik hills. This paper explores the hills of Kalnik, to the limited extent permitting (16th to 18th century documents) of the early Modern Age, focused on environmental history approach.*

**Ključne riječi:** Kalničko gorje/Kalnik, rani novi vijek, povijest okoliša, historijska geografija, socijalna geografija, kulturna geografija, planine

**Key words:** Kalnička gora hills (Mt. Kalnik), Banovina/Banija, early Modern Age, environmental history, historical geography, social geography, cultural geography, mountains



**Image 1.**  
*Position of Kalnik Hills / Položaj Kalničkoga gorja*

This paper explores the hills of Kalnik, to the limited extent permitting (16th to 18th century documents) of the early Modern Age, focused on environmental history approach.<sup>1</sup> In truth, since mid 20th century there were a number of successful scientific researches of mountain/hill regions by geographers in Croatia, focused primarily on 19th and 20th century.<sup>2</sup>

<sup>1</sup> Elementary data on environmental history: *John McNeill*, *Observations on the Nature and Culture of Environmental History, History and Theory*, 42/4, Middletown 2003, 5-43; Donald Hughes, *What is Environmental History?*, Cambridge 2006; Verena Winiwarter, *Approaches to Environmental History: A Field Guide to Its Concepts, People and Nature in Historical Perspective* (ed. Péter Szabó and József Laszlovszky), Budapest 2003., 3-22; Robert Delort, Francois Walter, *Povijest europskog okoliša (History of European environment)*, Zagreb 2002, 263-274; Shepard Krech, John R. McNeill, Carolyn Merchant, *Encyclopedia of World Environmental History*, vol. 1-3, London 2003, Ian G. Simmons, *Globalna povijest okoliša (Global history of environment)*, Zagreb 2010.

<sup>2</sup> Ivan Crkvenčić, *Prigorje planinskog niza Ivančice (Foothills of Mt. Ivančica range)*, Geografski institut Sveučilišta u Zagrebu, Zagreb 1958; Veljko Rogić, *Velebitska primorska padina (Coastal hill slopes of Mt. Velebit)*, Geografski institut Sveučilišta u Zagrebu, Zagreb 1958.

The same period is researched and covered in an excellent book by John R. McNeill, on environmental history of the Mediterranean mountain regions. This book could be a good starting point for the future similar research in Croatia.<sup>3</sup> Only in the few recent years, there have been some improvements and advancement in environmental history of the mountain regions. Problems in approach, relating to early Modern age environmental history of mountains, has been successfully defined by Drago Rokсандić,<sup>4</sup> and further developed by other researchers, like Marko Šarić.<sup>5</sup>

A researcher might ask these questions (but it would be a self-deception that such questions can be answered and resolved by this research): What was Mt. Kalnik like in the early Modern Age? How did people cause changes on the surface of Mt. Kalnik? What influence did Mt. Kalnik have on people, in return?

Hills of Kalnik (hereinafter: Kalnik) are located in the northwestern part of Croatia, generally extending southwest-northeast.<sup>6</sup> Kalnik is comprised by a number of hillsides, branching out eastwardly, and meeting Bilogora hills there; westward, Kalnik is joined with the mountains Medvednica and Ivančica. To the east, Kalnik borders with Drava valley; to the west, with upper stream of Lonja river; to the north, with Bednja valley; southward border is hard to define, as in many locations the hills gradually melt into the neighboring lowlands. Southern borders of Kalnik hills slope down all the way to the town of Križevci. In some areas, the hillside is elongated more than 20 km to the south, and gradually joining Lonja-Čazma basin. From Drava valley (eastward) to Paka pass (westward), Kalnik is more than 30 km long.

Kalnik is a part of Žumberak - Medvednica-Kalnik mountain range, stretching northeast-southwest (so-called "Medvednica", or, "Balaton" elongation). It's interesting that neighboring mountain ranges stretch differently, for example, Mt. Bilogora is vertically positioned toward Kalnik, while Stahinčica - Ivančica range is eastward-westward. The main characteristics of Kalnik, Bilogora, and Ivančica and Medvednica mountains are their relative low elevation (the last two, with their highest peaks, are barely over 1000 m above sea level). Otherwise, areas bordered by the said mountains and their hillsides (Medvednica, Ivančica and Kalnik) in the early Modern Age were among the most densely populated in the region, and this situation remains to the present day. Higher, sunnier hillside areas, especially where the mountains turn into hills, have had the densest population since the Middle Ages. These areas provided migration to other parts of the hillside and valley zones.<sup>7</sup>

<sup>3</sup> John R. McNeill, *The Mountains of the Mediterranean World. An Environmental History*, Cambridge University Press 1992.

<sup>4</sup> Drago Rokсандić, Dinara kao ekohistorijski problem - ranonovovjekovni kartografski aspekti (Mt. Dinara as environmental history problem - cartography aspects of early Modern Age), *Radovi - Zavod za hrvatsku povijest*, 32-33, Zagreb 2000., 333-343; Drago Rokсандić, *Triplex Confinium ili o granicama i regijama hrvatske povijesti 1500-1800 (Triplex confinium, or, on borders and regions in Croatian history from 1500 to 1800)*, Barbat, Zagreb 2003., str. 53-71.

<sup>5</sup> Marko Šarić, Ekohistorijski osvrt na planine i morlački svijet (Environmental history review on mountains and Morlach world), *Dalmatinska zagora. Nepoznata zemlja, Galerija Klovičevi dvori*, Zagreb, 2007, 221-231.

<sup>6</sup> Radovan Kranjčev, *Kalnik. Iz prirodne baštine Kalničkog gorja i prigorja (Mt. Kalnik and foothills - its natural heritage)*, Ogranak Matice hrvatske Koprivnica, Koprivnica 2008, 5-6.

<sup>7</sup> Milan Vresk, Geografska studija užeg područja (Geography study of a limited area), *Generalni prostorni plan memorijalno-turističkog područja Kalnik*, Zavod za urbanizam Arhitektonskog fakulteta Sveučilišta u Zagrebu, Zagreb 1972, 77.

Tertiary tectonic movements were particularly strong during lithosphere timor (horst), particularly made of Mesozoic Era rocks - Jurassic and Cretaceous limestone.<sup>8</sup> Kalnik is basically made of Paleogene and Neogene flysch basin sediments, with 2 dolomite and limestone layers and changeable Cretaceous layers, emerging from the below. Upward, towards Bednja valley, the mountain edges with drains of igneous rock.<sup>9</sup>

In the Middle Ages, as well as in the beginning of Modern Age, in the central mountain area and neighboring hills of Kalnik there were several important settlements and marketplaces - Donja Rijeka, Brezovica (today's Kalnik), Miholec, Glogovnica etc. In the early Modern Age, all these settlements lost their township status and central role in the region, which now shifted to the southern rims of Kalnik hills, the town of Križevci.<sup>10</sup>

In the early Modern Age, Kalnik was a kind of link between urban settlements, located mostly on its hill slope rims: Križevci (on Kalnik southeastern rim); Koprivnica (Kalnik northeastern rim); Ludbreg (Kalnik northern rim); Vrbovec (southern rim); Varaždinske Toplice and the likes (western rim). Kalnik is a mountain that provides symbolic and spatial integration of the space. From the list of settlements, it's obvious that all urban settlements in the early Modern Age were built on hill slopes of Kalnik and its rim. 17th century and earlier, the situation had been different, as there had been settlements on Mt. Kalnik, like Brezovica or Reka, both having lost their township status as early as 16th century.

Kalnik has the following parts: 1) mountain base (main core) or fault-folded Mesozoic folding, 2) foreland step - up hill slopes and 3) foreland step - down hill slopes.<sup>11</sup> From environmental history perspectives, the main core of Kalnik could be elevation criteria, approx. 400 m above sea level; this is approximate borderline of farming and crops on the hillside. In case these calculations are accurate, Kalnik mountain base would be some 20 km in length, and 4-9 km width. The neighboring landscape is domineered (in morphology and height) by south ridge, beginning with Pusta Barbara peak in the west, the crest stretching over its peak, so called Kalnik beam, toward Veliko Brdo. This part represents the only rocky parts of Mt. Kalnik; however, it's not integral, but rather rugged. Despite this, domineering

<sup>8</sup> Dragutin Feletar, *Podravina*, Koprivnica 1973, 280-283; Ivan Eleršek, Prikaz geologije ludbreškog područja s posebnim osvrtom na pojave mineralnih sirovina (Geology review of Ludbreg area, with particular outlook on mineral resources), *Ludbreg*, Ludbreg 1984, 27-37.

<sup>9</sup> Josip Roglič, *Geomorfološke teme*, Zagreb 2005, 465. "When it comes to Mt. Kalnik (643 m) it's horst rock that has inversion in structure. Obviously, today's mountain ridge was once a part of a Kratogenic synclinal zone, that during Mesozoic was an area of thick sedimentation series (dolomite and limestone). These sediments in Alpine orogeny during Neogene and Quartar were disturbed and elevated. Elevation of Kalnik was influenced by logitudinal faults in northeast- southwest direction. A number of lesser regional faults split the bloc into 2 relief-expressed parts, so called central ridge and Subotica horst. Younger tectonic fault, with magma outbursts, probably caused exhumation of Mesozoic core from tertiary sedimentation mantle. Erosion-derasion processes, in part by neotectonics predisposed and directional, divided the mountain mass to a number of parallel ridges and valleys of appropriate genesis." Andrija Bognar, Tipovi reljefa kontinentnog dijela Hrvatske (Relief types in continental Croatia), *Spomen-zbornik proslave 30. obljetnice Geografskog društva Hrvatske, Geografsko društvo Hrvatske*, Zagreb 1980, 56.

<sup>10</sup> Zdenko Balog, *Križevačko-kalnička regija u srednjem vijeku (Medieval region of Križevci-Kalnik)*, Matica hrvatska Ogranak Križevci, Križevci 2003; Hrvoje Petrić, Trgovišta i stupanj urbanizacije u Slavonskoj krajini (Varaždinskom generalatu) i Križevačkoj županiji u 17. stoljeću (Marketplaces and levels of urbanization in Slavonian border-Varaždin Generalate and Križevci county in 17th century), *Podravina*, 15, Meridijani, Koprivnica 2009, 39-63.

<sup>11</sup> Kalnik could be included into fault-folded Mesozoic rock massifs foldings of homogeneous type. Andrija Bognar, Tipovi reljefa kontinentnog dijela Hrvatske (Relief types of continental Croatia), 56.

the landscape and neighboring population to the south calls only this part of the mountain range - Kalnik.

“Causes of such morphology lie in geology and petrography of the region. This ridge, or rather, the series of ridges and peaks, is made of Upper Cretaceous limestone and breccia, as the most solid remnants; they are most resistant to erosion-denudation processes, stretching in the narrow passage from Pusta Barbara to beyond Veliko Brdo.”<sup>12</sup>

Kalnik base relief indicates “a few series of ridges, ranges, aloof peaks, and a few deeply cut stream valley. Although Kalnik narrowest peaks don't go beyond 650 m, we can still say that Kalnik has a very dynamic relief. The biggest ridges and series of peaks are stretched southwest-northeastwardly, just like Mt. Kalnik; however, majority of stream valleys has a vertical direction. “On the other side, Kalnik base width expands from southwest to northeast, and the narrowest base width (Moždenec-Sudovec outline) is about 5 km.”<sup>13</sup>

The central part holds Kalnik's highest peaks - Vranilac or Kalnik (643 m), Peca (624 m) and Bračev vrh (608 m). Other peaks are below 600 m elevation: Vuklec (572 m), Ljubelj (558 m), Podrevec (547 m), Ljuba Voda (546 m), Korenić (539 m), Malinac (531 m), Velika Špica (529 m), Sola (503 m) etc.<sup>14</sup> Below its southern ridge, there are villages Kalnik (elevation 359 m), Kamešnica (215 m), Obrež (279 m), Vojnovec (380 m), Hižanovec (260 m), Gornja Rijeka (206 m), Sudovec (234 m) and others.<sup>15</sup>

Among its peaks, Kalnik base has 3 rows of parallel, yet not quite connected peaks. The first row is the highest, representing Kalnik in the narrow sense, with a domineering peak; it stretches from Lonja river in the southwest, to Gliboki creek in the northeast. The following ridges are located here: Bela Gorica (423 m), Mali Kalnik (429 m), Veliki Kalnik (643 m), Kalnička greda (547 m), Veliko Brdo (408 m) and Gradec (368 m). The second row starts with the peak Oštri vrh, continuing with the peaks Ljuba Voda, Korenić (539 m), Peca (620 m), Malinec (531 m), Porutine (491 m) and Kamenjak (430 m). The third row begins with Veliki Drenovec, followed by Ljubelj (558 m), Drobno Kamenje and Glavicu (437 m).

The elevation difference between the highest peaks and the hillside is 300 m. “Beside the peaks and ridges in Kalnik relief, other important characteristics are deeply cut stream valleys, enhancing dynamics of the relief. It's interesting that majority of stream valleys has vertical direction of stretching. The only stream that does not follow east-west flow is Ljuba creek, and only in its upper stream. Stream and river valleys are cut in to the middle of the mountain base. They are characteristically deep with steep sides. Streams and creeks Kamešnica, Ljuba, Drenovec, Kalnik and Petkovec made the deepest cuts into the mountain base.”<sup>16</sup>

We can establish that the original, main vegetation of Mt. Kalnik was deciduous plants, although, it's been devastated lately. Today, majority of Kalnik is afforested: at low elevation,

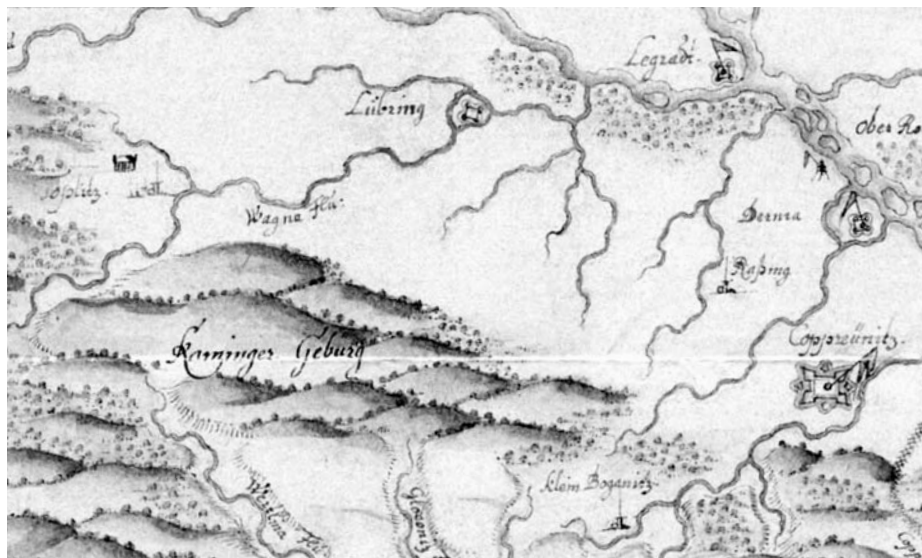
<sup>12</sup> Zvonimir Badovinac, Marinka Kamenarić, Zvezdica Mikulić, Ivica Bralić, *Zaštita prirode* (Environmental protection), *Generalni prostorni plan memorijalno-turističkog područja Kalnik*, Zavod za urbanizam Arhitektonskog fakulteta Sveučilišta u Zagrebu, Zagreb 1972, 21.

<sup>13</sup> Milan Vresk, *Geografska studija užeg područja* (Geography study of a limited area), 77.

<sup>14</sup> *Topografska karta 1:100.000* (Varaždin - 271), Vojnogeografski institut 1973; Podaci dobiveni terenskim istraživanjem.

<sup>15</sup> Mirko Korenčić, *Naselja i stanovništvo SR Hrvatske 1857-1971*. (settlements and population in SR Hrvatska 1857-1971), Jugoslavenska akademija znanosti i umjetnosti, Zagreb 1979, 799-800.

<sup>16</sup> Milan Vresk, *Geografska studija užeg područja* (Geography study of a limited area), 77.



**Image 2.** Kalnik Hills on the map of the 17th century (Martin Stier) / *Prikaz Kalničkog gorja na karti Martina Stiera iz 17. stoljeća* (Osterreichische National Bibliothek, Wien, cod. 9225, fol. 36)

it's mostly deciduous trees like beech, or coniferous forest - spruce, larch and white pine. Sloping hills and lower regions at the base of the mountain are afforested with the trees and plants like grape vine, common oak, hornbeam, acacia... On moist, filtered soil, between the hillside and water streams, predominant vegetation is red oak, elm and ash trees. On wet, flooded fields by rivers and streams, there are alder, poplar, willow trees and meadows.

Kalnik has one of the most widespread foothills in the northwestern Croatia, stretching for about 30 km, touching the foothills of Mt. Medvednica in the southwest. Kalnik foothills are made of tertiary deposit layers (primarily of marl, sand and clay mud), easily washed away, and more subjected to erosion. The streams, that spring at the mountain base of Kalnik usually flow toward south and belong to River Sava basin. These streams immersed their beds in soft material and thus dissected the foothills. "In general, dissection was following the water flow toward south. This is why the entire foothills have, one after the other, stream valleys and elongated ribs, sometimes isolated peaks. Stream valleys are usually moist valley and a great deal-to the south, in particular- unsuitable for settlements or roads. This is why settlement developed on higher and filtered soil, mountain ribs and hills, with average altitudes of approx. 250 m, and declining toward south".

This means than the town of Križevci and vicinity is at about 200 m. The foothills, stretching from Čanjevo village to Apatovac, are densely populated and dissected by many streams. They are connected with Kalnik mountain base in a 20 km line. The foothills branch out deeply southward to Lonja-Čazma basin.<sup>17</sup> Recently, this is where a specific regional identity of the foothills has established itself.<sup>18</sup>

<sup>17</sup> Milan Vresk, Prigorje Kalnika (Foothills of Mt. Kalnik); *Razvoj stanovništva u uvjetima "agrarnog gladi" i deagrarizacije* (Population migrations in times of 'agrarian hunger' and deagrarization process), *Radovi Instituta za geografiju Sveučilišta u Zagrebu*, 13, Zagreb 1976, 139; Milan Vresk, *Geografska studija užeg područja* (Geography study of a limited area), 77-78.

<sup>18</sup> Nikola Žulj, *Križevci i kalničko Prigorje (Križevci and Mt. Kalnik foothills)*, Veda, Križevci 2006, 7, Mt. Kalnik foothills stretch to towns and places of the southern side of Mt. Kalnik; this includes the town of Križevci and municipalities: Gornja Rijeka, Kalnik, Sveti Petar Orehovec and Sveti Ivan Žabno. In my opinion, in geographical sense, it's unclear whether the place Sveti Ivan Žabno belongs to Mt. Kalnik foothills, as the entire municipality is situated on Mt. Bilogora.

**Image 3.** Wider area of Kalnik Hills on the map made by Giuseppe Canelli / Šire područje Kalnika na karti Giussepea Cantellija, Rim 1690.



Although the term 'foothills' is usually applied on northern sides of mountains, I believe that Kalnik foothills could actually be divided into 2 sectors: northern and northeastern. The northern sector stretches from Ludbreg to Novi Marof, being steep and narrow (2-3 km average width). It's dissected by creeks and streams running down toward Bednja river. As this river valley is moist and unsuitable for development of settlements, people began settling in the early Modern Age alongside Kalnik ribs, in the area with most accessible arable lands.<sup>19</sup> Lately, this area has established and spread out a regional Zagorje identity, and the latest issues of encyclopedia classified it under "Hrvatsko zagorje".<sup>20</sup>

The northeastern sector of Kalnik foothills (some categorize it as hill slopes) is stretched from Bednja river stream to Koprivnica creek (Koprivnička Rijeka), approx. from Veliki Poganac to Drava valley. This part of foothills is narrowed and closed by Mt. Bilogora, dissected and less populated. The contact zone of northeastern Kalnik foothills and Drava lowlands have developed as more densely populated area.<sup>21</sup> During the early Modern Age, in the contact zone there was only one town (Koprivnica) and 2 marketplaces (Ludbreg and Rasinja).<sup>22</sup>

Although some call this space Ludbreg-Koprivnica downs,<sup>23</sup> I believe it's more appropriate to divide it into Koprivnica downs (between Gliboki creek and Koprivnica-Križevci-Zagreb railroad) and Ludbreg downs (between Gliboki creek and Bednja river). Numerous creeks and streams of northeastern foothills of Kalnik usually flow toward the Gliboki and Koprivnica creeks, with their streams directed to northeast and flowing to Drava river basin. Most of the settlements there were developed on gentler sunny slopes of numerous hills and ribs<sup>24</sup>, with

<sup>19</sup> Milan Vresk, *Geografska studija užeg područja* (Geography study of a limited area), 78.

<sup>20</sup> *Hrvatska enciklopedija*, sv. 4 (Fr-Ht), Zagreb 2002., 752.

<sup>21</sup> Milan Vresk, *Geografska studija užeg područja* (Geography study of a limited area), 78.

<sup>22</sup> Hrvoje Petrić, *Trgovišta i stupanj urbanizacije u Slavonskoj krajini (Varaždinskom generalatu) i Križevačkoj županiji u 17. stoljeću* (Marketplaces and levels of urbanization in Slavonian Border- Varaždina Generalate and Križevci county in 17th century), 39-63.

<sup>23</sup> Radovan Kranjčev, *Kalnik*, 101.

<sup>24</sup> Milan Vresk, *Geografska studija užeg područja* (Geography study of a limited area), 78.



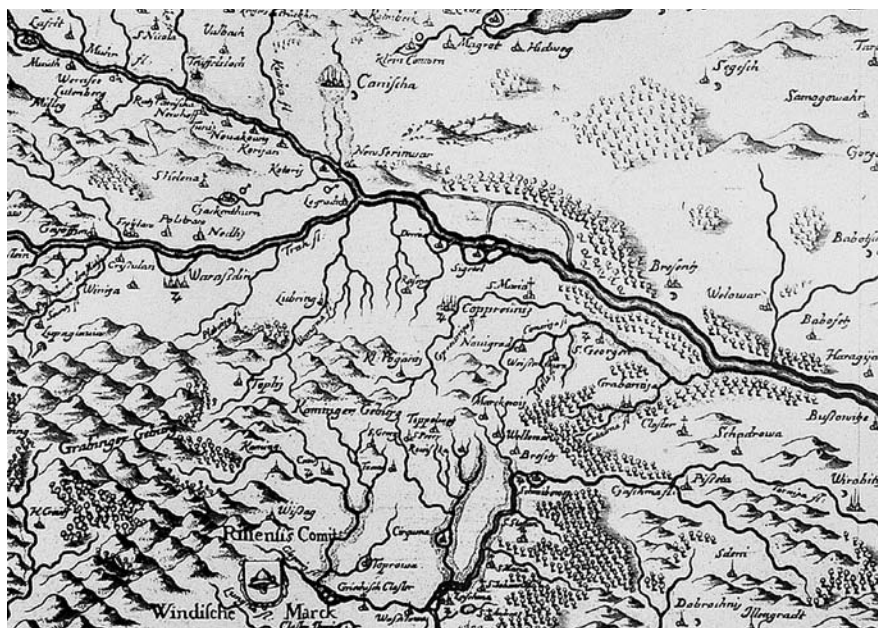
**Image 4.** Kalnik Hills on the map made by J. W. Valvasor (1689.) / Područje Kalnika na karti J. W. Valvasora iz 1689. godine

deforested clearings dating back to early New Age, when most of today's settlements were established. Population of the biggest part of Kalnik foothills northeastern sector has regional awareness of belonging to Podravina.

By the end of 16th century, the native population remained mostly in northern and western parts of Kalnik. The most intense depopulation was in eastern and southeastern parts of the highlands, most open to Podravina lowlands, where the Ottoman penetrations came from. Demography revitalization of the eastern Kalnik had begun in mid 16th century, when the first group of Orthodox Slavs (Vlachs) arrived. The same settlers came in greater numbers to southeastern part of Kalnik; some settled in the late 16th and early 17th century. Orthodox Slavs (Vlachs) moved to previously depopulated Kalnik areas and neighboring, poorly populated, region of Mt. Bilogora. Vlachs continued their migration to these parts even later, but in smaller numbers. Throughout the entire 17th century, with some of the native population remaining in these areas, western and northern parts of Kalnik highland suffered more intense colonization from mostly Roman Catholic settlers of various origins. 17th century colonization would form Orthodox Slavs (Vlachs) - predominant settlements in eastern Kalnik and Roman Catholic - predominant others parts of Kalnik.

To illustrate what villages and their environments looked like at Kalnik foothills, the author focused on some descriptions of the settlements in the highest sector of Kalnik, being a part of so-called civil Croatia (Križevci County). In document, village Kamešnica is described as "scattered around the slopes of Mt. Kalnik, with solid-built church that can block passage to *Kalnik*. The church and the village are surpassed from all directions. *Kamešnica* creek, running on the eastern side and forming in big part a dividing boundary between *Varaždin Generalate* and *Križevci county*, here is 3 fathoms (6 ft.) wide and 2 feet deep, with sandy bottom and 2-3 feet high banks.

**Image 5.** Kalnik Hills on the Map made by Martin Stier (17th century) / Karta Kalničkog gorja Martina Stiera iz polovice 17. stoljeća



Wade across the creek was possible only in dry season, and only where clear marking indicated a draft. A road leading to *Kalnik* has a firm, solid rock ground, wide rut and it's usable for carts and wagons any time of a year. Other roads have changeable soil- at time rocky, other times made of silt. The roads have narrow rut tracks and pass very steep slopes, totally spoiled by rain and full of holes. Peasant carts can be used in dry season; however, horse ride is possible at any time. Surrounding highlands and higher slopes, going down from *Kalnik* highlands, take turn in domineering.<sup>25</sup>

More to the west, there is a village Potok “a quarter of an hour away from *Kamešnica*, a full quarter from *Šopron*, less than half an hour from *Kalnik*, about half an hour away from *Hrgovec*. The village is set on a mild hill slope that stretches from the hill *Mačka*, with not a single solid building and surrounded by higher environment. The little stream, flowing from *Kalnik*, named *Veliki dol* by the villagers, has no significance at all and can be crossed at all points, either by cart, or riding a horse. In dry season, on the way to *Hrgovec* once can travel the road in heavy carts, however, the soil is somewhat spongy and cannot hold moist; in rain season, it's deeply softened and only chaise or a light carriage can be used then. Other roads have stony ground, but only a narrow passage. One can use them only in a light carriage. Woods of the neighboring hills have low trees and densely overgrown bushes.<sup>26</sup>

The nearby villages of *Šopron* and *Kalnik*, situated right below the highest peak of Mt. *Kalnik* (643 m), “are pretty close to each other. They are less than quarter an hour way away. The distance from these and other villages are here: a quarter of an hour from *Kamešnica*, a full quarter of an hour from *Obrež*, a quarter of an hour from *Potok*, two hours from *Ljubeščica* (14th section). The villages are set on a pretty high hill slope of *Kalnik*. By the

<sup>25</sup> *Hrvatska na tajnim zemljovidima XVIII. i XIX. Stoljeća (Croatia in secret maps of 18th/19th century)*, Križevačka županija, pripremili Mirko Valentić, Ivana Horbec i Ivana Jukić, Hrvatski institute za povijest, Zagreb 2004., 153-154.

<sup>26</sup> Križevačka županija, 159-160.



village *Kalnik*, there's a parish church and rectory, a chapel, remains of an old fort, and right next to it - a new fortification with ring-like wall, and a distant chapel of *St. Martin*, all solidly built. The remaining of the village is a few scattered houses. A hamlet of *Šopron* has no solid building, also on a pretty elevated ground, and both villages are the highest point, topping everything else. All roads, leading here, can be blocked from the few solid buildings that exist here. The chapel *St. Juraj* is dominated by the parish church and rectory.

The church itself is domineered by the fort, holding a defense division; inside the church backyard, there place to hold half a division, and a quarter an hour away from ring-like walls that defend *St. Martin* church, an additional half of division. Right at *St. Martin* church, military can block the road toward *Ljubeščica*. None of the water sources springing here, have any significance. The road to *Obrež* is stony, the track is carved deep and full of holes, some travelers sometimes must use some steep hillside slopes. The existing *creek pathway* is of the same quality. The road to *Ljubeščica* is also stony, yet further tracks become muddy and in rain season very soft. All these roads have narrow rut and tracks can be traveled only in light carriage. The road to *Kamešnica*, however, has a wide, stony rut and is traveled in a heavy kart at any time, in any condition."<sup>27</sup>

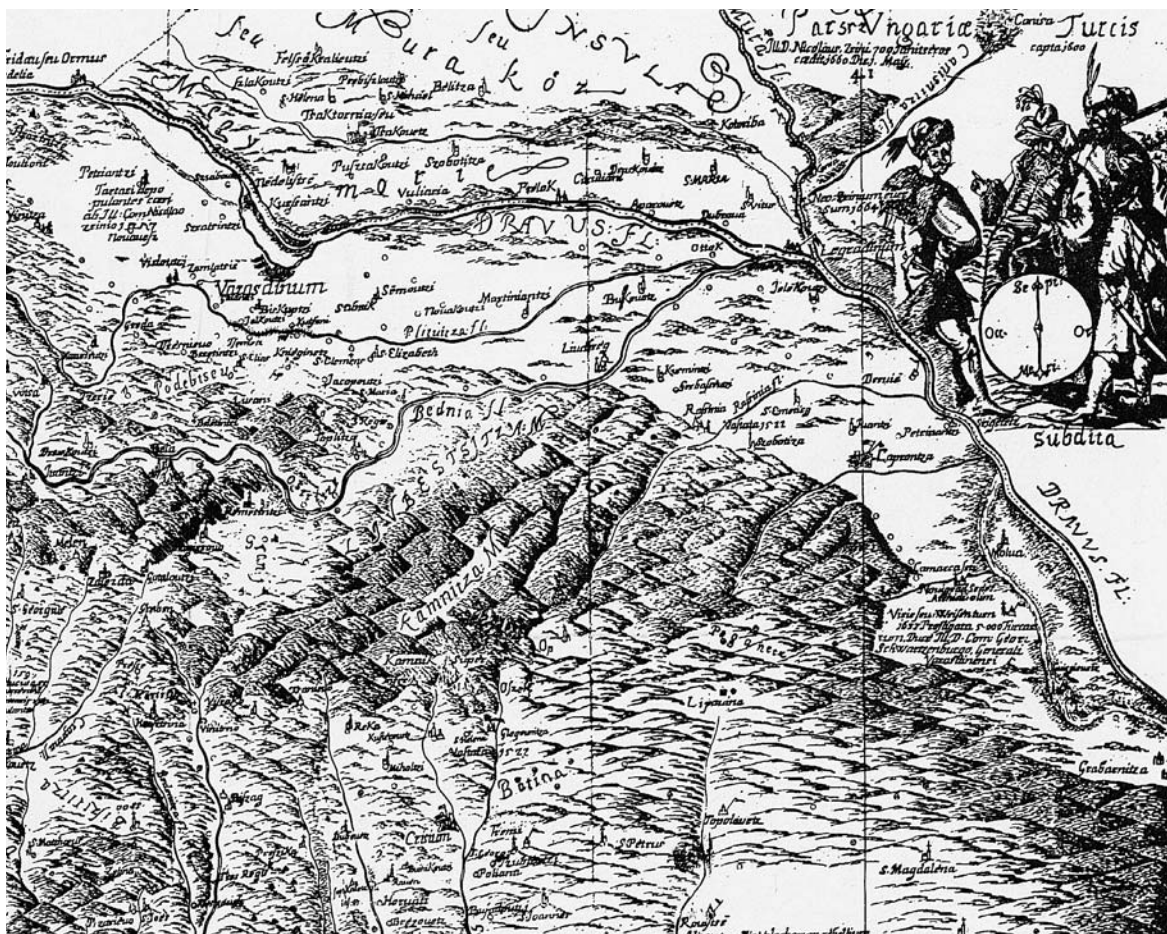
There is another interesting document, describing hillside area near the villages: “ *Mt. Kalnik* is similar to an island wall. The mountain here has many high - named and unnamed - peaks, all covered in woods. There are also terribly deep, impenetrable and wooded gullies and the whole wild end is not settled. The mountain cannot be crossed, either on foot or on horseback, outside established transit routes. On the southern cliffs of *Kalnik* hills ridge, there are sparse trees, with thicket and overgrown bushes. Woods on the northern side have sparse, yet tall trees, and thick, overgrown bushes.”<sup>28</sup> There are documented descriptions of three villages, west of *Kalnik*. “*Obrež* is very scattered, while *Popovec* and *Vinarec* are close to each other (...) they have no solid building and are domineered by hill slope they lie at, and that runs down from *Kalnik*. A nameless creek that springs below the village of *Obrež*, turns by the village *Vinarec* into a stream, 5-6 feet wide, with 3 feet steep banks, with rocky bed and one can cross it only in mapped crossing spots. Roads from *Obrež* to *Kalnik*, *Vojnovec* and over the hills have stony ground and are set on very steep slopes. The roads are mostly rough and full of holes, with narrow rut and can be traveled in light carriage only. By the creek, the road connects with another by the grain mill; this is where this creek is joined by the creek running down from *Finčevac*, with muddy soil, often flooded with overflowing stream. One can travel this road only in light carriage. The road to *Vukovec* has, on the other hand, the firm ground, a wide rut and is easily traveled in heavy cart as well.

The hills *Vinarci* and *Stražinec* are the highest local hills, yet both are covered by trees. These woods are a mixture of low and high trees, completely overgrown with thicket and bushes.”<sup>29</sup> The villages *Vojnovec* and *Hižanovec* “are not separated, nor they are scattered (...) They have no solid building and are domineered from all sides. The creek called *Rijeka*,

<sup>27</sup> Križevačka županija, 160-161.

<sup>28</sup> Križevačka županija, 161.

<sup>29</sup> Križevačka županija, 161-162.



**Image 6.** Wider area of Kalnik Hills (Kamnitza M.) on the map made by Stjepan Glavač (1673.) / Karta Stjepana Glavača iz 1673. godine - područje sjeverozapadne Hrvatske

running through, has a strong current, it's 5-6 feet wide and 2 feet deep, with stony bed and obscure banks; there are several watermills along the creek, each with tiny little bridges made of wood, for easy crossings. Bridges are, however, in poor condition (...) *Mt. Kalnik* hill slopes *take turns* in domineering. Only scattered trees can be found there.<sup>30</sup>

The villages *Štrigovec*, *Vukovec* and *Dropkovec* "are not too distant from one another; their homes at the end of each village are barely quarter of an hour away (...) Outside *Dropkovec* village there is a solid-built church of *St. Francis*, from where the nearby road to *Križevci* can be blocked and, thus, the village defended. It's domineered from all sides, though. The creek *Rijeka*, running eastwardly, here is 3 fathoms wide, 2 feet deep, with muddy bed and crossed over by bridges, all in bad shape, however. A nameless creek runs westward, insignificant and impossible to cross unless marked for crossing (...) Hillside and peaks, mostly covered with woods, take turn domineering one another. A few scattered woods are with scarce low trees and thicket."<sup>31</sup>

<sup>30</sup> Križevačka županija, 162.

<sup>31</sup> Križevačka županija, 163.

The village Gornja Rijeka is “a quarter of an hour away from *Črnčić*, a quarter an hour from *Kostanjevec*, a half an hour from *Donja Rijeka*, a half an hour from *Vojnovec*, a half an hour from *Vukovec*. The village is situated on the foothills, in the direction from the hill called *Reber*. It has a solid-built church, with stone walls around the church and rectory, an inn and a fort with round turrets on each of the four sides (roundels). All of these buildings can be used to block entry to the village and the linking *Križevci* road. The fort could accommodate one division of soldiers, and the parish church could another. However, there are domineering hill slopes around these buildings.

Unnamed streams, running down from highland gorges, are not important individually; when they join, they create a creek that further down runs under the name of *Črnek*, and after having received more streams, gets 2-4 fathoms wide, 2 feet deep; however, only an hour walk further down, the creek gets deeper (3 feet deep). Here, the creek still has rock bottom, yet further down it turns to muddy bed. It can be crossed only on marked crossings and bridges. All these bridges are wooden, but in terrible condition. Fishponds, not far from the fort, are 5 -6 feet deep, with muddy bottom and of maximum 30 fathoms width (...).<sup>32</sup>

Documents and archives hold a partial description of Mt. Kalnik, near the village Gornja Rijeka: “Of the hills we have, the highest ones are *Reber* and *Mali Kalnik*. True, the hilltops are covered by trees, but their non-forested slopes have quite pleasant views of southern part, which have a lot to offer. Ruins of an old fort, located on the hilltop of *Mali Kalnik*, are devastated and have no defense. Lower hills are constantly domineered one another. Woods on the high, northern hills are thick with tall trees and completely overgrown bushes and thicket. Scattered woods on the hill slopes, however, have low and sparse trees and mostly bushes and thicket”.<sup>33</sup>

From other descriptions of Mt. Kalnik the author particularly highlights the one on village Finčevac: “At this end, *Vinarci* hill is all covered with trees, yet, the hill of *Vučak* is the thickest with vegetation. Surrounding woods all have medium sized trees and are thick with overgrown bushes.” By the village Bogačevo, there is *Vučak* being “in these regions the highest hill; the second highest is *Strmec*. These hills, however, on this side are overgrown with trees on their peaks. The woods have tall trees completely overgrown with bushes so thick that cavalry cannot pass through, without proper roads.” In the vicinity of these six hamlets (*Donja Rijeka*, *Šatvari*, *Nemčevac*, *Jelaki*, *Bodvinci*, *Selnica*), being scattered parts of *Donja Rijeka*, there was this “highest hill of *Bodvinski*, mostly overgrown with thick bushes and sparse trees.”<sup>34</sup>

West of Gornja Rijeka, south of Sola peak (503 m), in the village *Kostanjevec*, hill slopes of Mt. Kalnik take turns in domineering over one another; the woods are sparse, low trees and thicket. It's similar with the village of *Sudovec*, set a bit further west; “The highest hilltops here are *Pušina*, *Proščevina* and *Farnišće*. They are all thick with trees. Neighboring woods have tall trees and overgrown bushes.” The hills *Strmo rebro* and *Bota* nearby *Čanjevo* village

<sup>32</sup> Križevačka županija, 165.

<sup>33</sup> Križevačka županija, 166.

<sup>34</sup> Križevačka županija, 163-165.

**Image 7.** *Kalnik postcard shot around 1930 / Razglednica Velikog Kalnika snimljena oko 1930. godine (fotoarhiva D. Feletara*



are the highest peaks of Mt. Kalnik. “They dominate the entire surroundings; looking down, you have a clear view of the road to Križevci, that snakes down; the surrounding woods have tall trees and thick bushes.”<sup>35</sup>

In the direction of Lonja river (where Mt. Kalnik ends) there were the following villages: Visoko, Vinično, Kračevac, Jeruzalem and Radešić. The last two were scattered “in part on the hill slopes, and in part, in the valleys; they have no solid buildings and are domineered by the hill ridge *Bukovec* (...) The neighboring ridges take turns domineering, yet the highest is *Velišće*. Surrounding woods are mostly with tall trees and thick bushes.” The village of Vinično “is scattered in several slopes and in the valley; it has a solid-built church, which, however, is not suitable for defense; it’s encircled by domineering hill slopes in a ring pattern (...) The hill slopes, with its highest peak *Bukovec*, take turns in domineering the area; their woods have low trees and thick bushes.” Mt. Kalnik’s peak *Bukovec* also domineered over the village of Kračevac. The following on the village Visoko was recorded, too: “Uphill, on this side, the highest hilltop is *Šatorišće*, and it’s domineering with others, taking turns. Neighboring woods have trees of medium height and overgrown thicket; no cavalry passage is possible outside traveled road.”<sup>36</sup>

Further east from Kamešnica, there are villages of the Military Border (Križevci regiment) - Osijek and Apatovec. Documents on them never mention the name Kalnik for the hillside areas these villages were situated at. For example, archive documents mention Osijek with “domineering hills to the north; from there and the hills *Poljane* and *Mibaljsko brdo* there is a clear, long distance view toward south and west.” Another mention is “wooden hills to the north near the border with *Civil Croatia*”. It was thick with vegetation and “tall trees; due to high hills and deep gorges, it cannot be traveled outside the existing roads.”

<sup>35</sup> Križevačka županija, 166-168.

<sup>36</sup> Križevačka županija, 174-176.

Domineering the village Apatovec were “hills *Hum*, *Gradec* and *Krement*”. Part of the village, or rather, some homes, “lied on the long hill slope; it gradually went down from the hill *Lipovec*, domineering over east, west and south regions; to the north, however, it is domineered by another hill *Lipovac*, all the way to the vineyard on *Borovski* hill (...) From the hill *Lipovec* there is a great, long distance panorama, well into *Civil Croatia*, as well to the east and to the west.”<sup>37</sup> north of the villages Osijek and Apatovec, there were huge forest complexes, while the land around the very villages was cleared out.<sup>38</sup>

Further to the east, there were Military border villages (Đurđevac regiment): Rasinjica, Ribnjak, Radeljevo Selo, Veliki Grabičani, Veliki and Mali Poganec, Botinovac, Koprivnička Rijeka and others. They were situated on the eastern hill slopes of Mt. Kalnik, however, the population living here was unaware that the hills they lived on belonged to the mountain. Next to Rasinjica and Ribnjak, there was a hill named *Rasinsko bilo*; close to the villages Veliki Poganac, Koprivnička Rijeka and Botinovac, there were the hills called *Borovka*, *Čisto brašće*, *Poganačka šuma*, *Starčino brdo*, *Dugačko brdo*, *Viz*, *Kirin* and *Kolačko brdo*.<sup>39</sup> In this area, Mt. Kalnik foothills were shown on the maps mostly with thick woods, except for the valley formed by the creeks Gliboki and Koprivnička Rijeka, and in immediate vicinity of certain villages.<sup>40</sup>

On the easternmost hill slopes of Mt. Kalnik (again, the population without awareness that their hills belong to Mt. Kalnik), toward the rim of Drava valley, there are settlements formally belonging to civil Croatia (Križevci county). The records keep the following descriptions of the villages Kučan and Hrastovsko: “hill slopes across the creek *Bednja*, still attached to southern part of the mountain, domineering over the village. On the other hand, they are domineered by *Gradec* hill, with grape vineyards all over. There is a beautiful panoramic view from this hill toward the plains and many things can be seen from the above.” The villages “*Globočec*, *Čukovec* and *Mali Bolfan* lie on the foothills and slopes that stretch all the way from southern part of the mountain (...)”.

Also, there is a mention of “hill slopes between *Globočec* and *Čukovec*”, as well as another, called *St. Petka*. However, an unnamed peak is domineered by the hills *Graci*. Other hill slopes take turn in domineering over one another.” Next to the village Veliki Bolfan there were several slopes that, except for *Radovanica*, had no names. The village of Cvetkovec “lies on the foothills of two slopes of a small nameless ridge, yet interconnected with another higher hill”, obviously, Mt. Kalnik branch. The village Rasinja was also situated on the “foothills stretching from a high hills downward (...) The highest are the peaks covered in trees of medium height, and with thick overgrown bushes.” Radeljevo Selo and Ivančec are recorded “lying on a mid hill slope.” The village Segovina was located in the creek valley of the same name “and is domineered by surrounding hill slopes (...) The neighboring mountain,

<sup>37</sup> *Hrvatska na tajnim zemljovidima XVIII.i XIX. stoljeća*, (Croatia in secret maps of 18th/19th century) Križevačka pukovnija, pripremili Mirko Valentić, Ivana Horbec i Ivana Jukić, Hrvatski institute za povijest, Zagreb 2003, 107-108, 112.

<sup>38</sup> Križevačka pukovnija, Sekcija 1.

<sup>39</sup> *Hrvatska na tajnim zemljovidima XVIII.i XIX. stoljeća* (Croatia in secret maps of 18th/19th century) , Đurđevačka pukovnija, pripremili Mirko Valentić, Ivana Horbec i Ivana Jukić, Hrvatski institute za povijest, Zagreb 2003, 73-84.

<sup>40</sup> Đurđevačka pukovnija, Sekcija 2.



**Image 8.** Hills of Kalnik and part of the protected reserve / Dio Kalničkog gorja i prirodnog rezervata snimljen s jugoistoka (A. Čaplar)

with some peaks located on the ridge between this village and *Crna Glava*, is mostly covered with trees.” Subotica village vicinity has “from the upper part on the south, the hill of *Dugačko brdo*, mostly covered by trees. Woods here have tall trees and fully overgrown bushes. This village “lies in the plains and has no solid buildings; it’s domineered by hill slopes stretching down from *Dugačko brdo* hill, with grape vineyards”. The hill slopes of Mt. Kalnik stretched all the way to vicinity of Koprivnica; the Močile chapel is “only some 100 paces from *Koprivnica dirt road*, is a built solidly; from there, blockade of the road and its intersections is possible; it’s domineered, however, by vineyards in the south.”<sup>41</sup>

Interestingly enough, all Orthodox Slav (Vlach) villages had collective privileges and the status of so-called “private Vlachs” (the villages of Črnoglevec, Duga Rijeka, Ludbreški Ivanec, Čukovec, Bolfan etc.); they were situated on the northeastern pre-mountain parts of Mt. Kalnik, where population, beside farming, was occupied with livestock raise (not of transhumance character, but local, on the local pastures in the vicinity of their home villages). These areas occupied some 6000 hectares of land; taking into account the previous estimates of population, it’s easy to assume that population density off so-called “private Vlach villages”, at the end of 17th century, was about 20 people per square kilometer. The reason for such low population density lies with the former methods of land cultivation (fallow on large land areas), but also in keeping large pastures for cattle.

All this helped watch agrarian overpopulation as yielding years would endanger existence for majority of population. Perhaps it’s smart to ask this question: did “private Vlachs” in this situation actually help a sort of balance between agrarian economy and its environment, a sort of “sustainable development”?<sup>42</sup>

On the northern side of Mt. Kalnik pre-mountain area, with far less population than the southern hill slopes; in the second half of 18th century, there was no clear awareness of the

<sup>41</sup> Križevačka županija, 122-129, 148-149.

<sup>42</sup> Hrvoje Petrić, O najstarijim srpskim naseljavanjima i tzv. privatnim Vlasima u Kraljevini Slavoniji (On oldest Serb immigrations and so-called private Vlachs in Slavonian Kingdom), *Spomenica Josipa Adamčeka*, FF Press, Zagreb 2009, 140.



**Image 9.** A view of the Kalnik forests / *Panorama bogatim šumskih i livadnih površina na Kalniku* (Ž. Car)

mountain name people lived on and where some villages had been. This is clearly visible from the records describing the village of Moždenec: it was set up between the northern hill slopes of Mt. Kalnik and Bednja river: “The highlands and the hill slopes with scattered village homes have no name here; however, the mountain is full of lots of high, steep hill peaks (mostly nameless; some with names) and hilltops, majority covered with trees (...). Hill slopes, stretching from the said hilltops, have different peaks and slopes, on both sides rugged with deep ravines and gorges. They cannot be crossed on foot, or on horseback, and they have thick woods as well. Due to its wilderness, the entire mountain is, uninhabited; only a few grape vineyards, here and there, are planted on the mildest slopes. Most of the roads across the mountain are forest pathways in poor shape, only traveled by oxen cart; however, horseback ride is possible at all times; woods here have tall trees and very thick overgrown bushes.”<sup>43</sup>

Further east, there is Leskovec village. Population here, too, did not have awareness that the area they lived was a part of Mt. Kalnik. The village did not have any traffic connections between other villages of Mt. Kalnik highlands. This is clear from the following archive records: “roads, leading across the nameless highlands, are merely forest trails; they are used for logging and transport of firewood in dry season, on poor wooden carts; these trails end up as footpaths and hiking trails.”

Despite the fact that Mt. Kalnik was nameless in that period, the archive documents have record of a name: “the hill *Vrh majura* in the highlands, on the southern side”. This was the highest hill in the surrounding area, and clearly it was one of Mt. Kalnik peaks. There is also a documented proof of Mt. Kalnik impassability in this description of Jalšovec village: “on the mildly elevated hill slope, connected to *Korovec* village.” There is also this statement:

<sup>43</sup> Križevačka županija, 105.

**Image 10.** Remains of the medieval fortifications of Veliki Kalnik / Kalničke šume i srednjovjekovna utvrda Veliki Kalnik (Z. Tanocki)



“hills in this area on the southern side are impenetrable, while the hilltops are planted with vine and domineering over one another.”<sup>44</sup>

Vicinity of Terhovec (today, Čurilovec) village is documented with this record: “the hill of Šopron domineers over the area and its hill slopes can be used for defense - to shoot from and block the road toward *Kapela*; the hill called *Ljubelj* is the highest one in the vicinity; it’s widely covered with trees.” Two of the hills, *Peka* and *Ljubelj* have “almost the same elevation”; the villages here are Ljubeščica, Rakovec and *Kapela*. The village of Drenovec was the most deeply cut into the northern hill slopes of Mt. Kalnik, with documented descriptions, such as: “hill slopes circle around, domineering in a ring-shaped formation”, with “the highest hills among them being *Cipela*, *Jalsov zdenec* and *Vrb majura*. They are covered with trees, as all these hilly areas are. These woods are filled with tall trees and thick overgrown bushes; however, cavalry cannot pass through outside established roads.”<sup>45</sup>

Analyses of the first, more precise maps, (from the second half of 18th century), confirm that population density on the (southern) foothills of Mt. Kalnik was significantly higher, with origins from the base of Mt. Kalnik highest ridge; at the highest elevation, the following villages were here: Vojnovec (380 m) and Kalnik (359 m), and at some lower elevations - Kamešnica, Šopron, Gornja Rijeka, Sudovec, Čanjevo and others. Right here, around these villages, situated right below the mountain ridge, it was obvious that the woods were cleared out. North of Mt. Kalnik ridges, on the hill slopes, there is a large forest complex, stretching in an uninterrupted streak down to the river Bednja. The only clearings were around the villages formed in the contact zone of Bednja river and northernmost slopes of Mt. Kalnik (Moždenec, Ljubeščica, Terhovec, Leskovec etc.).

<sup>44</sup> Križevačka županija, 107-108.

<sup>45</sup> Križevačka županija, 108-111.



The only exception in population density pattern on the northern slopes of Mt. Kalnik, right next to the river Bednja, was the village of Drenovec (the closest to the mountain ridge, with woods clearings around it; by the pathway and the creek Ljuba voda (Ljubeščica) the clearing was stretching south of Ljubelj peak (558 m), with mapped spots for potash (potassium) incinerators used in cloth manufacture.<sup>46</sup>

Lack of woods around villages in southern parts under the mountain ridge is easily explained by the fact that population density increase during 17th century led to more clearing of woods. If we compare the listings with family names from year 1598, with the family names of 1704 and 1706 records of Roman Catholic parishes of Kalnik, Gornja Rijeka and Visoko (with their villages situated south of Mt. Kalnik ridge), we can establish a significant rise of population. In 1598, there were 231 families in 22 villages; in early 18th century, the number of families almost doubled, rising to 430. At the same time, the number of villages increased to 43. At the same time, there was a process of transformation from within, as 5 smaller villages vanished and people relocated; obviously those were the villages in little or no accessibility terrain.<sup>47</sup>

Today's village Kalnik (former marketplace Brezovica<sup>48</sup>) with an old name dating back to 1651<sup>49</sup>; however, by the early 18th century at latest, the new name Kamnik (Kalnik) prevailed.<sup>50</sup>

In religious topography of mountain terrains, the most important symbolism is naming the peaks, where Heaven and Earth touched<sup>51</sup>, thus, where man was the closest to God. No wonder there were a number of places on Mt. Kalnik with cult status, since the ancient history until present day. As in the early Modern Age, so is Mt. Kalnik established with a number of numerous shrines, sanctuaries and chapels for the local population, whether they were Roman Catholic, or Orthodox Slav religion.<sup>52</sup> A curiosity - a well-known roman Catholic saint Marko Križevčanin, was from these parts of Mt. Kalnik.<sup>53</sup>

It's no coincidence that right here on the contact zone of Mt. Kalnik and Mt. Bilogora, one of the most significant Orthodox Slav monasteries in two river (Sava-Drava) basin, was established - Lepavina. Lepavina monastery was also located on so-called Lepavinska previja (elevation approx.186m above sea level), which makes the lowest pass between Zagreb and Hungary. As much as Lepavina monastery had in common with Mt. Bilogora and Mt. Kalnik, it also helped - thanks to Lepavinska previja - better communication toward Hungary (via Koprivnica), toward Zagreb (via Križevci) and toward center of the Episcopate/Diocese - Marči.

<sup>46</sup> Križevačka županija, karte, Sekcija 14 i Sekcija 19.

<sup>47</sup> Nadbiskupijski arhiv Zagreb, Kanonske vizitacije (Canonical visitations), Prot. 130/I; Josip Adamček, Ivan Kampuš, *Popisi i obračuni poreza u Hrvatskoj u XV. i XVI. stoljeću (15th/16th century tax listings and calculations in Croatia)*, Institut za hrvatsku povijest, Zagreb 1976, 441-464.

<sup>48</sup> Hrvoje Petrić, Trgovište Brezovica u Križevačkoj županiji (Marketplace Brezovica in Križevci county), *Cris*, VI, Križevci 2004, 27-34.

<sup>49</sup> Kaptolski arhiv Zagreb, Fassiones XI, 56.

<sup>50</sup> Hrvoje Petrić, Pokušaj procjene ukupnog broja stanovnika na području Kalničkog arhidakonata od kraja 16. do početka 18. stoljeća (An attempt to estimate population of Kalnik archdeaconry from late 16th to early 18th century), *Cris*, IX, Križevci 2007, 40.

<sup>51</sup> M. Šarić, Ekohistorijski osvrt na planine i morlački svijet (Ecohistory review of mountains and Morlach world), 221-231.

<sup>52</sup> *Križevci - grad i okolica (Križevci - the town and its vicinity)*, Institut za povijest umjetnosti, Matica hrvatska Ogranak Križevci, Križevci 1993.

<sup>53</sup> Sveti Marko Križevčanin (Križevci, 1588. - Košice, 7. rujna 1619.), Ivan **Peklić**. *Hrvatski mučenik sveti Marko Križevčanin (Croatian martyr, Saint Marko of Križevci)*, Križevci 1995.

**Slika 10.** Panoramic view to the south from the top of the Kalnik Hills / Milovidne panorame Kalničkog prigorja - pogled s Kalnika prema Križevcima (D. Martinović)



We can conclude, that as early as second half of 18th century, the population living at the foothills of Mt. Kalnik used the name Kalnik only for the central part of today's Mt. Kalnik, being the area around the highest peak - Kalnik (643 m) and a little further west, around Mali Kalnik peak (460 m). Even the military map from 18th century last decade uses Mt. Kalnik (Gebürg Kalnik) mark only to the ridge (Kalnik-Begersrücken) stretching in the east-west direction and clearly distinctive on the horizon. Outside that area, population was unaware of Mt. Kalnik and their habitat under the mountain. Obviously the term Kalnik spread out to general public, marking the entire Mt. Kalnik, only after the end of 18th century; however, this problem exceeds the purpose of this paper. Suffices to say, that even today the local population, living in the southern part of Mt. Kalnik uses the name Kalnik only for its southern ridge, beginning with Pusta Barbara peak, and stretching across the highest mountain top, Kalnik beam toward Veliko Brdo.

Although majority of population had no awareness of the name Kalnik, its definition in geography and environmental history sense applies for the entire region of Mt. Kalnik; cartographers had a clear view of this fact since mid 17th century. Kalnik (Mt. Kalnik) toponyms on some old maps were only slightly altered. For example, In his map from around 1657, cartographer Stier mentions the name "Kaminger Gebürg"; another one, Glavač, in 1673 had drawn a mountain in the map and called it "Kamnitz", just as did cartographer Canteli in 1690; in late 17th century, Valvasor marked it down as "Kamniza Mons".<sup>54</sup>

<sup>54</sup> Ljudevit Krmpotić, *Izvjestaji o utvrđivanju granica Hrvatskog Kraljevstva od 16. do 18. stoljeća (Reports on border definition of Croatian Kingdom from 16th to 18th century)*, Hannover-Karlobag-Čakovec 1997, str. 43. Maps are being kept at Vienna National library, with signature ÖNB, Codex 8608, fol. 32.; ÖNB, Codex 9225, fol. 36; Glavač map was published by Vrela, Sarajevo; in 1930s it was edited by Miroslav Vanino who wrote several times on Glavač. Miroslav Vanino, *Kartograf Stjepan Glavač D.I. (1627-1680.)*, Vrela i prinosi, 6, Sarajevo 1936., 139-143; Giacomo Cantelli da Vignola, *Parte della Schiavonia...*, Roma 1690, u: G. G. Rossi, *Mercurio geografico overo...*, Roma 1692-94, *Atlas Hungaricus*, Budapest 1996, sv. 2, 522; Reprodukcijska karte u Zaključcima Hrvatskog sabora, 1, Zagreb 1958., 575.

One of the questions raised is, how much environmental aspects of the mountain (so called “spatial structures”) influenced definition and developments of a specific historical identity; how much “anthropogenic structures” shaped and defined the space of Mt. Kalnik, as a specific and recognizable in anthropology, geography ethnology and culture.<sup>55</sup>

Although we could call all inhabitants of Mt. Kalnik, in a manner of speaking, Kalničani (people of Kalnik), they never developed their own unique “Kalnik” identity (unlike people of Mt. Moslavina, called Moslavci, despite certain prerequisites had existed, even in the Middle Ages. There had been a Kalnik county once in the past (joined with Križevci county in mid 14th century)<sup>56</sup>. Perhaps the nonexistence of unique “Kalnik identity” should be blamed on the fact that in 16th century the last remaining urban settlements on Mt. Kalnik ceased to exist; thus, the central role was moved to mountain rim and further down to marketplaces, that developed on the contact of Mt. Kalnik with the surrounding lowlands. We should point out that in the recent period Mt. Kalnik population is self-defined, almost exclusively, as a) Prigorci (foothill population, who gravitate to the towns of Križevci and Vrbovec); b) Podravci (population gravitating to the towns Koprivnica and Ludbreg) and c) Zagorci (those gravitating to the towns Varaždinske Toplice and Novi Marof).

Despite the above, a social and cultural definition of “specific climate” was being created in dynamic interaction between nature’s given conditionality and human capabilities. An existential fight to survive forced “Kalnik people” to appreciate the existing resources of Mt. Kalnik. In a way, Mt. Kalnik had run the lives of people of Kalnik (whether they are self-defined as Prigorci, Podravci or Zagorci), just as Kalnik people run the mountain eco system. Starting new settlements, promoting farming or woods clearance, people from the early Modern Age were changing and reshaping mountain environment, adapting it to their human needs; defining spatial relations that would eventually shape today’s population.

## Sažetak

U ovom članku autor prvo daje prikaz prirodnogeografskih osobitosti s pokušajem rekonstrukcije stanja u ranome novom vijeku, a nakon toga obrađuje ranonovovjekovne procese antropizacije Kalničkog gorja. U radu autor pokušava dati prilog definiranju modela istraživanja povijesti okoliša peripanonskih gorskih prostora u ranome novom vijeku, na primjeru Kalničkog gorja. U članku autor prvo promatra prirodnogeografske osobitosti s pokušajem rekonstrukcije stanja u ranome novom vijeku, a nakon toga prati ranonovovjekovni procesi antropizacije Kalničkog gorja.

<sup>55</sup> M. Šarić, *Ekohistorijski osvrt na planine i morlački svijet (Ecohistory review of mountains and Morlach world)*, str. 221-231.

<sup>56</sup> Zdenko Balog, *Križevačko-kalnička regija u srednjem vijeku (Medieval Križevci-Kalnik region)*, 17.

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