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*The Topography of Potaissa during the Roman
Period*

SUMMARY

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The attempt to comprehend the heritage and the ancient structures discovered at Potaissa led to the emergence of monographic studies, the first comprehensive work being published in 1889. More than a century later, in 1994, archaeological notes, records, and various studies that had appeared in the scholarly sphere were integrated into the second monograph concerning the Roman period in Potaissa. The ancient municipium, later succeeded by a continuously developing town, renders the process of cataloguing and mapping archaeological discoveries an ongoing one. Since the publication of the second monograph of Potaissa and up to the present day, various intrusive works carried out in Turda have brought forth new information and data that complement the existing knowledge regarding the evolution of the ancient urban space. Modern technology applied to archaeology enables a new approach to contextualizing the information obtained over the past centuries.

Current research focuses on the cataloguing and analysis of all sites with significant discoveries, with the aim of establishing the archaeological topography of the civilian sector of Potaissa. By recording in situ or potentially in situ discoveries with well-established topographical landmarks, it becomes possible to reconstruct the ancient landscape and the development of the civilian settlement. The archaeological situation of the legionary fortress has not been included in the research, except for the influence exerted by the establishment of Legio V Macedonica—through the inevitable influx of population—on the development and creation of a prominent urban environment at Potaissa.

Chapter I of the work provides a comprehensive presentation of the natural, historiographical, and archaeological context of the city of Turda, identified as Potaissa, highlighting the complexity of its urban development during the Roman period and its significance within the archaeological landscape. The founding and subsequent evolution of the urban center of Potaissa were directly conditioned by the geomorphological particularities of the Transylvanian Depression, especially by the settlement's position along the lower course of the Arieș River, in an area of marked contrast between the riverbanks, with gentle terraces on the right side and steep hills on the left. Relief features such as the Fortress Hill (Dealul Cetății), the Fairies' Hill (Dealul Zânelor), and Șuia Hill (Dealul Șuia) provided a favorable framework for the development of civilian and military settlements and activities, while also serving as the locations where the most important archaeological discoveries have been concentrated.

From a historiographical perspective, the study of Roman vestiges in Turda has a long-standing tradition, beginning in the 16th century, when the first scholars described the structures of the legionary fortress. In the 19th century, the figure of Balázs Orbán stands out as the author of the first monograph dedicated to the town, correlating archaeological discoveries with local toponymy and geography. Subsequent works, especially those signed by István Téglás, enriched knowledge of Potaissa's archaeological topography, contributing detailed observations regarding the spatial distribution of discoveries. The 20th century brought a professionalization of investigations through the work of archaeologists such as Ioan Țigăra and Mihai Bărbulescu, who systematically documented buildings, necropolises, ceramic workshops, and infrastructure networks.

Ancient and modern cartographic sources, such as Ptolemy's *Geographia*, the *Tabula Peutingeriana*, and the Josephine topographic surveys of the 18th–19th centuries, complete the archaeological picture by providing essential data regarding the positioning of imperial roads, urban centers, and military structures. Recent archaeological inventories, based on modern spatial analysis and GIS techniques, contribute to a more precise localization of archaeological points of interest.

The Roman topography of Potaissa reflects the rigorous application of Roman urban planning principles, with well-laid road networks, water supply through aqueducts, and the integration of public buildings within a regular framework adapted to the local relief. Although the complete urban plan is no longer visible due to modern development, the major infrastructure—the imperial road and aqueducts—attests to the presence of a coherent organization, achieved with the participation of Legio V Macedonica. The presence of these soldiers is confirmed by epigraphic discoveries and stamped building materials. Public utility structures, such as temples, the forum, or baths, remain insufficiently documented; however, certain hypotheses regarding their location are supported by the density of discoveries and the massive character of the ruins in the area of the Roman Square and the adjacent streets.

The instruments used by Roman surveyors in the layout of roads and buildings, such as the groma, dioptra, and chorobates, reflect the advanced level of technical knowledge and organizational capacity of Roman engineering. These were employed by specialists such as *mensores* and *architecti*, integrated into legionary structures, contributing to the precise planning and execution of urban spaces and public infrastructure. All these data underscore the complexity

and importance of Potaissa within the urban and military network of Roman Dacia, as well as the ongoing necessity of research and reevaluation of the area's archaeological heritage.

Chapter II provides a clear depiction of the archaeological realities of the ancient municipium of Potaissa, clearly highlighting the degree of urbanization and the spatial distribution of habitation during the Roman period. The detailed analysis of built structures, discovered archaeological materials, and stratigraphic data supplies strong arguments for the configuration of a coherent and stratified urban topography, correlated with relief factors and the social and economic dynamics of the community.

The central area of the city, particularly the zone encompassing Panait Cerna Street, Cheii Street, Zamfirescu Street, and the Roman Square, constituted the main urban nucleus, where numerous civilian buildings have been identified. The discovered structures display rectangular plans, sometimes equipped with hypocaust heating systems, which suggests a high level of urbanization. The density of substrata and epigraphic material, such as altars, capitals, and sculptural pieces, indicates a stable urban framework marked by multiple functionalities—residential, cultic, and probably administrative.

The extension of research into the area delineated by the Sândului Valley has enabled the identification of a Roman residential district with multiple phases of development, characterized by buildings with orderly layouts, pavements, fountains, and a rich array of archaeological materials, including oil lamps, fibulae, pieces of military equipment, coins, and both luxury and common ceramics. The items discovered in this sector, particularly those votive or of prestige (a silver-plated phalera, terracotta statuettes, imported oil lamps), support the hypothesis of the existence of domus-type houses belonging to the local elite. At the same time, the presence of votive altars in inner courtyards and the diversity of the represented deities suggest the integration of religious elements within the domestic space.

The area of the Roman Square concentrates the remains of monumental buildings with public or administrative functions, evidenced by the discovery of column bases, massive structures built in the opus incertum technique, pavements with large slabs, and materials stamped with the mark of Legio V Macedonica. Such evidence suggests a direct involvement of the army in the construction of urban infrastructure and supports the hypothesis of the existence of administrative or military edifices in this zone, possibly even the city's forum.

The eastward expansion of habitation, in the area of the Fortress Hill (Dealul Cetății), reflects the settlement's continuous adaptation to topographical conditions, with buildings organized according to the slope of the terrain. Recent preventive excavations have led to the discovery of new civilian edifices and a rich array of archaeological material, indicating sustained urban vitality until the mid-3rd century AD.

Regarding chronology, the data are fragmentary but indicate intensive habitation beginning in the second half of the 2nd century AD, coinciding with the stationing of Legio V Macedonica in the fortress on the Fortress Hill. Coin circulation and the overlapping of construction phases suggest a continuity of urban life until the 3rd century, with some structures being renovated or rebuilt. The technical level of execution and the abundance of material reflect the firm integration of Potaissa into the provincial Roman urban system and its regional significance within Roman Dacia.

Chapter III provides an in-depth analysis of the Roman road network associated with the municipium of Potaissa, emphasizing the role of transport infrastructure in shaping both the urban and extra-urban space of the settlement. The imperial road, the axis of greatest importance connecting Napoca to Potaissa and further to the mining areas of the Apuseni Mountains, constituted the main element of development and connectivity for the local Roman community. First mentioned in an inscription on a miliarium dated to AD 108, the road is attested both archaeologically and historiographically along the south–north route Războieni–Turda, intersecting the Potaissan territory in the southern industrial zone and heading toward the bridge over the Arieș River, the pillars of which were destroyed in modern times.

Within the Roman city, the precise course of the road is difficult to establish due to the superimposition of modern habitation; however, the hypothesis of its path along present-day Libertății, Avram Iancu, and Clujului streets is supported by funerary discoveries positioned along its sides. The segment ascending toward the legionary fortress was clearly delineated, presenting typical stratification and a width of 6.5 meters, and has been archaeologically documented in the area of the Roman Square – Romană Street. Its structure consisted of a compact layer made of limestone marl rudus, over which the pavimentum, composed of gravel, was laid.

The internal street network of the civilian settlement is poorly known, being attested only fragmentarily through occasional discoveries, especially in the context of public works or agricultural activities. Several paved roads were identified during the 20th century, some featuring

drainage channels constructed of limestone slabs or gravel pavements. These isolated discoveries, located in areas such as the left bank of the Sândului Valley, Cheii Street, or the slope of the Fairies' Hill (Dealul Zânelor), suggest the existence of a coherent urban network, though insufficiently documented due to the lack of systematic research.

The road system of the Fortress Hill (Dealul Cetății), where the legionary fortress was located, was well-structured around its four gates: *principalis praetoria*, *principalis dextra*, *principalis sinistra*, and *decumana*. Each gate was connected to a well-defined roadway, adapted to the topography, with moderate slopes. The route between the *porta principalis dextra* and the civilian settlement is attested both archaeologically and historiographically, while the road exiting through the *porta principalis decumana*, toward Copăcenii, has been identified over a length of more than 2.6 kilometers, also visible in recent aerial photographs. Secondary roads on the fortress plateau followed the natural slope and connected various buildings with peripheral areas.

The expansion of the road network is demonstrated by the existence of several secondary roads linking Potaissa with neighboring regions. A major route followed the Arieș Valley toward the Apuseni Mountains, leading to Alburnus Maior via the localities of Mihai Viteazu, Lupșa, Bistra, and Abrud. Its width varied between 3.5 and 4.5 meters, and its structure consisted of a gravel layer with polygonal paving slabs on the surface. Other secondary roads connected Potaissa with Iara, Băișoara, and Valea Ierii, having been recently documented archaeologically between 2018 and 2019. Their technical features reflect Roman engineering standards applied even in less central areas.

Another important, though still hypothetical, road in the current stage of research is the one that may have connected Potaissa with the stone quarries in the area of the Turda Gorges (Cheile Turzii), along the Pordei Valley. Funerary discoveries on both banks of the valley, in the areas of Șuia Hill (Dealul Șuia) and the Fairies' Hill (Dealul Zânelor), together with evidence of stone-processing workshops and quarries active during the Roman period, support the existence of this route, even though it has not yet been directly identified through archaeological investigations.

Therefore, the road network of Potaissa emerges as an articulated and functional system, consisting of a principal imperial axis, a coherent though fragmentarily known internal layout, a system of connections between the fortress and the civilian settlement, as well as several secondary routes that integrated the city into the economic and military landscape of Roman Dacia. The

infrastructure reflects the concern of the Roman authorities for integrating the local space into an efficient provincial network, contributing to the urban development of Potaissa.

Chapter IV offers a detailed and well-documented analysis of the public infrastructure of the Roman municipium of Potaissa, with particular emphasis on the systems of water supply and drainage, essential for the functioning and comfort of a Roman urban center.

The principal water source of the city, identified in the area known as “Izvorul Copăcenilor,” supplied, through aqueducts, both the legionary fortress on the Fortress Hill (Dealul Cetății) and the civilian settlement at its foot. The aqueduct serving the fortress, constructed with standardized ceramic pipes and with a maximum estimated flow of 15 liters per second, has been identified at several points, including at the entrance through the *porta decumana* of the fortress. The aqueduct intended for the civilian settlement was better preserved and investigated, consisting of ceramic pipes of larger dimensions (30 cm in diameter), allowing a flow of approximately 50 liters per second. Its route has been traced at several points, from Copăceni toward Turda, with recent discoveries in 2021 confirming its technical characteristics and dating the work to the period following the settlement of Legio V Macedonica on the Fortress Hill plateau.

In addition to the two main aqueducts, other water conduits have been identified, which appear to have served peripheral areas of the settlement or residential districts. On the southeastern slope of the Fairies’ Hill (Dealul Zânelor), ceramic pipes were discovered indicating the existence of a secondary aqueduct, while other isolated pipes found on Romană Street or in the city center may belong to lesser-documented networks.

Equally important for the functioning of the city were the drainage systems, used in public, military, and domestic spaces alike. Drainage channels are documented especially in the civilian settlement and on the Fortress Hill. On Dr. I. Rațiu Street, in the present-day center of Turda, two sections of north–south oriented drainage channels were discovered in the 19th century, constructed in the *opus incertum* technique and provided with interior plastering and a brick base.

On the Fortress Hill (Dealul Cetății), in the proximity of the legionary fortress, several drainage channels have been identified on the upper plateau, as well as on the eastern, southeastern, and western slopes, indicating a well-articulated network for the evacuation of wastewater and rainwater. The structures, built of worked stone blocks or *opus incertum* walls, featured brick pavements, protective plaster coatings, and coverings with tegular materials. The dimensions of

some of these channels, particularly those identified near the baths, suggest a military character, associated with large-scale edifices.

Recent research conducted in 2023 brought to light a drainage channel on Turturelelor Street, at the western extremity of the plateau, constructed using the *opus signinum* technique at its base, which indicates a high level of durability and impermeability.

Overall, the data presented in this chapter attest that Potaissa possessed an advanced public infrastructure, comparable to that of other urban centers of Roman Dacia. The integration of water supply and drainage systems into the urban structure, both in the military and civilian sectors, reflects rigorous planning, influenced by Roman engineering norms and adapted to local relief and resource conditions. These elements confirm the settlement's status as a *municipium* and its relevance within the urban and military network of the province.

Chapter V presents the funerary spaces of the Roman *municipium* of Potaissa, offering a topographical, typological, and chronological perspective on the necropolises identified around the settlement. Urban expansion and the military presence in Potaissa, beginning in the second half of the 2nd century AD, required the organization of well-defined funerary zones, located outside the inhabited space, in accordance with Roman tradition. Based on archaeological and historiographical research, as well as chance discoveries made between the 19th and 21st centuries, three main necropolises have been delineated—southern, western, and northeastern—as well as several funerary areas on the Fortress Hill.

The southern necropolis is the best documented, both archaeologically and historiographically, being located along the imperial road that connected Potaissa to Napoca. The graves are arranged in clearly delimited groups, in locations such as “Bodoc,” “Mihai Viteazu Barracks,” “Râtul Sânmihăienilor,” “Waterworks,” and along the route of the modern highway. Typologically, stone sarcophagi and burials with brick arrangements predominate, though cremations and inhumations in sarcophagi fashioned from reused monuments are also attested. The funerary material, especially coins and fibulae, places the use of the necropolis between the mid-2nd century and the early 4th century AD, in parallel with the urban development of Potaissa and the stationing of Legio V Macedonica in the fortress.

In the western part of the city, the necropolis developed on the left bank of the Arieș River, in areas known as Șuia Hill (Dealul Șuia), Pordei Valley (Valea Pordei), and the Fairies' Hill (Dealul Zânelor). Discoveries from this necropolis are predominantly accidental and fragmentary,

made especially during the 19th century and the early 20th century. Simple burials, brick-built tombs, and a few sarcophagi have been identified. The funerary monuments discovered—stelae, reliefs, pine-cone motifs, and lion heads—suggest the presence of a diverse population, with varying degrees of social stratification. In the absence of systematic excavations, the chronology of this necropolis is inferred indirectly, being placed within the 2nd–3rd centuries AD, with the possibility of its existence prior to the attainment of municipium status.

The northeastern necropolis, located in the present-day center of the municipality of Turda, is documented by a small number of graves and funerary monuments, situated within the perimeter of Dr. Ioan Rațiu Street, Roman Square, Avram Iancu Street, and Libertății Street. The identified graves are predominantly brick-built or in stone sarcophagi. The associated inventory—coins, earrings, ceramic vessels—suggests a chronology spanning from the late 2nd century to the early 4th century AD. Moreover, the positioning of these graves outside the civilian residential area of the city allows for the hypothesis of a correlation with the course of the imperial road, which has not yet been securely identified in this sector. The funerary monuments, although originating from uncertain contexts, support the existence of a distinct funerary space in this area.

On the Fortress Hill (Dealul Cetății), four distinct funerary areas have been identified, treated separately from the civilian necropolises due to the military character of the *canabae* of the stationed legion. These funerary spaces are distributed along the southern, eastern, western, and northeastern slopes of the hill, in locations such as “Furdulășeni,” “Culmea văii Sândului,” “Dealul Cocoșului,” and “Malul de Mijloc.” The documented burials are varied—simple inhumations, cremations of the *bustum* and *ustrinum* types, brick-built tombs, or sarcophagi—indicating a diversity of funerary practices. Some of these, such as those on Turturelelor Street, belonged to children and preserve grave goods consisting of a coin and a necklace of beads with gold foil. Funerary monuments in the area include reliefs, stelae, pine-cone motifs, and statues, some datable to the 2nd century AD, others reused in later contexts. The absence of systematic research in some locations hinders the establishment of a firm chronology; however, the correlation of their positioning with the routes of military roads suggests the use of these areas between the late 2nd century and the 3rd century AD.

The data obtained through research, historiographical observations, and chance discoveries allow for the outlining of a complex funerary geography around Potaissa. The necropolises are distributed radially in relation to the urban nucleus, in accordance with the Roman practice of

separating funerary space from civilian space. The typology of the graves reflects both the diversity of funerary practices and the social stratification of the community, ranging from simple inhumations to elaborate sculptural monuments. Chronological elements—coins, jewelry, sculptural styles—indicate active use of the funerary spaces over the course of two centuries, in parallel with the military and urban development of the city. Overall, the chapter underscores the importance of reconstructing funerary topography in order to understand the demographic, social, and religious dynamics of a major Roman settlement in Dacia.

Chapter VI consists of three catalogues that present in detail all in situ or possibly in situ discoveries within Potaissa, representative for establishing the topography of the municipium. Catalogue 1 focuses on Roman discoveries of a civilian character, Catalogue 2 on graves, and Catalogue 3 on funerary monuments.

The final section of the doctoral thesis consists of appendices. Here, the coordinates of discovery points are presented in tables, according to their inclusion in the catalogues. The investigated areas comprise a significant number of discovery points, recorded largely in the context of modern infrastructure works—water networks, sewer systems, or public constructions—which have enabled the documentation of Roman substrata. Recurringly, the walls identified were built in the *opus incertum* technique, precisely oriented and well-preserved, in many cases being associated with architectural elements such as capitals, column bases, shafts, as well as hypocaust installations. All these findings indicate the existence of an urbanized civilian space, composed of domus-type residential buildings, workshops, and public spaces.

Equally important are the discoveries of votive altars and votive sculptures, dedicated to a wide spectrum of deities from the Roman pantheon, such as Jupiter, Mercury, Hercules, Terra Mater, Liber, and Libera. These inscriptions decisively contribute to the understanding of social structures, religious patronage, and local civic identities.

In addition to the civic and religious components, elements have also been identified that suggest the existence of production workshops: ceramic fragments with firing defects, glass waste, remains of kilns, and processing tools, especially in the area of the Fairies' Hill (Dealul Zânelor) and the Sândului Valley.

Recent research, particularly that conducted between 2018 and 2022, has made significant contributions to completing the archaeological map of Potaissa. Preventive and supervisory archaeological interventions on Săndulești, Mandolinei, Liviu Cigăreanu, and Zamfirescu streets

have allowed for the identification of new civilian buildings, largely affected by contemporary works or alluvial deposits, yet preserving stratigraphic and architectural elements valuable for reconstructing the general planimetry of the city. For instance, at the address Liviu Cigăreanu no. 16–18, a Roman Mediterranean-type house was identified, featuring a central courtyard, perimeter rooms, and entrance thresholds confirming the existence of a standardized architectural model applied on a provincial scale.

Therefore, the detailed catalogue presented in this chapter reflects a dense and stratified archaeological reality, in which Potaissa emerges as an important Roman urban center, with a complex civic and architectural network, strongly marked by military influence, yet also characterized by active civilian life. The diversity and scope of the discoveries confirm the settlement's status as a municipium and its regional significance within the province of Dacia.

The present work concludes with a list of abbreviations and the consulted bibliography.