

THE HABITAT POTENTIAL OF THE NATURAL ENVIRONMENT OF TELEAJENULUI SUBCARPATHIANS

Alina PANDELESCU*

University of Bucharest, Faculty of Geography, „Simion Mehedinți” Doctoral School,
N. Bălcescu Blvd., No.1, sect.1, Bucharest, Romania, e-mail: alinapand@yahoo.com

Abstract: The analysis presents the typical example of the close relationship between the natural environment elements (landforms, hydrography, climate, soil and subsoil) and the anthropic elements, forming the basis for inhabiting this Subcarpathian sector since the oldest times. Knowing the interaction between the environment and the man becomes an essential instrument of the actions aimed at a sustainable development of the human society, by intervention upon the deficient components and stimulation of those with a good potential.

Key words: habitat, natural environment, rural settlement, Teleajenului Subcarpathians

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INTRODUCTION

The rural settlements examined fully overlap the hilly sector of Prahova County, occupying the 1187.7 sqkm approx. 25% of the county area, the space being entirely occupied by the Teleajenului Subcarpathians (figure 1).

The Subcarpathian area represented by the Teleajenului Subcarpathians may be considered a natural region whose characteristics are revealed by the geological sub-layer, the landforms, waters, climate, soil and subsoil and the impact of the human factor upon them. Thus, each element of the natural environment may be described, from the perspective of the relationships with the rural micro-societies, by specific influences integrated in the local geographic complex (Bogan, 2008).

The literature provides lots of information about the Teleajenului Subcarpathians, as demonstrated by the geological surveys of the 19th century and the beginning of the 20th century, whereby Mrazec (1900) widely described the tectonic events of the Subcarpathians. Other authors, such as Niculescu (1981), Tufescu (1966), Mihăilescu (1966), Roșu (1973) also had significant contributions to the knowledge about the landforms of the zone, while more recent analyses were made by Ielenicz (2005), Armaș (2001, 2003).

In addition to these, the studies of Cucu (1995) opened new horizons regarding the development of human geography and human settlements, as well as the approaches of Erdeli (1999, 2007), whose studies focused on the population and human settlements as elements of the geographic landscape, in the process of humanization of the Romanian space.

* Corresponding Author

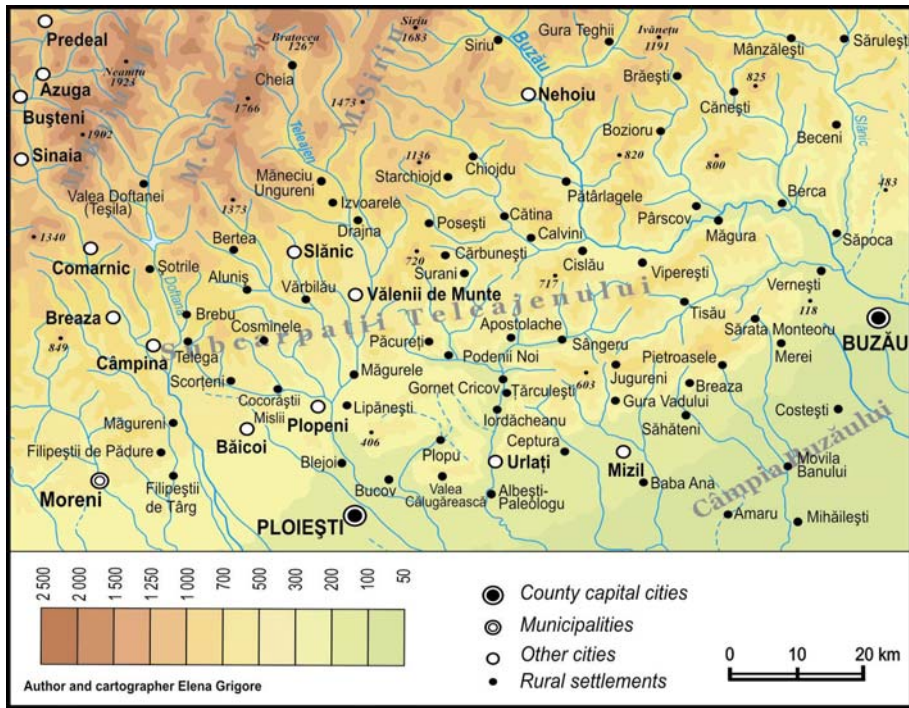


Figure 1. Geographic position of the Teleajenului Subcarpathians between Teleajenului, Prahovei and Cricovului Sărat Valleys

METHODOLOGY

The main objective of this paper is to reveal the role of the natural environment in the birth and dynamics of human settlements, such objective being achieved by scientific research of the examined habitat in several stages. The research began with the specialized literature and existing cartographic materials, moving with direct field observation and discussions with the locals and gathering quantitative data (data provided by the National Institute for Statistics, Prahova County Statistics Directorate, local town halls and other institutions which were interested in this study), ending with the analysis and integration of the materials, which materialized in the cartographic material.

STUDY HABITAT

From an administrative point of view, the rural area of the Teleajenului Subcarpathians is made up of 28 communes, with 115 villages (figure 2, table 1), representing 94% of the total human settlements, with 149,623 inhabitants, *i.e.* approx. 52% of the entire population.

Table 1. Demographic size of the settlements (2002)
(Source data: INS, DSJ Prahova)

Administrative territorial unit	Number of inhabitants	Number of villages in the Teleajenului Subcarpathians	Administrative territorial unit	Number of inhabitants	Number of villages in the Teleajenului Subcarpathians
Aluniș	3749	2	Lipănești	5068	4
Albești Paleologu	5792	3	Măgurele	4889	3
Bălțești	3603	3	Măneciu	11224	5
Bănești	5733	2	Păulești	5170	4

Bertea	3490	2	Plopu	2344	4
Brebu	7719	4	Podenii Noi	4775	6
Bucov	10448	5	Scorțeni	6095	5
Cocorăștii Mislii	3474	3	Șotriile	3559	6
Cornu	4472	3	Ștefești	2407	3
Cosminele	1266	4	Telega	6465	6
Dumbrăvești	3880	6	Teișani	4035	5
Gura Vitioarei	6061	5	Valea Călugărească	10551	2
Iordăcheanu	5200	6	Vălcănești	3994	3
Izvoarele	6952	6	Vărbilău	7208	5
Total: 149.623 inhab.			115 villages		

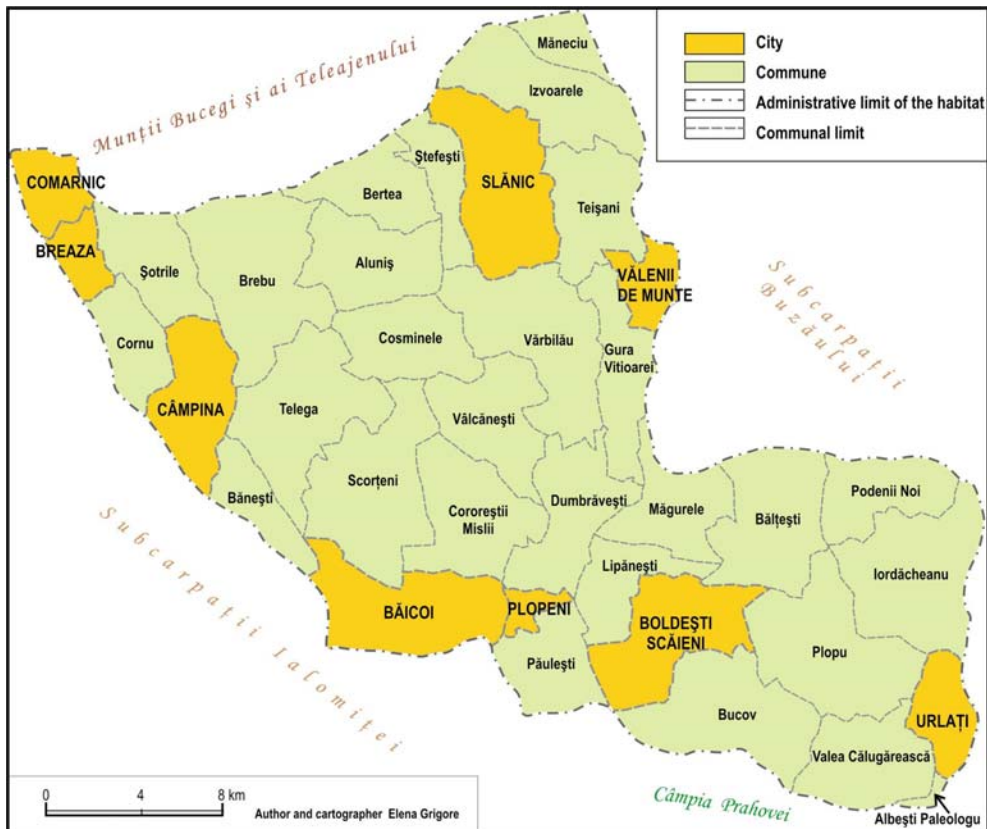


Figure 2. Network of settlements in the Teleajenului Subcarpathians

DISCUSSIONS

Geologic components and structure and the evolution in time of the Subcarpathian area.

From a geo-morphological and physical-geographic perspective, the Teleajenului Subcarpathian area has a unitary nature, only the detail elements making the differences among the various zones, being determined in time by the geological nature and dynamics of the habitat. In fact, the geological sub-layer has a particularly important role in defining the landforms, in the evolution and dynamics of certain current geo-morphological processes with impact upon the anthropic

activity, also hosting certain useful natural resources, adding to the social and economic development of the region. The Teleajenului Subcarpathians, comprised between Teleajen, Cricovul Sărat, to the East and Prahova to the West (Roșu, 1973), are characterized by a wide development of the Paleogene flysch and the narrowing of the internal Miocene area, this characteristic being encountered up the Dâmboviței Valley. The research conducted in this sector by Niculescu (1981) reveals the active role of the neo-tectonics in the landforms' evolution and past existence of a layer of Villafranchian gravels advancing to the North up to the contact with the mountain. The Mio-Pliocene sediments contain two regions with different tectonic styles, *i.e.*: a region of faulted folds, and another region of diapiric folds. The first region is to the East of Cricovul Sărat, being characterized by the above-ground formation of Miocene strata in faulted anticlines, plunging to the South, being contained in the Gornetu-Păcureți-Apostolache structures. The second region is to the West of Cricovul Sărat, and takes the shape of bells with salt massifs, of closed folds type (at Ceptura, Aricești, Boldești), or Țintea - Băicoi open folds. Geological structure requires variety perography in the study area, which influenced the development of industry over time in many localities: Plopeni, Băicoi, Câmpina, Urlați and others (figure 3).

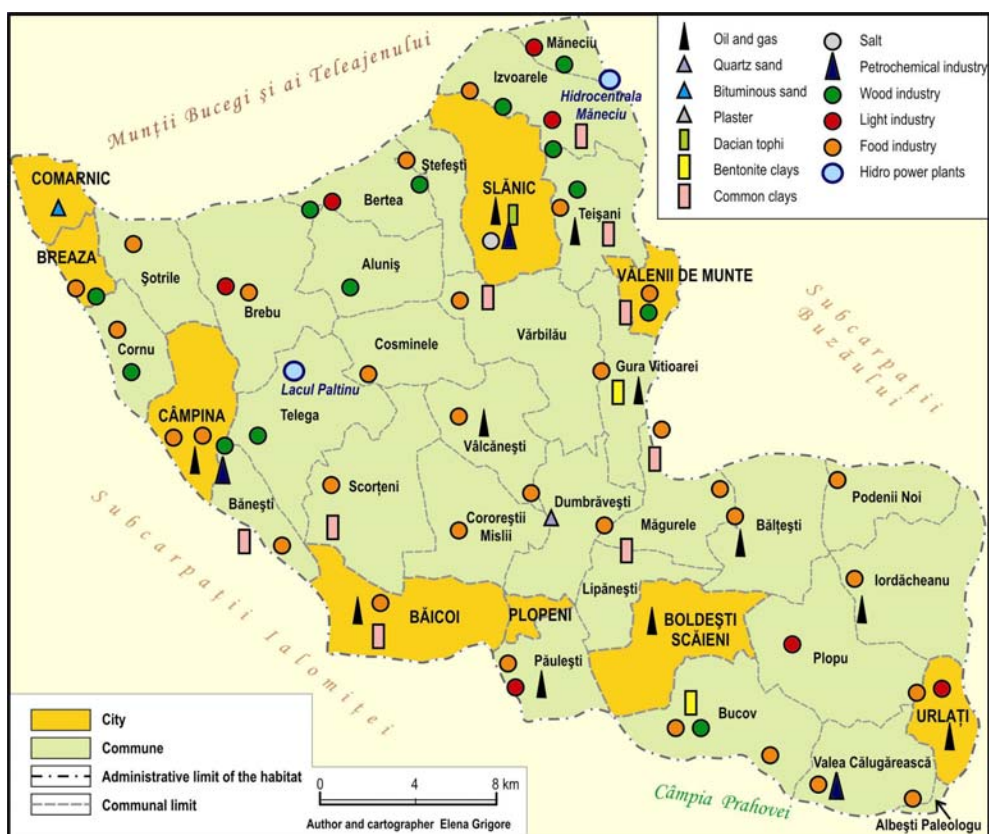


Figure 3. Resources and industry map

The landform - a favouring and restrictive element in the development of settlements.

The variety of the Teleajenului Subcarpathians landforms generated multiple types of territorial organization of the villages, adapted to the detail morphology, and the existence of basins and valleys, of alluvial cones, the flatness of the terrace bridges, the presence of meadows, of the small and sunny slopes, plus the low altitudes and low landform energy, were favourable conditions for

the establishment of settlements (figure 4, table 2), also imposing certain pedo-climatic characteristics which generated certain supports for the development of anthropic activities.

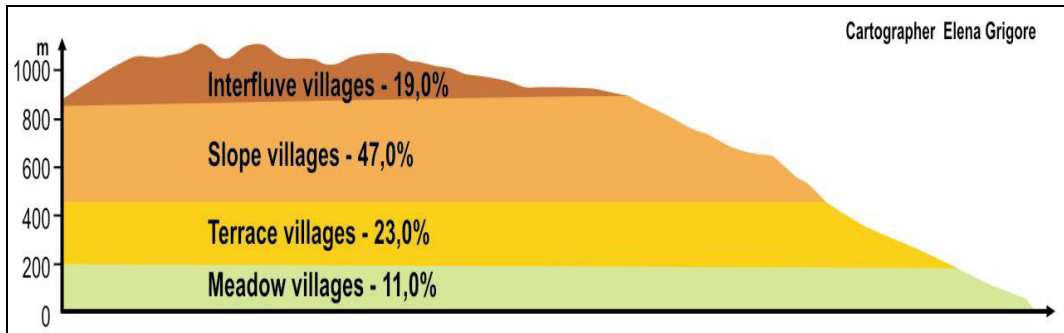


Figure 4. Morpho-structural types of villages

Table 2. Morpho-structural types of villages

Village type	Characteristics	
Interfluvial villages	Less contoured texture and structure; Isolated villages	Podu Ursului, Valea Oprii, Berteza, Vistieru, Malu Vânăț, Seciuri, Scurtești and so an.
Slope villages	They evolved from terrace villages; They have the largest number of inhabitants;	Vărbilău, Podenii Noi, Cocorăștii Mislii, Mocești, Plavia, Știubeiu, Valea Stâlpului and so an.
Terrace villages	High soil fertility; Water resources; High number of inhabitants	Urleta, Măgurele, Mislea, Glăvănel, Cernești, Iazu, Șârca and so an.
Meadow villages	Situated at low altitudes, at the contact with the plain.	Valea Călugărească, Bucov, Albești-Paleologu, Păulești, Țintea, Valea Ursoii, Chițorani and so an.

Rural settlements were concentrated in particular in the submontane depressions (Cetățuia, Măneciu, Măgurele, Slon and others), and on the valleys of the main rivers crossing the entire Subcarpathian area (Drajna, Gura Vitioarei, Vărbilău, Teișani, Țintea, Coțofănești and others), in the form of interfluvial villages (situated especially in the Northern sector, with small distances among them, sometimes isolated), slope villages, terrace villages (the village area developing either on the terrace bridges, or at the contact with the meadow) and meadow villages (present in the low regions in the South of the region).

On the other hand, the habitats with high landform fragmentation density (>6.1km/sqkm) imposed by the presence of Paleogene flysch strata with high friability (the basin of the Doftana, Bucovel Rivers), as well as the habitats with higher landform energy (350 - 400m, Bughei Peak) influenced the development possibilities of the settlements, by limiting their expansion, therefore the settlements are small, of the scattered villages type (Pietriceaua, Berteza, Lutu Roșu and others).

To these, the impact of the current geo-morphological phenomena is added (caving-in, landslides, torrentiality, sheet erosions, surface eluviation and others.), affecting a number of settlements (Vărbilău, Măgurele, Izvoarele, Cornu, Șotriș, Telega, Cosminele and others), becoming restrictive factors of settlement development (figure 5 - 6).

The landslide problem being a permanent and long term problem, in the past years the habitats affected by it experienced a depopulation phenomenon, the inhabitants preferring to settle in safer areas in terms of land stability.



Figure 5. Landslide in Doftanei basin at Telega



Figure 6. Muddy flows at Brebu

Climate and human habitat Local climate conditions play a particular role in the structure and distribution of human settlements in general, and implicitly of rural settlements, as well as in the arrangement and use of agricultural land, grass lands and forests (figure 7, table 3).

Foehn effects from Teleajenului Subcarpathians imposed by air circulation from North West, causes the majority sunny days, which provides over 1250 hours of sunshine and high radiation value, 122.9 kcal /sqcm at Valea Călugărească (Ielenicz et al., 2005, p. 83).

In this Subcarpathian sector we encounter the topo-climate of submontane depressions, Subcarpathian hills and intra-hilly depressions.

In general, topo-climates influence the local human habitat and certain economic activities, without being the essential factor of the humanization process. Thus, the sunny peaks were used for certain cultures, especially vine (the villages of Valea Călugărească Commune or those surrounding the Town of Urlați, with appurtenant land on the slopes exposed to the South), others were used for grazing (such as submontane fields, exposed to the South, from the villages of Măneciu, Valea Doftanei Communes, or surrounding the Town of Comarnic), while the shady slopes are usually covered with forests.

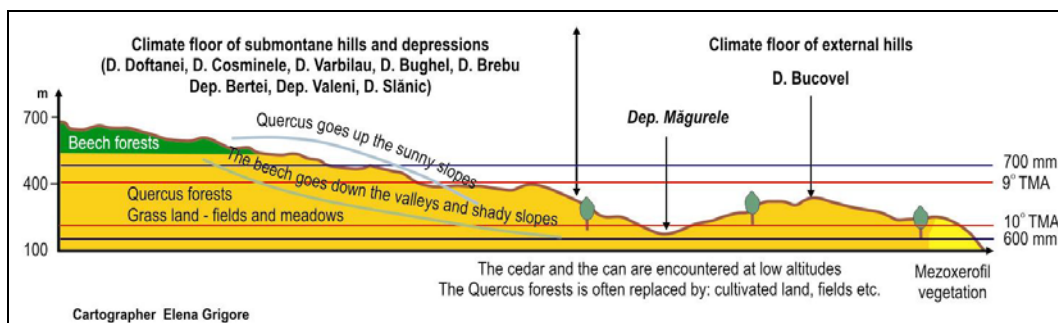


Figure 7. Main topoclimate of the Teleajenului Subcarpathians

Table 3. Main topoclimate of the Teleajenului Subcarpathians

topoclimate of important interfluvial bridges	-of the slopes with a predominantly Northern and Southern exposure (with beechwoods prevailing on the shady slopes, and Quercus forests on the sunny slopes);
	-of the submontane depressions (Bertei, Văleni, Slănic depressions)
	-of depression couloirs
topoclimate of certain basins	- of grass lands and meadows (at higher altitudes); - of cultivated land (Măgurele depression, Podeni depression)

Waters and their role in the permanence and development of human settlements and activities. The rivers from the Teleajenului Subcarpathians run through wide meadows, with plenty of alluvia, usually abutted by vertical banks subject to lateral erosion. Some examples are Prahova, Teleajen, Doftana, Cricovul Sărat, with their most important tributary streams Crasna, Slănic, Vărbilău, Cosmina, Mislea, Purcărul, Bertea, Bucov and so on.

Deep waters generally originate from shallow waters, their chemical content being influenced by the geology of the examined area. There are also plain chlorosodic waters in the Teleajenului Subcarpathians, originating from the eluviation of either salt massifs, or salty deposits (Slănic Prahova, Telega).

The lakes are small-sized, resulting from certain landslides, land settlement, dissolution. Such lakes are encountered at Slănic and Telega, situated in the salt massifs, at shallow depths or on the surface, or they are encountered where the strata have a high content of plasters, where the formation process is complex. We notice that the hydrographical network was, together with other natural factors, an active element in the development process of local human settlements.

The attractiveness of the hydrographical network for the habitat is emphasized, among others, by the fact that numerous settlements are situated along the valleys, on one or several banks, such as Vălcănești, Vărbilău, Telega Villages. When the torrentiality degree of the hydrographical body presents high risks, the river line is avoided, its vicinity being preferred, like in the case of Podenii Vechi or Scorțeni Villages. The presence of the hydrographical network inside the settlement was possible in the case of certain rural settlements, which evolved from several old nuclei (Brebu, Gura Vîtioarei, Olteni, Teișani and others).

Biodiversity, as a development potential for the settlements. Most of the Teleajenului Subcarpathians are situated within the limits of two vegetation sub-floors: one of *Quercus* forests, occupying the external part, with low altitudes, and the beech forests (*Fagus silvatica*) and oak forests (*Quercus robur*, *Quercus petraea*) sub-floor. We encounter an area of overlap at their contact, where mixed *Quercus* and beech forests alternate with *Quercus* forests (especially on the sunny, well drained slopes) and beech forests, occupying especially the shady slopes. We must not omit the presence of the coniferous floor to the North, at the contact with the mountain. Due to the fact that this land is favourable for agricultural cultivation, most of the forests were cleared, with small clusters or isolated oak trees being preserved here and there. However, compact forests were also preserved in several places, being some of the most representative oak forests in the country (Teleajenului Terraces South of Vălenii de Munte or on the Podenilor Hills).

Soil and agriculture. The climate, vegetation and rock are the elements characterizing the types of soil. They also influence their zoning but, under local conditions, azonal soils develop within the limit of the zonal soils (especially under the influence of the rock, water, salts). For example, in the Slănicului Depression, saliferous rocks lead to the presence of Salinas, while Rendzinas appear on plasters.

The most important for the agriculture are the mollic soils and alluvial soils (figure 8), which are suitable for various types of crops: cereals, technical plants, vegetables, and others. cultivated on the river meadows and depressions, while fruit trees and vines are cultivated on the sunny slopes.

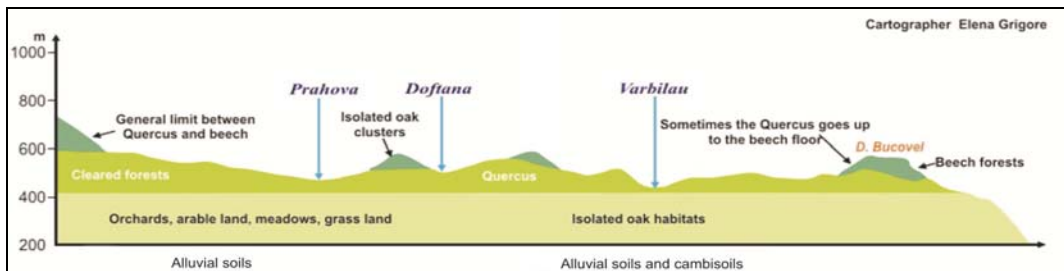


Figure 8. Soil distribution according to the climate and vegetation floor

The productive potential of the soils is low in the Northern area of the Teleajenului Subcarpathians, at the contact with the mountain region, in the regions with lithological complexity which are affected by slope geo-morphological processes. The soils have medium and high potential at the contact with the Southern region (the meadows of Prahova rivers, Păulești area, or Vărbilăului meadow - Coțofenești area and others).

CONCLUSIONS

The Teleajenului Subcarpathians, with varied landforms, represented by depressions, large terrace valleys, and sunny slopes, shelter climate, rich hydrographical network, and others. have a geographical area populated since the oldest times. This is demonstrated by numerous material traces, from the Paleolithic age, others are from Dacian age (tools, adornments, coins, vestiges discovered at Drajna, Slon, Gura Vitoareii, Cerașu, Cetățuia, Valea Humei, Drajna, Coțofenești). (figure 9).

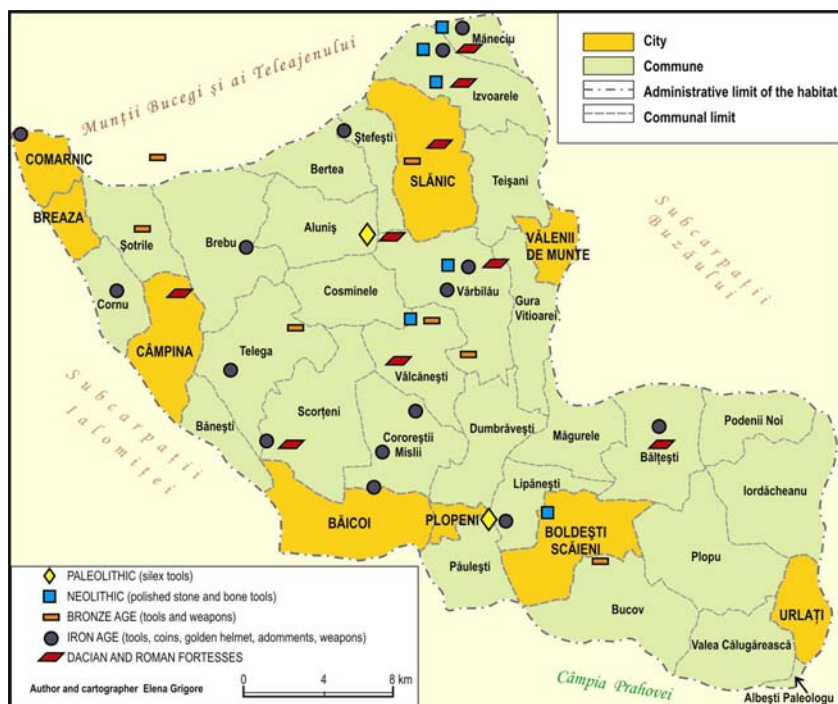


Figure 9. Archaeological vestiges from the Teleajenului Subcarpathians
(Source: after Niculescu, 1981, modified)

The position of the Teleajenului Subcarpathians at the crossing of certain main commercial roads which used to connect Țara Românească with Transylvania and Moldavia, the capitalization of certain important subsoil resources (salt, gas, oil, mineral waters, construction rocks) were all factors determining an intensive population of this geographical area.

The first documentary evidence of the rural settlements in the Teleajenului Subcarpathians are dated back to the year 1331 (when the settlements played the role of fairs and customs, being situated along the commercial roads connecting Ardeal with Țara Românească). Most of the settlements from the Subcarpathian area emerged later on, during the 17th and 18th centuries, as a result of intensified economic exchanges.

The 19th and 20th centuries are characterized by the intensification of handiwork activities, natural resources exploitation, new industrial activities, and others. All these were favourable conditions for the increase in the number of inhabitants, due to the final relocation of the

population from other regions (Transylvania, the Ungureni population) to settlements from the Teleajenului Subcarpathians (Cucu, 1995) but also inside the analyzed Subcarpathian area, from villages to towns (Ploiești, Câmpina, Slănic, Vălenii de Munte and others) (figure 10).

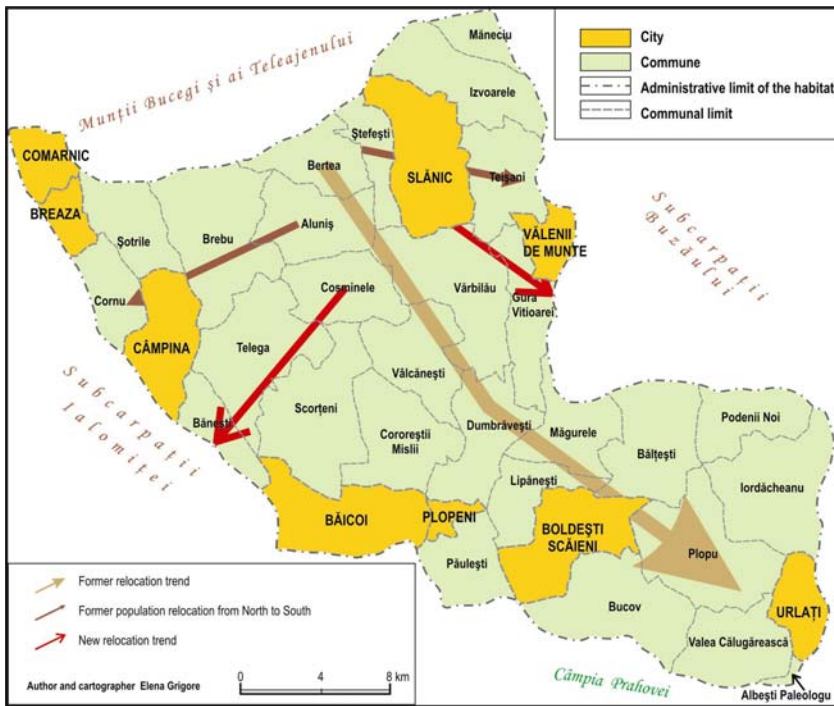


Figure 10. Trends in population relocation in the Teleajenului Subcarpathians

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Submitted:
January 12, 2012

Revised:
March 12, 2012

Accepted and published online
April 12, 2012