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## A MULTI-PERIOD SITE ON UROI HILL, HUNEDOARA: AN AERIAL PERSPECTIVE

### Site location and topography

Uroi Hill (Uroi, Hunedoara county) projects into the valley of the Mureş from the Apuseni mountain range to the north, the harder andesite rock presumably offering greater resistance to the passage of the river than the surrounding deposits. The hill sits in an important strategic position directly overlooking the confluence of the Mureş and the Strei rivers, with excellent views along their valleys to west, east and south (fig. 1).

The hill is approximately triangular in shape with a largely flat top, sloping downwards slightly to the north-west. Quarry faces define its south and east sides facing the Mureş, whose passage may well have been responsible for the original exposure of the rock. How much has been quarried away is difficult to estimate, as is the original form of the hill, but it remains steep-sided both to the east and west of the quarry faces and must have been so also in antiquity. The hill rises to a height of almost 389 metres and stands up to 200 metres above the valley floor, yet this fertile zone remains readily accessible via the more gentle slope on the north side of the hill. These characteristics make the hilltop potentially very attractive for settlement, particularly in the later prehistoric period.

### Previous knowledge of the site

The hill at Uroi is best known as an important stone quarry, which has been in use since at least Roman times. The stone which forms the hill is andesite, well known as 'Uroi'-type, a special mixture with augite. It is present in the quarry in two colours, red and grey. A similar type, but of grey-blue colour, is known from the quarry on Pietroasa hill near Deva<sup>1</sup>. There is much evidence for the use of andesite in pre-Roman (especially Dacian) times for various artefacts, including mill stones, and even as building material. For example, large architectural blocks of andesite were discovered at Grădişte belonging to the last building phase of seven Dacian sanctuaries, six at Sarmizegetusa Regia itself and one on Pustiosu Hill<sup>2</sup>. Unfortunately, as yet no petrographical analysis has been made of these pieces, so that it is not possible to confirm beyond any doubt that the Uroi quarry was exploited in Dacian times, even though it is thought likely to have been so.

Extensive quarrying at the site in the Roman period, however, is well attested. The andesite from Uroi seems to have been used for funerary monuments at a number of sites in the vicinity. Examples are known from the graveyard east of the auxiliary fort at Micia some 18.5 kilometres down the Mureş Valley, from Ulpia Traiana Sarmizegetusa some 45 km to south-west, and one from Apulum a similar distance to the north-east, though it is less certain that the latter originated where it was discovered<sup>3</sup>. Also the Roman road coming from the south along the Strei Valley from

<sup>1</sup> V. Wollmann, *Mineritul metalifer, extragerea sării și carierele de piatră în Dacia romană*, Cluj-Napoca 1996, 257.

<sup>2</sup> I. H. Crișan, *Spiritualitatea geto-dacilor*, București 1986, 176 ff.

<sup>3</sup> D. Tudor, *Orașe, târguri și sate din Dacia romană*, București 1968, 123; V. Wollmann (n. 1), 20, 35, 43 etc.

Călan-Aquae seems to have used Uroi andesite in its composition in the area of Simeria<sup>4</sup>. It seems likely that the legion involved in the work was *legio V Macedonica*, which is recorded on a fragmentary inscription of late second/early third century date found in the ruins of the medieval castle near the village at the foot of the hill<sup>5</sup> (CIL III 7883), although no Roman camp has yet been identified nearby. The importance of the quarry is further indicated by the place-name Petriș which, according to the Tabula Peutingeriana<sup>6</sup>, is located between Aquae and Germisara. This would locate it somewhere in the immediate vicinity of Uroi. The name has been tentatively attributed to a rural settlement to the east of the quarry hill along the road to Rapoltu Mare<sup>7</sup>.

The site is also thought to have been occupied in the later prehistoric period, though the extent and nature of that occupation has never been clearly stated in print. Bronze age material is known from Uroi, though not specifically attested as coming from the hilltop<sup>8</sup>. The presence of a fortification on top of Uroi hill is noted by Marțian, in his brief survey of archaeological remains in the area, who assumed it to be Dacian<sup>9</sup>. However, a visit to the site 30 years later by Floca failed to identify the defences and he seems to have assumed that Marțian was referring to the Medieval fortification at the bottom of the hill<sup>10</sup> (1957, 111-12). Thereafter, to the writers' knowledge, the fortifications have never been described in print nor their potential significance identified.

Finally, within living memory, Uroi hill was utilised by the military. During the Second World War a gun battery was located on top of the hill, taking advantage of its strategic position overlooking Deva and with excellent views along the Mureș and Strei valleys. Military trenches are still visible on the lower slopes of the hill below the quarry face on the east side.

### The aerial perspective

The authors of this paper are participating in a research project whose basic aim is to increase our understanding of the history and development of the landscape of central-south-western Transilvania from later prehistory to the immediate post-Roman period through the application of aerial reconnaissance. The geographical focus is the middle and upper Mureș valley, the Strei valley, and Țara Hațegului to the south. The project is being undertaken by the University of Glasgow, Scotland, in conjunction with the National Museum of Transilvania, through its General Director, Professor Ioan Piso, and the University of Alba Iulia, through its Rector, Professor Iuliu Paul, with the assistance of the Dacian and Roman Civilization Museum in Deva, through its Director, Dr. Adriana Rusu-Pescaru. Funding for the flying programme has come from the Leverhulme Trust, and the British Academy has supported the acquisition of computer equipment for the post-reconnaissance analysis of the results.

The primary focus of the aerial reconnaissance programme was intended to be the search for cropmarks which offer the greatest potential for the discovery of previously

<sup>4</sup>B. Basa, *Șantierul Simeria*, Materiale 9, 1970, 231.

<sup>5</sup>CIL III 7883.

<sup>6</sup>Tabula Peutingeriana. Codex Vindobonensis 324, Graz 1976 (Kommentar E. Weber), segm. VII.

<sup>7</sup>D. Tudor (n. 3), 127; L. Mărghită, *Urme romane pe curpinsul județului Hunedoara*, Sargetia 11-12, 1974-1975, 42.

<sup>8</sup>I. Andrițoiu, *Civilizația tracilor din sud-estul Transilvaniei în epoca bronzului*, Bibliotheca Thracologica 2, București 1992, 12.

<sup>9</sup>I. Marțian, *Urme din războaiele romanilor cu dacii. Studiu arheologic* Publicațiile Comisiunii Monumentelor Istorice. Secțiunea pentru Transilvania, Cluj 1921, 21.

<sup>10</sup>O. Floca, *Regiunea Hunedoara. Ghid turistic cu 174 ilustrații și 3 hărți*, s. I. 1957, 111-112.

unknown archaeological sites. Differential growth, primarily in cereal crops, can result in the creation of a pattern visible on the surface of the crop which reflects some features of the archaeological site buried below. This phenomenon results from the varying depth of soil and the differential availability of moisture and of nutrients over buried archaeological sites, as compared with the rest of the field in which they are located. However, this technique is heavily dependent on the restriction of soil moisture, which in turn relates to soil drainage and to local weather patterns, particularly during the crucial early part of the growing season when differential growth patterns become established. Since in both 1998 and 1999 precipitation in spring and early summer in the survey area was relatively high (as it was reported to be all over Europe), the discovery of cropmark sites was relatively limited and so a greater effort was concentrated on recorded upstanding remains. These are usually referred to as 'shadow' sites. Where there is some trace of an archaeological site surviving above the ground surface as an earthwork, usually on pasture land and often in more upland areas, the site is best revealed by the pattern of shadow and highlight created by sunlight, particularly when the sun is low in the sky. The aerial view, ideally from a height of about 500 metres above the ground surface, enables these patterns to be seen and their potential archaeological significance appreciated. This technique will reveal even very slight undulations in the ground surface, but if sufficiently well-preserved, the remains will also be visible on the ground.

Thus, while flying over Uroi Hill in June 1998, the first named author noted and photographed the line of what appeared to him to be a bank and ditch running east-west across the top of the more gentle slope on the north side of the hill (fig. 2). The site was subsequently visited on the ground by both authors in July 1999 and again in June 2000. The description which follows is based on further more detailed aerial photographs taken in July 1999, augmented by the results of those site visits.

### Site description

The existence of a rampart and ditch system identified from the air was readily confirmed on the ground. The earthen rampart had clearly been created by digging a narrow terrace into the hillside and throwing the material forward to create a bank. In front of that was dug a ditch, from which the earth was again thrown forward down the slope to create a counterscarp bank. Though filled with vegetation, which had colonised the bottom of the ditch, in places it survived to such a depth that a person standing within it was barely visible to someone on the terrace above (fig. 3). Measured from the surviving top of the inner rampart, the ditch was at least 2 m deep, though only 1 m up to the top of the outer counterscarp bank. The width of the ditch from the middle of the inner bank to the midpoint of the counterscarp was 9.3m. The line of the rampart and ditch ran very slightly up the hill from west to east and terminated in a natural gully on the east side. The western end, however, is hidden by dense vegetation.

The line of these defences is breached slightly off-centre to the west by a trackway which runs diagonally down the hill from west to east, before swinging back round to the west as it reaches the bottom of the hill. Though clearly in use in relatively recent times, as indicated by the presence of wheel ruts, the possibility remains that this was an original entrance. Alternatively, a narrower trackway, showing no signs of recent use, approaches the rampart towards its western end running up the slope from the east at a less oblique angle. The termination of this trackway, however, was lost in the dense undergrowth on the western side of the hill.

The rampart and ditch had the effect of cutting off the upper part of the hilltop and creating a promontory fort, now almost triangular in shape as a result of the quarrying of the southern scarp. Nonetheless, the steepness of the slope on the south-east and south-west sides is unlikely to have required further augmentation for the purposes of defence. The area currently enclosed is some 6.5 hectares, though the original area prior to the effects of quarrying may have been somewhat greater.

Within the enclosure, concentrating on its northern half, a number of smaller circular features are visible, giving the ground a rather pock- marked appearance (fig. 2). Many are now filled with small trees or bushes making them particularly difficult to see from the air. Investigation on the ground confirmed that these features were circular or oval depressions which varied in depth from 0.6-2 m, often surrounded by a small bank. They ranged in diameter from approximately 5-12 metres, though most were some 6-7 metres across. At least fourteen such features were noted, clustering in small groups of three or four. While they might represent localised surface quarrying for stone, such an interpretation is not supported by their consistent characteristics, particularly their regularity and the presence of a surrounding bank. The possibility that they were the foundations of sunken round houses of Hallstatt date was considered but eventually dismissed because of their general dimensions and inconsistency of shape. Rather they should best be interpreted as the sunken or semi-sunken foundations for the protection and camouflage of artillery and associated structures during the Second World War.

Also visible on the aerial photographs as a cropmark, but not apparent on the ground, is a slight circular, single-ditched enclosure, c. 25-30 m in diameter located on fairly level ground towards the centre of the south- western edge of the scarp (fig. 4).

### Identification and analogies

The existence of defended settlements in Romania is well known for the whole of prehistory from the late Neolithic period onwards in the Ariuşd-Cucuteni-Tripolie cultural area, though no examples have previously been recorded in the Mid-Mureş basin<sup>11</sup>. However, previous studies have tended to focus on the central area of settlements rather than seeking to establish if they had defences. The preference for lower or higher altitudes varies from one period to another, but all periods seem to show a special care for the maximum use of the strategic and defensive potential offered by the terrain. While late Neolithic settlements generally prefer the lower river terraces, the later Bronze Age or Iron Age defended settlements manifest an increased preference for higher and, therefore, more inaccessible positions. The tribes of the Wietenberg culture in the Bronze age used hills with steep slopes, preferably on all sides, or high terraces or plateaux margins which were naturally defended on at least one side, as for example at Sighişoara-Wietenberg, Derşida, Balsa, Piatra Văcarului and Boiu<sup>12</sup>. Iron Age hillforts/fortified settlements are placed in dominant positions too, at about 300-500 m above sea level and 100-150 m higher than the large flat fields below, as for instance at Teleac, Subcetate (some 40 km south of Uroi in the Strei Valley) and Dej<sup>13</sup>. Dacian hill forts develop this concept even further, with their location on inaccessible hills deep in the mountains sometimes taking precedence

<sup>11</sup> I. Paul, *Cultura Petreşti*, Bucureşti 1992, 16-21; I. H. Crişan (n. 2), 145.

<sup>12</sup> M. Rotea, *Aşezările culturii Wietenberg*, EN 3, 1993, 36; I. H. Crişan (n. 2), 145-146.

<sup>13</sup> V. Vasiliev, I. Al. Aldea, H. Ciugudean, *Civilizaţia dacică timpurie în aria intracarpatică a României. Contribuţii arheologice: aşezarea fortificată de la Teleac, Cluj-Napoca* 1991, 19.

over the availability of an immediate supply of water. Moreover, the builders even flattened the top of the hill if this was not naturally suitable for settlement<sup>14</sup>.

Apart from their importance in making them less accessible to potential enemies, the location of settlements on high ground was good for the survey and control of the fertile fields on the lower terraces of river valleys, as well as dominating the principal routes of access for communications and trade. In this context it is easy to understand the importance of river confluences, as for example at Teleac<sup>15</sup>. That people had such values in mind when choosing settlement locations at different dates in prehistory is demonstrated by the fact that in several cases the same location was used for defended settlements by different communities across long time-spans, as for example at Sighişoara-Wietenberg, Cugir and Sona. Since it fulfils all of these geographical and topographical criteria, it is easy to understand why such a perfect location as Uroi would have been chosen at different times, especially since the Mureş is arguably the most important river in Transilvania.

The size and shape of these defended settlements is variable and reflects not only the size of the group involved but also its social structure. The Neolithic and Bronze Age settlements tended to be rather small, covering only 2500-3500 m<sup>2</sup> in Wietenberg settlements for example<sup>16</sup>. This contrast sharply with the situation in the Early Iron Age (Hallstatt), which is generally characterised by extremely large sites. The examples known in Transilvania were some of the largest fortified settlements in Europe at that time (30 ha. enclosed at Ciceu-Corabia for instance<sup>17</sup>). Presumably this relates to an increase in population in the first phase of the Iron Age. The situation changed again in Late Iron Age (La Tène) when the Dacian fortifications are generally much smaller, covering areas between 1 ha. and 7 ha.<sup>18</sup>. The fortified settlement from Arpaşu de Sus, for example, is only c. 3700 m<sup>2</sup> in area. Rather than indicating a decrease in population, this presumably relates to a change in the social structure and the development of aristocratic/royal sites. Because the form of such settlements is largely determined by topography, they follow no standard shape, though the most common form is the 'promontory' type, as at Uroi, which takes advantage of the defensive potential of scarps or naturally steep slopes.

Within prehistory the most common way to define and defend the area of the settlement was by digging a ditch and using the excavated material to build a bank or rampart which may or may not have been surmounted by a timber palisade. Stone walls appear only in Late Iron Age in the last phase of the Dacian kingdom, before the Roman conquest, and they are found only around hillforts. So far no traces of such earthen rampart and ditch systems have been discovered at Neolithic or Bronze Age settlements in the Mid-Mureş Basin<sup>19</sup>.

Those defensive ditches which are known have variable dimensions. In the Hallstatt period they reach 9 m in width (e.g. Subcetate), but most often they were between 3-6.5 m, with a depth of up to 4 m<sup>20</sup>. In the La Tène period the general size increases, with ditches between 2-30 m in width, and depths up to 7 m<sup>21</sup>. The

<sup>14</sup>I. Glodariu, *Arhitectura dacilor*, Cluj-Napoca 1983, 59-60; A. Zanoci, *Fortificațiile geto-dacice din spațiul extracarpatic în secolele VI-III a. Ch.*, Bucureşti 1998, 15-26.

<sup>15</sup>V. Vasiliev, I. Al. Aldea, H. Ciugudean (n. 13), 19.

<sup>16</sup>M. Rotea (n. 12), 34.

<sup>17</sup>V. Vasiliev, *Fortifications de refuge et établissements fortifiés du premier âge du fer en Transylvanie*, Bucarest 1995, 149; V. Vasiliev, I. Al. Aldea, H. Ciugudean (n. 13), 19.

<sup>18</sup>I. Glodariu (n. 14), 67; A. Zanoci (n. 14), 30-32.

<sup>19</sup>I. Paul (n. 11), 16-21; M. Rotea (n. 12).

<sup>20</sup>V. Vasiliev (n. 20).

<sup>21</sup>I. Glodariu (n. 14); A. Zanoci (n. 14).

dimensions of the ramparts vary too, but their height is difficult to estimate because of natural erosion and collapse over time. The ditches could be V- or U-shaped, the latter round or flat-bottomed with oblique or stepped sides<sup>22</sup>. The height difference between the lower level of the ditch and the upper level of the rampart in Hallstatt fortifications, where these could be estimated, varies between 3m to 6.5m. The longevity of these defence systems and care for their maintenance is confirmed by the identification of several phases of reconstruction of the ramparts and the cleaning out of the ditches which has been recognised during excavation, even in the case of some non-permanent fortifications (see Subcetate<sup>23</sup>).

This brief survey of the nature and development of defended hilltop settlements in western Transilvania provides a reasonable basis for offering an interpretation of the site at Uroi. The closest analogy for the large enclosure in terms of location and morphology seems to be with the Hallstatt fortified settlement at Teleac. The geographical location of that site controls the confluence of the Mureş and the Ampoi, another important river which penetrates deep into the Apuseni mountains. Teleac is a promontory fort some 30 ha. in area. It is almost triangular in shape, with the side most easily approached protected by a rampart and ditch fortification<sup>24</sup>. The similarities with Uroi are sufficiently close that we may ascribe the major phase of occupation at the latter to the Hallstatt period with reasonable confidence.

Circular ditched enclosures such as that recorded on top of Uroi Hill are less readily paralleled within current knowledge of prehistoric settlement in the area. However, enclosures similar in form, dimensions and location at the edge of scarps or breaks of slope have been revealed as cropmarks in the course of the aerial reconnaissance programme elsewhere in the Mureş valley, notably by Teiuş (fig. 5). They do not appear to have been previously recorded and are most likely to represent prehistoric settlement of an earlier date than the larger defended promontory fort at Uroi, perhaps linked to the Bronze age finds referred to earlier. Interestingly, the archaeological excavations at Teleac also demonstrated the existence of a first phase of the settlement which was much smaller, positioned at the highest point of the hill and surrounded by a ditch.

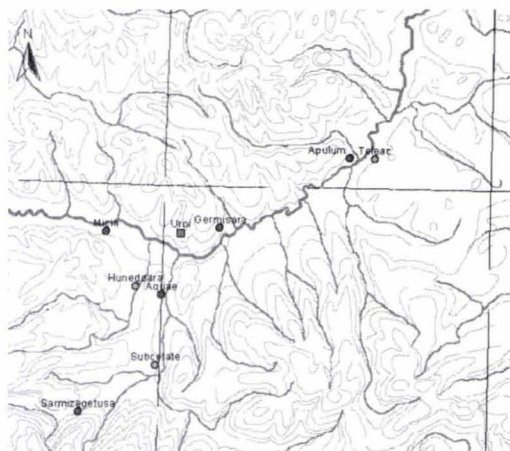
### Importance of the discovery

The re-discovery of a previously unrecognised major hilltop settlement of probable Hallstatt date at Uroi is of considerable importance on a number of levels. Clearly it adds to our knowledge of the distribution of settlement foci in this period, and fits conveniently into the gap between Subcetate to the south and Teleac to the east. It also serves to provide greater historical depth to our knowledge of settlement in the local area, indicating that it came to prominence rather earlier than previously has been demonstrated. Finally, the excellent preservation of the site holds the prospect of considerable enhancement of our more detailed knowledge of settlements of this period through a combination of careful ground survey and limited excavation.

<sup>22</sup> V. Vasiliev (n. 17); I. Glodariu (n. 14); A. Zanoci (n. 14).

<sup>23</sup> V. Vasiliev (n. 17).

<sup>24</sup> V. Vasiliev, I. Al. Aldea, H. Ciugudean (n. 13).



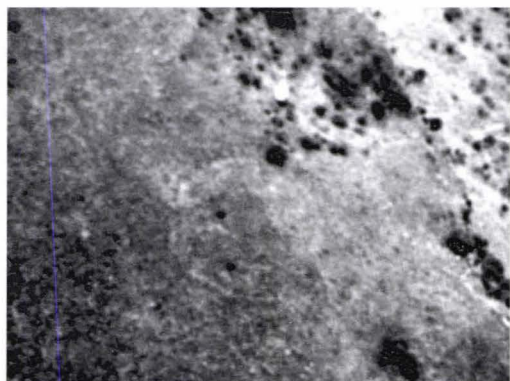
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1. Map of area putting site into context
2. Near vertical aerial photograph of interior of Uroi showing earlier enclosure
3. Photo of rampart/ditch from the ground
4. Detailed photograph of earlier enclosure from the air
5. AP of circular cropmark enclosure by Teius