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A VIEW ON THE GEOGRAPHICAL SPACE ORGANISATION OF TRASCĂU MOUNTAINS

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ABSTRACT – The geographical space of Trascău Mountains is made up by a series of longitudinal ranges, corridors and plateaus, which are named according to their position within the analysed region: the Western Corridor, the Western Plateau, the Central Corridor, the Central Range, the Eastern Plateau and the Eastern contact area or border. The valleys crossing these longitudinal units create beautiful gorges between depression areas. Most settlements are small and very small, lying along the corridors or the valleys, but some are scattered on the hills. Their importance increases eastwards. Their economic function is changing, from forestry and breeding towards agriculture. The polarizing flows are organized along the main rivers, but there is a need of improving the infrastructure. A model of the Trascău Mountains is presented, and several proposals are made to take the region out of isolation.

Key words: Trascău Mountains, geographical space organisation, Romania.

Geographical space organisation within mountain areas is governed by natural laws, determined by specific climatic, hydrographic and energetic conditions (Duma, 1998), such as:

- the decrease of the thermal potential along with the increase of the altitude of the impact surfaces;
- the increase of annual average rainfall amount together with the altitude;
- the progressive increase of energy consumption with the altitude;
- the increase of the rainfall modelling potential with the altitude;
- the decrease of the degree of favourability of settlement consolidation along with the altitude.

A model is a schematic simplified representation of reality, a pattern. At the same time, the model should generalize and abstract reality, and is usually created for operative purposes: action, prediction or explanation (Brunet, 1980). Brunet classifies spatial models in: general models, regional models, specific models and elementary models (or choremes). From the point of view of this classification, the model of geographical space organisation in Trascău is a specific one. As any other specific model, it is meant to render the spatial structure of only one geographical object. However, the general modelling rules apply: generalization, abstract and inductive-deductive interpretation.

The geographical space of Trascău Mountains is structured by a number of longitudinal ranges and corridors, heading approximately from North to South, locally having also other directions (NE-SV, NNE-SSV). These are crossed by transverse valleys, which polarize the regional flows in straight angle regarding the above-mentioned ranges and corridors. The names of these longitudinal units are given according to their geographical position within the analysed region. The fragmentation density decreases from West towards the East, while the fragmentation depth decreases in the same way.

The Western Corridor (also named Ponor or Întregalde Corridor) represents the limit between the Trascău Mountains to the East, and the Metaliferi and Muntele Mare Mountains to the West. It is dominated by the steep slope of the Ciumerna – Bedeleu – Hâşu limestone and crystalline range to the East. It is also an important convergence area, both hydrographically and from the point of view of the settlements, that have a polarizing role for the surrounding mountain regions.

Popescu-Argeşel (1977) supposes the existence of a longitudinal river along it, which would have unitarily drained the corridor from Palaeogene until the Miocene. Subsequently, it would have been segmented by capture, from its mouth upstream, by rivers that would have headwardly erode from the East (Arieş, Râmeţ, Galda).

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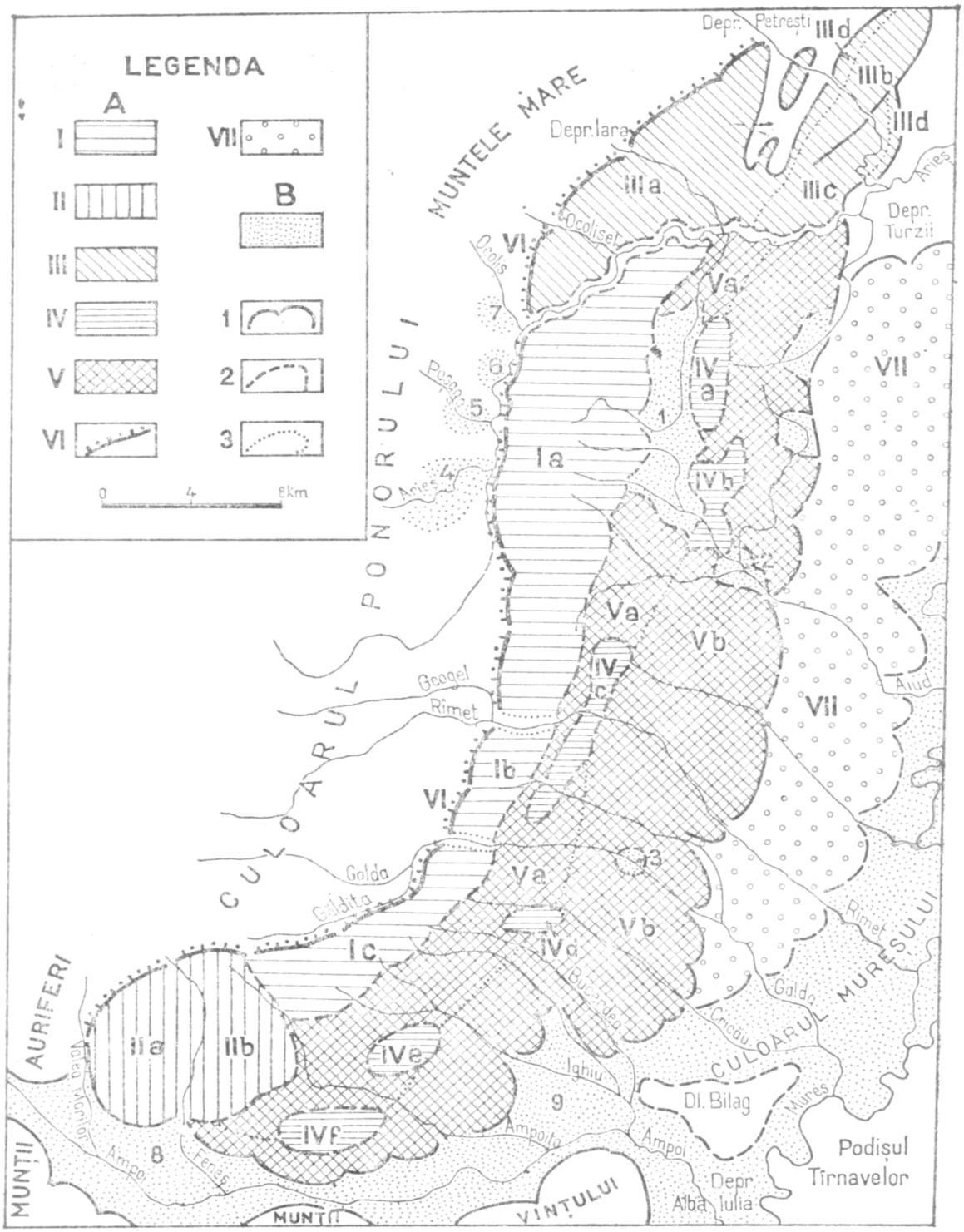

Figure 1. *Map of geomorphological regionalization (after Popescu-Argeşel, 1977)*

A. Mountainous units. I, Ciumerna-Bedeleu unit: a, Bedeleu-Tarcău unit; b, Cetea unit; c, Galda-Ciumerna unit; II, Dâmbău-Corabia unit: a, Dâmbău unit; b, Corabia unit; III Vârfuiata – Culmea Petreştilor unit: a, landforms developed on crystalline rocks; b, landforms developed on limestones and conglomerates; c, landforms developed on ophiolites; d, landforms developed on Tortonian formations; IV Unit of Limestone Isolated Massifs: a, Colţii Trascăului unit; b, Data and Rachiş Massifs unit; c, Pleaşa Râmeţului – Prisaca – Piatra Cetii unit; d, Piatra Craivii unit; e, Piatra Grohotişului unit; f, Dosul Blidarului unit; V

Unit of the long watersheds from the East: a, central unit; b, pediment unit; VI Unit of the Western Scarp; VII Trascău Piedmont unit.

B. *Depression Units: 1. Trascău Depression; 2. Poiana Aiudului Depression; 3. Poiana Gălzii Depression; 4. Sălciua Depression; 5. Poşaga Depression; 6. Lunca Depression; 7. Ocoliş Depression; 8. Zlatna Depression; 9. Ampoi-Ampoiţa Depression.*

1. *Limit of The Trascău Mountains; 2. Limit of relief units; 3. Limit of relief smaller units.*

This opinion is largely accepted, but Cocean (1988) considers that the spring of this river would have been on the Galda – Râmeț watershed, thus not including Găldița. He argues that the aspect of the Întregalde gorges is more mature than that of the Râmeț gorges. Regardless of the way this river might have evolved, the altitudes along the corridor are considerably smaller: 410-430 m on Arieş, 500 m on Râmeț, 570 m on Galda, reaching a maximum of 850 m on the Dealu Geoagiului and 950 m at Brădeşti (Râmeț – Arieş watershed). Considering its origin in the South-West, at the springs of Găldița (1000 m), the difference of altitude compared to the Western Plateau is 300 – 800 m. It is drained by several rivers, the majority flowing towards North or North-East, as the ancient river: Găldița, Galda, Valea Pravului, Valea Poienii, Valea Morilor, Arieşul, and some in the opposite direction: Glicerul, Valea Brădeştilor, Geogelul

Its importance is especially given by the impressive number of settlements: 16, among which four (Întregalde, Sălciua de Jos, Poşaga de Jos, Ocoliş) are commune centres, while other two commune centres (Ponor and Iara) lie in the surroundings, to the West. Most of these settlements are on the valleys: Sfârcea and Necrileşti on Găldița, Întregalde and Modoleşti on Galda, Cheia on Râmeț, Valea Poienii on the homonymous river, Sub Piatră on Valea Morilor, Sălciua de Jos, Poşaga de Jos, Lunca and Ocoliş on Arieş or nearby, Ocolişel on Ocolişel river, Făgetu Ierii on Iara. Three villages lie on watersheds: Dealu Geoagiului and Boțani on Galda-Râmeț watershed, and Brădeşti on Râmeț-Arieş watershed.

The relative isolation and the absence of a unitary infrastructure led to a series of demographic problems. The total population of the 16 villages is only 3,202 inhabitants (in 2002, according to Varga, 2007), compared to 3,640 inhabitants (in 1992), and more than half of them are concentrated in three villages with around 500 inhabitants (Sălciua de Jos, Poşaga de Jos and Ocoliş). The other settlements have usually less than 200 inhabitants and even less than 100 inhabitants, which makes their future existence questionable. Their main feature is given by the scattering of households on slopes and hills, with some tendency of nucleation on the valleys and small depressions. Along the corridor, most of the land is arable, pasture, and hay fields, but the Eastern steep slopes are covered by forests. A number of settlements lie in the neighbourhood of the corridor and have important relations with it: Iara, Surduc, Dumeşti, Vale în Jos, Ponor, După Deal, Onceşti, Mărineşti, Popeşti, Ivăniş.

The corridor may be extended to the Ampoi basin through a col (1100 m), South of Sfârcea, which links the corridor with the upper valley of Feneş (850 m). There are numerous scattered households belonging to the village of Feneş and a dominant arable use of the land. Then, another col (1150 m) relates this to Vâltori valley, where the village of Runc (760 m) lies. All these valleys and cols are considered by Popescu-Argeşel (1977) as the Western limit of the Trascău Mountains in the sector of connection with the Metaliferi Mountains.

The **Western Plateau** represents a well-highlighted morphological alignment, limited to the North (Iara Depression), West (Western Corridor) and South (Zlatna Depression) by steep slopes which sometimes have more than 600 m difference of altitude. The plateau inclines less firmly eastwards, but even here, differences of more than 800 m may appear (between Bedeleu Mountain and the Trascău Depression). Popescu-Argeşel (1977) mentions three morphological units, mainly due to geological and lithological reasons, underlined in specific works (Ianovici and others, 1969). However, from a geographical point of view, there is only one slightly rolling plateau, with small differences due to lithology (Rusu, 2000). In addition, from the point of view of the drainage, the plateau may be divided into several parts between the transverse rivers, as it is not a watershed (there is no main watershed in the Trascău Mountains). The rivers that succeeded to break through the limestone, crystalline and ophiolite barrier are: Arieş with its tributaries Ocolişelul and Iara, Râmeț,

Galda and Feneş. Crossing this hard rock ridge of variable width, they formed impressive gorges, with almost vertical slopes. The explanations for their „success" are various: stream piracy (Popescu-Argeşel, 1977), stream piracy in the case of Arieş, karst piracy in the case of Râmeț and epigenesis in the case of Galda (Cocean, 1988, 2000), while most of the authors think that the valley of Feneş is superimposed. The wild aspect of these gorges indicate their youth, the process of their formation is still undergoing.

The plateau landscape is given by the upper erosion surface, Eocene-Oligocene, first recognized by de Martonne (1922) and renamed afterwards as Ciumerna-Bedeleu surface by Popescu-Argeşel (1977). It cuts alike the limestones, ophiolites and crystalline rocks, but it has its maximal extension in the limestone area, which determined Ianovici and others (1969) to consider it a karst plain.

The altitude of the Western Plateau thus coincides with that of the upper erosion surface and it is higher in the South. North of Arieş, the altitudes on the crystalline rocks vary between 850 and 1000 m (Hâşu 1006 m, Vârfuiata 966 m), enough to dominate the neighboring regions by 300-600 m. The slope processes on deforested cliffs are specific to the crystalline area of the Plateau.

The crystalline is also encountered to the South of Arieş, but the prevalent rocks here are the limestones. There are heights more than 1200 m between Arieş and Galda: Bedeleu 1227 m, Secu 1281 m, and even more than 1300 m South of Galda: Băieşu 1300 m, Dâmbău 1369 m. There is typical unoriented karst relief on limestones, made up by karrens, dolines, uvalas and even caves. South of Galda, the plateau has initially the form of a ridge (Colţii Caprii 1211 m, Dragului 1176 m), but more to the South-West, in Ciumerna, it regains its status as a plateau, reaching the above mentioned maximal altitudes.

The surface drainage is poorly organized, and water shortage is a restrictive factor in determining the human potential of this region. Thus, if the hamlets lie even up to 1200 – 1600 m in other parts of the Apuseni Mountains, given similar morphological conditions, there are no settlements on the Western Plateau of Trascău Mountains. The hamlets prefer the neighbouring corridors, except for the Arieş valley, where two enlargements within the gorges make way for the development of the small villages Vidolm and Lungeşti (189 inhabitants, together, in 2002). They lie on a longitudinal strip that separates the plateau proper and a limestone ridge to the East, made up by a series of isolated heights, comparable to those mentioned above: Ardaşcheia 1250 m, Cornului 1238 m, Curetului 1240 m. Many valleys having the springs on the plateau cross this ridge, giving birth to gorges (Urdaşului, Văii Pietrelor, Bedeleului, Drăgoiului, Pleşii).

The Western Plateau continues South of Ciumerna, over the col from the source of Lunca Meteşului, determined by the presence of Cretaceous Flysch. This part of the plateau is dominated by the heights of Poiana Măgurii 1248 m, Corabia 1307 m, Dâmbău 1369 m, lying on limestones and surrounded by flysch. The river Feneş separates the highest peaks of the mountains: Dâmbău to the West and Corabia to the East.

From the point of view of its position within the space of the Trascău Mountains and also within a larger area, that of the Apuseni Mountains, the Western Plateau represents an important spatial barrier, between the Western Corridor and what is West of it, generally known as Moților Land, on the one hand, and the Central Corridor, the Trascău Piedmont and the Transylvanian Depression (Alba Iulia – Turda Corridor), on the other hand. Thus, it has a character of geographical discontinuity.

Although there are no permanent settlements, lots of sheds, barns, isolated houses, sheepfolds and dwellings belonging to the inhabitants of the neighbouring corridors are found on the plateau. The smoothness of the plateau offered the opportunity of an extensive use of the land, covered mainly by pasture and hay fields. The cliffs limiting the plateau are generally covered by forests, excepting the slopes whose verticality hindered the forest. This situation is encountered especially in the case of South-oriented cliffs, along the gorges.

The Central Corridor may be recognized from the Borzeşti Depression in the North until the Zlatna Depression, in the South, across valleys, depressions, and cols lying between the Western Plateau and the Central Range. Its development on less competent rocks (flysch) compared to the surrounding limestones might lead to the statement that this corridor is the result of differentiated

erosion. Popescu-Argeşel (1977) argues for its existence in the Northern half, where its presence in the landscape is more obvious. There was a unitary drainage from the beginning of the Tertiary until the Pannonian, when the Arieş and the Aiud would have captured the river along the corridor. Its source would have had its springs below the Pleaşa Râmeţului, it would have drained the Trascău Depression, and it would have reached the Borzeşti Depression. Considering the origin of this river as the Inzel spring, the Central Corridor would include thus the entire Trascău Depression. The depression is large, having 11 km in length and 4 km maximum width; it is clearly limited by high surrounding ranges, being oriented North-South. The drainage networks belong to the Trascău basin in the Northern half and to the Aiud basin in the Southern half. The lowest parts of the depression lie at about 425 m. The Central Corridor continues mainly on the same direction (SSW-NNE) to Buru, and then along the Borzeşti Gulf to Tureni, along the Negoteasa Valley, whose spring lies at about 570 m near Tureni and clearly traces the Western limit of the Petreşti Plateau.

The Central Corridor may be also highlighted South of the Inzel spring. The Uza Valley disposition is exactly along it, heading South, while a larger river bed on the Râmeţ valley between the Râmeţ Gorge and Mănăstirii Gorge favoured the establishment of dwellings belonging to Cheia village. Southwards, the watershed between Râmeţ and Galda valleys does not reach 1000 m, and at the same time, it is easily noticeable that the disposition of certain tributaries of the above-mentioned rivers is exactly along the corridor. The same situation, as described in the case of the Râmeţ valley, is encountered on the Galda valley. This time, the dwellings belong to the villagers of Poiana Galdei, and to Roica camp.

From there to the South and South-West, one can remark the same alignment of cols and larger river beds in the valleys along the structure we call the Central Corridor. It is also emphasized by the human factor: the presence of numerous households, barns, dwellings, sheds. Nowhere the altitude passes 1000 m, and in most of the cases, the altitude differences in comparison with the Western Plateau and the Central Range are 150 to 200 m. The Central Corridor is obvious upstream the Ampoiţa Gorges, where a small mountain depression was formed. Its space is used by the villages of Lunca Ampoiţei and Lunca Meteşului; the name „lunca” (= flood plain) speaks about the geographical reality of this area. The centre of this erosional depression lies at about 600 m.

Depression in its entirety. This large depression is drained by the Ampoi and its tributaries and it has a length of 15 km and a maximum width of 8 km.

One can understand from what is above-stated that this Central Corridor has a spatial unfolding which is parallel to the main mountain units of the Trascău Mountains and it is more obviously structured in its Northern and Southern extremities, where it is made up by large depression areas (Borzeşti and Trascău Depressions in the North, Lunca Ampoiţei and Zlatna Depressions in the South). In its central part, it is inserted in the shape of cols and flood plains on the main valleys, and valleys created by their tributaries. It never reaches 1000 m.

Its geographical unity may be debatable because of its high fragmentation determined by the valleys coming from the Western Plateau. In most of the cases, these valleys are themselves polarizing axes attracting the settlements of the Central Corridor. The total population of the Central Corridor is more than 11,500 inhabitants (in 2002, according to Varga, 2007), distributed among 25 settlements, out of which Zlatna, Feneş and Tureni have, together, more than half of the inhabitants. Zlatna is a small industrial town, while Tureni, Petreştii de Jos and Rimetea are commune seats. Most of the settlements lie in the depressions: Zlatna town and the villages Podul lui Paul, Feneş, Suseni, Pătrângeni, Valea Mică, Galaţi, Presaca Ampoiului in Zlatna Depression, Lunca Meteşului and Lunca Ampoiţei in Lunca Ampoiţei Depression, Rimetea, Colţeşti, Vălişoara and Izvoarele in Trascău Depression, Borzeşti, Petreştii de Jos, Petreştii de Sus and Petreştii de Mijloc in Borzeşti Depression. Other settlements are to be found at the crossroads, where the Corridor meets the main crossing valleys: Buru on Arieş, Tecşeşti on Cetea, or tributaries of these valleys: Valea Inzelului and Valea Uzei on the homonymous creeks, Olteni on Neau; eventually, Tureni lies at the contact with the Transylvanian Depression and Floreşti on the contact with the Western Plateau.

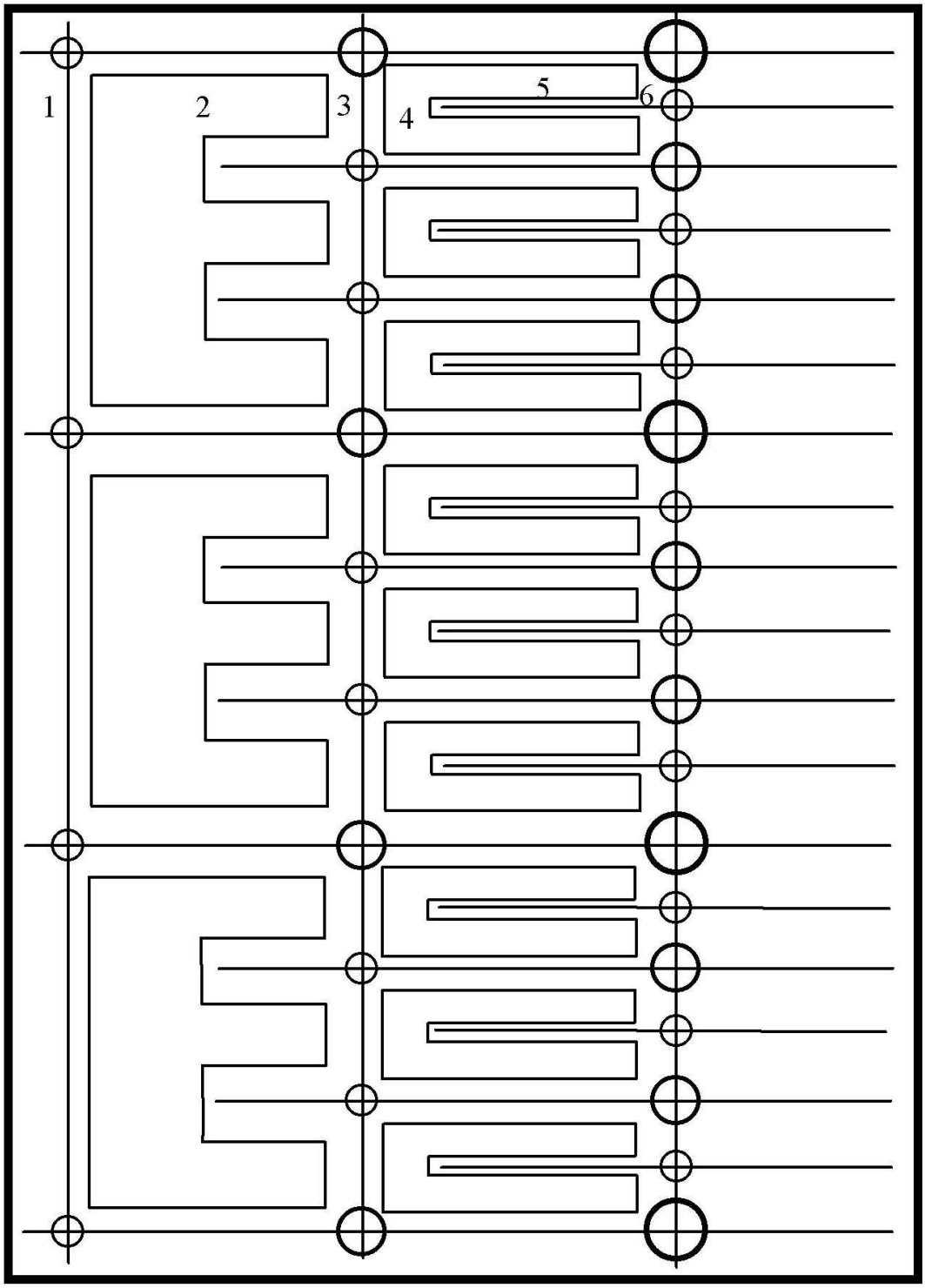

Figure. 2. *The model of The Trascău Mountains spatial organisation (modified after Rusu, 2000)*
1. The Western Corridor; 2. The Western Plateau; 3. The Central Corridor; 4. The Central Range; 5. The Eastern Plateau; 6. The Eastern contact area.

Except for some villages and the town of Zlatna, the demographic potential of these villages is very low. They have less than 500 inhabitants and an aged demographic structure. The villages have usually a compact structure on the depression bed (72 % of the villages), but sometimes their

households are scattered on the surrounding hills. There is poor infrastructure along the corridor, as most of the communication lines are oriented crosswise. The arable lands are predominant in the depressions, where the main feature is given by the numerous anthropogenic terraces.

West of this depression, a col lying at 890 m links it to Bibaț valley, a tributary of the Ampoi, and thus to Zlatna Depression. The orientation of the corridor becomes NE-SW including the Zlatna Depression.

The Central Range of the Trascău Mountains represents a longitudinal alignment of ridges and peaks, deeply fragmented by transverse rivers whose valleys deepened through epigenesis, most of the times resulting in the formation of spectacular gorges.

If Ianovici and others (1969) consider that the limestone klipps, seen as olistholites, have a random position within the Cretaceous flysch, I. Popescu-Argeşel (1977) has given the name of „isolated limestone massifs" to this unit, without including the Petreşti Range, while Valeria Velcea and Al. Savu (1982) talk about an alignment of ridges and peaks, exactly the one which is presented here.

The Northern part is formed by the Petreşti Range, having an altitude of about 700 m (Bisericii Peak, 793 m), cut by the Turzii Gorge, to the North of the Arieş, and the Piatra Secuiului Range (1122 m), South of the Arieş. In between, the Arieş river has created a canyon in the sector of minimum width of the limestones (downstream from Buru). Piatra Secuiului, together with Colții Trascăului lie at more than 600 m above the Trascău Depression, to which is linked by an exceptional limestone scarp, with scree on its base. The Central Range continues to the South by the Massifs of Data (884 m) and Rachiş (788 m), the latter cut by the Aiudului Gorge. There is a lower segment of the Range between the Rachiş Massif and Pleaşa Râmețului, due to the absence of limestones, but the valleys of Inzel and Neaului present a narrowing of the river bed, and Dealul Olteanului (1023 m) appears as a monadnock.

The central part is a typical ridge: Pleaşa Peak (1250 m) – Prisecii (1150 m) – Piatra Cetii (1233 m), limited by high scarps determined by differential erosion. The ridge is crossed by the rivers Râmeț and Cetea, which form the Mănăstirii Gorge and the Tecşeşti Gorge respectively. They are very short, because the ridge is very narrow.

Between the Galda and Ighiu valleys, the Central Range may be followed exclusively along a number of isolated peaks, which are however very visible because of their surrounding vertical scarps: Piatra Bulzului (948 m) – Piatra Craivii (1078 m) – Stânii (1111 m), and the transverse valleys (Cricăul, Bucerdea, Țelna) have narrower river beds when they cross the Range.

The Southern part, again unitary, is developed between the Ighiu and Ampoi valleys. It is formed by the ridge Piatra Grohotişului (1130 m) – Padeşului (1015 m) – Dosul Blidarului (1094 m) and it continues even South of the Ampoi, in Piatra Corbului – Vârful Mare (1010 m). Two transverse rivers form gorges in this sector: Ampoița, downstream from the Lunca Ampoiței Depression, and Ampoi – between Presaca Ampoiului and Poiana Ampoiului.

Overall, the Central Range is made up by erosion outliers which, in many cases, reach comparable altitudes to those of the Western Plateau, so they can be connected to the Ciumerna - Bedeleu level. Its eastward position imposed a deepening of the river network, which determined the formation of scarps at the contact between limestones and less competent rocks. These scarps are of no use because of the intense weathering processes that take place. Forests cover the less inclined slopes. In some cases, the ridge presents in its upper part a plateau-like shape, covered by grass, used for grazing. In spring, one can admire the daffodils on Piatra Cetii.

Tourism is the only profitable economic activity in and around the Central Ridge, due to its attractiveness. Surrounded by lower regions and highly fragmented by deep valleys, its degree of accessibility is high, and most of its gorges are accompanied by paths or even roads, and railway, in the case of Ampoi. The existence of some human-related tourist objectives of national importance, such as the Râmeț Monastery, and the neighbourhood of several cities (Turda, for the Turzii Gorge, Aiud, for the Aiud Gorge, Teiuş, for the Mănăstirii Gorge, Alba Iulia, for the Ampoiței Gorge) are enough reasons and strengths for the development of an efficient and sustainable tourism.

The Eastern Plateau is developed, as its name suggests, to the East of the Central Ridge, on less competent rocks – ophiolites in the North and South, and Cretaceous flysch in the central part of the area. The altitudes are lower, seldom reaching 900 m. There are isolated limestone outcrops, such as Pietrele Ampoiței, Gălzii Gorge and the most spectacular Cetii Gorge. Its smoothness at the watershed level is due to the secondary erosion surface, named Râmeț – Ponor by Popescu-Argeşel (1977), the same with Mărişel or Arieşului Platform (de Martonne, 1922), dating from the Miocene.

North of Arieş, the Eastern Plateau is relatively fragmented and cut by the Tur and Hăşdate valleys, which create gorges in the ophiolites. However, South of Arieş, as far as the Ampoi valley, it is made up by a series of long parallel watersheds, which gradually descend towards the outskirts of the massif. Initially, the platform was unitary and relatively smooth, its present appearance being due to a number of pedimentation processes and the fragmentation of the river network. The maximal development of the plateau is found between the Inzel and Galda rivers, where it has its most specific tentacle shape and similar altitudes. Because of its smoothness, it is used in this section by the Aiud – Mogoş county road, and many villages belonging to Râmeț commune are scattered on the plateau. The altitude of the plateau is generally 700 – 800 m, a bit higher to the West and a bit lower in the East, and it reaches only about 500 m North of Arieş.

The degree of afforestation of the Eastern Plateau is higher than in the case of the other longitudinal units. The oak (*Quercus petraea*) and beech (*Fagus sylvatica*) forests cover even the watersheds. The land uses are more diverse near the settlements, hay fields, and grazing land dominating the slopes and watersheds. Arable lands appear towards the Eastern edge of the plateau, especially in the valleys and small depressions (Poiana Aiudului, Poiana Galdei, Poiana Ampoiului – Meteş), where one can admire human-made agricultural terraces and even vineyards and orchards. Limestones are excavated at Poiana Aiudului for the Ocna Mureş Works of soda chloride products.

The total number of settlements of the Eastern Plateau is 19, out of which two commune centres (Râmeț and Meteş), but all except one (Măgina) have less than 500 inhabitants. The total population is 3,015 (in 2002). The most developed villages are those on the main rivers: Poiana Aiudului, Poiana Galdei, Poiana Ampoiului, Meteş, Văleni (the latest three on Ampoi). Several small villages lie also along the valleys (Rachiş, Valea Mănăstirii, Măgina, Remetea), but most of the villages have their households scattered on the watersheds and slopes: Râmeț, Vlădeşti, Cotorăşti, Valea Făgetului between Neau and Râmeț, Fața Pietrii between Râmeț and Cetea rivers, Răicani between Cetea and Galda, Zăgriş and Lupşeni between Galda and Tibru, Isca between Ampoița and Ampoi, Pietroasa – East of Colții Trascăului. These are typical plateau settlements, having a high degree of dispersion, with the exception of Pietroasa. All of them have important demographic problems because of aging and massive emigration. Only some of them have more than 100 inhabitants. Unlike the villages lying along the rivers, which are well connected (except for Rachiş) to the towns and cities of the Mureş Corridor, the plateau hamlets suffer a disintegration process which must be stopped by any means for their undoubted cultural and ethnographical value. The neighbourhood of several important tourist sites might be a premise for their future development.

The Eastern contact area represents a longitudinal strip between the Trascău mountain space and the Trascău Piedmont (in the South), the Măhăceni Plateau and Turda – Câmpia Turzii Depression (in the North). It has a variable width and it is marked by an alignment of contact settlements, and a change of the river flow direction, from transverse (West to East) to longitudinal (North to South), as in the cases of Vălenilor and Cetea rivers. However, the biggest changes are concerning the land use structure. The place of forests, meadows, and grazing land is taken by arable land, which becomes predominant. The favourably exposed slopes are used as vineyards, while the orchards are more visible in the landscape.

The 20 settlements lying along the Eastern contact area are the beneficiaries of both the mountain space to the West and the plateaus, hills and depressions to the East. Their land use structure is quite balanced. Four of them are commune centres: Sănduleşti, Moldoveneşti, Livezile and Cricău.

Figure 3. *General map of The Trascău Mountains (after Măhăra and Popescu-Argeşel, 1993)*

Except for several villages which lie on the lower slopes of the contact hills or on secondary creeks (Sănduleşti, Cheia, Podeni, Geomal), the vast majority of the settlements are organized straight along the main crossing valleys at their exit from the mountains: Copăceni on Tur valley, Cornești and Moldoveneşti on the Arieş terraces, Livezile on Aiud valley, Gârbova de Sus on Gârbova valley, Geoagiu de Sus on Râmeț, Cetea on the homonymous river, Galda de Sus on Galda, Tibru, Cricău, Craiva, Buceredea Vinoasă, Ampoița and Țelna on the homonymous creeks, Ighiel on Ighiu river and Tăuți on Ampoi.

From a demographic point of view, some of these villages have a bit more than 1,000 inhabitants (Cricău, Copăceni, Moldoveneşti, Țelna) and most of the others have between 500 and 1,000 inhabitants, which is much more than the usual number for the villages of the mountains proper.

The number of inhabitants amounts to 14,905 (in 2002, according to Varga, 2007), only a bit less than in 1992. In fact, the population of several villages increased since then: Sănduleşti, Cheia, Copăceni, Cornești (all of them near Turda), Cricău, Tăuți (near Alba Iulia), as a consequence of the increasing suburbanization. However, many of these settlements are dominated (in rank and number of inhabitants) by others, not far away to the East, at the contact of the Piedmont with the Mureş Corridor, along the Corridor or in the Turda – Câmpia Turzii Depression: Mihai Viteazu and the conurbation Turda – Câmpia Turzii in the North, Aiud and Teiuş towns and the communes Stremț and Galda de Jos in the centre, the villages Ighiu and Şard and especially Alba Iulia City in the South.

The density of fragmentation increases from West to East, having the Western Plateau as a reference, while the fragmentation depth decreases in the same direction.

The valleys crossing the Trascău Mountains may be classified according to their importance. A first category is made up by those valleys whose spring is outside The Trascău Mountains, such as the Arieş with its left tributaries the Ocolişel, Iara and Hăşdate, the Râmeț, Galda and Feneş. Among these, only some (the Arieş, Râmeț, Galda, and Feneş, to which one may add the Ampoi) cross the mountains entirely, through all the above-mentioned longitudinal units. Thus, they are important axes of flow concentration and polarisation between the so-called „Moților Land", in its wider sense, to the West, and the Alba Iulia – Turda Corridor, to the East. But, because of the gorge sector, the Râmeț valley is not followed by a road upstream, while the Feneş valley has a reduced significance due to the nearby location of the the Ampoi valley, which goes around the mountain structures of Trascău, having a quasi-longitudinal nature.

Unlike others, the Arieş river has a large basin, covering the Găina Massif, Southern Bihor Mountains, Muntele Mare and Metaliferi Mountains. It drains a much larger region, becoming an important communication and demographic axis. However, like in the case of the Ampoi river, its peripheral position within the Trascău Mountains creates a number of drawbacks concerning the capitalization of the human potential of this area. Thus, a reinforcement of the central axes, the Râmeț and Galda rivers, is necessary. New modern roads should be built and tourism should be developed, without endangering the natural beauty of the gorges.

The „domestic" rivers, those who have their springs within the Trascău Mountains, follow the general rule, crossing transversely the longitudinal units, from West to East or North-West towards South-East. There are few exceptions, especially in the Central Corridor and Eastern contact area, where several creeks flow along these units (the upper stream of the Aiud and Inzel, the Trascău, Petrid, Văleni, and Rachiş). Several small tributaries of the main rivers are also oriented longitudinally.

The „domestic" rivers may be classified according to their place of origin: those coming from the Western Plateau and crossing all the other longitudinal units towards East are more important than the shorter streams, having their spring in the Central Ridge or the Eastern Plateau. Among the former, one may mention the Borzeşti, Aiud, Cetea, Cricău, Bucerdea, Ighiu, and Ampoița. The only direct tributary of the Mureş is the Aiud valley. These valleys are usually followed by roads (mostly poor local roads, used for forestry reasons), but not too far upstream.

A hierarchization of the settlements is easily noticeable, according to their position along the valleys: the rank of the settlement is higher downstream. Each village polarizes the entire upper

drainage basin and is in its turn polarized by another village downstream. Therefore, it is easy to predict that cities are to be found along Alba Iulia – Turda Corridor, where the valleys lose their morphological characteristics and are collected by the Mureş. Such centres are: Turda and Câmpia Turzii for the Arieş basin, Aiud for the Aiud and Gârbova basins, Teiuş for the Râmeţ and Galda basins and Alba Iulia for the Ampoi basin. It must be also said that Alba Iulia and Cluj-Napoca are county seats and they polarize the entire region at a higher hierarchical level.

The rule concerning the rank of the settlements is specific to the „domestic" rivers, because local centres appear on the upper stream of the main, peripheral valleys – towns like Zlatna on the Ampoi or Baia de Arieş on the Arieş.

It is not just the rank of the settlements that changes downstream, but also their function. Indeed, forestry and breeding are the main activities of the villagers living upstream in settlements such as Întregalde, Râmeţ, Valea Inzelului, Tecşeşti, Poiana Galdei, Valea Poienii. Settlements having a mixed agricultural function, breeding and cultivation of the land, are to be found eastwards: Galda de Sus, Geoagiu de Sus, Vălişoara, Cetea, Ighiel, Craiva, Tibru. Land is covered by orchards, vineyards or crop fields as one reaches the Eastern contact area, at Moldoveneşti, Galda de Jos, Stremţ, Cricău, Bucerdea Vinoasă, Ighiu, Livezile.

In the end, a **number of measures** are proposed to be taken into account regarding the future planning and development of this region:

- the improvement, rehabilitation and modernization of the present means of communication, including the introduction of a tourist train along the Arieş valley;
- the building of a new road from Cluj-Napoca to Zlatna along the Western Corridor (Iara – Ocolişel - Ocoliş – Sălciua – Brădeşti – Cheia – Dealu Geoagiului – Întregalde – Sfârcea – Feneş – Zlatna), which might open the perspective of a modern mass tourism in the area, due to the better access to some important tourist attractions, such as Huda lui Papară Cave, Vânătara sinkhole, Bedeleu escarpment, Râmeţ, Întregalde and Găldiţa Gorges, Ciumerna Plateau, Feneş Gorges;
- the reinforcement of Întregalde commune within the Western Corridor;
- the building of modern roads along several transverse valleys: Ampoiţa, Lunca Meteşului and Ighiu, to better capitalize the presence of Ighiel Lake, to encourage private initiatives in tourism and to help the creation of secondary homes for the urban dwellers of Alba Iulia and Zlatna on the upper streams of the Ighiel, Ampoiţa and Feneş;
- the building of modern roads in the Northern and Southern parts of the Central Corridor: Tureni – Petreştii de Jos – Borzeşti – Buru and Lunca Ampoiţei – Lunca Meteşului – Zlatna;
- the introduction of natural gas pipelines in as many settlements as possible to stop the abusive and out-of-control clearing and deforestation;
- the fostering of private initiative in order to transform uninhabited or abandoned plateau households or barns into tourist chalets, located at a maximum of six hours on foot from one to the other;
- the consolidation of rural tourism by making the communities aware of the tourist potential of the area;
- the professional reconversion of the former workers of Zlatna area and the setting up of a strategy for the environmental conservation and protection of the entire region;
- the design of special protection programmes for the most delicate natural beauties: gorges, scarps, caves, and the setting up of natural reserves;
- the maintenance of way marking along the present footpaths and the increase in number of marked paths;
- the opening of new climbing routes on the steep scarps within the gorges;
- the creation of a commission made up by volunteers interested in the sustainable development of the Trascău Mountains, having branches in all nearby cities – Alba Iulia, Aiud, Turda, Teiuş, Zlatna, and in the commune centres within the mountains: Rimetea, Întregalde, Râmeţ, Meteş, Cricău. This commission should cooperate with the decision factors at county and local level, in

order to apply measures established by agreement between all the parties involved in the development of the area.

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