

**CONSTANTIN PREOTEASA
CIPRIAN - DORIN NICOLA
- editors -**

**CUCUTENI CULTURE
WITHIN THE EUROPEAN
NEO-ENEOLITHIC CONTEXT**

IN MEMORIAM
Dr. DAN MONAH

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Dr. GHEORGHE DUMITROAIA

**PIATRA - NEAMȚ
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**CUCUTENI CULTURE
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NEO-ENEOLITHIC CONTEXT**

Proceedings of the International Colloquium

„CUCUTENI – 130”

15-17 October 2014, Piatra-Neamţ, Romania

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THE DYNAMICS OF PRECUCUTENI AND CUCUTENI HABITAT OF THE BAHLUIEȚ BASIN (TÂRGU FRUMOS MICROREGION)

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Sergiu-Constantin Enea,
Radu Gabriel Pîrnău

Keywords: Chalcolithic, Precucuteni, Cucuteni, Bahluiet hydrographic basin, Târgu Frumos microregion, habitat, landscape archaeology.

Abstract

The Cucuteni-Trypillian habitat is relatively well defined from a general perspective, but there is a very scarce literature that details the microregional research. In the present study, the authors present several viewpoints related to the local natural conditions during Chalcolithic and the evolution and dynamics of the Cucuteni habitat in the Târgu Frumos microregion. Located in the western half of the Bahluiet hydrographic basin and in the eastern part of the Ruginoasa-Strunga Saddle, the region or the „Gate of Târgu Frumos” (Victor Tufescu) is one of the well researched microregions as regards the Cucuteni culture, both by systematic excavations (Târgu Frumos-„Baza Pătule”, Cucuteni-„Cetățuie” and „Dâmbul Morii”, Ruginoasa-„Dealul Drăghici”, Hăbășești-„Holm”, Fedeleșeni-„Dealul Cânepăriei”, Costești-„Cier”, Giurgești-„Dealul Mănăstirii”, Bălțați-„Dealul Mândra”) as well as surface pedestrian field surveys. Being a contact microregion between the Moldavian Tableland’s subunits (SE of the Suceava Tableland, NW of the Central Moldavian Tableland, WNW of the Moldavian Plain) and the middle basins of Siret and Prut rivers, it was intensively inhabited during the Cucuteni millennium (18 sites Precucuteni, 86 sites Cucuteni with 103 occupation layers, and 11 sites Horodiștea-Erbiceni, within an ca. 300 km² area). The corroboration, analysis and integrated interpretation of the archaeological data with the landscape archaeology data and the digital elevation model (DEM) within GIS, together with the results obtained from the interdisciplinary investigations allowed, directly or by comparison, the development of certain modeling and reconstructions of the Pre- and Protohistoric landscape / ecosystem evolution, thereby facilitating the coherent understanding of the Cucutenian habitat of the Middle and Late Atlantic.

Introduction

The Cucuteni habitat as a whole (as the Trypillian one, through affinity, extension and complementary) is relatively well researched in a series of general and specific papers, micro- and macroregional repertoires (Passek, 1961; Chernysh, 1962; Zaharia *et alii*, 1970; Marinescu-Bîlcu, 1976, p. 55-65; 1997, p. 166-175; Zbenovich, 1974; 1989; 1996; Dergachev, 1980; 1993, p. 101-118; Markevich, 1981; Vinogradova, 1983; Monah, Cucuș, 1985; Monah, 1992, p. 391-406; László, 1993, p. 24-50; Sorochin, 1993, p. 69-85; 1997, p. 7-81; Gusev, 1995; Popovici, 2000, Bodean, 2001; Shmagli, 2001; Videyko, 2002; Văleanu, 2003; Chitic, 2008, p. 262-315; Lazarovici, 2008, p. 239-262; Ursulescu, 2008, p. 207-238; Preoteasa, 2009, p. 105-118; 2015, p. 111-130; Garvăn, 2013; Vasilache, 2013, p. 125-132; Ursulescu, Cotiugă, 2014, p. 201-230)¹, marking out, either more cautiously, or enthusiastically, some of the main general features, as well as the similarities and differences to the occupation types / patterns of contemporary civilizations that were nearest or farthest from it. In many general papers, different size areas are assumed as being occupied by the Cucuteni communities, inventories / repertoires of sites that contain data on 1000 to 3000 settlements are presented, hypothetical „vital spaces” for macro-communities, microcommunities and individuals are distributed and statistics are made, unfortunately without sufficient samples and reference data, all being interpreted in the light of the modern man’s needs.

Nevertheless, there are very few papers concerned with the microregional research of the Cucuteni habitat, which are the only able to contribute to obtain detailed images, significantly closer to the realities of the past.

Objectives

Under these circumstances, by bringing together published and some unpublished information, we herein aim to present our reflections related to the local natural conditions of the Chalcolithic period, the evolution and dynamics of the Cucuteni habitat in the Târgu Frumos microregion. The region or „The Gate of Târgu Frumos” (Tufescu, 1940, p. 329-416) is located in the western half of the Bahluiet hydrographic basin and in the eastern part of the Ruginoasa - Strunga Saddle. This contact microregion was intensively inhabited during the Cucuteni millennium and is relatively well researched from an archaeological point of view, giving us the possibility, by the corroboration, analysis and integrated interpretation of the archaeological data with the landscape archaeology data and the digital elevation model (*DEM*) within *GIS*, together with the results obtained from the interdisciplinary investigations, to develop certain modeling and reconstructions of the Pre- and Protohistoric landscape / ecosystem evolution in order to facilitate the rational knowledge, understanding and reconstruction of the Cucuteni habitat of the Middle and Late Atlantic.

Brief history of research

As shown above, the region or „The Gate of Târgu Frumos” is well known in the archaeological literature by the high number of indexed and investigated Cucuteni sites, the scholars’ efforts for their investigation coinciding to a great extend with the progress of this

¹ These papers contain the detailed bibliography of the discoveries related to the Cucuteni and Trypillian habitat.

civilization historiography, during more than 130 years that have passed since the eponymous site was discovered. In a history of research brief reminder, we could highlight the contributions made to the study of the Târgu Frumos-Baza Pătule, Cucuteni / Băiceni-Cetățuie și Dâmbul Morii, Ruginoasa-Colina / Dealul Drăghici, Hăbășești-Holm, Fedeleșeni-Dealul Cânepăriei, Costești-Cier, Giurgești-Dealul Mănăstirii, Bălțați-Dealul Mândra settlements (Schmidt, 1932; Dumitrescu, 1933, p. 56-87; Dumitrescu *et alii*, 1954; Mihai, Boghian, 1985, p. 429-452; Boghian, Mihai, 1987, p. 313-324; Boghian, 1995, p. 195-203; 1997, p. 63-74; 2004; Ursulescu, Boghian, 1996, p. 38-73; Ursulescu, Boghian, 1998, p. 13-42; Ursulescu *et alii*, 2002 a, p. 29-54; 2002 b, p. 101-130; 2003, p. 27-40; 2005, p. 217-260; 2006, p. 3-23; Dinu, 2003, p. 75-96; 2006, p. 31-56; Petrescu-Dîmbovița, Văleanu, 2004; Ursulescu, 2009; Lazarovici, Lazarovici, 2012; Boghian *et alii*, 2014)².

Unfortunately, some of the archaeological excavations from various periods of time remained unpublished, depriving us of important data on the characteristics of the Cucuteni occupations in the concerned sites (Fedeleșeni-Dealul Cânepăriei, Cucuteni / Băiceni-Dâmbul Morii).

Also, particularly important for an accurate radiography of the Chalcolithic occupation in the Târgu Frumos region are the archaeological repertoires made out over time, each with its merits, even if they reflect the field research level from the period they were conducted and the documentation drawn up (Zaharia *et alii*, 1970; Chirica, Tanasachi 1985; Boghian, 1999; 2004; Văleanu, 2003).

At the same time, it should be noticed the scientific investigations conducted in order to achieve the thorough knowledge of the Bahluiet basin's geographical conditions, the morphometric (*DEM*) and *GIS* modeling, the noninvasive investigations (magnetometry, *GPR*, aerial photography), the attempts to explain their relationships with the Precucuteni and Cucuteni communities' habitat, as well as the monitoring of the hydrogeomorphological risks faced by the archaeological sites (Micle *et alii*, 2010, p. 23-37; Nicu *et alii*, 2011, p. 71-83; 2012, p. 204-207; Asăndulesei, 2012; 2014 a, p. 69-90; 2014 b, p. 90-101; Asăndulesei *et alii*, 2012, p. 444; Brigand *et alii*, 2012, p. 5-32; 2014, p. 89-106; Nicu, Miha-Pintilie, 2012, p. 15-22; Romanescu *et alii*, 2012, p. 953-966; Brigand, Weller, 2013, p. 195-207; Nicu, 2013; Romanescu, Nicu, 2014, p. 509-523), which contribute to a more correct understanding of the complex relations between the geographical environment and the Chalcolithic communities³.

The environment of the Târgu Frumos microregion / Geographical setting

The general landscape of the Târgu Frumos region is part of the geographical subunit called Ruginoasa - Strunga Saddle (*The Gate of Târgu Frumos*), which is a microregion placed approximately in the center of the area between the Carpathian

² In these papers, detailed data on the history of research and the bibliography of the Chalcolithic discoveries from the reference region can be found.

³ D. Boghian is grateful to his younger colleagues from the Arheoinvest Interdisciplinary Research Platform, which, through new investigations and *GIS* digital elevation model, confirmed / validated / reinforced many of the observations and assumptions made in his PhD thesis *The Cucuteni Culture in the Bahlui Basin*, „Alexandru Ioan Cuza” University of Iași, 1999, published under the title *Comunitățile cucuteniene din Bazinul Bahluiului*, Suceava, 2004, including the repertory of the Cucuteni sites (even if, incidentally, some of the sites have not been identified in the field).

Mountains and the Prut river, at the contact between Dealul Mare / Hârlău (SE of the Suceava Tableland) and the Central Moldavian Tableland (fig. 1, 2), forming in the NE and E an „amphitheater” with a large opening to the south and south-east, towards the Central Moldavian Tableland, and to the east, towards the wavy Moldavian Plain. It is NNW-SSE and V-E crossed by the Bahluiet upper and middle course, showing a hilly relief and an altitude below 300 m. That is why, quite rightly, V. Tufescu considered that ... *The Ruginoasa Saddle seems rather a wing of Dealul Mare leaning slightly to the SE ...*” (Tufescu, 1937, p. 59).

Being a hilly erosion saddle, the Ruginoasa - Strunga Saddle is characterized by plateaus and large and low interfluvial areas, NW-SE monoclinally oriented, fragmented and carved into softer, loamy rocks (Şandru *et alii*, 1972, p. 24-30; Băcăuanu *et alii*, 1981, p. 264, 265; Gheorghiu, Lupu-Bratiloveanu, 1992, p. 460-462; Boghian, 2004, p. 49, 50; Minea, 2012, p. 29, 30), generally with altitudes between 150 and 175 m (Alexa-Angheluş, 2006, p. 17), (fig. 2, 5).

In terms of geological configuration, the Ruginoasa - Strunga Saddle belongs to the western part of the Moldavian Platform, which is a component of the East-European Platform, the outcropping deposits being typical of the Basarabian (Middle Sarmatian, ca. 12-11 Ma). They consist of a sequence of clays, marlstones with sand alternation and thin horizons of limy sandstone and oolitic limestone (fig. 4), visible in some natural or anthropic openings (Hărmăneştilor Valley: *the upper oolitic limestone* of Hărmăneşti; at Stroieşti: *Osoi-Pietrărie*; at Băiceni / Cucuteni: *Cetăţuia* and within the Broscăria-Laiu structural Platform: at Ruginoasa-Colina (Dealul) *Drăghici*; to SSE of Ruginoasa, on the Haina and Criveşti brooks: *the oolitic sandstone of Criveşti*, the crossed layers of Găureana and the former quarry from the Hainei Valley; on the Bahluiet upper course: the eastern slope of the Pietrişul Hill; on the valley of Cotoc / Chetrosu / Păscănia / Bărbăteşti brook, at Bărbăteşti and Giurgeşti, at 270 m altitude (Foetterle, 1870, p. 319; Cobălcescu, 1883, p. 36-39, fig. 9; Tufescu, 1937, fig. 3, 4; Macarovici, Turculeţ, 1956, p. 288-291; Lazarovici *et alii*, 2012, p. 13, 14; Minea, 2012, p. 20-22; Juravle, 2013, p. 18, 19, fig. 7; Boghian *et alii*, 2014 a, p. 574, 575, fig. 3.1; 2014 b, p. 12, 13). Towards south and east, up to Târgu Frumos and towards Iaşi, the Basarabian limestone facies becomes clayey.

The sculptural plateaus located immediately to the north and further, to the east of Târgu Frumos, in the Moldavian Plain and the Bahluiet - Valea Oii interfluvial areas have a Quaternary geological structure (Pleistocene QP3), while the lowlands on the Bahluiet middle and lower courses and some right tributaries (Reditu, Valea Lupului - Bahna - Ciunca, Albeşti - Goeşti) are of Holocene age (fig. 4).

The Târgu Frumos region relief is very diversified and includes all the types: structural, sculptural and accretion. In the north-north western and western part of the region, within the Ruginoasa - Strunga Saddle, the most part of the area is represented by the structural relief specific for the Broscăria - Laiu Platform and its extensions (plateaus - Dealul Ulmişul (Ulmişul Hill), Dealul Mare (Great Hill), Dealul Ruginii (Ruginii Hill), Dealul Pietrişul (Pietrişul Hill), Dealul Holm (Holm Hill) etc. – valleys and cuestas: Bahluiet, Cotocul / Păscănia, Reditu).

The deluvial, sculptural relief is of Quaternary age and was favored by the slopes' steep gradient, the succession of hard rocks (limy sandstones) with soft and

friable ones (sands, clay), which caused a landslide microrelief, with slumps and ridges, depending on the lithic substrate that supports the structural plateau, of which some are active and other, stabilized.

Generally, the water courses that fragmented the relief in this area follow the monoclinical structure (NW-SE), some being subsequent, with notable asymmetric transversal profile, cuesta-type slope and high gradient (some of which over 25%): the Hărmănești, Buda and Batoage valleys etc., in the northern sector (Ioniță, 2000, p. 13). Most of the valleys are consequent / cataclinal: Cotocul / Pășcănia – up to Giurgești, Bahluiet – up to Târgu Frumos, Reditu – up to Crivești. On the Bahluiet valley, the colluvium-proluvium accretion relief is limited in surface (the cores of Giurgești and Costești - Pietrișul villages) consisting of coarse alluvia (loamy), deposited over a current shallow minor bed of 1-3 m (Alexa-Angheluș, 2006, p. 20-23; Minea, 2012, p. 29, 30).

Downstream of the confluence with Cotocul / Chetrosu / Pășcănia, near the village of Giurgești, the Bahluiet river has created an increasingly wider microdepression, opened towards SSE, towards Târgu Frumos. On some of the landslide outliers, displaced from the slopes of the Ulmișul (on the left) and Pietrișul (on the right) hills, which have larger and quasi-flat areas, were founded protohistorical settlements (Giurgești-*Dealul Mănăstirii*, Costești-*Cier*) and historical settlements, including the cores of the medieval and present-day villages (Giurgești, Costești Sturzești și Costești Răzeși, Pietrișul de Sus și Pietrișul de Jos). South of Costești Sturzești, an interfleuve used by the Cucuteni B communities (*Podișu I*) was formed by the successive recession of the confluence between the Probota / Valea Bunei brook and Bahluiet. The same situation can be observed next to the former Jora village (called Munteni during the Middle Ages), today a neighborhood of Târgu Frumos, in the southern part of the Muncelul Hill, at the confluence between Cucuteni / Valea Oardei brook and Bahluiet river, where an interfleuve was formed, which was inhabited also by Cucuteni A communities (*Jora-Fosta Școală Generală nr. 3*).

In the central-southern and southern part of Ruginoasa-Strunga Saddle, the structural relief consists of a series of plateaus, also of NW-SE monoclinical structure, such as Dealul Viei (Viei Hill), Dealul Holm / Găureana (Holm / Găureana Hill) (at Crivești), Dealul Hăbășești (Hăbășești Hill) (the watershed between the Siret basin, Mihaili brook and Bahluiet basin), while the sculptural relief has developed on the subsequent / orthoclinal course of the Crivești brook (Criva) or on the obsequent / anacclinal valley of Strunga brook, causing landslides of escarpment type (see Crivești-*Hârtop*, Boureni-*Hârtop*, Strunga-*Calda* etc.), which were previously inhabited by several Cucuteni communities.

On the hilly Moldavian Plain, in Târgu Frumos region, are found as elements of the structural relief, the consequent / cataclinal valleys of the Valea Oardei / Cucuteni, Adâncata, Valea Oii (Balș - Filiași segment) brooks, the subsequent / orthoclinal valleys of Bahluiet (downstream of Târgu Frumos), Reditu (between Crivești and Târgu Frumos), Valea Oii (downstream of Filiași) and several with cuestas, on the right side of the Bahluiet river: Dealul Buznei (Buznei Hill) (Beci), Dealul Prigoreni (Prigoreni Hill), Dealul Badașca (Badașca Hill). As for obsequent / anacclinal, inverse oriented to the layers (ca. S-N) valleys, we could mention those south of Bahluiet: Valea Lupului, Recea, Bahna (with different segments), Velnița, Lunca, Ciunca, Albești-Goești, with poorly highlighted

symmetric profiles, linear cuestas and major slope processes (gravitational landslides) (Alexa-Angheluș, 2006, p. 20, 21).

The sculptural relief consists of the hills' wider plateaus, with altitudes between 100-180 m, a relief energy of 100-125 m, gentle slopes (interfluvial plateaus) – 3-5°; low energy slopes – 5-10°; the main valleys and cuestas – 10-20°, and an average horizontal fragmentation of 800-1000 m (Alexa-Angheluș, 2006, p. 18), placed to the north of the Bahluiet river and east of the east-south-east Băiceni - Cucuteni-Dealul Halm - Dădești alignment: Dealul Bejenesa (Bejenesa Hill), on the left side of Oii Valley, Dealul Hârtop (Hârtop Hill), east of Boureni, Dealul Dădești (Dădești Hill), Capul Calului, Bejenesa, left of the Bahluiet river, Dealul Mare, Dealul Boghiu (Boghiu Hill), Coasta Boilor, Dealul Mândra (Mândra Hill), on the right side of Oii Valley (fig. 6).

These plateaus and interfluvial areas go down gently to SSE, towards the Bahluiet's major riverbed (below 80 m altitude), being suitable areas for Precucuteni and Cucuteni settlements (Târgu Frumos-Lukoil / Casa Mandache, Târgu Frumos-Capul Calului, Războieni-Cantonul 28, Războieni-Vest de sat / În față la fosta fermă Centru, Războieni-Tarlaua Experiență, Bălțați-Confluența Gugea-Bahluiet). By their Quaternary composition, these gentle slopes make the transition to the accretion relief and gain the state of fluvial terraces of the Bahluiet, of Pliocene-Pleistocene and Holocene age (PIV-QI-III-H): T I-II = 10 m; T III = 40 m; T IV = 65 m; T V = 95-105; T VI = 110 m; T VII = 132 m (Băcăuanu, 1968, p. 146, 147). These are made of loams and sands accumulated on the top of the Basarabian clay, between which the aquifer layer appears (Alexa-Angheluș, 2006, p. 24, 25).

Within the accretion relief we also mention the colluvial-proluvial lowlands of the microregion main water courses: of Bahluiet, the most obvious, with two sectors – upstream (250 m in width) and downstream (500 m) of Târgu Frumos; of Rediu, downstream of the confluence with Criva / Crivești (150-200 m); of Valea Oardei / Cucuteni, downstream of Cucuteni, up to Jora; of Valea Bunei / Probota, towards the confluence area with Bahluiet, Bahna and Valea Oilor. To these, are added the colluvial-proluvial glacis, at the lowlands' edges and the colluvial ones at the contact between the terraces, as well as the landslide microrelief forms: areolar, with slumps and ridges, of depth and torrential (Alexa-Angheluș, 2006, p. 23-25).

To south, on the right side of Bahluiet, the interfluvial areas are narrower and show few horizontal / quasi-flat surfaces, gently sloped in S-N direction. They often have slopes of 10-20°, which favors the slope processes. The average altitude is of 140-160 m, but sometimes they can reach 200 m (Alexa-Angheluș, 2006, p. 18, 19): Dealul Gănești (Gănești Hill), Dealul Podiș (Podiș Hill), Dealul Rediu (Rediu Hill), Dealul Ilei / lui Ilie (Ilei Hill / Ilie's Hill), Dealul Horpaz (Horpaz Hill), Dealul Vulturului (Vulturului Hill). An interesting case is that of Dealul Buznea (Buznea Hill), situated south of Târgu Frumos, between Bahluiet (N), Bahna (SSE) and Ciunca (E), sloped in N-S direction. Towards north it forms the Bahluiet's cuesta (Dealul Beci / Beci Hill) where, on the backslope / reverse side there is a Cucuteni A₃ high altitude settlement; at 1.5 km south of it, on the gentle slopes of the Bahna brook, there is the Cucuteni B settlement of Buznea-După Grădini / Siliște, while at 2.2-2.3 km, on the north-eastern slope, towards the Ciunca / Cristești brook, there is the Prigoreni Mici / Ion Neculce-Nord-estul Dealului Buznei / Fosta livadă de vișini site, and south of it (0.4 km), the Prigoreni-Siliștea Schitului settlement.

Being a contact depression, the Târgu Frumos region continues, towards south with the eponymous locality, with the western sector of Iași Transition Cuesta, a physical-geographical subunit of the Central Moldavian Tableland, that makes the passage to the south of the Moldavian Plain (Jijia - Bahlui Depression, Bahluiet-Bahlui subdivision), with altitudes that reach ca. 200 m (Romanescu, 2002, p. 37-44; 2004, p. 127, fig. 1). The northern frame of the Central Moldavian Tableland comprises structural plateaus and cuestas made of Basarabian deposits, with altitudes between 200 and 300 m and forms an important steep in comparison to the Moldavian Plain, where the watershed is located (Stănescu, Poghirc, 1992, p. 521, 522). The steep is affected by strong erosion processes (landslides with slumps and ridges, some of which are active, some are stabilized).

By the paleogeographic evolution of the hydrographic network conditioned by the Bahluiet river and more obvious during the Holocene, as well as by the prevailing south-east, south, south-west or south-north slope, this relief fragmentation has also determined the terrain and slopes' specific exposures in the same directions (fig. 6, 7) and provided favorable conditions for the Cucuteni habitat setup and land use.

As to climate, nowadays, the Târgu Frumos region is at the contact between the climatic areas of the Suceava Tableland, the Moldavian Plain and the Central Moldavian Tableland. Thus, in the northern and western part, in the Ruginoasa - Strunga Saddle, a temperate continental climate can be found, with well individualized seasons, sometimes excessive and sometimes with colder and wetter Scandinavian-Baltic influences (towards north), or with East-European, steppe aridity influences and less often, Mediterranean influences to south-south-east, depending on the cyclicity and / or prevalence of Icelandic, Azores, Euro-Asian / Siberian anticyclones and Mediterranean cyclone (Mihăilă, 2006, p. 405-411, 414; Nistor, 2008). The average annual temperatures fall on the 8-9°C isotherm, with normal oscillations, and the annual precipitations, on the 550-650 mm isohyetal lines (Hijmans *et alii*, 2005, p. 1965-1978) (fig. 8, 9), being more abundant in spring and summer.

In the sector belonging to the Moldavian Plain the same temperate continental climate with well individualized seasons can be found, sometimes with aridity influences and oscillations determined by the cyclonic and anticyclonic baric fields activity; the average annual temperatures fall on the 9°C isotherm, with variations, and the annual precipitations are within the 500-550 mm isohyetal, more important during spring and summer.

In the western sector of Iași Transition Cuesta, the temperate continental climate is characterized by annual average temperatures that fall on the 8-9°C isotherm, which are lower on the upper region (8-9°C) and higher on the lower region (9-9.5°C) and a precipitation annual average of 550 mm, with variations in altitude: ca. 600 mm on the upper region and 500-520 mm in the lower regions (Romanescu, 2004, p. 128, 129).

The prevalent winds are found in the northern part of the microregion, *i.e.* the N, NW and NE winds towards S, SE and SW, which are also favored by the Reditu, Bahluiet, Cotocul / Pășcănia, Probota / Valea Bunei, Valea Oardea / Cucuteni, Adâncata, Valea Oilor valleys' orientation. In the southern part prevail the winds from N, NE and east, favored by the local conditions – the S-N obsequent and W-E subsequent orientation of valleys (Romanescu, 2004, p. 130; Alexa-Angheluș, 2006, p. 27-41).

Local complex microclimates have developed because of the microregional factors (altitude, relief fragmentation, valley orientation, slope orientation / exposure,

vegetation etc.). This is the case of the sunny slopes' topoclimate, especially of those with southern exposure that are well lighted and heated, found on the left side of Bahluiet or of the Bahna, Lunca, Velnița, Strunga brooks. The poorly lighted slopes' topoclimate is colder and wetter and it is specific for: the western slope of Dealul Ulmișul (Ulmișul Hill), on the left side of Bahluiet; the eastern slope of Dealul Pietrișu, on the right side; the east-south-eastern slope of Dealul Ocoalelor (Ocoalelor Hill), on the right side of Cotocul / Pășcănia brook; the eastern slope of Dealul Muncel / Dădești (Muncel / Dădești Hill), on the right side of Valea Oardea / Cucuteni, the eastern slope of Hârtoș Hill, Mare / Filiași Hill, Boghiu Hill, on the right side of the Valea Oii; the eastern slopes on the left side of the Valea Lupului, Recea, Lunca, Ciunca / Cristești. The narrower valleys' topoclimate (the Bahluiet upper course, the valley of Cotocul / Pășcănia brook, Valea Oardea / Cucuteni, Valea Oilor, Velnița, Ciunca / Cristești) is defined by lower temperatures and higher humidity (Alexa-Angheluș, 2006, p. 27-41). These features also appear in a series of local toponyms, as *Recea (The Cold One)* (on the upper course of Valea Oii, a right tributary of Bahna brook, SW of Buznea) or *Calda (The Warm One)* at Strunga.

The Târgu Frumos microregion hydrography belongs to the Bahluiet basin (Bahluiet), part of the Bahlui basin (fig. 3), and by it, of Prut's basin, being the main water course with consequent / cataclinal orientation up to Târgu Frumos and subsequent / ortoclinal orientation, downstream, up to Podu Iloaiei ($L = 51$ km; $S = 559$ km²). Up to south of Costești, on the upper course, the Bahluiet river develops a narrow valley, with almost symmetrical slopes and a quite high longitudinal gradient. In this sector, Bahluiet collects, from the left side, the Cotocul / Pășcănia / Chetrosu and Probotă / Valea Bunei brooks (Ujvári, 1972, p. 542, 543; *Atlasul cadastrului apelor din România*, 1992, p. 455, 456), and from the right side, several very small brooks – Valea Drăgoteni, Vascani – as well as valleys formed by the slope springs and streams. Further, the Bahluiet valley becomes asymmetrical (lower left slope, steep / cuestasiform right slope). The Bahluiet river receives on the left side, south of Jora former village, the course of Valea Oardea / Cucuteni, and on the right side, south of Târgu Frumos, the course of Rediu brook, both of them flowing from the Ruginoasa - Strunga Saddle. Bahluiet collects downstream of Târgu Frumos the consequent/cataclinal valleys of the Adâncata, Fandolica, Gugea and Valea Oii brooks, as left tributaries, and on the right side, the subsequent/anaclinal valleys of Ciuncăi / Cristești and Albești, which flow and collect their tributaries from the Iași Transition Cuesta.

If in the microregion's northern sector, the hydrographic average density is of 1-1.5 km/km² (with variations within microareas), in the southern one, the density is higher, reaching 1.5-2.5 km/km², the main water courses being: Bahna, Lunca, Buda, Ciunca / Cristești, Albești (Romanescu, 2004, p. 130). Moreover, Bahna, Ciunca / Cristești and Albești collects the obsequent / anacinal and consequent / cataclinal valleys of their tributaries that flow from the Iași Transition Cuesta, within several quasi-dendritic networks in which the slowly permanent watercourses are combined with the temporary ones and the natural accumulations (see Bahna and the Lacurile (Lakes) on Ciunca / Cristești and Albești).

The permanent brooks have a moderate phreatic, pluvial and nival supply in the spring and summer, but during rainfalls and downpour they cause lateral erosions and local damages, which sometimes are major. The Ruginoasa - Strunga Saddle and the western

sector of Iași Transition Cuesta are comprised in the high hills' hydrological unit and the contact areas' hydrological unit, the rivers and brooks having inclined slopes and a faster flow; hydrochemically, the waters show a sodium bicarbonate high mineralization, falling within the quality classes I-II (Minea, 2012, p. 252-254, fig. 128).

Depending on the geological structure and on the precipitations, the subterranean waters, the surface and depth hydro-structures can be high mineralized (Minea, 2012, p. 123-152), by the dissolution of the salts that were once found in the marine sediments: the case of the „salted” fountain in the courtyard of the inhabitant Emil Văcărașu, house no. 420, Costești (Lazarovici *et alii*, 2012, p. 17, fig. I.14)⁴, those from Băiceni, of bicarbonate, sodium and sulphureous mineral waters (Poni, 1888, p. 94; Macarovici, Bejan, 1957 a, p. 259-280; 1957 b, tab.) or from Strunga, of bicarbonate, sulfate, magnezian, calcium, sulphureous and ferruginous mineral waters (Romanescu, 2004, p. 133). They occur like slope springs and / or at the slope base from deluvio-colluvial deposits. In the microregion's northern area, on certain plateaus, there are found natural occurrences and accumulations of water, the so called ponds, such as: the one from the Iezer Hill (374 m), on the Siret - Bahluiet watershed, NE of Dumbrăvița and NW of Vascani, 1 km west of the Bahluiet source, which is surrounded by a Cucuteni B settlement, and those north-north east of Târgu Frumos, near the sources of Adâncata and Fandolica brooks. In the contact areas, behind the landslide's slumps and ridges, small accumulations of water, of puddle type, have formed.

The waters from the lower region specific for the Moldavian Plain fall in the hilly Plain hydrological unit. The brooks and rivers have an average hydrographic density of 1-3 km/km², gradients of under 5‰, low discharge and slow flow, some of which may run dry in summer. Hydrochemically, the waters are rich in bicarbonate and sodium bicarbonate, with intensive mineralization, falling within the III-IV quality classes (Minea, 2012, p. 254, 255, fig. 128).

As regards the vegetation and fauna, the Târgu Frumos region is placed at the contact of the Central-European, East-Carpathian and Balkano-Moesic provinces (Monah, 2001, map 4) and is characterized by two regions: *nemoral*, of deciduous forests, with the sub-zones of sessile oak and mixed forests and oak forests, in the higher region from N, W and S, which has a high degree of anthropization (The Ruginoasa - Strunga Saddle, Iași Transition Cuesta); and *forest-steppe* in the hilly Plain of Jijia and Bahlui, composed of pratosteppe and grasslands together with pedunculate oak, sessile oak and maple forests (Minea, 2012, p. 100).

As a consequence of the intensive exploitation (the second half of the 19th century and the first half of the 20th), of the region's large medieval forests, *i.e.* *Codrii Cârlișturii*, those „endless forests” (Costăchescu, 1931, p. 181, 330; Tufescu, 1940, p. 343-347) that were extended continuously up to Iași vicinity, only several parts of penduculated oak forests (*Quercus pedunculiflora*), sessile oak (*Quercus petraea*), mixed with hornbeam (*Carpinus betulus*), elm (*Ulmus campestris*), linden (*Tilia alba*, *T. tomentosa*, *T. cordata*), field maple (*Acer campestre*), European ash (*Fraxinus excelsior*), wild cherry (*Cerasus avium*) were preserved, as those between Stroiești-Coasta Măgurii,

⁴ The on-site verification made by us (July 17, 2014) showed only the presence of a brackish water, not a salted one, perhaps because of the precipitation related mineralization.

Movileni and Strunga, Giurgești and Vascani and from the Iași Transition Cuesta, between Brătulești - Hândrești, Buznea and Gănești or Boghicea, Buda - Brăiești - Goești (Minea, 2012, p. 101-103, fig. 41). Nowadays, certain degraded slopes (Rediu brook, left of the Cotocul / Pășcănia brook, right of Bahluieț, south of Târgu Frumos) were stabilized by black locust (*Robinia pseudoacacia*) plantations.

In the hilly Plain, the steppe areas are characterized by pratosteppe with feather grass (*Agropyro pectinatae* – *Stipetum capillatae*, *Jurinea arachnoidea* – *Stipetum lessingianae*) (Minea, 2012, p. 100, 101). The grasslands represent the secondary vegetation, being found on the lowlands of Bahluieț, Rediu, Valea Oardea / Cucuteni, Valea Oilor, Bahna, Lunca, Ciunca, Albești and on the slopes affected by erosion; they are made of xero-mezophilic grasses associations (*Festuca*, *Andropogon*, *Stipa*, *Poaceae*) mixed with shrubs and blackthorn (*Prunus spinosa*), rose hip (*Rosa canina*), common hawthorn (*Crataegus monogyna*), dogwood (*Cornus mas*), hazel (*Corylus avellana*) and shrubberies (Chifu *et alii*, 2006, p. 16-18).

As regards the forest animals, the following species have survived: the roe deer (*Capreolus capreolus*), the wild boar (*Sus scrofa ferus*), the fox (*Canis vulpes*), the badger (*Meles meles*) and the specific avifauna, while in the steppe regions and grasslands live: the European hare (*Lepus europaeus*), the common vole (*Microtus arvalis*), the European ground squirrel (*Citellus citellus*), the European hamster (*Cricetus cricetus*) (Șandru *et alii*, 1972, p. 52-54; Băcăuanu *et alii*, 1981, p. 130-147; Alexa-Angheluș, 2006, p. 50, 51) etc.

Showing a gradually evolution due to the complex interaction of the pedogenetical factors (relief, soil formation rocks, climate, waters, vegetation, microorganism, human and time), the zonal and intrazonal soils of the Târgu Frumos microregion have developed depending on the particular conditions of each sub-division. Thereby, the soil types specific for the high plateaus are the luvisols and the gleical and argic faezioms, common in areas with forest vegetation and / or areas that evolved in the past below the forest massifs (Ruginoasa - Strunga Saddle, Iași Transition Cuesta); in the area that corresponds to the hilly Plain, the specific soils are the typic and cambic chernozems evolved in forest-steppe climate and vegetation conditions (fig. 10).

In terms of microregional soil identification, we mention that in the central-northern part of the Ruginoasa - Strunga Saddle, at higher altitudes (250-400 m), are found chernozemic soils (*FZcb* – cambic faezioms, according to *SRTS 2012* – Romanian System of Soil Classification) in association with gleical and stagnic faezioms, making the transition to the typic and stagnic luvisols. In the Saddle's southern sector, where the altitudes are lower (less than 250 m) are found, almost entirely, cambic faezioms (pratozioms, forest chernozemic soils, black chernozemic soils in the older classification systems) (Florea-Munteanu, 2012; Pîrnău, 2013, p. 101-111). These soils have the appearance of cambic chernozems, specific for the forest-steppe region, but they are also found in the higher, forest region (at altitudes over 250 m), particularly in the central part of the Ruginoasa - Strunga Saddle.

Eroded anthrosols evolved on the Vascani, Cotocul / Pășcănia valleys, on the upper courses of Bahluieț and Valea Oii, as well as in the Băiceni „cuvette”. Hydrosols of stagnosol type are found in the central and southern part of the Broscăria - Laiu Platform,

while the gleysols, on the course of Bahluieț (downstream of Vascani, up to Târgu Frumos), Probota / Valea Bunei and Valea Oardea / Cucuteni (the lower sector).

In the hilly Moldavian Plain region, the south-western sector, the typic and cambic chernozems occupy large areas on the plateaus north and south of Bahluieț. Fluvisols have developed in the valleys of the following rivers and brooks: Rediu, Crivești, Bahna, Velnița, Lunca, Ciunca, the middle course of Bahluieț, the upper course of Valea Oii.

*

The above presented describe the actual geographical landscape features of the Târgu Frumos microregion, which was strongly anthropic modified by humans communities. A brief regression and paleogeomorphological analysis show that the present relief of Târgu Frumos microregion with its geographical components was modeled during the post-Sarmatian stage, after the Dacian Basin retreat towards SE (Jipa, Olariu, 2009, p. 40-91 *passim*), in particular during Pliocene-Quaternary, when a series of associated processes took place: the retreat of north-western and southern cuesta fronts, the setup of the main water courses of the hydrographic network (*i.e.* Bahluieț and Valea Oilor) and the formation of the terraces left of Bahluieț.

A proliferation of the landscape modeling processes is observed during the Late Pleistocene and Holocene, in particular during Boreal (more humid and colder) and Atlantic (*Climate Optimum*, more humid and warmer), when the weather pattern changes and the increase of rivers and brooks activity have resulted in the development of structural and accretion landforms.

Specifically, the Sarmatian-Basarabian NW-SE monoclinical geological structure of the area with hard rocks (sandstone and oolitic limestones), in combination with softer rocks (clay and sands) was strongly shaped by the paleo-Bahluieț and paleo-Recea / Valea Oii, which had significantly higher discharge and energy than those of today. Probably, also during Boreal have begun the slope erosional processes (deluvial), materialized by the landslide ridges and slumps on the right side of the Valea Oilor: Băiceni - Cucuteni, Filiași - Podișu - Valea Oilor (Romanescu, Nicu, 2013, p. 21, 22; Romanescu *et alii*, 2013, p. 23), those of Costești - Giurgești and Strunga microregions or of the western segment of the Iași Transition Cuesta (SW of Buznea, S of Gănești, S of Brăiești, S of Goești).

Gradually, along with the riverbed deepening and lateral erosion, were reconfigured the morphological elements of the terraces and erosion outliers, which were reshaped by slope gravitational processes, torrential erosions or proluvial-colluvial glacises. The directions of water flow, in accordance with the structure, similar orientation of brooks' terraces, alluvial fans, interfluvies and glacises, often with sub-horizontal surfaces or gentle slopes, with south, east and west exposures, well lighted during day time, seasons and year, with an important quantity of received solar energy determined favorable conditions for the founding of the Neolithic and Chalcolithic human habitat.

In the *Atlantic Climate Optimum* conditions, that were ca. 100-150 mm / year wetter and 2-3°C warmer than today, with uneven manifestations (Volontir, 1990, p. 65-69; Kremenetskij, 1991; Tomescu, 2000, p. 235-270; Davis *et alii*, 2003, p. 1701-1716; Velichko *et alii*, 2013, p. 1-9), has developed on these landforms, the large thermophilic deciduous

forest (*Quercetum mixtum*), with many glades and open spaces, specific for the most of the Suceava Tableland (Popovici, 1934, p. 277-295), Ruginoasa - Strunga Saddle, Iași Transition Cuesta and hilly Plain, in many cases extended to the river beds (Chirilioaie *et alii*, 2012, p. 64-77). In the hilly Moldavian Plain, the thermophilic deciduous forest was interfusing with vast areas of grasslands mixed with brush, pasture lands and cultivated fields.

This fact is also proved by the hunted / gathered fauna (the primary and secondary forest species, but also the eurytopic one) identified in the Precucuteni and Cucuteni sites in the Târgu Frumos region – Târgu Frumos-Baza Pătule (Haimovici, Coroliuc, 2000, p. 169-206; Haimovici, 2002 a, p. 131-150; 2002 b, p. 21-35; Ursulescu *et alii*, 2002 a, p. 29-54; 2002 b, p. 101-130; Coroliuc, 2009), Cucuteni / Băiceni-Cetățuia (Haimovici, 1969, p. 317-319; 1987, p. 157-166; Haimovici, Văleanu, 2004, p. 309-317), Ruginoasa-Dealul Drăghici (Știrbu, 2012, p. 367-374), Hăbășești-Holm (Gheție, 1954, p. 601-605), Bălțați-Dealul Mândra (Haimovici, 1997, p. 31-37), Costești-Cier (Bejenaru, Stanc, 2014, p. 31-36; Boghian *et alii*, 2014, p. 101-131) – which indicate the presence of the *Quercetum mixtum* forest biotope interfused with glades, shrubs and natural grasslands, major brooks' meadows, natural accumulations, waterlogged and marshy regions (Boghian, 2004, p. 52). Obviously, within these Precucuteni and Cucuteni zooarchaeological assemblages, the domestic fauna prevails, as indirect evidence of anthropic modified environment.

It is also possible that the cambic faezioms and the chernozem soils specific for the Târgu Frumos pedogeographic region formed during a long period of time, given the existence of an open landscape with rich grassland herbaceous vegetation and fields free of forest or resulted from the long deforestation (centuries, millennia), as well as the forest-steppe anterior to the forest that has later evolved under the forest climate conditions (Barbu, 1991-1992, p. 104; Lupașcu 1996, p. 83-90).

In other opinions based on morphology and certain biochemical features, these soils would have started their formation under steppe and forest-steppe maximum extension conditions, within the Postglacial *Climate Optimum* (Atlantic and Subboreal), continuing their evolution during Subatlantic as herbaceous enclaves in large forest areas. On the other hand, the absence of biogenic formations (in particular krotovina) specific for steppe-forest-steppe soils advocates for placing the beginnings of chernozemic soils evolution in Subatlantic, in the primary and / or secondary glades (resulted from centuries old deforestation, from Antiquity), the humiferous character being linked to the long existence of herbaceous vegetation and the clay-marl substrate, unfavorable for forest establishment (Barbu, 1991-1992, p. 108).

Regardless of the valid hypothesis, it can be observed, archaeologically, that most of the Precucuteni and Cucuteni settlements were founded on thin, brown nascent soils, the more intensified and extended anthropic activities generating, usually, large amounts of organic matter, which favored their evolution, both within the sites and in the adjacent areas.

Under these circumstances, the facilitating factors of the Chalcolithic human habitat foundation, density and dynamics of Târgu Frumos microregion and not only are found, largely, in the geographical determinants of its landscape. However, one must not forget that a human settlement is a complex geographical, social and spiritual unity and often within the prehistoric communities, the habitat foundation and space management were ruled by reasons other than the strictly material ones. Therefore, we believe that it is

important to keep the sensitive balance between the geographic determinism and the anthropic determinism also when examining the Chalcolithic human habitat evolution.

Cultural-chronological framework

The viewpoints related to the specificity and dynamics of Cucuteni habitat of Târgu Frumos region are founded on the general and specific information about the evolution of Precucuteni and Cucuteni communities, on the interrelation of planimetric and stratigraphic data provided through the investigations carried out within the sites of the reference area, on the typological comparative analysis of quasi-similar artifacts discovered in various sites, on certain elements of relative chronology, on the radiometric data published until present (Mantu, 1995, p. 213-235; László, 1997; Bem, 2000, p. 337-359; Lazarovici, 2010, p. 71-114), as well as on the connections, on a macro-level, with the neighboring civilizations (Stadler, 1995, p. 102-105, 210-224; Lenneis *et alii*, 1996, p. 97-116; Wild *et alii*, 2001, p. 1057-1064).

In this paper we will make use of the traditionally periodization schemes for the Precucuteni-Cucuteni / Trypillian culture, based on the contributions of Vl. Dumitrescu (Dumitrescu, 1963 a, p. 51-78; 1963 b, p. 285-308) and A. Nițu (Nițu, 1984), which we find useful, despite their imperfections, which are the effects of a certain research level. Therefore, following the example of Russian, Ukrainian and Moldavian historiography (Markevich, 1981, p. 55-68; Boghian, 2004 b, p. 121, 122; 2006, p. 170-172), we consider necessary for the future to develop specific periodization on groups of synchronic settlements, the so called intra-phase and inter-phase *stages of development*, adapted to the various regional aspects (variants) (Dumitrescu, 1963 a, p. 72; 1973, p. 1-20; 1974 a, p. 33-47; 1974 b, p. 545-554; 1976, p. 167-176; Boghian, 2001, p. 71-114; Palaguta, 2007, p. 3-8), which should be also in accordance with the traditional phases and stages of evolution in order not to create additional theoretical problems. This would respond to the problem of the cultural differences considered to be chronological determined, but in fact, could be regarded as synchronies within the cultural diversity of the same civilization (Boghian *et alii*, 2014, p. 138-149).

Since the archaeological reality is much richer and nuanced than any of the provided and argued cultural and chronological schemes, we brought, where relevant, some clarifications on the contents of the occupation layers, stages and sequences, according to the following scheme: Precucuteni I a-b (ca. 5050-4900/4850 BC, average of probabilities), Precucuteni II a-b (ca. 4900/4850-4700 BC, average of probabilities), Precucuteni III a-c (ca. 4700-4550 BC, average of probabilities); Cucuteni A (ca. 4550-4150 BC, average of probabilities): Cucuteni A₁ a-b, Cucuteni A₂ a-c, Cucuteni A₃ a-b, Cucuteni A₄ a-b; Cucuteni A-B (ca. 4150-3900 BC, average of probabilities): Cucuteni A-B₁ a-b; Cucuteni A-B₂ a-b; Cucuteni B (ca. 3900-3600/3500 BC, average of probabilities): Cucuteni B₁ a-b, Cucuteni B₂ a-b (Boghian, 2004 a, p. 167-174, fig. 13, 14). This could be more clearly detailed once new archaeological materials will be published, and / or new archaeological excavations will be conducted and the criteria used in the periodization and chronology of Eastern Carpathian Chalcolithic will be improved and interrelated.

The Cucutenian habitat characteristics and dynamics

Patterns of Precucuteni-Cucuteni settlements

General premises

Despite the relatively numerous archaeological investigations, the available data for identifying certain Chalcolithic settlement patterns based on evolution phases are very scarce. Unfortunately, the perspectives do not look better, if we consider the severely limited human and material resources. A ray of hope comes from the non-invasive investigations, which have offered relevant information about several Cucuteni sites from the region (*e.g.* Dealul Mare-Filiași and the adjacent microarea), but the lack to check the surveys by archaeological excavation forces us to act on the same quicksand of relativism and working hypotheses.

Some unfulfillment concern even the surface surveys of the Târgu Frumos microregion, well but unevenly investigated, where there are still many blank spots: the sector left of Valea Oii, from Băiceni up to the mouth; the upper course of Rediu brook / the area between Crivești-Costești and Ruginoasa; the Prigoreni - Cristești - Rediu - Albești sector; the sector right of Bahluiet, downstream of Prigoreni Mari etc., all these creating the false image of occupation gaps, also for the Chalcolithic. At the same time, new and repeated field investigations are required in order to verify / reverify the old evidences (especially since new developments of the localities cores and modification of lands' property, microtoponymy and lands' feature have occurred in the recent decades), to exclude the double or triple references, as well as to obtain new archaeological materials that would clarify the occupation phases / stages, the settlement extent, the density of artifacts / intensity of occupation etc.

Trying to overcome these inconveniences, we are founding our approach on the consideration that also during Chalcolithic a settlement was a natural space, temporary or more durable modified by humans in various ways and at different intensities, which had social and cultural connotations, assuming both the territoriality and community, the traditions, innovation and the connection to a system of settlements. In other words, the settlement is / was a social territory designating the natural area that a human community occupies and manages for a period of time, causing geo-historical, socio-demographical, economical and spiritual effects. Therefore, an anthropological approach of the Precucuteni and Cucuteni habitat (Rapoport, 1969; 1972; Ucko *et alii*, 1972) is required in order to complete the analysis and the pluri-factorial reconstruction, from an archaeological and population and settlement geography perspective.

At the same time, the study of the habitat evolution and density on hydrographic basins that are considered hydro-geographic units displays certain advantages in determining the details related to the paleoecological conditions of human settlement establishment and operation, based on our (modern) representations of the criteria and the conditions that would have determined prehistoric people to act in a certain way. This approach is nevertheless deficient, because it generates only *puzzle* pieces (maps and digital elevation models with sites on basins and small basins), difficult to integrate in terms of the geo-historical evolution of human communities with territorial organization, who had different „borders” than the watersheds or the watercourses sectors.

Considering the fact that the Precucuteni and Cucuteni settlements belonged to communities that owned / managed certain territories / areas, as cultural expression of vital space management, we believe that references are required both on the *intra muros* built space and the *extramuros* space (cultivated fields areas, pasture lands, hunting grounds within the borders of the „domain”), *domus*, *agrios* and *foris*, according to Ian Hodder (Hodder, 1990). Unfortunately, this type of approaches are almost inexistent in the Romanian archeology, where the assumption stage was not yet overcome.

At the same time, the Precucuteni and Cucuteni settlements, regardless their type, surface or occupation duration, must be conceived and understood like social, economical and spiritual living organisms, which have experienced the natural stages of establishment, development / growth and decay / destruction / abandon, with the return on the same site of the same human communities or of their successors, with the disappearance of some human groups and the colonization of other etc. Therefore, within the settlements, not all the houses and inhabitants of the maximum development phase have existed from the beginning or were they contemporary, nor the occupations of a single phase, as would suggest certain archaeological discoveries that were approached undifferentiated.

Patterns of Precucuteni habitat

We can observe that all the Precucuteni sites of the Târgu Frumos region that were identified so far were established on relatively low locations (considering the association of the hydrological and geomorphological processes that took place afterwards, such as the rivers and brooks riverbed deepening, the banks' aggradation/degradation, alluvium accretion etc.): the southern and western slopes of Bejeneasa hill (Boureni-*Bejeneasa*, Precucuteni I-II; Balș-*Bejeneasa I / La Brigadă*, Precucuteni II), the southern slopes of Valea Părului hill (Balș-*Valea Părului III*), the low terrace near the confluence between Adâncata and Bahluiet (Târgu Frumos-*Lukoil / Casa Mandachi*), the low terrace left of Bahluiet (Războieni-*Vest de sat / În față la fosta fermă Centru*, today covered by the new residential neighborhood Războieni-*Tarlaia Experiență / Experimentală*, Bălțați-*Canton CFR 38-39*), gentle slopes (Buznea-*SE of Buznea Hill*, Ion Neculce / Prigoreni Mici-*Siliștea Schitului*) and old evolved landslide outliers (Buznea-*Valea Lupului II / Recea II; Rediu-Rugărie*); also on relatively high locations: the glacis at the foot of Băiceni's Fortress (Băiceni-*La Pod*), cuesta backslope (reverse) (Târgu Frumos-*Baza Pătule*, Prigoreni Mari-*La Curte II*), plateaus (Gănești-*Ciurea* and *Siliște*, Strunga-*Platoul Dârmoxa I / Cornișa Dealului Dârmoxa* and *Dealul Găureana II*) (fig. 11). Yet, there were discovered no Precucuteni settlements on relatively high positions, as those known for Cucuteni A phase.

A particular mention should be done on the site of Târgu Frumos-*Baza Pătule*, placed on the eastern side of the cuesta backslope right of Adâncata brook (relative altitude of 20 m), which represents a large size settlement (ca. 10 ha), with a rather long internal evolution, not always continuous, with three stratigraphic horizons (three types of dwellings – pit-houses, surface dwellings without platform and surface dwellings with platform), a core relocation from the cuesta backslope body (the beginning of Precucuteni III phase) towards its front (the end of Precucuteni III phase / Cucuteni A₁ ?), with a defensive ditch and a very rich archaeological inventory (Ursulescu, Boghian, 1996, p. 38-

73; 1998, p. 13-42; Ursulescu *et alii*, 2002 a, p. 29-54; 2002 b, p. 101-130; 2003, p. 27-40; 2005, p. 217-260; 2006, p. 3-23). If the communities' hunting and gathering grounds were located in the forests near the site, the fields and pasture lands were, probably, on the plateau, very close to the habitation area. Except for this site, no evaluation of sizes for the other settlements were done.

As regards the relative density of the Precucuteni settlements of the discussed region, we consider that a more close to the past reality image is being drawn in the Balș - Boureni sub-regions, on the Valea Oii brook (3 sites, probably one for each phase) and Târgu Frumos - Războieni - Prigoreni Mari on Adâncata and Bahluieț (5 sites).

Likewise, in order to provide accurate data and cultural and chronological framing for the sites and considering the fact that some of the Precucuteni settlements are found on the same location as those of Cucuteni A₃ of Hăbășești type, in which the quantity of pottery decorated with incised motifs continues to play a quiet important role (Războieni-*Vest de sat / În față la fosta fermă Centru*, Bălțați-Canton CFR 38-39, Prigoreni Mari-*La Curte II*, Gănești-Siliște, Buznea-SE *Dealului Buznei*, Ion Neculce / Prigoreni Mici-Siliștea *Schitului*, Strunga-*Platoul Dârmoxa I / Cornișa Dealului Dârmoxa*), we stress the necessity of verifying once again the old evidences and of accurate specifications by archaeological excavations.

Patterns of Cucuteni A phase habitat

Most of the Cucuteni A sites were established and functioned also on relatively low locations, some of them continuing the Precucuteni occupation. Among these we mention the following sites: Bălțați-Canton CFR 38-39, Bălțați-Iazul 3 (*Mândra Hill*), Bălțați - *Confluența Bahluieț-Pârâul Gugii*, Cristești-Lacurile / *La Izvoare*, Buznea - *Valea Lupului II-Recea II*, Boureni-*Bejeneasa*, Războieni-*Vest de sat / În față la fosta fermă Centru*, Strunga-*Indicatoul km 152*.

From this phase on, begin to be occupied the high locations, on dominant positions, most often the promontories that are individualize on the structural plateaus of either the Ruginoasa-Strunga Saddle (Stroiești-Pietrărie, Cucuteni / Băiceni-*Cetățuie* and *Dealul Mănăstirii / La Dobrin*, Ruginoasa-Colina / *Dealul Drăghici*, Giurgești-*Dealul Mănăstirii*), the Iași Transition Cuesta (Hăbășești-Holm, Fedeleșeni-*Dealul Cănepăriei*), the Bahluieț Cuesta backslope (Buznea-*Dealul Beci*) or finally, of the cuesta fronts, plateaus and cuesta backslope on the right side of Valea Oii (Filiași-*Dealul Mare*, Podișu-Tarlaua *Pădure / Crescătorie I* și Podișu-*Dealul Boghiu / Crescătorie II*; Gănești-Siliște). These locations benefit from a very good potential visibility/inter-visibility, usually along the valleys, which were also traffic route and responded probably to certain needs in hierarchy, defense and territory control. For example, in days of normal clarity of the atmosphere, from the ground level, the sites of Buznea-*Dealul Beci* and Hăbășești-Holm can be easily seen from Giurgești-*Dealul Mănăstirii*, the *Cetățuia (Fortress)* of Cucuteni-Băiceni, the *Pietrăria Hill* from Stroiești and *Cătălina Hill* from Cotnari (where there was also a Cucuteni A settlement) can be seen from *Dealul Mare* of Filiași.

Moreover, the built space edification, including the fortifications' build-up and maintenance require, beside the good coordination of the communities, a significant investment of social energy. In these circumstances, it seems plausible that these

settlements could have been centers of groups of sites within a type of territorial organization. Although only certain high altitude sites have anthropic fortifications certified through archaeological investigation, of which those from Cucuteni / Băiceni-*Cetățuie* functioned throughout the subsequent phases, it is possible for other settlements to have had complex defense systems with ditches, palisades, towers, having also a cultic role, defining the sacred space of the habitation.

Regarding the concentration configuration of Cucuteni A settlements, several clusters stir interest, like those on the upper and middle course of Valea Oii *i.e.* the Băiceni - Cucuteni (4-5 sites) and Boureni - Filiași - Podișu (4-5 sites) microareas, those on the upper course of Bahluiet, *i.e.* Costești - Giurgești (2 sites), or those on the western segment of Iași Transition Cuesta, *i.e.* Hăbășești - Fedeleșeni / Buznea - Gănești (4-5 sites), whose internal chronology is to be clarified by further archaeological investigations (fig. 12, 13).

In terms of size, the Cucuteni A sites of Târgu Frumos microregion are mostly small, up to 2 ha (Cucuteni / Băiceni-*Cetățuie* și *Dealul Mănăstirii*, Hăbășești-*Holm*), rarely of medium size, up to 5 ha (Filiași-*Dealul Mare*, Giurgești-*Dealul Mănăstirii*) and exceptionally large sites of over 10 ha, like the Ruginoasa-*Dealul Drăghici* settlement (15.8 ha) (Lazarovici, Lazarovici, 2012, p. 29). It is worth mentioning the case of Costești-*Cier* Cucuteni A₃ site of only 0.3 ha (Boghian *et alii*, 2014, p. 16, 17), very concentrated, which seems rather a handicraft site (considering the very large amount of pottery compared to the estimated number of dwellings). These various sizes should be related, probably, with the settlement type and specificity (permanent settlement, temporary settlement), the location land size, the number of inhabitants, the importance, purpose, development (evolution or involution) or the level of knowledge by archaeological or non-invasive investigation.

As regards the built space organization in Cucuteni A phase, the available data allow us to point out the diversity of dwelling types and the variety of building solutions, features that are preserved also during the other phases of the culture: surface dwellings without platform, surface dwellings with wood and burned clay platform (Hăbășești-*Holm*, Fedeleșeni-*Dealul Cânepăriei*); pit-houses and dwellings with stone structure (Ruginoasa-*Colina* / *Dealul Drăghici*), surface dwellings with stone structure (Cucuteni / Băiceni-*Cetățuie*), surface dwellings with wood and burned clay platform / structure, some of which are partially dug into the ground (Costești-*Cier*) (Boghian *et alii*, 2014, p. 32, 33). These indicate an active adaptation of these communities to the practical conditions of life and why not, an internal structure / hierarchy of the buildings.

Patterns of Cucuteni A-B phase habitat

The habitat in Cucuteni A-B phase is reduced in comparison to the other two phases (A and B), fact that is rather difficult to explain (fig. 12, 13). No doubt, the gaps in research and the misinterpretation of the ceramic material represents a major cause of this situation. Except for the Cucuteni A-B₂ / B₁ settlements on the *Cetățuie* of Cucuteni-Băiceni and on Boureni-*Dealul Hârtopului* / *Hârtochi*⁵ located on high positions, the other sites are placed

⁵ Even if they are mentioned as being two different sites (Boghian, 2004, p. 206; Brigand *et alii*, 2012, p. 26), we believe that the two belong to the same settlement, the differences in location being caused by the measurement tools used: GPS in 2011-2012, uncertified estimations in 1987 and reference to the old core of Boureni village.

on relatively high locations (20-25 m relative altitude): Cucuteni / Băiceni-*Dâmbul Morii* (erosion outlier of the major riverbed of Valea Oii brook), Săcărești-*Suhat* (a small promontory individualized on the Broscăria - Laiu structural Platform, above the Valea Bunei / Probota brook riverbed) Crivești-*Holm* (structural promontory on the confluence between Gura Văii / Găureana brook with Crivești), Costești-*Cier* (evolved landslide outlier in the Bahluiet floodplain), Crivești-*În Hârtop*, Vascani-*Lutărie* (structural promontory).

The only sites of the Târgu Frumos microregion from Cucuteni A-B phase that were better investigated are those of Cucuteni / Băiceni-*Cetățuie* and *Dâmbul Morii*, Săcărești-*Suhat* and Costești-*Cier*, revealing specific features, but also resemblances. We were not able to clarify the potential existence of a site from the beginning of Cucuteni A-B phase because of the absence of publications regarding the archaeological materials discovered at Fedeleșeni (Nestor, 1933, p. 39, 45, Taf. 2/2, 3; Zaharia, 1996, p. 129, 130; Ursulescu, 2015, p. 157-196)⁶ and the poverty of data regarding the discoveries from Săcărești-*Tinoasa* (Nițu, 1984, p. 100, fig. 3/1-4). The settlement of Cucuteni / Băiceni-*Dâmbul Morii* can be dated in a developed sequence of Cucuteni A-B₁ stage (Cucuteni / Băiceni-*Dâmbul Morii* (Sect. A), in the southern part of the erosion outlier, inside the area bordered by the defense ditch), continuing / moving the location in the beginning sequence of Cucuteni A-B₂ stage (Cucuteni / Băiceni-*Dâmbul Morii* (Sect. B and C), in the northern part of the outlier) and then on *Cetățuia* (the evolved sequence of Cucuteni A-B₂ stage and the shift towards Cucuteni B₁). Under these circumstances, we have an almost complete progressive series of Cucuteni A-B habitat of Băiceni microregion, which may be extrapolated as a pattern for other microregions (e.g. Crivești-*Holm* and Crivești-*Hârtop*; Săcărești, Vascani), the lack of such sites in other regions being only illusory.

Within the investigated settlements, which are small (below 2 ha), the built space has particular features and dimensions. Within these are found surface dwellings with more simple platforms and stone floors as in Cucuteni / Băiceni-*Cetățuie* (Petrescu-Dîmbovița, Văleanu, 2004, p. 46-98, 103)⁷, with massive platform / wood and burned clay structure, as in Cucuteni / Băiceni-*Dâmbul Morii* (Petrescu-Dîmbovița, 1966, p. 32-35; Dinu, 2006, p. 31-56), surface dwellings with simple clay floor, as in Costești-*Cier* (Boghian et alii, 2014, p. 34, 35) and surface dwellings with simple floors and pit-houses – Săcărești-*Suhat* (Boghian, 2004 a, p. 187)⁸. In terms of size and house compartmentalization, can be noticed house no. 1 in the Cucuteni / Băiceni-*Dâmbul Morii* site, which had a surface of approx. 134 m², with probably 7-8 rooms – determination based on the hearths (of which one is round shaped) and wall debris.

The settlements fortification is continued during this phase, the only known defensive ditches being those of Cucuteni / Băiceni-*Cetățuie*, Cucuteni / Băiceni-*Dâmbul Morii* (Dinu, 2006, p. 31-56) and Costești-*Cier* (Boghian et alii, 2014, p. 34). It is very likely that the defensive ditch paired with a stone padded earthwork of Cucuteni / Băiceni-*Cetățuie* (Petrescu-Dîmbovița, Văleanu, 2004, p. 126-130), dated in Cucuteni B₁, have

⁶ Unpublished materials „V. Pârvan” Institute of Archaeology, Bucharest.

⁷ Given the situation of Costești-*Cier*, we consider that some of the settlements on *Cetățuie*, dated in Cucuteni B₁ are directly following the anterior occupation layer, so that the same building traditions and habits are followed.

⁸ The reevaluation of certain big size pits allows us to place them in the pit-house category.

been built since the final sequence of Cucuteni A-B₂. At Costești-Cier, during Cucuteni A-B₂ / B₁ sequence, the fortification from the previous phase (Cucuteni A₃) was rebuilt.

Patterns of Cucuteni B phase habitat

In the investigated region the Cucuteni B phase habitat is well known. Some of the sub-regions that were better investigated seem to offer a closer to past reality image of the habitation density (fig. 12, 13). Thus, there is a continuation of establishing the settlements on high locations, which dominate the surrounding area, with good and very good potential visibility / inter-visibility – Stroiești-Pietrărie, Dumbrăvița-Tarlaua Iezerul / Holm (around the natural lake with phreatic, pluvial and nival input sources) Cucuteni / Băiceni-Cetățuie, Prigoreni Mici / Ion Neculce-La Curte I, Fedeleșeni-La Cruce în Fundoaie – or relatively high locations with the same features: Costești-Cier, Săcărești-Laiu, Crivești-Dealul Viei și Hârtoș, Prigoreni Mici / Ion Neculce-Cimitir (Berlescu, 1955, p. 154-163) and Fosta livadă de vișini, Vascani-Vatra satului, Vascani-Lutărie.

At the same time, there is a significant number of settlements located on relatively low landforms (interfluvies, partially stabilized landslide outliers, the left side terraces of Bahluiet) as those of: Cucuteni / Băiceni-La Bazin (on the glacis at the foot of Băiceni cuesta), Cristești-Cristioaia, Costești-Podiș I, Bălțați-Cantonul CFR nr. 38-39, Buznea-Siliște / După Grădini, Târgu Frumos-Capul Calului, Războieni-Cantonul 24, Strunga-Calda I and Indicator kilometric 23, Prigoreni Mari-Holm, Vascani-Tarlaua Pășcănia (Boghian, 2004 a, p. 57-59).

As regards the sizes of Cucuteni B settlements, so far, only small size settlements (below 2 ha) are known for the Târgu Frumos region, but apparently there were also large size settlement (ca. 10 ha) as the one of Dumbrăvița, around the Iezer lake (Chirica, Tanasachi, 1985, p. 352, 353). An interesting case is that of the return of a human community at the small 0.3 ha Costești-Cier site, confirming the assumption that some of the area's resources, especially the high quality iluvial clay, would have favored the re-establishment of a handicraft settlement; the same case is applicable for the Buznea-Dealul Brocea settlement, which is approximately the same size. Some of the sites, as those of Cucuteni / Băiceni-Cetățuie and Costești-Cier have preserved their fortification systems built at the end of the previous phase (Petrescu-Dîmbovița, Văleanu, 2004, p. 126-130; Boghian *et alii*, 2014 a, p. 34).

As regards the dwellings of Cucuteni B settlements, these are: surface dwellings with more simple platforms and stone floors as in Cucuteni / Băiceni-Cetățuie (Petrescu-Dîmbovița, Văleanu, 2004, p. 46-98, 104-122), surface dwellings with simple clay floors, as in Costești-Cier (Boghian *et alii*, 2014 a, p. 34, 35) or with wood and burned clay platform / structure, as in Buznea-Siliște.

In terms of Cucuteni B settlement density within the reference region, we mention their suspicious decrease on Valea Oii (except for the Stroiești - Băiceni - Cucuteni microarea) and the habitation „agglomeration” within the Târgu Frumos - Războieni / Buznea - Prigoreni, Vascani - Costești - Săcărești and Strunga - Crivești microareas. For now, most of the sites belong to Cucuteni B₁ phase, lacking those clearly dated in Cucuteni B₂ (except for the Cucuteni / Băiceni-Cetățuie settlement).

Also, for the time being, there are no known Horodișteea-Erbiceni-Gordinești I settlements, clearly defined stratigraphically. Given the fact that in the area's nearby were investigated the sites of Erbiceni-*Dealul Sărăturilor* and *Dealul Mănăstirea* (Dinu, 1968, p. 129-139; 1987, p. 133-143) and Cârniceni-*Școala Veche / Pe Coastă* and *Holm* (Alaiba, Grădinaru, 1995, p. 62-78; Nițu, Chirica, 1987, p. 287, 288) (the former belonging to the so called Brânzeni cultural aspect), we consider the above mentioned situation a result of research deficiency or incorrect interpretation of certain discoveries (fig. 14).

Furthermore, some painted pottery fragments from Cucuteni / Băiceni-*Cetățuia* site could be dated in the early phase of Horodișteea-Erbiceni (I) culture, even though they were previously assigned to Cucuteni phases (Schmidt, 1932, p. 45, pl. 11.6, 12.3 center, 22.4, 23.1-2, 24.4-5, Form. B.13, 14 b, 17; Petrescu-Dîmbovița, Văleanu, 2004, fig. 186.1). Whether it is an early Horodișteea horizon with painted pottery, or its survival in the Horodișteea-Erbiceni II and III (?) layer, the occupation layer of Cucuteni / Băiceni-*Cetățuia* was entirely and / or partially contemporary with the corresponding layers from the high and relatively high location sites of Ruginoasa-*Dealul Drăghici* (Dumitrescu, 1933, p. 56, 57, fig. 13/3, 5; 19/2, 7; 20/1-7; 21/2, 6-7; Lazarovici, Lazarovici, 2012, fig. VIIB.195, VIIB.221, VIIB.222, VIIB.224), Hăbășești-*Holm* (Dumitrescu *et alii*, 1954, p. 477-485, pl. CXXVI-CXXIX), Costești-*Cier* (Boghian *et alii*, 2014 a, p. 30, 31; Boghian *et alii*, 2014 c, p. 204-206, 518-525), Crivești-*În Hârtop spre Budăi* and *Platoul de la NNV de sat* (Chirica, Tanasachi, 1985, p. 379, 380) and with the Târgu Frumos-*Capul Calului*, Războieni-*Sud de sat* and Prigoreni Mari-*Holm* sites, which are located on low and / or relatively low altitudes (Zaharia *et alii*, 1970, p. 214; Chirica, Tanasachi, 1985, p. 420, 425, 465), all dated at the beginning of the East Carpathian Bronze Age.

Discussions. The dynamics of Cucuteni habitation

The detailed synchronic and diachronic study of Precucuteni, Cucuteni and Horodișteea habitat of Târgu Frumos region and not only reveals elements of habitation extension and narrowing, continuity and discontinuity even within the same phase and stage, with periodical departures and come backs on / in the same location, which are very difficult to identify by stratigraphy in areas where there are nascent faeziom / chernozem soils and where the occupation layers are affected by the later ones. If the geographical, anthropic, social, cultural and archaeological variables (the false synchronism between the archaeological units and artefacts, microregional chronology and periodization) are not taken into account, wrong ideas about Chalcolithic demographic explosions and downfalls may appear and affect the right understanding of these human communities' life.

The microregion's geographic determinants (the dens hydrographic network, the abundant surface and underground hydro-structures, the landscape complementarity, the diverse and available landforms with favorable exposure, the rich forest-steppe vegetation and fauna, the nascent faeziom soils, the forest resources, the longitudinal and transversal passageways etc.) played undoubtedly a very important role for the Chalcolithic habitat setup and durability. Some of these natural areas of the microregion had already been transformed by the Neolithic communities (Starčevo-Criș and Linear Pottery), so that the Precucuteni human groups established their habitat in a landscape of various degree of reversible

anthropization and continued, by deforestation and land planning, the process of space transformation into settlements, household areas, fields, pasture lands, hunting areas etc.

Thus, in the Târgu Frumos microregion (ca. 300 km²), 18 sites Precucuteni, 86 sites Cucuteni, with 103 occupation layers (unspecified phase – 19; Cucuteni A – 43, of which Cucuteni A unspecified – 23; Cucuteni A₂₋₃ – 2; Cucuteni A₃ – 16; Cucuteni A₄ – 2; Cucuteni A-B – 9; Cucuteni B – 32), and 11 sites Horodiștea-Erbiceni were indexed (fig. 11-14).

The significant increase in settlement number from Precucuteni to Cucuteni, as well as the differences in site density between the well represented stages and phases of Cucuteni A₃ and Cucuteni B₁ and other cultural sequences (Cucuteni A₄ și A-B) where the settlement decrease is noticeable are obvious, though relative. A series of socio-historical explanations could be invoked when it will be proven that these differences are not the result of factors, such as: research deficiency, hazard of the archaeological surface surveys and the significant amount of culturally undefined sites (so-called Precucuteni and Cucuteni uncertain / unspecified phase).

In order to explain the increase in number of settlements during Cucuteni A₃ and B₁, in a dynamic Chalcolithic world, could be invoked a series of the micro- and macrolevel social and historical processes: the natural endogenous population growth, the exogenous intake of populations, invasions / colonizations (expressed through the emergence of new cultural traditions), a greater population mobility determined by the agriculture type and the animal husbandry system. In the same manner, the decrease in number of settlements could be explained by: periods of insecurity, wars, plagues, movements (in the era challenges context) and the habitat traditional pattern modification through contacts with human groups with different cultural traditions. Therefore, the demographic estimations (Preoteasa, 2009, p. 105-118) can only be relative, all the habitation factors and variables and the elements of population continuity and discontinuity at a micro- and / or macroregional level being difficult to specify.

The occupation continuity in certain sites indicate not only the existence of favorable conditions of the landscape that remained opened after the successive occupation and set up of the built space and extension of agricultural and pasture land, but also the presence of certain management and habitation traditions of *the center*, e.g. Cucuteni / Băiceni-Cetățuie was inhabited almost without interruption (except some gaps during Cucuteni A and A-B₁) until the beginning of the Bronze Age (Horodiștea-Erbiceni culture) and even afterwards, during the Middle Bronze Age and the Early Dacian Latène.

At the same time, the planimetric dispersion, the sites grouping around a center and the settlement complementarity on landforms demonstrate a certain hierarchy of the Precucuteni and Cucuteni habitat, where the high altitude sites, *the fortresses*, played an important role in the control and management of areas between 25 and 30 km², within which the communities were periodically changing / rotating the habitat. Furthermore, the role of such centers-fortress is becoming increasingly evident in the following periods.

As regards the better inhabited microregions, according to the current stage of research, there are several groups (clusters) of synchronic or diachronic Cucuteni sites, some with occupation continuity testified through vertical stratigraphy and planimetry, in the following microregions: Stroești - Băiceni (Todirești), Băiceni - Cucuteni, Boureni - Filiași - Podișu, on Recea / Valea Oii brook; Vascani - Giurgești, Costești - Săcărești, on

Bahluieț brook, upstream of Târgu Frumos; Cristești, Prigoreni Mici / Ion Neculce, Ciunca / Cristești brook; Crivești - Găureana / Gura Văii - Strunga, on Strunga, Criva and Rediu etc. (fig. 12, 13).

The relatively high amount of small settlements (of ca. 2 ha), with compact houses rise the problem of an dynamic habitat, which implies the periodical change of fields outside the built space, determined probably by the Chalcolithic agriculture nature that was based to a significant extent on the use of the surrounding faeziom soils' natural fertility. These fields were in the immediate proximity of water courses or phreatic sources and accumulations, both on low (terraces, interfluvies, glacises etc.) and high landforms (see the promontories of the Broscăria - Laiu structural Platform, Central Moldavian Platform, Ruginoasa - Strunga Saddle or Iași Transition Cuesta). Therefore, the anthropic intervention during Precucuteni and Cucuteni was more obvious than previously, creating more and more extended opened areas, even though the *Quercetum mixtum* forest was still occupying large areas.

At the same time, for the Precucuteni and Cucuteni built space and house planning of Târgu Frumos microregion, the changes in building solutions, general sizes, and inhabited / used space based on the culture's evolution phases should be taken into account. In this regard, can be noticed an increase in construction solidity and sizes during Cucuteni A-B and B phases and the interweaving of several architectural traditions. The massive structure of some mud walls, platform and ceiling of the Cucuteni A-B₂ / B₁ houses from Cucuteni / Băiceni-Dâmbul Morii and Costești-Cier sites make us believe that some buildings were multi-storey. In the current stage of research, one can only ask if the diminishing use of wood and clay platforms and the increase in use of simple floors for the Cucuteni B surface dwellings of Târgu Frumos microregion were an expression of climate aridization during the Late Atlantic and the beginning of the Subboreal.

It is also very difficult to make estimations on the inhabitants' number (Porčić, 2011, p. 323-332) per house and settlement in Precucuteni and Cucuteni cultures (Monah, Cucos, 1985, p. 48, 49; Preoteasa, 2009, p. 105-118), as we may not know too soon the specific types of family and kinship of these communities, the ownership forms, patrimonial relationships or the built and / or used space distribution and resources use.

More reliable appears to be a series of archaeological „realities”, which are to be investigated and validated / invalidated by interdisciplinary research and which suggest that almost all Precucuteni and Cucuteni buildings were multipurpose, even under the circumstances of work specialization within houses, in their annexes and vicinity, they were used for the practice of both crafts and daily domestic occupations, as storage places, night shelters and areas dedicated to the domestic cults. Even the building where the cult complex of Buznea-Siliște / După Grădini was discovered (Mihai, Boghian, 1985, p. 429-452; Boghian, Mihai, 1987, p. 313-324) seems, by inventory association, to have been the multipurpose house of a potter (Boghian *et alii*, 2015, p. 435-450).

Moreover, the use of the ethnological modelings allows us to notice that certain individuals within a so called primitive community and those of traditional communities had different food and housing needs than those of the contemporary man; the management of space and in particular of the inhabited / used space was very pragmatic

and depended on certain *formae mentis* that are extremely difficult to penetrate when using formal schemes of reconstruction.

For now, in Târgu Frumos microregion there were no investigations undertaken for the identification of scattered settlements along riverbed sectors, but the great length of certain settlements - such as the one of Boureni-*Bejeneasa* (Cucuteni A₃) of over 500 m on the gentle slope of Valea Oii left side plateau – and the high density of several contemporary / quasi-contemporary sites, such as those on low altitudes in the Filiași-Podișu region (Cucuteni A₃-A₄ ?) require this type of approach, also for the „satellite” and temporary settlements grouping around a center. On the other hand, the extremely compact occupation of Costești-*Cier*, which shows a high density of lithic and ceramic objects for the two occupation phases (Cucuteni A₂-A₃ and Cucuteni A-B₂ / B₁) suggest a handicraft settlement, which could explain also the Cucuteni archaeological deposit thickness, produced, in our view, in a relatively short period of time, of only two centuries (Boghian *et alii*, 2014 a, p. 17).

The relatively high amount of quasi-contemporary, close Cucuteni sites in the Târgu Frumos microregion during Cucuteni A₃ and Cucuteni B₁ phases, raises the issue of clarifying the relationships between them, of clearly identifying the similarities and differences between the human communities that made them and inhabited there. The more urgent this issue is, as the archaeological investigations conducted so far gave a fairly uniform image of the Cucuteni creations in general, and of those in the reference area, in particular. This is particularly relevant since the Cucuteni communities were not closed / autarchic, but were involved in complex micro-community, intra-community, inter-community, micro- and macroregional systems. Hopefully, by the increase and intensification of interdisciplinary research, certain aspect of the micro and macroeconomical, social and spiritual relationships particular for each site or group of sites will be clarified.

Undoubtedly, the Precucuteni and Cucuteni man had other patterns of the world and space organization / management, expressed perhaps in their cosmological and anthropogenic conceptions, about which we know nothing, and which are very difficult to understand, under the conditions of an incomplete archaeological research. Potential patterns of the complex structuring of space and of the relationships between the Neolithic and Chalcolithic communities and sites may be those of the Anatolian-Balkan world (the *tell* settlements some of which are interdependent), the Middle Danube world (the Lengyel *rondels* settlements and Tisza culture's *tell*) or those of the Trypillian area (*giganty poselenija*), which indicate the presence of societies with a complex territorial organization.

Despite the influences of the neighborhood areas, the Precucuteni and Cucuteni communities in Târgu Frumos microregion developed their own pattern of habitat similar to the one of the neighborhood areas, characterized by the grouping of certain small sites around a center, following the specificity, sizes and features of the occupied territory. In this context, the high amount of contemporary / quasi-contemporary sites seems to compensate their size, providing an quasi-uniform and dynamic management of space, without causing irreversible human intervention. These *formae mentis* about the world and the organization influenced, alongside the geographical, economical and social determinants, the Chalcolithic habitat setting up and functioning within complex societies.

Undoubtedly, future archaeological and interdisciplinary investigations should be conducted at a microregional level in order to bring new data and clarifications about the Precucuteni-Cucuteni habitat in Târgu Frumos region and not only and the specificity of the settlements and relationships between them. In such a way, the general discussion and assumption phase based on incomplete investigations will be overcome.

Conclusions

In the end, we stress that the high density of Precucuteni and Cucuteni sites in the Târgu Frumos microregion is similar to a large extend to other relatively well investigated areas (the Neamț and Bacău Sub-Carpathian region, the Central Moldavian Tableland, the hilly Moldavian Plain etc), which demonstrates a generalized reality at a macro-level, *i.e.* at least regional level: depending on the relief are occupied the rivers' terraces, the alluvial fans surfaces, the inter-rivers, the landslide / erosion outliers from the rivers' immediate vicinity, usually with relatively low and medium (rarely high) altitudes, relatively good visibility / inter-visibility, sub-horizontal surfaces, south, east and west oriented, well lighted.

No doubt, an explanation of the high density of Precucuteni-Cucuteni habitat in this region can be found in the favorable geographic determinants. Firstly, a very important role was played by the microregion's location that was in an area of intense movement and contact between the various human communities in the segments of Siret middle basin and Bahlui and Prut basins, which favored the transversal and complementary economic links between the Carpathian and Sub-Carpathian depressions and hilly Moldavian Plain) as well as the longitudinal ones, between the North and South of Moldavia (Suceava Tableland, the north of the Moldavian Plain and the Central Moldavian Tableland).

Secondly, the favorable life conditions offered by the Middle and Late Atlantic environment (dense river network, rich springs, vast areas of forest and forest-steppe, the presence of relatively vast open areas for the cultivated fields, soils with a certain degree of anthropization), as well as the socio-economic phenomenas associated with the farming type, the regular change of fields and pasture lands, the elements of specialization, the natural population growth rate, the expansion and the „cluster” of settlements, the depopulation and intrusion / colonization of other human groups had particular significance.

Last but not least, it appears evident the existence of certain well structured concepts about the world and the space organization within a complex territorial social organization at micro- and macro-community level, even regional / supra-regional (as the regional variants seem to indicate), perhaps of *Chiefdom* type. Groups of rural settlements coagulated around centers relied on the positive interaction and continuum adaptation of the Chalcolithic communities to the environment challenges and its determinants, as a cultural response, the anthropization of certain areas within the *Cucuteni millennium* causing no irreversible effects in the investigated microregion ecosystem during the Middle and Late Atlantic.

Also, in judging the phenomenas of the habitat continuity and discontinuity we should not overlook the social-political factors, the inter-community conflicts being, apparently, quite often, all sites ending their existence by violence, which can cause at some point depopulations of certain areas, population movements to and from the

Precucuteni, Cucuteni and post-Cucuteni environment (colonizations, human groups departures, etc.), affecting the density and patterns of the Neolithic habitation in the Târgu Frumos microregion and only. At the same time, we should not exclude the habitat traditional pattern change, in the context of contacts between the human groups with different cultural traditions.

The sites' mapping, the integrated chorologic analysis of Precucuteni-Cucuteni habitat and the *landscape archeology* reconstructions of Târgu Frumos microregion show that there are currently more questions than answers, being required further field investigations, archaeological excavations and interdisciplinary research. In most of the cases it is not about the hiatus in Precucuteni and Cucuteni occupation, but the incomplete knowledge of the archaeological realities that affects the accuracy of the habitat dynamics reconstruction and the validity of geographical and historical conclusions.

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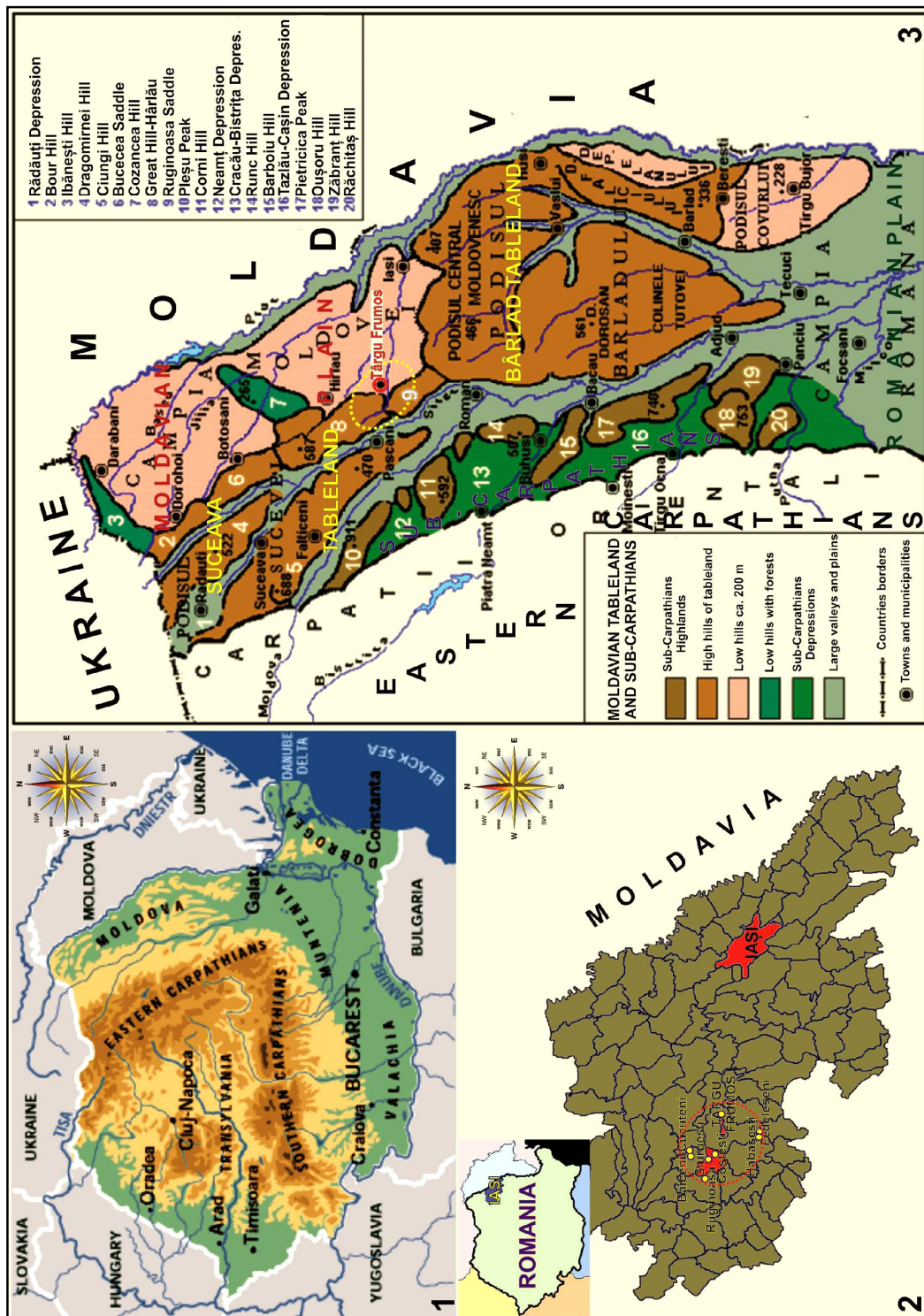


Fig. 1. Location of the Bahluiet hydrographic basin, Târgu Frumos microregion (1-3) (cartographic support: <http://www.oocities.org/dmarioara/subpodmo.htm>).

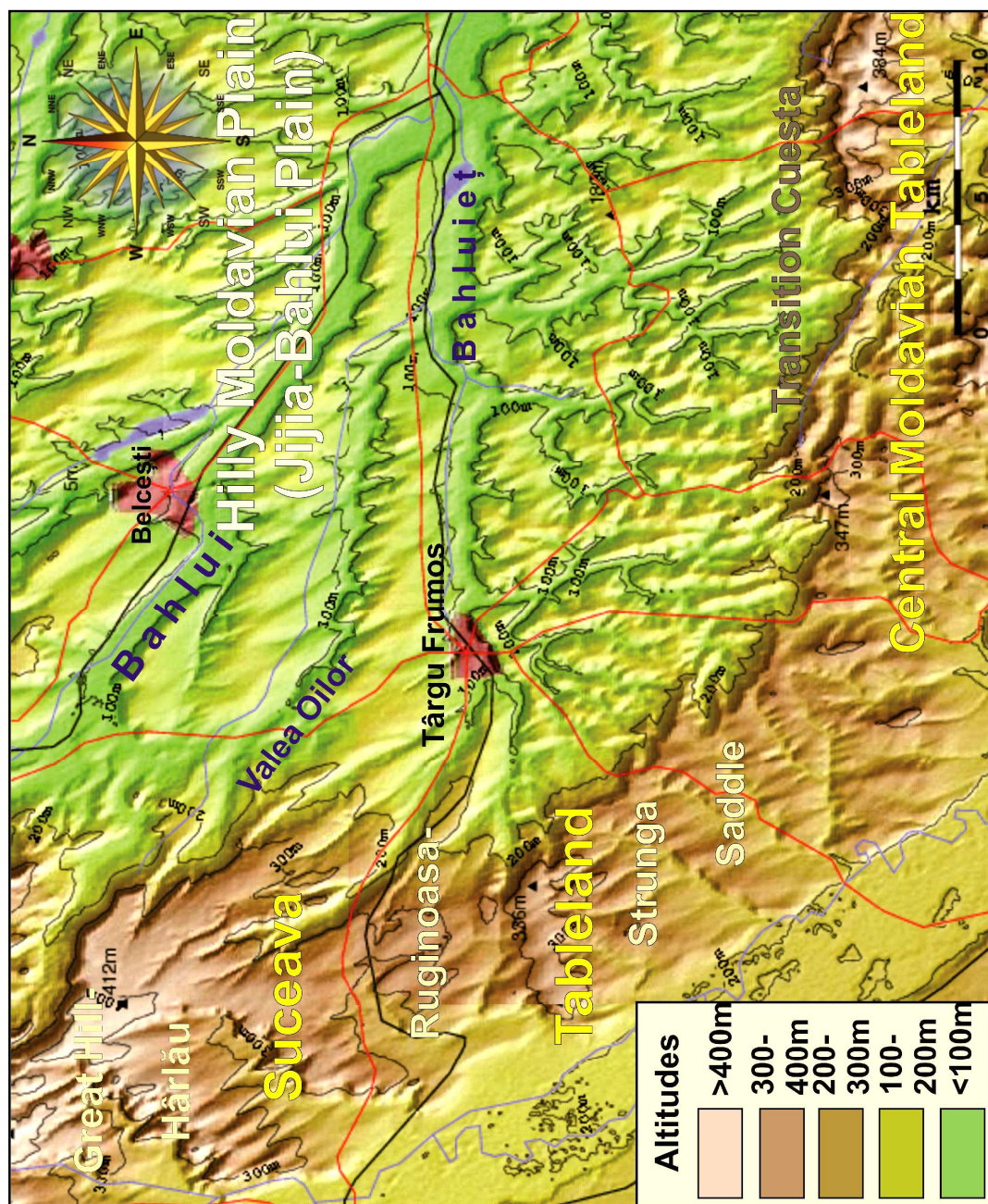


Fig. 2. The geographic units in Bahluiet hydrographic basin, Târgu Frumos microregion (cartographic support: www.weather-forecast.com/locations/Tirgu-Frumos).

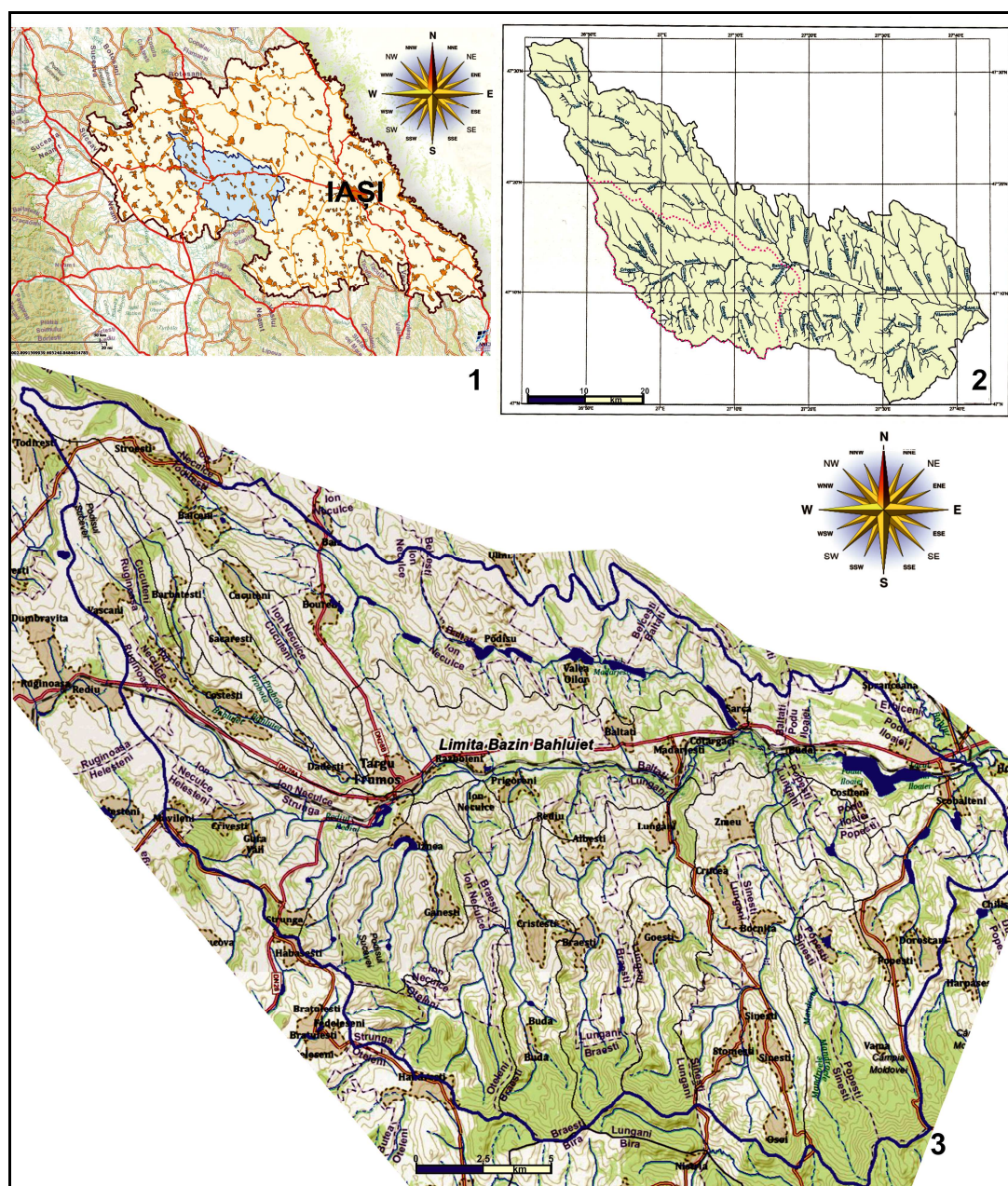


Fig. 3. The Bahluiet hydrographic basin (1-3)

(1, 3 – cartographic supports:

[http://www.arcgis.com/home/webmap/viewer.html?url=http%3a%2f%2fwww.geoportal-mediu.ro%2foperational%2frest%2fservices%2fARHEOLOGIE%2fBazineHidrografice%2fMapServer&source=sd](http://www.arcgis.com/home/webmap/viewer.html?url=http%3a%2f%2fwww.geoportal-mediu.ro%2foperational%2frest%2fservices%2fARHEOLOGIE%2fBazineHidrografice%2fMapServer&source=sd;);

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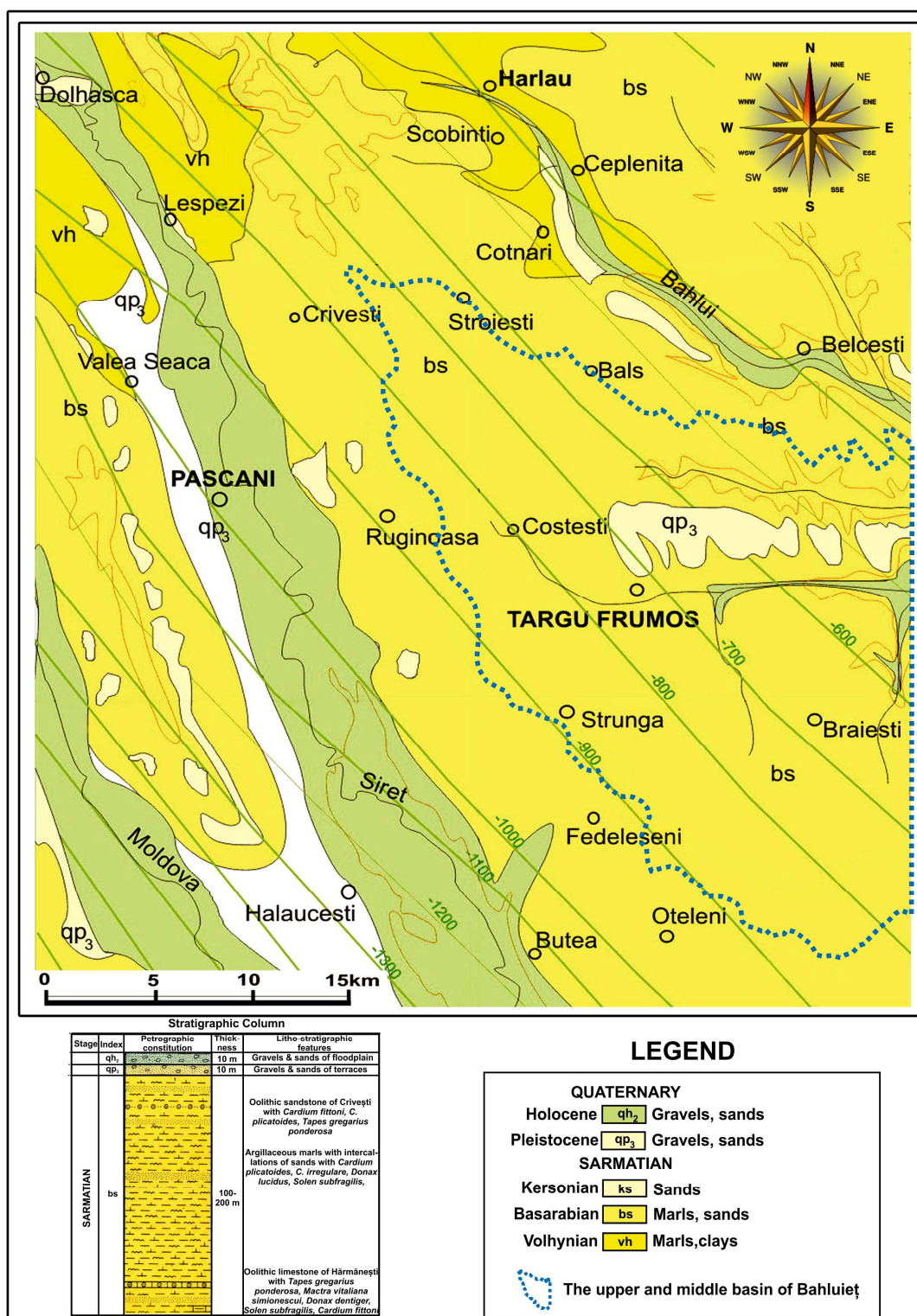


Fig. 4. Geological map of the Bahluiet hydrographic basin, Târgu Frumos microregion (© R.G. Pîrnău).

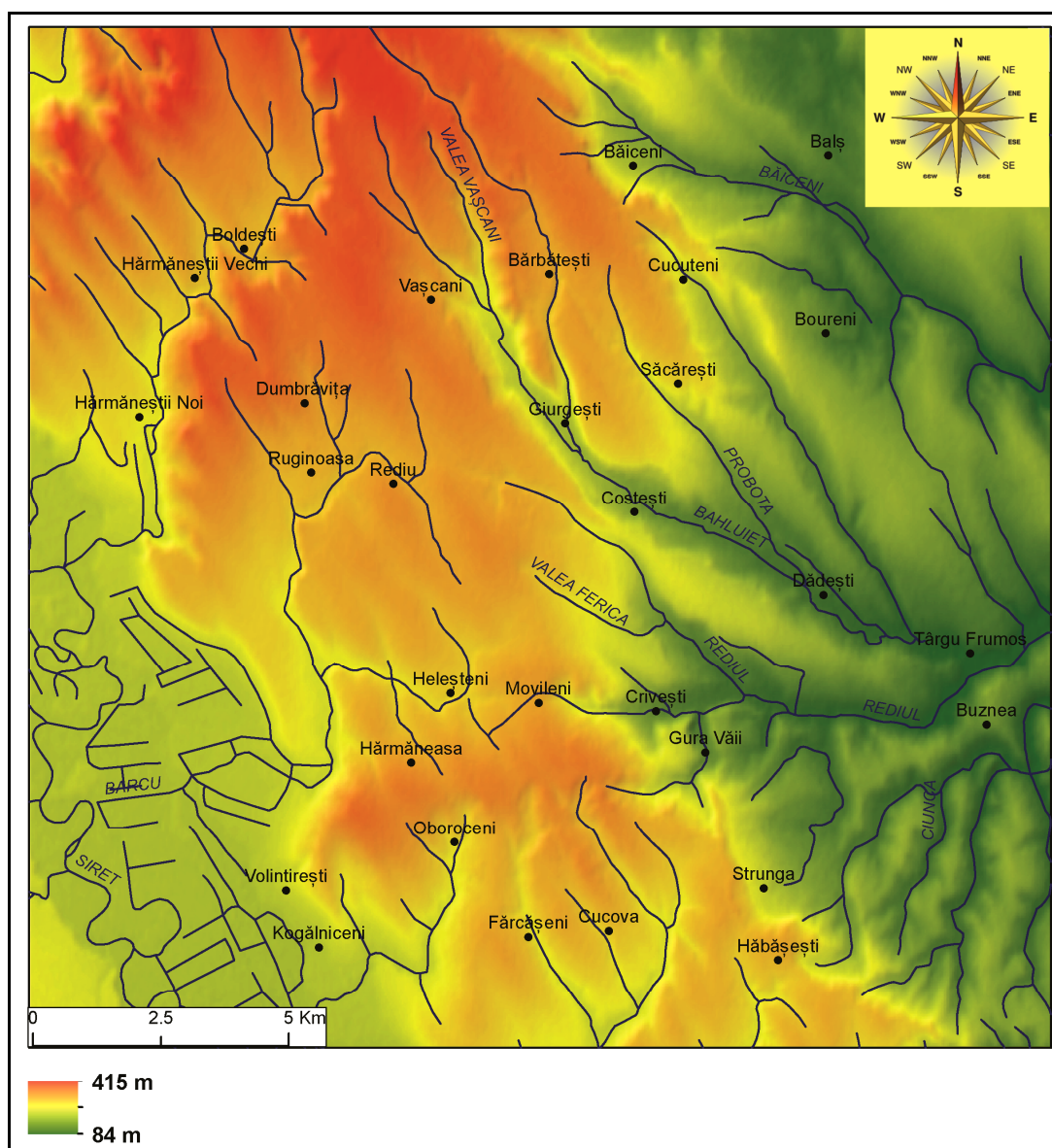


Fig. 5. *Hypsometric map of the Bahluiet hydrographic basin, Târgu Frumos microregion*
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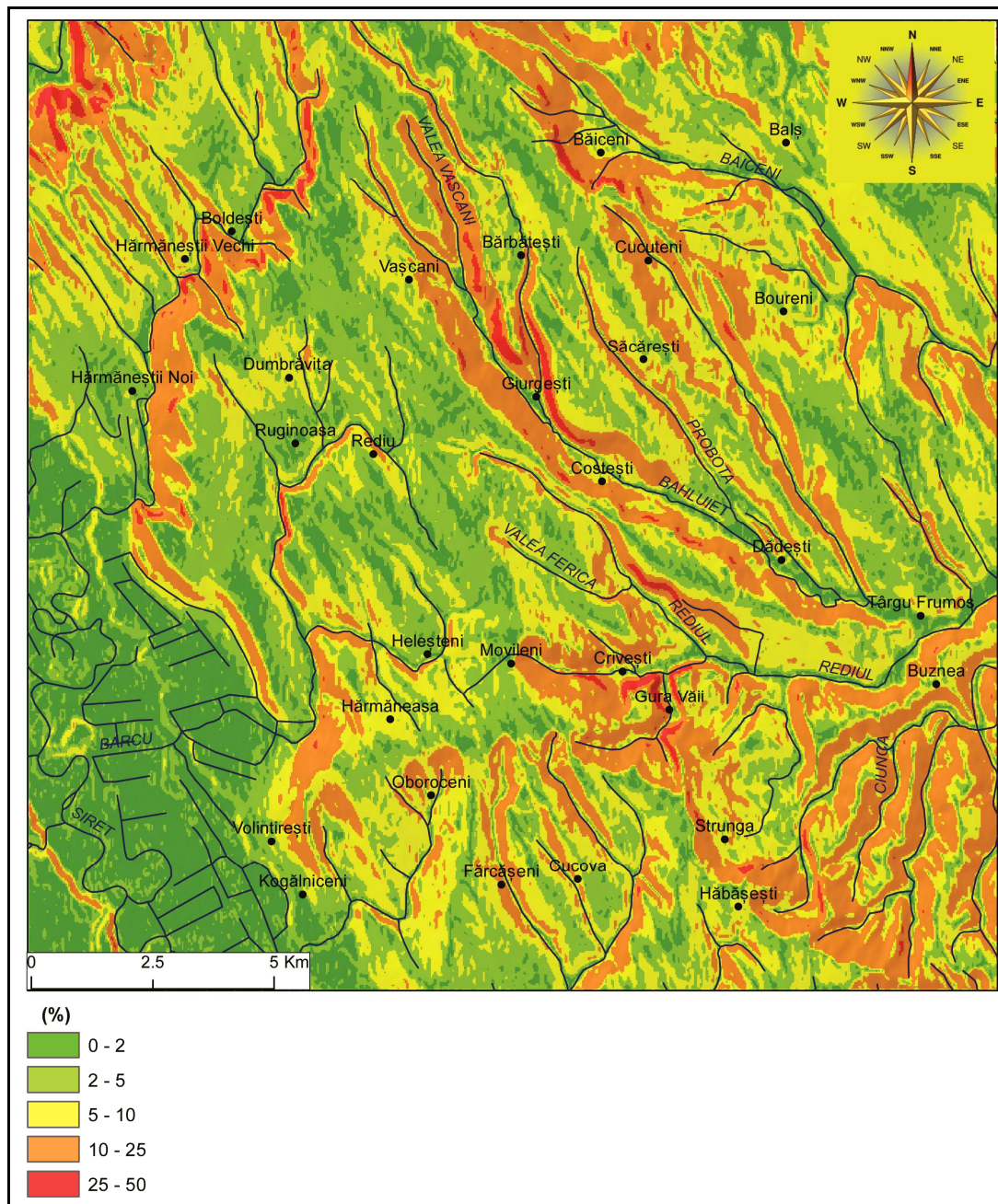


Fig. 6. Slopes map of the Bahluiet hydrographic basin, Târgu Frumos microregion
(© R.G. Pîrnău).

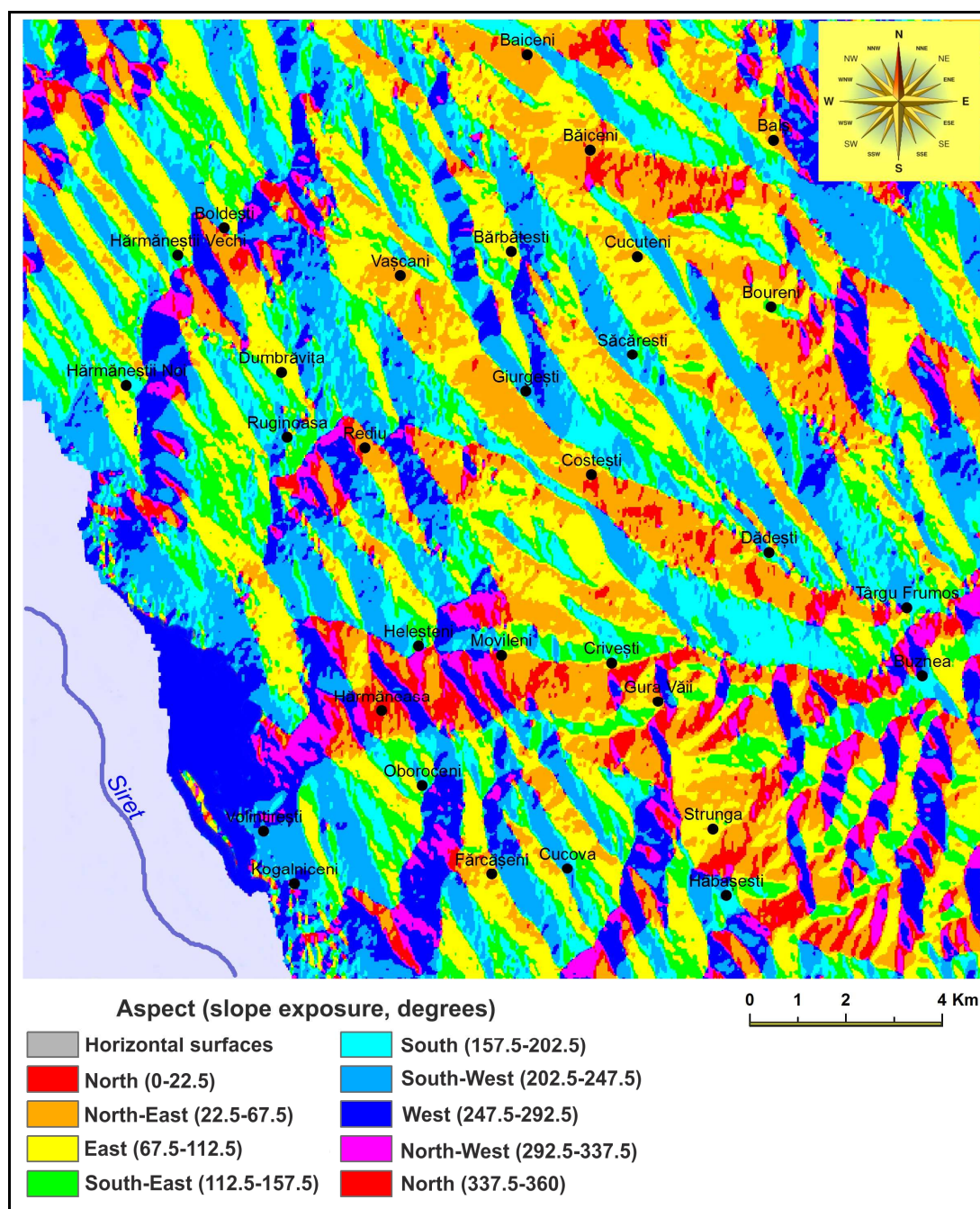


Fig. 7. Aspect map of the Bahluiet hydrographic basin, Târgu Frumos microregion
(© R.G. Pîrnău).

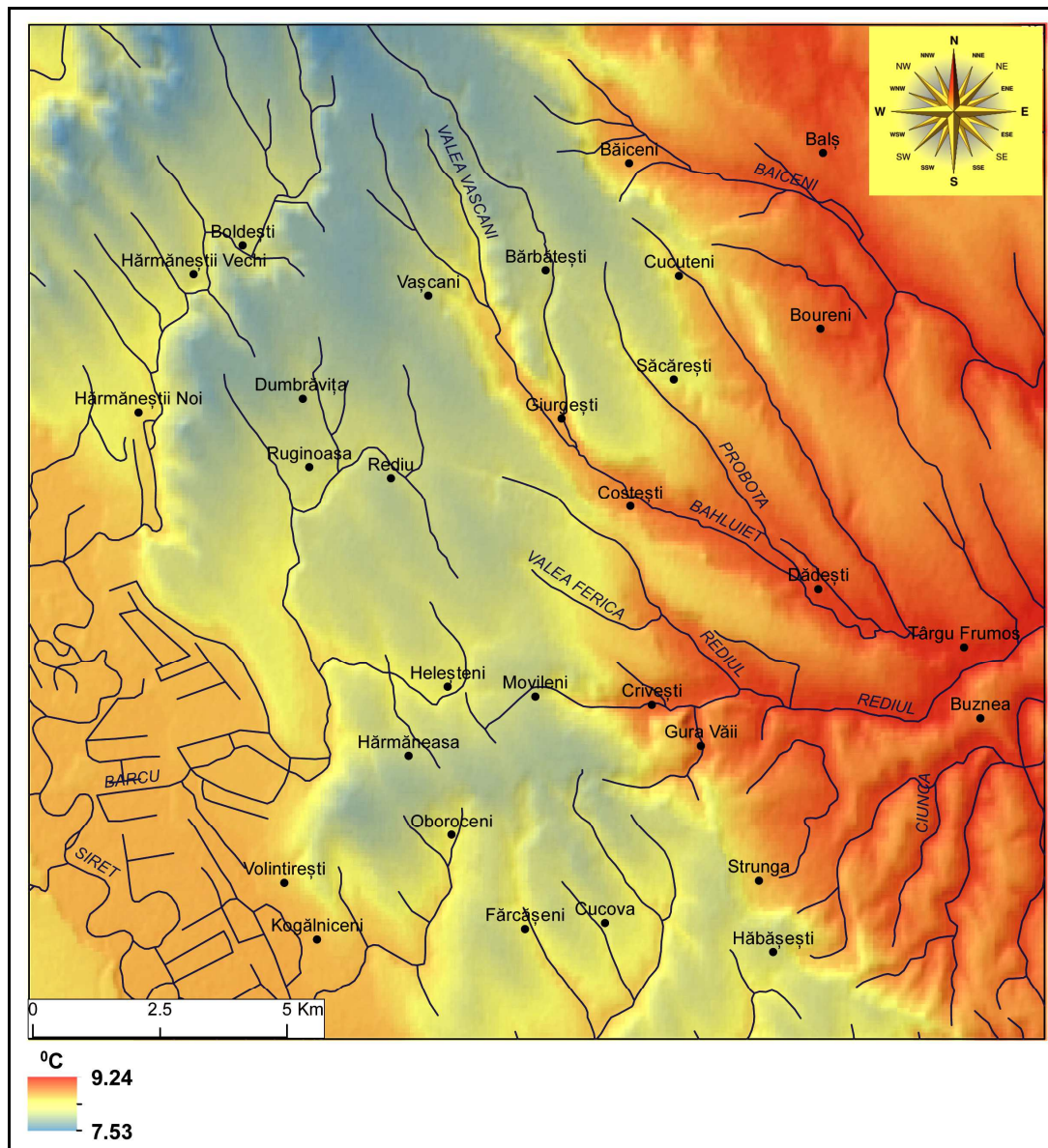


Fig. 8. *Temperatures map of the Bahluiet hydrographic basin, Târgu Frumos microregion*
(© R. G. Pîrnău).

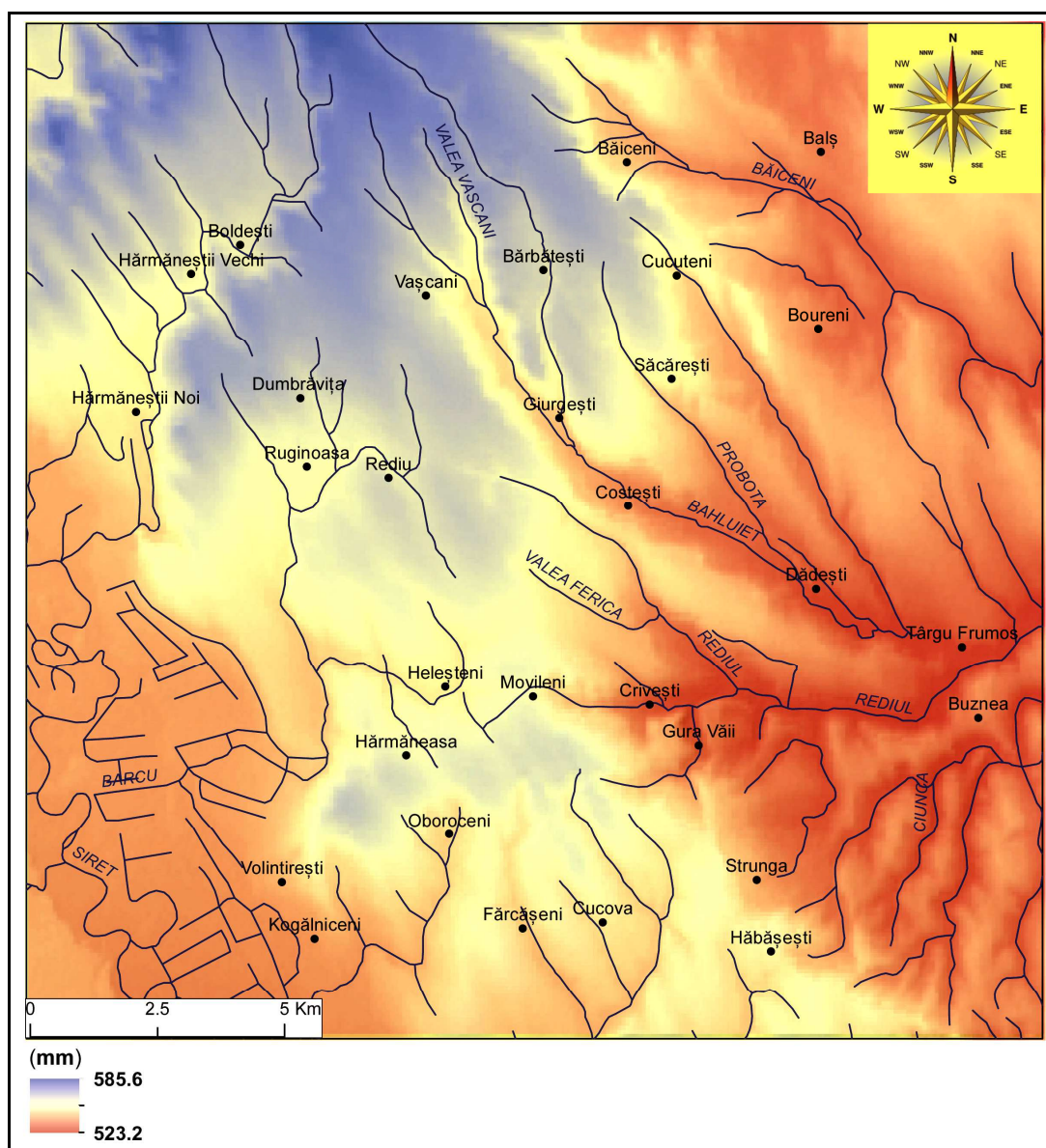


Fig. 9. Precipitations map of the Bahluiet hydrographic basin, Târgu Frumos microregion (© R.G. Pîrnău).

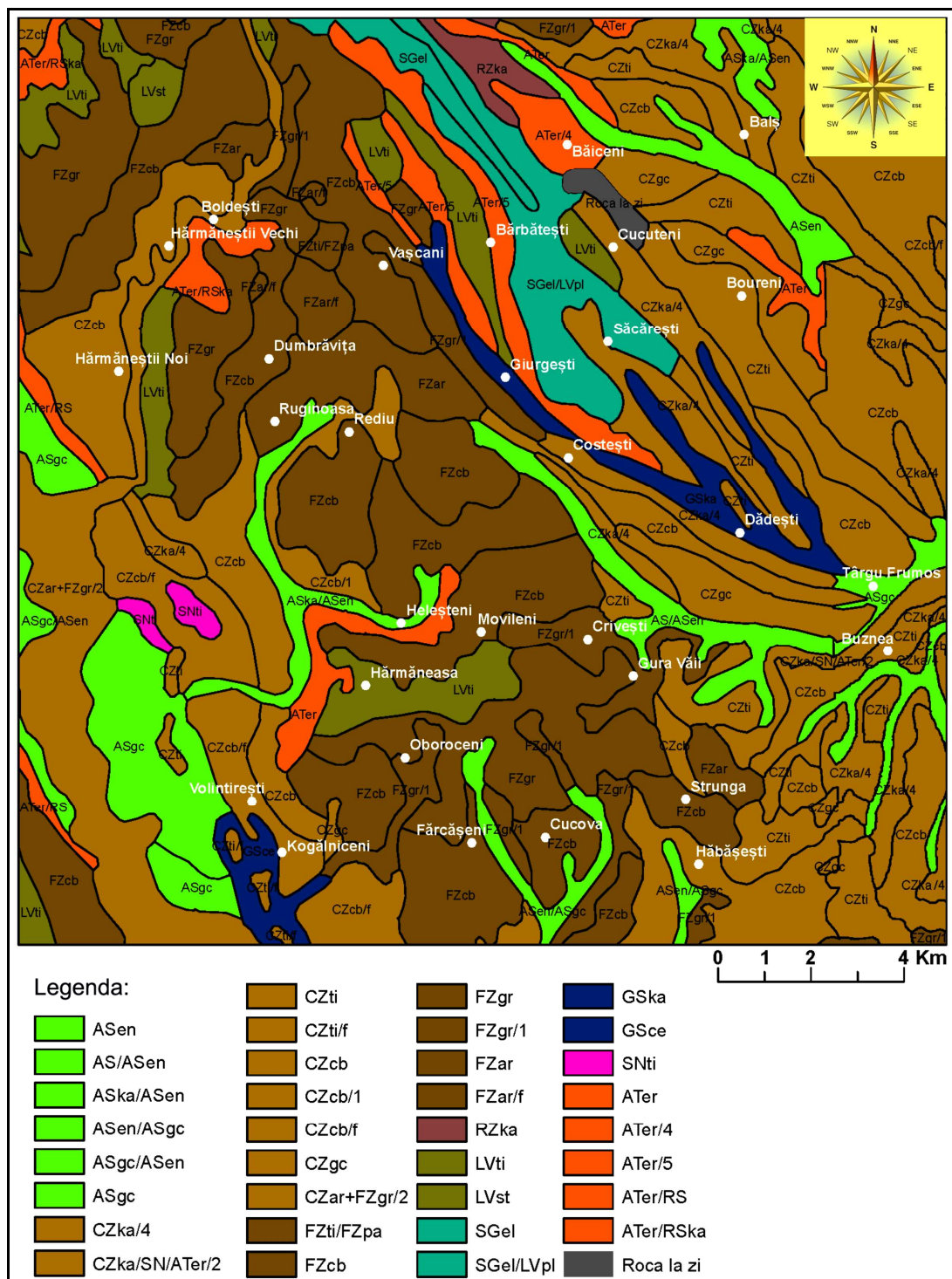


Fig. 10. Soils map of the Bahluiet hydrographic basin, Târgu Frumos microregion (© R.G. Pîrnău).

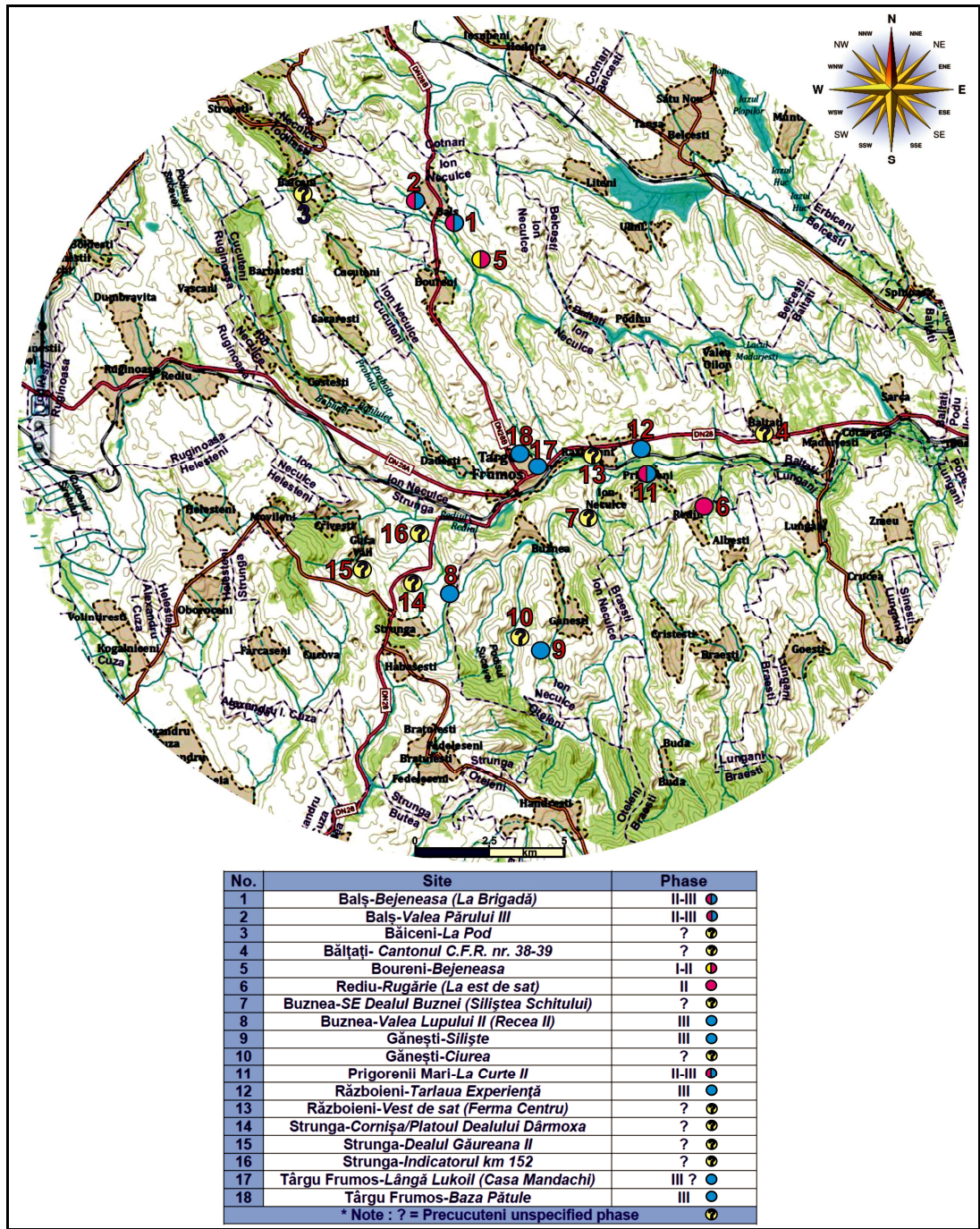


Fig. 11. Precucuteni sites in the Bahluiet hydrographic basin, Târgu Frumos microregion.

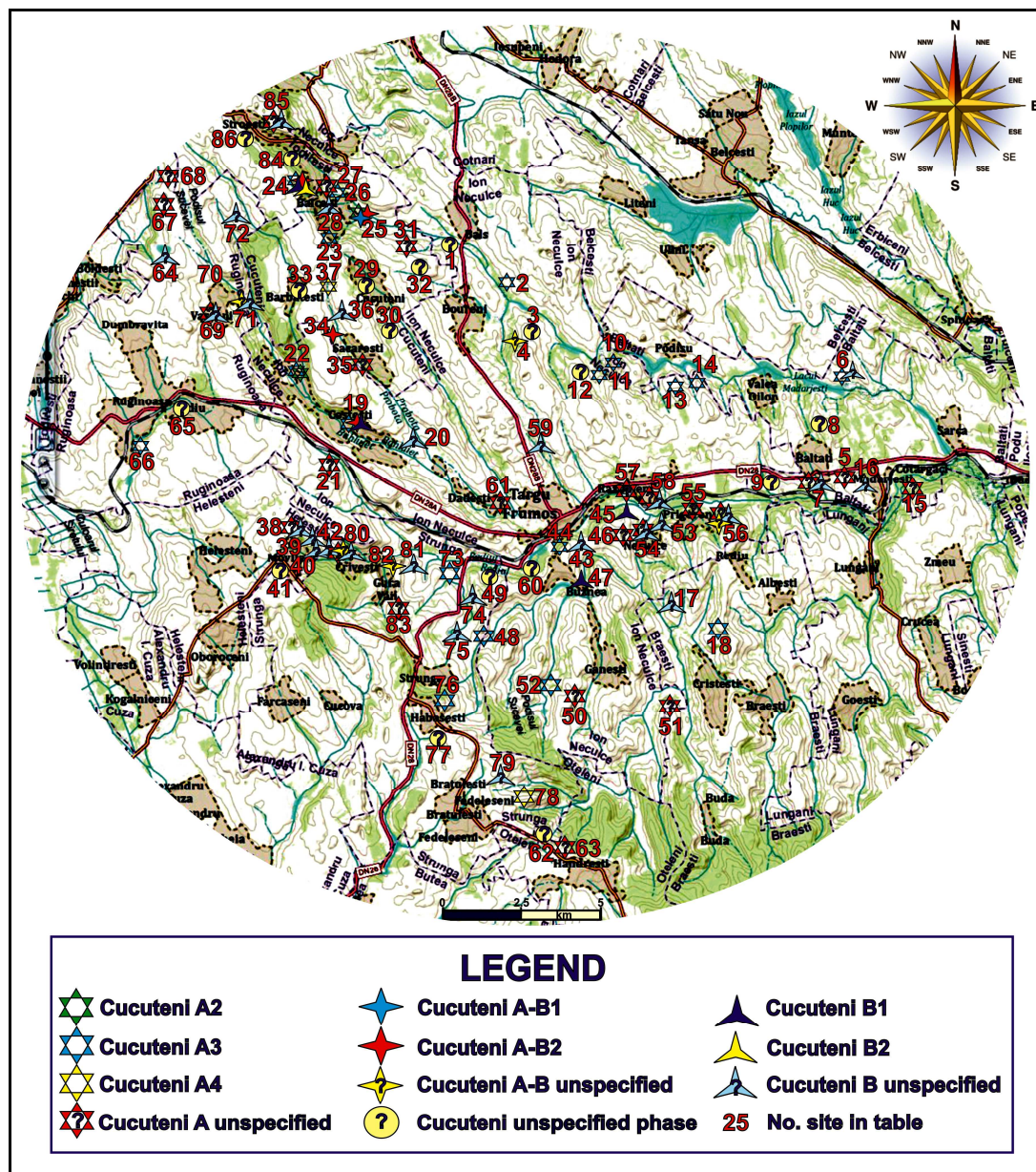


Fig. 12. Cucuteni sites in the Bahluiet hydrographic basin, Târgu Frumos microregion.

No.	Site	Phase	No.	Site	Phase
1	Balș-Mamelon	?	45	Buznea-NE Dealul Buznei (Livada de vișini)	B1
2	Boureni-Bejeneasa	A3	46	Buznea-SE Dealul Buznei (Siliștea Schitului)	A
3	Boureni-Dealul Hârtoș (Hârtochi)	?	47	Buznea-Siliște (După Grădini)	B1
4	Boureni-Dealul Hârtoșului	A-B	48	Buznea-Valea Lupului II (Recea II)	A3
5	Băltați-Livada IAS	A	49	Buznea-Livadă	?
6	Băltați-Dealul Mândra	A3, B	50	Gănești-Siliște	A
7	Băltați-Cantonul C.F.R. nr. 38-39	A, B	51	Gănești-Draga II	A
8	Băltați-Movila Hârtoșeanu	?	52	Gănești-Ciurea	A3
9	Băltați-Confluența Bahluiet-Gugea	?	53	Ion Neculce/Prigoreni Mici-La Curte I	B
10	Filiași-Dealul Mare	A3	54	Ion Neculce/Prigoreni Mici-La Cimitir	A, B
11	Filiași-SV de Dealul Mare	A3	55	Prigoreni Mari-La Curte II	A
12	Filiași-Tarlaua Hârbuzărie	?	56	Prigoreni Mari-Holm	A, A-B, B
13	Podișu-Dealul Boghiu (Crescătoria de pește)	A3	57	Războieni-Vest de sat (Ferma Centru)	A
14	Podișu-Tarlaua Pădure	A3	58	Războieni-Cantonul 24	A, B
15	Cotârgaci-Dealul Cotârgaci	A	59	Târgu Frumos-Capu Calului (Adâncata)	B
16	Mădărești-Marginea de SV a satului	B	60	Târgu Frumos-Nisipărie	?
17	Cristești-Cristioaia (Via Cristești)	B	61	Târgu Frumos-Jora (Fosta Școală generală 3)	A
18	Cristești-Lacurile (Izvoare)	A3	62	Hândrești-Zgâia I	?
19	Costești-Cier (Lângă Școală)	A3, A-B2 B1	63	Hândrești-Zgâia II	A
20	Costești-Podișu I	B	64	Dumbrăvița-Tarlaua Iezerul (Holm)	B
21	Costești-Pietrăria din Valea Hainei	A	65	Rediu-Grădina lui Toma Melinte	?
22	Giurgești-Dealul Mănăstirii	A2-3	66	Ruginoasa-Colina/Dealul Drăghici	A3
23	Băiceni-Dealul Mănăstirii (La Dobrin)	A3	67	Ruginoasa-Stânga drumului Todirești-Băiceni	A ?
24	Băiceni-Cetățuia	A3, A-B2 B1, B2	68	Ruginoasa-La nord de comună	A
25	Băiceni-Dâmbul Morii	A2, A-B1-2	69	Vascani-Vatra satului	A, B
26	Băiceni-Dâmbul lui Pletosu	A	70	Vascani-Podiș	?
27	Băiceni-Siliște	?	71	Vascani-Lutărie	A-B, B
28	Băiceni-La Bazin	B	72	Vascani-Tarlaua Păscănia	B
29	Cucuteni-Vatra satului	?	73	Strunga-Indicatoul km 152	A3
30	Cucuteni-Sud de sat	?	74	Strunga-Indicator kilometric 23	B
31	Cucuteni-Târfa Luncanului	A	75	Strunga-Calda I	B
32	Cucuteni-Ismiceanu	?	76	Hăbășești-Holm	A3
33	Bărbătești-Tarlaua Grajd	?	77	Hăbășești-Siliște	?
34	Săcărești-Suhat	A-B2	78	Fedeleşeni-Dealul Cănepăriei	A4
35	Săcărești-Vatra Satului (Locuința Brânză Petruț)	A	79	Fedeleşeni-La Cruce în Fundoale	B
36	Săcărești-Laiu	B	80	Crivești-Hârtoș-Spre Budăi	A, A-B, B
37	Săcărești-Tinoasa	A4	81	Crivești-Dealul Viei	B
38	Movileni-La Movile	A, B	82	Crivești-Holm	A-B
39	Movileni-Magiea de NE a satului	B	83	Gura Văii/Găureana-Lutărie	A
40	Movileni-Muchia Dealului	B	84	Băiceni/Todirești-Platoul VSV de Vatra satului	?
41	Movileni-Dealul Fântânilor	?	85	Stroiești-Pietrărie (Osoi)	A, B
42	Movileni-Hârtoșul de la est de sat	B?	86	Stroiești-Bărgăhici	?
43	Buznea-Dealul Buznei	B			
44	Buznea-Dealul Beci	A3			

* Note : ? = Cucuteni unspecified phase

Fig. 13. Table with Cucuteni sites in the Bahluiet hydrographic basin, Târgu Frumos microregion.

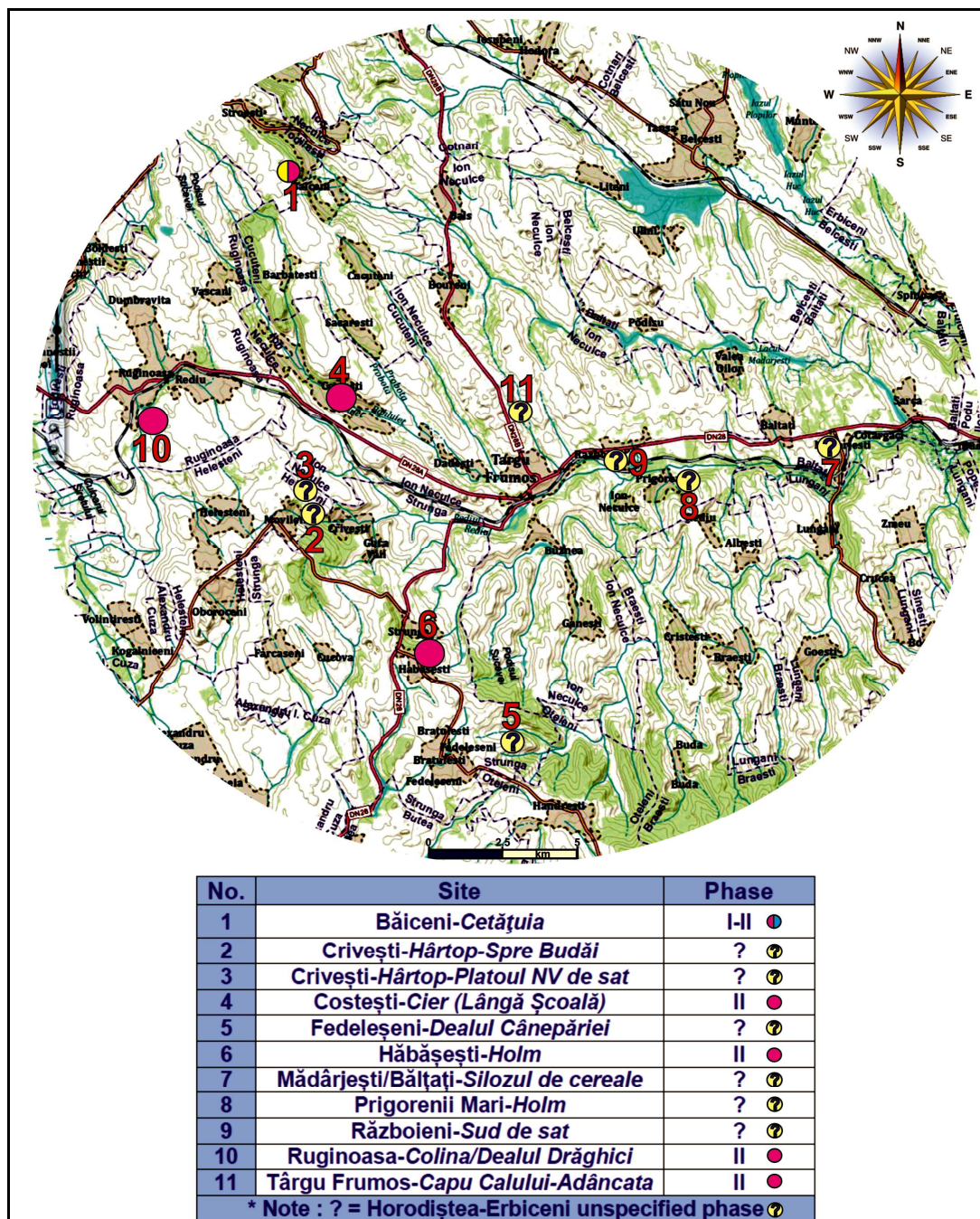


Fig. 14. Horodiștea-Erbiceni sites in the Bahluieț hydrographic basin, Târgu Frumos microregion.



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