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APVLVM L

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JUBILEU - APULUM L

Anuarul științific editat de Muzeul Național al Unirii, revista *Apulum* împlinește o cifră rotundă, respectiv a ajuns la cel de-al cincizecilea număr al său.

O retrospectivă și în egală măsură o istorie a acestui "ambasador" al instituției albauliene, în țară și dincolo de fruntariile acesteia, ni se pare a fi nu numai necesară, dar și bine venită, fiecare din numerele sale editate până în acest moment ocupându-se cu predilecție de istoria veche și arheologia românească și, în egală măsură, europeană.

Începuturile anuarului datează din 22 august 1939 când Profesorul ION BERCIU hotărăște, împreună cu câteva din autoritățile locale ale timpului, în vederea creșterii prestigiului instituției în fruntea căreia a fost numit de NICOLAE IORGA (1938), publicarea unui buletin (*Acta Musei Apulensis*) pus sub genericul *APULUM*, nume simbolic justificat prin două direcții, adică acela legat de arheologie (și de toponimul dublului centru urban roman, Alba Iulia de astăzi) și de necesitatea editării unei reviste de profil ce urma să oglindească în paginile sale activitatea muzeului ca instituție de cercetare și protejare a patrimoniului istoric deținut de acest spațiu geografic (vezi prefața lui ION BERCIU din primul număr al revistei *Apulum*, p. 361-367).

De la gândurile profesorului și până la materializarea acestora a trebuit să treacă mai bine de trei ani, pentru discuții, felurite aprobări, organizarea unor licitații pentru obținerea fondurilor pecuniare etc. timp în care, "încăpățânarea" de oltean a filologului clasic (pe care epigrafistul clujean I. I. Russu, coleg de generație cu Ion Berciu, îl numea, într-o epistolă trimisă subsemnatului prin anii anii 70 ai secolului trecut cu expresia **OLIM MALVENSIS NUNC APULENSIS** – odinioară din Oltenia – **DACIA MALVENSIS** – prin rădăcini, acum apulens – locuitor al Albei Iulia) a dat roade astfel încât numărul de debut a văzut lumina tiparului și a pornit la drum în 1942, sumarul său fiind structurat în șapte segmente: preistorie, istorie antică, istorie medie-modernă, științe naturale, etnografie, comunicări și cronica muzeului (vezi recent Zevedei Ioan Drăghită, "Documente privind începuturile anuarului *Apulum*", *Apulum*, XL, p. 483-493). Încă de la început, anuarul nu s-a limitat doar la trecutul ținuturilor Albei, ci prin deschiderea lui, a publicat între copertile sale valoroase contribuții ale unor specialiști de marcă din domeniile pomenite mai sus, arheologi, istorici, etnografi ce își desfășurau activitatea în centre științifice de tradiție de la noi (D. Berciu, C. Daicoviciu, Al. Borza, D. Prodan, Ghe. Pavelescu ș.a.). Apariția anuarului albaulian se adaugă unei alte reviste muzeale cu nume simbolic –

Sargetia – editată de Oct. Floca de la Muzeul din Deva, a cărui număr inaugural a fost lansat în anul 1937.

După apariția următoarelor două numere – *Apulum* II, 1943/1945, *Apulum* III, 1949 – actele apulense își vor înceta brusc apariția din cauza timpurilor pe care nu le comentăm aici și acum, pentru a-și relua reeditarea în anul 1961 cu genericul schimbat în *Studii și Comunicări, Acta Musei Apulensis*, III, al cărui cuprins era direcționat pe aceleași segmente cu care a pornit la drum în 1942.

Revenind la denumirea care l-a consacrat – *Apulum, Acta Musei Apulensis* – odată cu numărul V (1965) revista și-a continuat apariția anuală, și-a extins colaboratorii (cercetători locali ori de la alte instituții, muzee, institute de cercetare din țară) și a început seria publicării unor studii semnate de specialiști din Europa și America, acest lucru fiind posibil datorită fondatorului, ION BERCIU, cel care a pus bazele schimbului de publicații, volume care au făcut ca biblioteca muzeului albaiulian să fie una din cele mai bogate biblioteci specializate de la noi.

Anuarul a continuat să fie editat până în anul 1989 (numărul XXVI), următoarele trei numere (XXVII-XXX/1990-1993) fiind cuprinse într-un singur tom.

În următorii ani (1994-2012) anuarul a apărut anual, fiind, o afirmăm cu satisfacție, singura revistă de specialitate care apărea la timpul potrivit.

Cine va avea curiozitatea să consulte sumarul celor 49 de numere, în total mii de pagini (dacă socotim că media/volum, cuprinde între 300-600 file tipărite), va putea lesne observa chiar dintr-o frugală parcurgere a indicilor de autori (*Apulum* I-X, p. 936 sq., *Apulum*, XI-XX, p. 451-470; *Apulum* XXI-XXX, p. 562-575; *Apulum*, XXXI-XL, p. 670-697; *Apulum* XLI-L, sub tipar) că fiecare număr cuprinde în segmentul istorie veche și arheologie (asupra căruia insistăm, dată fiind specialitatea noastră) studii, comunicări, note, bibliografie, rezumate în limbi de circulație internațională a căror țintă a fost preistoria (cu epocile sale străvechi) și protoistoria, epocile celei de-a doua vârste a fierului și până la consolidarea evului mediu, rezultatele unor cercetări arheologice, epigrafice, numismatice ș.a. ale unor generații de specialiști, în cea mai mare măsură consacrați în domeniul lor de investigare a patrimoniului mobil și imobil, ori din tânăra generație de arheologi și muzeografi care bat, cu bune rezultate, la porțile consacrării.

Dintre numele care au onorat, prin contribuțiile lor anuarul *Apulum* se cuvine să îi amintim pe C. și H. Daicoviciu, M. Macrea, I. I. Russu, D. Protase, I. H. Crișan, I. Glodariu, R. Vulpe, D. Tudor, Vl. Dumitrescu, C. C. Petolescu, I. Piso, M. Bărbulescu, V. Vasiliev, A. Zrinyi, R. Ardevan, Doina Benea, Lucia Marinescu, N. Gudea, K. Horedt, M. Rusu, N. Vlassa, Ghe. Lazarovici și lista ar putea continua, acestora li s-au adăugat, firească, generații de arheologi de la

instituția muzeală ce se îngrijește de apariția cu regularitate a actelor apulense: E. Zefleanu, I. Berciu, Ghe. Anghel, Al. Popa, I. Al. Aldea, V. Moga, H. Ciugudean, ori tinerii noii echipe G. T. Rustoiu, C-tin. Inel, M. Drîmbărean, R. Ciobanu, R. Ota, I. Lascu, G. Bounegru, Anca Timofan etc., cei care duc greul tot mai numeroaselor cercetări arheologice preventive din Alba Iulia și județul Alba.

Revista noastră este prezentă în aproape toate bibliotecile ori instituttele de cercetare din țară, fie ele centre universitare, fie muzee naționale ori județene, dintre care unele, după exemplul apulens au început (unele continuă, altele și-au încetat apariția, n.n.) să-și editeze anuare proprii (*Acta Musei Napocensis*, *Acta Musei Porolissensis*, *Potaissa*, *Analele Banatului*, *Pontica* șamd.).

Schimburile externe, ale căror baze au fost demarate, și ori de câte ori avem ocazia nu încetăm să o repetăm, de ION BERCIU, se cifrează în acest moment la 180 de instituții de profil din Europa, America și Asia, în a căror bibliotecă *Apulum*-ul este nelipsit și, continuăm noi, apreciat.

Deschiderea Muzeului spre lumea științifică internațională este confirmată și de paginile semnate de peste treizeci de cercetători ai antichităților din Belgia (M. Renard, G. Balty), Bulgaria (M. Cicicova, P. Detev), Franța (J. Carcopino, J. Baradez, S. Boucher), Germania (N. Boroffka), Italia (L. Bianchi, N. Brancato, L. Zerbini), Spania (A. Balil, J. Zuriaga, J. Pantoja), USA (St. Foltiny, Ph. Davis) și mulți alții.

Majoritatea dintre cercetătorii externi, după corespondențe păstrate în arhiva muzeului, ne-au fost oaspeți, ei vizitând muzeul și câteva din siturile arheologice din zona Albei, fie că este vorba de așezarea neolitică de la Lumea Nouă, fortificația din prima vârstă a fierului de la Teleac, cetățile dacice de la Căpâlna sau Craiva, marele centru urban Apulum cu castrul său în parte restaurat pe latura de sud, galeriile antice de la Roșia Montană (Alburnus Maior), în fine cetățile feudale de la Tăuți, Vurpăr etc., toate înscrise în lista patrimoniului național.

Pare de domeniul evidenței că în cei 74 de ani de la apariția ideii de revistă a Muzeului și 71 ani de când *Apulum* (pe a cărui primă copertă se găsește *logo*-ul Lupei Capitolina descoperită aici, n.n.) apare cu regularitate, de îngrijirea lui (strângere de materiale, tehnoredactare și inerentele probleme redacționale) s-au ocupat, pe lângă întemeietorul ei, ION BERCIU, un colegiu de redacție care a activat în cadrul departamentului de arheologie-cercetare Ghe. Anghel, Al. Popa, I. Al. Adea, V. Moga.

Dacă majoritatea volumelor au fost structurate pe domeniile pomenite la tot pasul (arheologie, istorie, istoria culturii, etnografie, restaurare-conservare), au fost ani când numărul articolelor trimise redacției au fost atât de numeroase încât, începând cu anul 1968, anuarul cu numărul VII, a trebuit să fie împărțit în

două părți distincte, un volum de arheologie (VII/1) și un altul de istorie (VII/2), modalitate ce a fost adoptată și pentru două-trei numere următoare.

Cu începere de la anuarul pe anul 2008 (*Apulum* XLV) alături de un nou colectiv de redacție, format din câțiva tineri absolvenți ai Facultății de Istorie din cadrul Universității ”1 Decembrie 1918” din Alba Iulia, care și-au ales, încă din anii studenției specialitatea istorie veche și arheologie, în conformitate cu noile norme pentru acreditare CNCSIS (volumul trebuie să treacă din categoria C în gradul B, și acest lucru trebuie să preocupe noul colegiu de redacție, n.n. V. Moga) a fost selecționată o echipă de recenzori ce cuprinde cercetătorii de la Universitatea ”Babeș – Bolyai” și Institutul de Arheologie și Istoria Artei din Cluj – Napoca, Sibiu (Universitatea ”Lucian Blaga”) și Frankfurt/Main (Germania). Tot cu același număr s-a restructurat și sumarul revistei, anume dispunerea materialelor ce urmau să fie publicate în funcție de tematica lor: *Studii – Dezbateri – Fontes – Recenzii – Note de lectură* și, ca o opinie personală, deschiderea unui segment numit *Cronica Muzeului* cu informații despre cercetările arheologice anuale, despre activitatea științifică și culturală pe care membrii colectivului actual trebuie să o cunoască nu numai în ziarele ori posturile de televiziune locale (!).

Din anul 2011 (*Apulum* XLVIII) s-a încetățenit ”ruperea” volumului în două părți distincte în urma cărora volumul de arheologie a fost inclus în ”series archaeologica et anthropologica”.

Apulum, ajuns așadar la un număr jubiliar, L, trebuie și este obligat moral să continue tradiția, începută cu mai bine de șapte decenii în urmă, aceea de a fi un mesager al preocupărilor științifice de ținută europeană în domeniul atât de vast al arheologiei locale, naționale și de ce nu, internaționale, paginile sale fiind deschise tuturor celor care se preocupă de cercetarea patrimoniului, a urmelor de habitat cu varietatea lor de artefacte de toate categoriile încă nedepistate. În arheologie surprizele sunt la tot pasul, așteptându-și depistarea.

AD MULTOS ANNOS ACTA MUSEI APULENSIS!

Alba Iulia,

10 mai 2013

VASILE MOGA

AERIAL ARCHAEOLOGICAL PROSPECTION ON THE MIDDLE COURSE OF THE MUREŞ RIVER AND ADJACENT AREAS*

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Keywords: aerial photography, topography, Middle Mureş Valley, prehistory, Roman period

Cuvinte-cheie: fotografie aeriană, topografie, Mureşul Mijlociu, preistorie, epocă romană

Initiated by the Eötvös Loránd University in Budapest and the Mureş County Museum, later expanded to include further institutions – among them Muzeul Unirii din Alba Iulia –, the aerial archaeological project started in 2009 and defined the initial study area as the Transylvanian Plain¹. Parts of the earlier results of the project were already reported², a selection of photographs was presented in an itinerant exhibition at Târgu Mureş, Alba Iulia and Budapest, accompanied by a catalogue³. This paper presents the results of the researches from a smaller geographical area: the Middle Mureş Valley and adjacent areas (Pl. I).

The aerial archaeological exploration of the area dates back to the end of the 1990's and the beginning of the 2000's, when B. Hansen and I. Oltean conducted researches for several years⁴. While this past project focused mainly on the Late Iron Age and Roman sites from the Mureş Valley, the objective of the new investigations is the collection of data about the general archaeological

* This work was supported by a grant of the Romanian Ministry of Education, CNCS – UEFISCDI, project number PN-II-RU-PD-2012-3 – 0316. This work was also supported by the Hungarian Academy of Sciences, Hungarian Science Abroad, the 2013 Domus Hungarica Scientiarum et Artium Programme. In 2009–2010 the aerial photographs were made with the support of the Hungarian Scientific Research Fund (OTKA) IN 77325 project. The authors wish to thank for observations, information and bibliographic support to Cristian I. Popa.

¹ Oberländer-Tárnoveanu 2010, p. 399.

² Czajlik *et alii* 2011.

³ Berecki *et alii* 2012.

⁴ Oltean 2007.

topography of the region, the quest of new archaeological pieces of evidence starting from the aerial photographic documentation of the known sites.

One of the main characteristics of the middle course of the Mureş River is its location (both from north and south) between high mountains. The landscape is framed north by the Apuseni Mountains, and south by the Southern Carpathians, more precisely the Şureanu Mountains. From the valley up to the high mountains several consecutive geomorphologic levels can be observed, which on the one hand define the settling and communication conditions, and on the other hand, due to the fast changing weather and vegetation, significantly influence the research and sighting possibilities.

The settling of communities as well as the circulation of the various goods, like ores or salt, was facilitated by the valley of the river, which running along the high mountains formed a wide valley bottom, propitious for human activities and communication routes. The river produced significant alluvial deposits, due to which pronounced terraces emerged. The alluvial process was intensive even in historical times, as it could be observed – among others – during the aerial photography of the archaeological rescue excavations at the South-Transylvanian Motorway (Pl. II/1). The thick alluviums render difficult the identification of archaeological sites. At the same time, as in the case of other waterways of the Carpathian Basin, one should notice also for the valley of the Mureş River that settlements were not necessarily established only on terraces⁵. It is doubtless however that well identifiable – and usually known for a long time – settlements occur on the plateaus of the river. As examples for low – and in this respect geomorphologically younger – terraces the Neolithic Tărtăria or the Roman Veţel can be mentioned, while the Roman Cigmău was established on a higher, previously formed terrace. At the periphery of the Mureş Valley, by fortifying the up to several hundred meters high “mountains”, the prehistoric fortifications of important strategic position were established, controlling longer sections of the valley, such as Teleac or Uroi.

Leaving the valley, the settling levels can hardly be followed; our information for the time being is only fragmentary. The researches in the south, in the region of Cugir, indicate human establishments in the proximate forefront of the high mountain zones, similar to the fortification from Ardeu in the north. Other fortifications such as Piatra Craivii northwards in the Apuseni Mts. or the ones around the Dacian capital in the southern region were built on the fortifiable, strategically significant locations of high mountains. From the perspective of the Middle Mureş Valley the southern region is particularly important, since in this direction there are several narrow valley systems crossing the Carpathian Mts., broadening the east–west communication routes

⁵ Czajlik, Holl 2011.

with further, southern connections. The maintenance and supervision of this southern route was important not only for the Dacian Kingdom, but it had an outstanding role in the Roman period as shown by the fortification system located in the relatively high Şureanu Mountains.

The geomorphologic conditions and the settlement system had a determining influence on the methodology of the aerial archaeological prospection. While the research of the alluvium relief and the Mureş River's Valley was possible by sighting the various vegetation and soil marks on the cultivated fields during the early summer period, on the higher woodlands and pastures the snowy seasons or the early autumn months following droughty summers were adequate for aerial observations. As experienced by other similar projects from different countries, the results of this kind of research in different periods are unequal, e.g. because of the abundant precipitations in the spring and summer of 2012: in that year crop marks could hardly be observed in the Middle Mureş Valley.

However, the number of the sites from Transylvania – and generally from Romania – investigated through aerial archaeology does not allow the categorization of these morphological systems⁶; we will still present a classification, according to the type of the site. In this respect, the present paper proceeds from the features observable on field to the sites identifiable only from the air, considering also the chronological information and detailing the available topographical information.

Fortifications

The site from Căpud–Măgura dated to the Copper Age was mentioned in the literature already in the 19th century, but small scale excavations were undertaken only at the middle of the 20th century. The site is situated east of the village and north of the confluence of the Târnavă and Mureş Rivers, a place from where the valley is highly visible and controllable (Pl. III/1). The interpretation of the aerial record is made difficult by the later agricultural use of the area. Some of the terraces and parcels are the result of this late land use. The more or less triangular flat hilltop is also divided; both on its edge and also inner territory traces of banks can be observed. The anthropic use of the hilltop is documented by several ditches and pits, partially cutting the bank from the hillside. The discoveries were dated to the 3rd phase of the Coţofeni culture and to the Early Bronze Age⁷, but because of the modern agricultural interventions,

⁶ Exceptions are the barrows, see recently Oltean 2013.

⁷ Moga, Ciugudean 1995, p. 68; Gligor 1999, p. 63, pl. I.

the connections between the observed features and the Copper Age culture can only be elucidated by further field investigations.

Similar terraces and structures were recognized north from Pánade, on a higher hill whose ridge extends in NW–SE direction. Since in contrast with the earlier site in this point no archaeological investigations were undertaken, the archaeological interpretation of the site remains hypothetical.

Among the prehistoric fortifications, the Late Bronze Age / Early Iron Age site from Teleac was investigated in June 2011 and also during the next year (Pl. III/2). The 30 hectares large fortification from the HaB period with its three horizons (I–III) covered a small territory in the first period, extending to west and south in its later periods⁸. The plateau is surrounded by steep slopes, while the defensive system of the fortification, located on the north-eastern side, is composed of a double earthen wall and ditch enclosure. The first outer earthen wall has a length of 220 m and belongs to the first level of habitation. The second 688 m long earthen wall was contemporaneous with the 2nd and 3rd levels, and it was provided with an entrance and a bastion in its south-eastern corner. On the other sides, the defensive system was established by raising the ground level and placing a simple palisade there. The investigations revealed several surface and pit houses, with indoor and outdoor fireplaces, storage and waste pits, ritual pits, a large amount of pottery, bronze and iron ornaments, objects with cultic significance and osteological materials. The discovery of 20 stone moulds suggests the presence of bronze-casting workshops⁹.

The andesite massif at Măgura Uroiului with an altitude of over 329 m rises above the right bank of the Mureş River, at the confluence with the Strei River. The visibility from the upper plateau is excellent: over 20 km upstream and downstream. Numerous archaeological sites have been identified over time on the top of the hill and in its surroundings. Systematic investigations started there in 2003 on several terraces around the hill and on the upper plateau. Traces of habitation belonging to the Palaeolithic, Neolithic (Turdaş and Petreşti cultures), Bronze Age (Wietenberg culture), Early and Late Iron Age, Roman and Medieval Ages, have been identified. A settlement belonging to the Early Iron Age and a fortified Dacian settlement have been identified at the foot of the hill¹⁰. In the times of the Dacian kingdom, on Măgura Uroiului there was an andesite quarry¹¹, the extracted stone being used in a series of religious structures from Sarmizegetusa Regia. The exploitation of andesite continued in the Roman times. The hilltop is surrounded on three sides by cliffs, the gentle slope can be found northwards. On this side the density of the woody, bushy

⁸ Ciugudean 2011a, p. 75, n. 84.

⁹ Vasiliev *et alii* 1991; Nagy in Berecki *et alii* 2012, p. 45.

¹⁰ Ştefan 2005, p. 241; Rustoiu, Rezi in Berecki *et alii* 2012, p. 55.

¹¹ Oltean 2007, p. 39, fig. 5.26.

vegetation shows the lines of two ditches, whose connection to any of the periods identified on the site is indeterminable (Pl. V/1).

Supervising the valley of the Sebeş River, the Late Iron Age fortification from Căpâlna documented in the spring of 2012 (Pl. II/2) lies at an altitude of 610 m and its upper oval-shaped, 56 × 42 m plateau is covered by woods¹². On the capture, the road leading to the stronghold can be observed. The defensive system consists of a trench and two earthen ramparts, which bar the access way to the south-western top of the mountain. The upper plateau of the hill was enclosed by a wall of limestone blocks. The precinct wall included a tower house situated on the south-western margin of the plateau. This was built of carved stones, the upper floor being made of bricks. However, nowadays the fortification can be accessed from southwest; the ancient main gate built of stones can be found on the south eastern side. A secondary entrance was found on the north-eastern side. Finally, on the southern edge of the plateau the foundation of a wooden watchtower was cut in the rocks.

The presence of the Roman army is documented by several forts standing for longer or shorter periods of time, one of which is the fort at Ighiu. The 492 m high *Măgulici Hill* can be found in the valley of the Ampoi River. At 64 m from the rectangular earthen *castra aestiva* with rounded corners, measuring 50 × 41 m, another rampart made of earth and rubble and another ditch, both with an open angular shape, were identified, also visible on the aerial photography (Pl. IV). The placing of a marching fort on the hill was probably related to the besieging and then conquering of the Dacian fortress at Piatra Craivii. The temporary fortification was abandoned afterwards, when Legion XIII *Gemina* settled at *Apulum* (Alba Iulia) during the beginning of the Roman province¹³.

In the presented region – as well as generally in Transylvania – several fortifications or earthworks which can be interpreted as fortifications were documented. These, nevertheless due to the lack of field information cannot be chronologically framed. A prominent example of such a feature was observed east from Pianu de Jos. The area enclosed by a ditch, having a bank on the inner part has an irregular shape, its dimensions are approximately 140 × 180 m; on the eastern part other banks probably joined the system. Its function can hardly be defined; it could be a fortification, or the trace of modern land boundary. In any case, its location on a lower part of the hill is an inappropriate place for fortification.

¹² Glodariu, Moga 1989, p. 34–46; Ştefan 2005, p. 234–239; Rustoiu in Berecki *et alii* 2012, p. 59.

¹³ Macrea, Protase 1959, p. 435–452; Egri in Berecki *et alii* 2012, p. 73.

Barrows

On this section of the Mureş River, earlier known as well as newly discovered barrow fields have been documented. Among these, southwest from the already identified barrows at Hăpria–*Cetățuie* – where one of the mounds has been levelled in time and based on the pottery collected from its surface it was dated to the Coțofeni culture, while a second one was located in the forest and it was 3 m high¹⁴ – further ones can be seen.

At Țelna three Copper Age and Early Bronze Age tumuli cemeteries are known. Of these, the nine barrows from the place north of the village called *Rupturi* were identified in 1985 by H. Ciugudean, who later, in 1990, archaeologically investigated two of these. In Tumulus I a crouched skeleton was found with a single conical cup as grave inventory, while in Tumulus II six dismembered skeletons were unearthed, with richer grave goods consisting of three pots, a bone ring and a necklace made of dog teeth¹⁵. On the aerial photo one can observe that the mounds were irregularly built on a higher point of the ridge, on a gentle terrace (Pl. V/2). Because of the modern land use and especially the animal herding, the barrows are extremely eroded. Their prospection with geophysical methods would be conducive to their identification and mapping. A further curiosity of the site is that on the slopes of the hills, west from the tumuli the terraced parcel system of a former farming is almost entirely preserved.

Another group of barrow was identified northeast from Tămășasa, on the ridge of the hill in the direction of Orăștie, close to the two roads crossing the pasture, in the place known as *Dealul cu trei țâței*, *Holumbul Beriului* or *Gorgane*. From this site six uninvestigated mounds are known¹⁶; from these the northern three ones shown on the aerial photo (Pl. VI/1) are at 200 m from one another, their diameter is approximately 30 m and their height 7–8 m. On the higher mound a modern pylon can be seen along with traces of dug holes. Around the tumuli modern ditches, roads, i.e. the traces of the modern land use can be observed. Close to the barrows two parallel, crisscrossed infantry entrenchment are visible. Beside the standing barrows, further smaller and levelled ones might have existed on the ridge of the hills. The fourth and fifth barrows are 650 m away from the northern group. Finally, the sixth barrow was mentioned south of the earlier ones, southeast from the village. One barrow destroyed by treasure hunters lacked any archaeological material; therefore it did not elucidate the chronology or the anthropic origin of the mounds¹⁷.

¹⁴ Ciugudean 1995, p. 25.

¹⁵ Ciugudean 1995, p. 27–28; Ciugudean 2011b, p. 33.

¹⁶ Căstăian 1995, p. 51, pl. IX; Luca 2005, p. 113.

¹⁷ Information Cristian I. Popa.

A further barrow cemetery was lately identified at Silvaşu de Jos (Pl. VI/2)¹⁸. The ridge is situated north of the locality, in the direction of Ocolişu Mare, on pastures close to an access road, on the watershed of the Strei and Cerna Rivers' hydrographical basins. The region stands out due to the numerous traces of flint tool-production from the Middle Palaeolithic. Later excavations brought to light traces indicating the presence of possible contemporary workshops. Nine natural mounds were identified here; three were slightly higher, approximately 20 m in diameter, while the smaller mounds were 7–12 m in diameter. Mounds 2–5 were investigated using archaeological trenches and sampling. Mound M1, partially affected by the road, was researched entirely and revealed archaeological traces consisting of a few pits and a ritual feature – a cenotaph containing several vessels. Mound M4 was an inhumation tumulus grave. The ritual and funerary features from the mounds were dated to the Late Copper Age Coţofeni culture, IIIb phase.

Roads

As nowadays, the valley of the Mureş River was a paramount transportation and communication route in Transylvania in historical times. The most evident traces of transportation are given by the Roman roads, whose sections were already exposed by the aerial archaeological research of I. Oltean in the vicinity of Bobâlna, Sebeş, Veţel, Alba Iulia and Cigmău¹⁹. At the same time, the interpretation of the linear structures observed on aerial photographs and connected to roads is not always simple, their field identification and chronological framing is difficult to achieve even by archaeological research. Our investigations resulted in further information and documentations regarding the route system of the area, whose chronology remains however uncertain.

With an east–west trajectory, a shorter linear feature was observed in the northern boundary of Gligoreşti, heading toward the Arieş River. It is a road differing from the present plot system by its orientation, with unknown chronology. On the Google Earth maps, its intermittent sequences westwards can be observed, its trace partially overlaps the administrative boundary of Cluj and Alba counties. It is worth mentioning that from Gligoreşti several Roman sites are known (a *statio* was presumed in the place called *Holoame*), and the road – according to the finds controlled by troops of Legion V *Macedonica*, called by locals *Trajan's road* – leading from *Apulum* to *Potaissa* with a ramification

¹⁸ Luca *et alii* 2007; 2008; 2009; 2011a; 2011b; Ciugudean 2011b, p. 33; Berecki in Berecki *et alii* 2012, p. 29.

¹⁹ Oltean 2007, p. 195.

along the Mureş Valley towards Cristeşti was documented earlier in the northern boundary of the village²⁰.

The trace of the road, with ditches on both sides observed north from Aiud is highly spectacular. It lays 2.5 km west from the present watercourse of the Mureş River, and close to an earlier watercourse of the river, NNW from Aiud, heading as a straight line, crossing the present highway, feeding into a land road also used nowadays. The capture might show a portion of the road leading from *Apulum* to *Potaissa*, which was also used in the Middle Ages and modern times²¹, and on a small portion even in present days.

South from Alba Iulia, on the left bank of the Mureş River, in the cornfields west from Oarda de Jos, further crop marks with a NW–SE trajectory indicating roads were seen, with highly observable ditches flanking the road (Pl. VII/1). The traces of the Roman road were still visible in the 19th century²², still it is unsure if the observed feature is the continuation of the Roman road.

Another road section having east–west trajectory was identified west of Simeria, approximately 8.5 km east from the fortress in Deva. Due to its structure it is most probably a road from the modern era, however in the region the Roman road was also documented.

Roman Age crop marks

The aerial photography of the Mureş Valley broadens our topographical knowledge every year with further details. In the case of Roman buildings, the walls appear by the help of the so-called “negative crop marks”. The mosaic character of the information is the result of the small parcel land use because of this corn, usually propitious for observations, is seeded every year in another plot. During the existence of the Dacia province, in this sector, the legion fort from *Apulum* was completed by three important auxiliary units at Războieni, Cigmău and Veţel, all three lying on the main route of the Mureş Valley. The aerial topographical researches of I. Oltean and B. Hanson between 1998 and 2004 resulted in highly detailed plans of these sites, which were completed in some details by our recent aerial researches.

The Roman town of *Micia* at Veţel lying on a territory of 25 hectares surrounds the fort known since the middle of the 19th century. The settlement developed during several building periods along a ‘quasi-urban’ street system. During the archaeological excavations, various houses, administrative and religious public facilities, baths and the buildings of a workshop quarter were

²⁰ Popa 2000, p. 63, 65.

²¹ Toda 2007, p. 84.

²² Moga, Ciugudean 1995, p. 132.

revealed. The amphitheatre is located east from the fort, while the two cemeteries were localized east and southwest of the *castrum*. The previous plan²³ was completed with further buildings by the aerial investigations in 2011–2012 (Pl. VII/2).

The first information about the fort of the *ala Batavorum milliaria* at Războieni (*Ad Vatabos*)²⁴ situated on the right bank of the river, was mentioned at the middle of the 19th century and the large scale excavation of the site is still pending. In the last decades, several aerial photographs have been taken here; our results were already mentioned earlier²⁵. On the photos of I. Oltean, based on the traces of intersecting stone buildings, even the relative chronology of several features could be defined²⁶. In the vicinity of the military fort, two settlements were documented, one to the north and the second to the south. Their prosperity was based not only on the strong economic ties with the Roman army, but also on the salt exploitation (*Salinae*) from the opposite bank of the river, at Ocna Mureş. Our aerial investigations gave data partially about the fort and the territories north and west of it, completing in slightly the results of the earlier researches (Pl. VIII).

Like Războieni, the fort at Cigmău (*Germisara*) is located on the right bank of the Mureş River, too. Only some of the initial area of the plateau is preserved, its southern part was destroyed by the course changes of the river. The existence of the civilian settlement of 1.3 hectares²⁷ was initially suggested by the incidental discovery of some artefacts, and then the approximate dimensions were identified by field-works, since the site has not been archaeologically excavated so far. In the fort, archaeological investigations of the last decade uncovered different elements of the internal structure, as well as a large part of the defensive system, belonging to both the initial timber phase and the later stone phases. The main role of the auxiliary fort from Cigmău was to control the access on the imperial road connecting *Ulpia Traiana Sarmizegetusa* and *Micia* with *Apulum*, but also to guard the neighbouring territory, which included the thermal baths from *Germisara*²⁸. The detailed plan of the site resulted after the researches of I. Oltean and B. Hanson was completed by our aerial photos²⁹ with further buildings observable close to the road leading northeast (Pl. IX).

²³ Oltean 2007, fig. 5.28.

²⁴ Popovici, Varga 2010, p. 45–67.

²⁵ Czajlik *et alii* 2011, p. 11–12.

²⁶ Oltean 2007, p. 21, fig. 5.30.

²⁷ Oltean 2007, p. 158.

²⁸ Egri in Berecki *et alii* 2012, p. 71.

²⁹ Czajlik *et alii* 2011, p. 11, pl. 4/2.

Crop marks – buildings, pits and graves

The positive crop marks indicating sunken buildings, pits or maybe graves resulted by the different growing and ripen of the vegetation – in contrast with the northern region of the Mureş River from the territory of Mureş County – are relatively in great number and of wide range. The archaeological sites identified mainly in grain field but occasionally even on pastures are new and need to be verified on field; therefore one cannot make, in this stage of the research, observations regarding their chronology or their actual archaeological nature. The evaluation in these cases is restricted to the position of the features, their shapes and the nature of the sites.

In two grain tables southwest from Teiuş, southwest from the farm, light coloured features having circular plan and approximately the same size could be observed, which could be interpreted as sunken buildings. The settlement is in general inordinate, the features can be observed in the darker parts of the grain field. Similarly, at Vinerea the features having circular and rectangular plans were also observed in the darker parts of the grain field. In this case the possible archaeological features differ in size; therefore, beside the pit houses, clay pits, storage pits or other type of dug features can be presumed. A further example can be mentioned from Tărtăria, 1.5 km southwest of the widely known *Gura Luncii* site, an approximately 200 m from the motorway, where in the same darker parts of the grain table both the shape and the position of the features were irregular. Finally, in one part of the multilayered site of *Petreşti–Groapa Galbenă* features observed in similar conditions should be mentioned, where the earlier field walks resulted in prehistoric and Roman potsherds.

Two outstanding sites were identified in the outskirts of Sebeş (Pl. X). In both cases the features were observed in dark coloured parts of grain tables. One of the sites is located north of Sebeş, in the fields near Lancrăm, between the Secaş River and the agrarian road. The rectangular and circular planed features of the settlement differed in size and they were located on both sides of a crooked road, which roughly follows the course of the river (Pl. X/1).

Similarly, in the north eastern part of Sebeş, in a triangle shaped agricultural field found between the railway and motorway, another site was identified (Pl. X/2). The research and the interpretation are aggravated by the fact that the earlier traces of the frequently changing hydrographical system are highly visible; however, despite this, the marks of the human “intervention” are perceptible. The features are lying in a narrow east–west oriented lane, apparently arranged in lines. The dense pits might indicate a cemetery (probably with cremated graves), but intense traces of settlement features or later, recent agricultural field use can be also presumed.

It is known that the middle course of the Mureş River is remarkably rich in archaeological sites; beside numerous prehistoric settlements and fortifications, important Roman sites are located here. Particularly in the case of the prehistoric fortifications and barrows, the topographical mapping of the already known sites is important, since lacking other detailed mapped documentation by aerial archaeological methods the stage of these sites, their topographical conditions can be recorded, while during this process in many cases further details are obtained. The cognition of the surroundings of *Apulum*, the military, economic and cultural core of Dacia Apulensis was completed by the earlier and recent aerial archaeological investigations with details regarding the civilian settlements of the Roman military forts as well as with information regarding the communication routes of the province.

Briefly summarizing the results of our four year research project, it can be assessed that the Transylvanian landscape with several archaic peculiarities can be effectively researched by aerial archaeological methods almost during all seasons, focusing on different periods, on different geographical areas (valleys, hills or high mountains). The efficiency of the research would be highly improved – especially in the valleys, but in the case of tumuli cemeteries, too – by geophysical surveys as well as geological, pedological and land cover investigations.

PROSPECȚII ARHEOLOGICE AERIENE PE CURSUL MIJLOCIU AL RÂULUI MUREȘ ȘI ZONELE ÎNVECINATE

REZUMAT

În cadrul proiectului de aerofotografiere arheologică a Transilvaniei, inițiat de Muzeul Județean Mureş în colaborare cu Universitatea ELTE, Budapesta și Muzeul Național al Unirii din Alba Iulia, o regiune de o importanță deosebită o constituie cursul mijlociu al Mureşului. În această regiune au fost cercetate prin topografiere aeriană situri cunoscute și altele noi, printre care fortificații preistorice, necropole tumulare, castru romane, drumuri și așezări din diferite epoci.

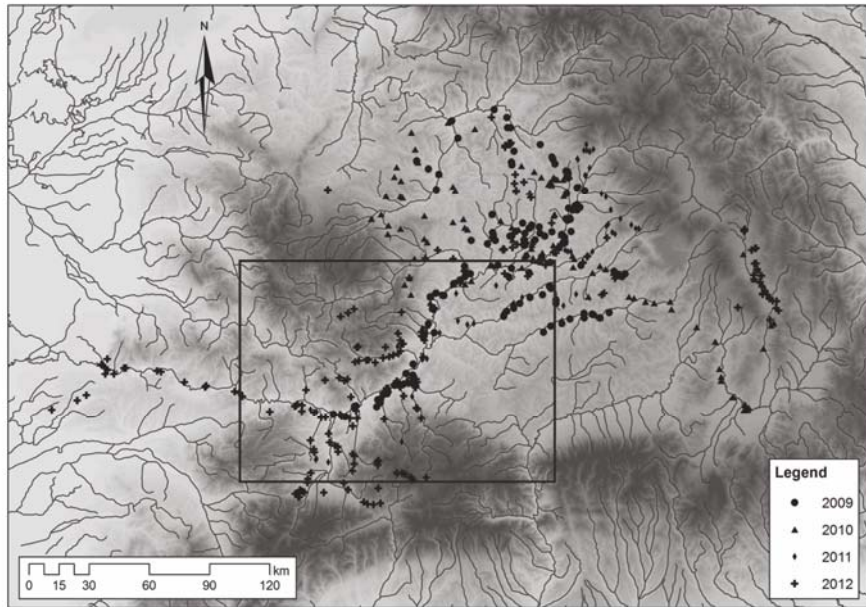
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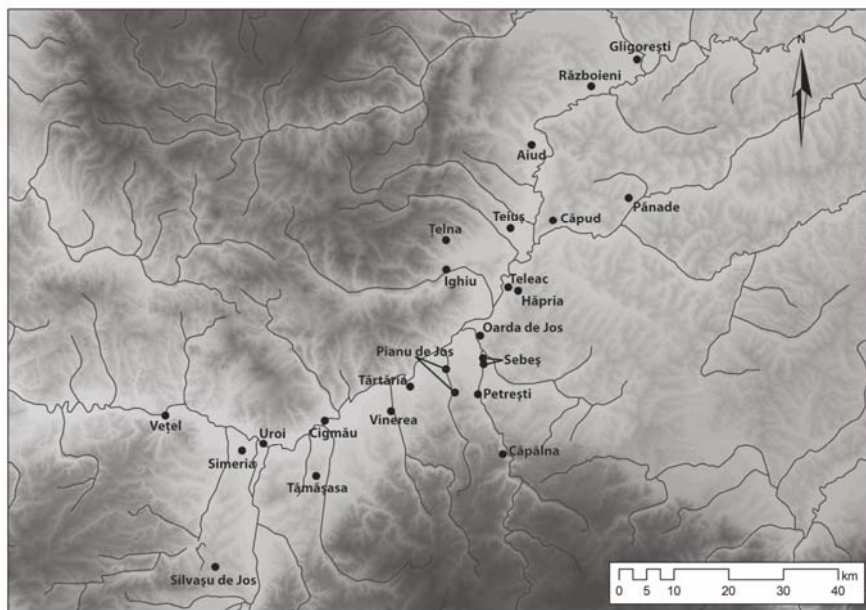
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1



2

Plate I. 1. The researched area in 2009-2012; 2. The sites mentioned from the Middle Mureș Valley.



Plate II. 1. South-Transylvanian Motorway, rescue excavation (17 June 2012); 2. The Dacia fortress from Căpâlna (23 March 2012).



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Plate III. 1. Căpuș, prehistoric rampart (23 June 2011); 2. Teleac, the eastern rampart (23 March 2012).

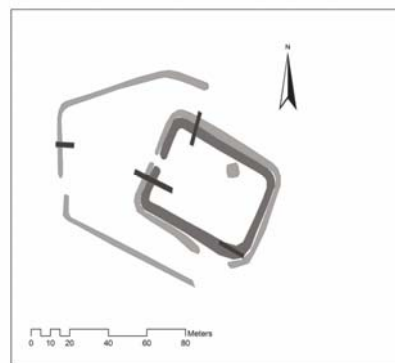
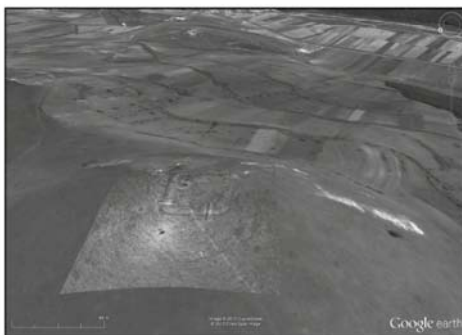


Plate IV. The Roman fort from Ighiu (23 June 2011).



1

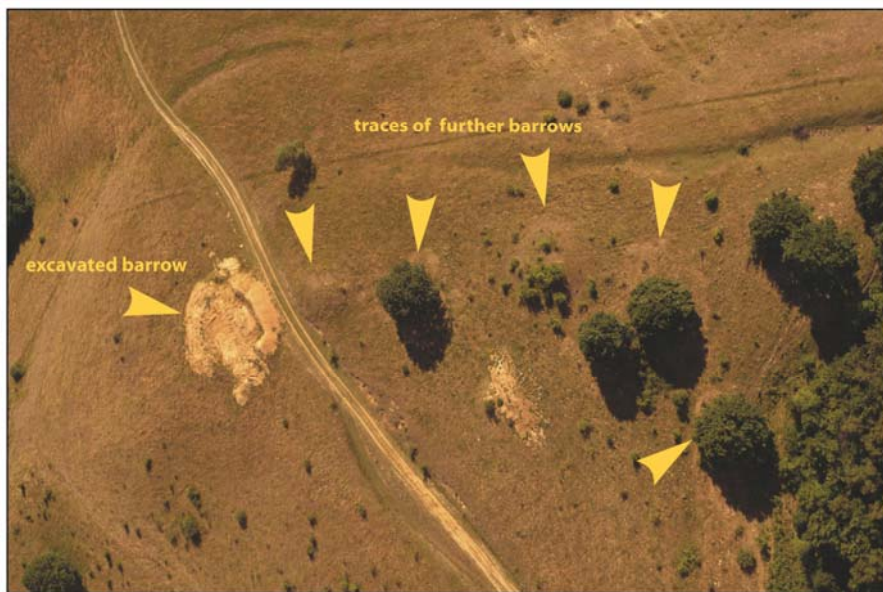


2

Plate V. 1. Uroi, the northwestern rampart (27 June 2009); 2. Ţelna, barrows (18 June 2012).



1



2

Plate VI. 1. Tămășana, barrows (17 June 2012); 2. Silvașu de Jos, barrows (23 June 2011).



1



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Plate VII. 1. Oarda de Jos, trace of a road (27 June 2009); 2. Vețel, traces of buildings in the vicus (23 June 2011).

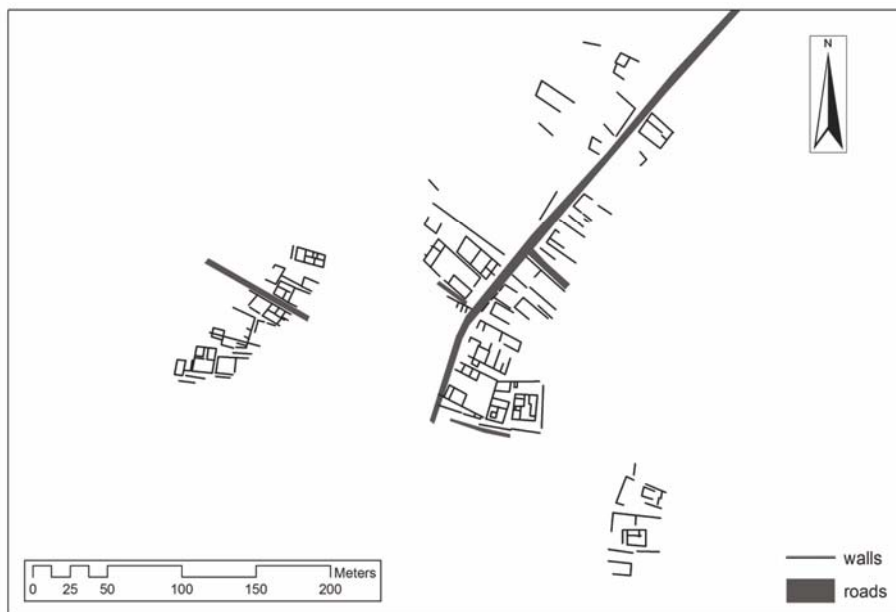


Plate VIII. Războieni, site plan of the *vicus* based on the researches from 2009-2012.

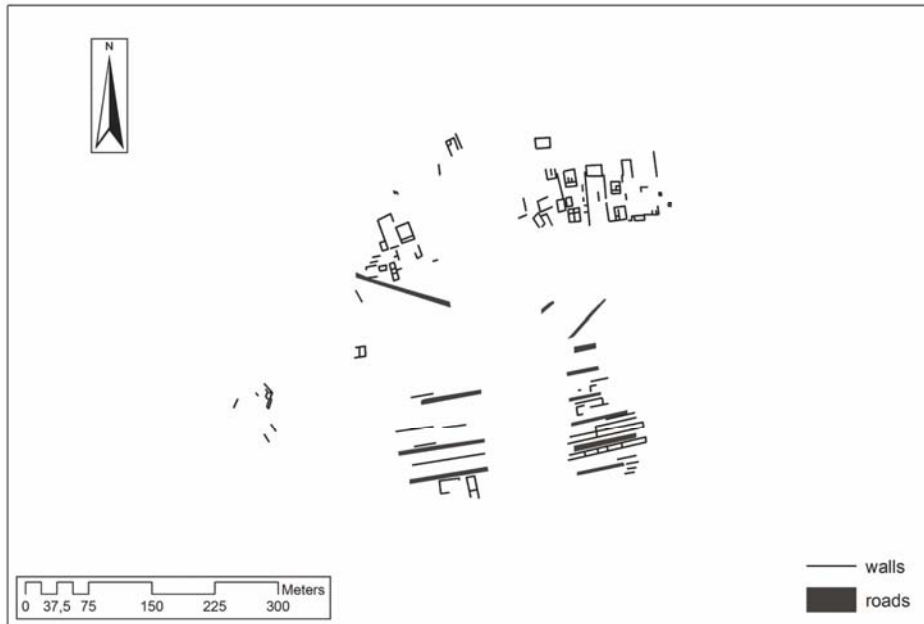
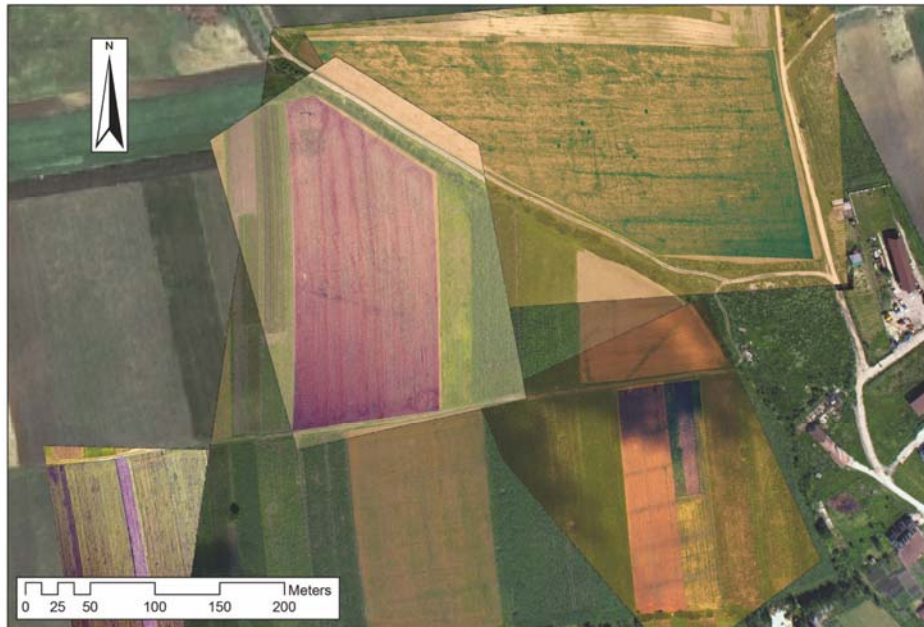
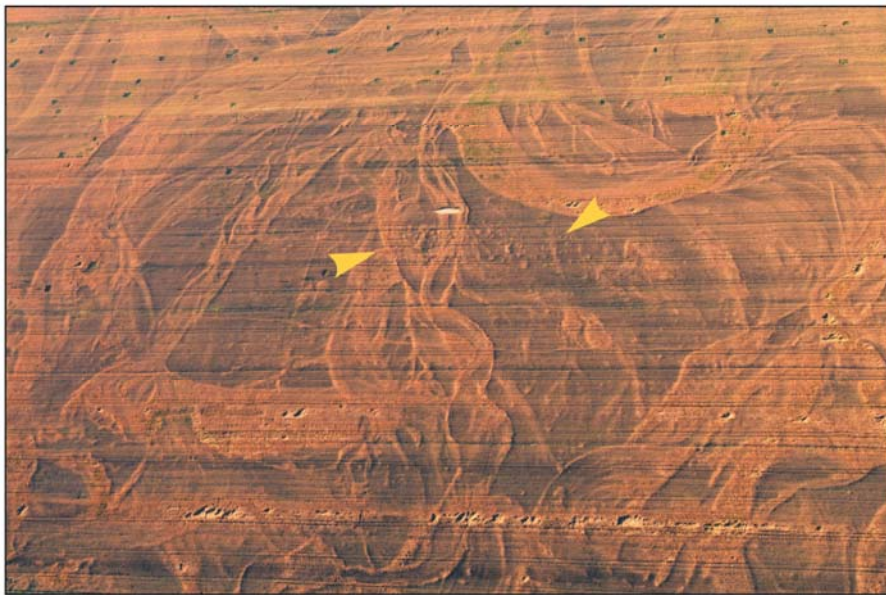


Plate IX. Cigmău, site plan of the *vicus* based on the researches from 2009-2012.



1



2

Plate X. 1-2 Sebeş, settlement and cemetery (?) (23 June 2011).