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Pázmány Péter Catholic University, Doctoral School of History
Faculty of Humanities and Social Sciences



Islamic coins in the Carpathian basin:
The Máramaros “Huszt” Hoard of the Hungarian national museum.

Submitted by:
Suleman Al Halabi

Supervisor:
Dr. Langó Péter
Dr. Adrienn Papp

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Abstract

This dissertation examines the numismatic, archaeological, and historical significance of the Máramaros "Huszt" hoard, the only known Islamic coin hoard from the Carpathian Basin dating to the early medieval period. Discovered in the early 20th century near Huszt (modern-day Khust, Ukraine), this remarkable collection consists of 373 Islamic silver dirhams, predominantly issued by the Samanid emirate and the Volga Bulgars. Through a detailed numismatic analysis, the study investigates the inscriptions, mint origins, metallurgical composition, and chronological distribution of the hoard. The research also contextualizes the hoard within the broader medieval trade networks of the ninth and tenth centuries, emphasizing its relevance to the slave trade, the Silk Roads, and the economic landscape of the Carpathian Basin.

The dissertation employs a multidisciplinary approach, integrating archaeometric techniques, direct examination of coins, and comparative studies of regional hoards. Additionally, it incorporates archaeological and historical data to illuminate the socio-economic and cultural role of Islamic coins in the region, particularly their presence in Hungarian graves. This analysis offers new insights into the connections between the Islamic world, Eastern Europe, and Central Europe during the medieval period.

Beyond the Máramaros hoard, the study addresses the broader context of ninth- and tenth-century Islamic dirhams discovered in the Carpathian Basin. Building on earlier research and recent discoveries, it provides a comprehensive analysis of their archaeological and historical contexts, distribution patterns, and circulation dynamics. The research contributes significantly to our understanding of medieval trade, economic interactions, and cultural exchanges, offering valuable contributions to the fields of numismatics, archaeology, and medieval history.

Introduction

The study begins with a comprehensive introduction outlining the historical and numismatic context of the Máramaros "Huszt" hoard. It identifies the key research questions, objectives, and significance of the study. Central to this research is the role of Islamic dirhams in understanding trade and cultural interactions between the Islamic world and the Carpathian Basin during the ninth and tenth centuries.

The introduction also reviews the historiography of Kufic coin studies in the Carpathian Basin and situates the current study within the broader framework of medieval numismatic research.

Key objectives include re-evaluating previous analyses of the hoard, employing advanced scientific techniques, and integrating recent discoveries to provide a more nuanced understanding of the region's economic and cultural history.

Chapter 1: Methodology

This dissertation employs a multidisciplinary approach to analyze the Máramaros "Huszt" hoard and ninth-tenth century Islamic dirhams in the Carpathian Basin. The methodology integrates historical research, numismatic analysis, archaeometric techniques, and advanced imaging technologies to provide a comprehensive understanding of the hoard's historical, cultural, and economic significance.

The study begins by examining the historical background of the Samanids, Volga Bulgars, Khazars, Vikings, Rus, and Hungarians, highlighting their roles in the circulation of Islamic coins. It incorporates Arabic and Persian sources and the accounts of travelers like Ibn Faḍlān and Ibrāhīm Ibn Ya'qūb to explore trade networks and cultural exchanges.

The research maps trade routes and the roles of merchants, analyzing the flow of commodities such as slaves, furs, and silk. It also investigates currency and weight systems to reveal the interconnected economic structures of the period.

Key focus areas include a detailed analysis of the hoard's coins, examining their mint origins, inscriptions, dates, weights, and diameters, as well as the archaeological context of dirham burials in the Upper Tisza region. X-Ray Fluorescence (XRF) analysis provides insights into the metallurgical composition and authenticity of the coins.

The study compares the hoard with other European finds, exploring regional variations and trade dynamics, and employs 3D imaging to document the coins' physical characteristics. A comprehensive catalog of the hoard offers detailed data for future research.

This integrated methodology provides a nuanced interpretation of the Máramaros hoard's role in medieval trade, cultural interactions, and economic systems in Eastern Europe.

Chapter 2: Historical Framework

This chapter examines the historical context of the Máramaros "Huszt" hoard, focusing on the interconnected trade networks and economic interactions of the ninth and tenth centuries. The study highlights the relationships between the Samanids, Volga Bulgars, Khazars, Vikings, Rus, and Hungarians, emphasizing their roles in the circulation of Islamic silver coins.

Through this comprehensive historical framework, the chapter provides valuable insights into the archeological, and economic significance of the Máramaros "Huszt" hoard, situating it within the broader medieval economy and demonstrating its role in shaping the interconnected systems of trade and cultural exchange during this period.

Chapter 3: Sources and Travelers

This chapter investigates the historical context of the Máramaros "Huszt" hoard through a comprehensive analysis of Arabic and Persian sources, as well as the accounts of notable travelers. These geographical and historical materials provide valuable insights into the socio-economic, cultural, and trade dynamics of the ninth and tenth centuries.

The chapter draws on a range of seminal works, including those by Ibn Khurdādhbih, al-Ya‘qūbī, Ibn Rusta, al-Bakrī, Hudūd al-Ālam, al-Iṣṭakhrī, Ibn Ḥawqal, al-Muqaddasī, al-Mas‘ūdī, al-Ḥimyarī, and Yāqūt. These sources offer detailed descriptions of trade routes, economic systems, and cultural exchanges, contributing significantly to the understanding of how Islamic coins circulated in the Carpathian Basin. While these texts have been analyzed extensively in previous studies, recent scholarly investigations highlight untapped potential for further exploration, ensuring their continued relevance in contemporary research.

Additionally, the writings of travelers such as Ibn Faḍlān, Ibrāhīm Ibn Ya‘qūb al-Ṭartūshī, and Abū Ḥāmid al-Gharnāṭī are examined for their firsthand observations of trade networks, societies, and cultural interactions. These vivid descriptions offer glimpses into the lives of the people and the regions they visited, providing essential context for understanding the movement of dirhams and their role in medieval economies.

By integrating diverse perspectives from geographical, historical, and traveler accounts, this chapter aims to enrich the analysis of the Máramaros "Huszt" hoard. This multidimensional approach allows for a nuanced understanding of its significance within the broader framework of Islamic coin circulation and medieval trade networks.

Chapter 4: Trade and the Circulation of Dirhams

The Carpathian Basin, strategically positioned at the crossroads of major trade routes, emerged as a vital hub connecting Viking territories, the Byzantine Empire, and the Islamic world during the Middle Ages. This region's trade dynamics were significantly influenced by the Hungarians, who controlled key routes, and the Volga Bulgars, who played a critical role along the Volga River, bridging the Viking territories with Central Asia and the Islamic lands. The Máramaros

"Huszt" hoard, containing both genuine Kufic dirhams and imitations, serves as tangible evidence of these interconnected trade networks and the economic and cultural exchanges between diverse regions.

This chapter explores the mechanisms that facilitated the circulation of Islamic dirhams in the Carpathian Basin, focusing on the intermediaries who played pivotal roles in the trade networks. Key figures included the Khazar merchants, Rus merchants, Bulgar merchants, Magyar merchants, and Muslim merchants. These intermediaries connected distant regions, ensuring the smooth flow of goods and coins across vast trade routes.

The chapter also examines the nature of commercial exchanges during this period, highlighting significant commodities such as slaves, furs, silk, and other valuable goods. These items were essential to the trade network, shaping the economies and cultural interactions of the regions involved. By analyzing these commodities, the study reveals their critical role in facilitating economic exchanges between Eastern Europe and the Islamic world.

In addition, the chapter delves into the currency and weight systems utilized by the Rus, Vikings, Khazars, Volga Bulgars, Muslims, and Magyars. These systems, characterized by their complexity and regional variations, offer valuable insights into the broader economic frameworks of the medieval period. By comparing these diverse systems, the study elucidates the interconnectedness of these societies and the mechanisms that enabled the circulation of coins, particularly Islamic dirhams.

Through this comprehensive analysis, the chapter provides a detailed understanding of the historical and economic context that shaped the trade networks of the Carpathian Basin. It underscores the critical role of intermediaries, commodities, and monetary systems in enabling the movement of Kufic dirhams and highlights the region's importance in medieval trade and cultural interactions.

Chapter 5: The Máramaros "Huszt" Hoard

Chapter 5 delves into the Máramaros "Huszt" hoard, a hoard of immense significance in the study of Islamic numismatics. This chapter provides a detailed examination of the coins, focusing on the various mints represented in the hoard. The analysis draws from the perspective of an Islamic numismatics expert and employs the native Arabic script found on the dirhams to ensure accurate identification. Through meticulous physical examinations and modern measurement tools, the study revisits prior assessments, correcting errors and unveiling new

insights. This rigorous investigation spanned over five years, with periodic visits to the Hungarian National Museum's coin cabinet.

The chapter begins with the al-Shash mint, highlighting its historical and cultural context and the craftsmanship behind its dirhams. The focus then shifts to the Samarqand mint, uncovering the stories and distinct characteristics of its contributions. Subsequent sections explore coins from the Andarābah, Balkh, Ma'ādan, and Nishapur mints, each offering a unique glimpse into the economic and artistic heritage of their regions.

A significant portion of the chapter is dedicated to the Volga Bulgar dirhams, which form a substantial component of the hoard. Detailed analyses cover the Bulgar Mint, its coinage, and the influential role of al-Amīr Yaltawar of the Volga Bulgar, particularly in the creation of dirham imitations.

This chapter underscores the interdisciplinary nature of numismatic studies, incorporating methodologies from archaeology, history, metallurgy, and linguistics. By integrating these approaches, the examination reveals the rich historical narratives embedded within the Máramaros "Huszt" hoard. These findings not only deepen our understanding of medieval coinage but also provide critical insights into the broader trade networks and cultural exchanges of the period.

Chapter 6: The Archaeological Interpretation

Chapter 6 offers a thorough archaeological examination of the Máramaros "Huszt" hoard, placing it within the broader historical and economic context of the ninth and tenth centuries. It begins with an analysis of Islamic dirhams discovered in the Carpathian Basin, incorporating re-examinations of photographs, precise measurements, and direct physical analysis of the coins. This section revises earlier research by including new findings from Hungarian museums and recently identified hoards. A comprehensive map and detailed catalog enhance the understanding of the distribution and characteristics of these coins.

The second part of the chapter explores the archaeological significance of Islamic dirhams found in graves during the Hungarian conquest period. These coins, acquired through trade or war booty, are interpreted as symbols of status, despite their relatively low silver value. Special attention is given to the Karos-Eperjesszög cemeteries, which reveal the Upper Tisza region's critical role as a hub for trade and cultural interaction. Recent discoveries, including an Abbasid dirham predating previously known coinage in the region and a re-examined dirham from

Tiszacsoma, challenge existing narratives about coin circulation and trade dynamics during this period.

The chapter also highlights the Volga Bulgars' intermediary role in trade, evidenced by imitation dirhams and unique coins in the hoard. These findings provide deeper insights into the interconnected trade networks that linked the Carpathian Basin to the Islamic world, underscoring the region's importance in medieval economic and cultural exchanges.

Chapter 7: Archaeometry Examination of the Máramaros "Huszt" Hoard

Chapter 7 presents the archaeometry examination of the Máramaros "Huszt" hoard, offering valuable insights into its composition and characteristics. The study utilized advanced instrumentation, including MICRO-XRF SPECTROMETERS M4 TORNADO and the Digital Microscope VHX-6000 Series, to conduct a detailed analysis of the dirhams. These tools enabled precise documentation of the hoard's elemental composition, silver content, and visual properties.

The analysis determined the percentage of silver in the dirhams and highlighted variations across different mints, identifying coins with the highest and lowest silver content. The presence of other elements, such as copper, iron, gold, and trace elements, revealed the metallurgical techniques and regional differences in coin production. These findings not only shed light on the physical properties of the coins but also enhanced understanding of their historical and economic significance.

The comprehensive examination underscored the craftsmanship, trade networks, and economic systems of the medieval period. By integrating archaeometric methods, the study revealed the hidden stories and valuable information contained within the hoard. This chapter highlights the importance of advanced analytical techniques in numismatics and their role in enriching our understanding of the medieval world.

Chapter 8: The Results of the Archaeometry Examination and Silver Composition of the Hoard

Chapter 8 focuses on the detailed analysis of the silver content in the dirhams of the Máramaros "Huszt" hoard, providing insights into the metallurgical and economic characteristics of coins from diverse mints, including al-Shash, Samarqand, Andarābah, Balkh, Ma'dan, Nishapur, and Volga Bulgar. The study highlights significant variations in silver purity, ranging from 94.6% to 99.3% Ag, with notable differences across individual dirhams and mints.

The findings reveal the highest silver content in a dirham from Andarābah (99.3% Ag) and the lowest in an imitation dirham (94.6% Ag). Copper, iron, gold, and trace elements such as manganese, nickel, and lead contribute to the unique composition of each coin, reflecting the technological and regional distinctions of their production. For instance, al-Shash dirhams consistently maintained high silver content, with detailed variations meticulously cataloged for each coin.

The study also examines the distinct characteristics of imitation dirhams from the Volga Bulgar, which, intriguingly, sometimes surpass the silver purity of original Samanid dirhams. This underscores the complex craftsmanship and economic interactions during the era.

Through this analysis, the chapter emphasizes the historical significance of silver as a dominant material, offering insights into the coinage practices, trade networks, and metallurgical expertise of the medieval Islamic world. The results contribute to a deeper understanding of the economic and cultural dynamics of the period, revealing the interconnectedness of diverse mints and regions.

Chapter 9: The Máramaros "Huszt" Hoard from an International Perspective

Chapter 9 situates the Máramaros "Huszt" hoard within an international framework by comparing the silver content of its dirhams with those from other hoards documented in the seminal work *Dirham und Rappenpfennig Mittelalterliche*. This comparative analysis utilizes X-ray fluorescence measurements conducted during the interdisciplinary research project "Medieval Coinage in Mining Regions."

A key finding is the notably high silver content of the Máramaros "Huszt" dirhams compared to coins from other European hoards. This suggests the Carpathian Basin's prominence as a hub for the circulation of Islamic coinage during the tenth century. The analysis revealed unique aspects of the hoard, including a significant proportion (34%) of Volga Bulgar dirhams, many of which exceed the silver purity of similar coins documented elsewhere. Rare examples, such as dirhams minted under al-Amīr Yaltwar and in Bolgar, underscore the hoard's diversity and its economic connections.

This chapter highlights the collaborative approach integrating geochemistry, history, archaeology, and numismatics to analyze the hoard's composition. The findings illuminate trade routes and economic interactions between the Volga Bulgars, the Carpathian Basin, and the

Islamic world. By identifying the exceptional characteristics of the Máramaros "Huszt" dirhams, this research contributes to a deeper understanding of medieval trade networks and offers valuable criteria for future numismatic studies.

Chapter 10: 3D Measurements of the Máramaros "Huszt" Hoard Dirhams

Chapter 10 highlights the application of advanced 3D measurement and imaging techniques to analyze the dirhams from the Máramaros "Huszt" hoard. Utilizing the Digital Microscope VHX-6000 Series, precise measurements of engravings and inscriptions were captured, providing invaluable insights into the coins' design, craftsmanship, and historical significance.

The 3D measurement process allowed for highly accurate analysis through edge detection and on-screen measurements, while high-resolution images documented the intricate details of the dirhams' surface features. Photogrammetry techniques further enhanced this study by creating 3D models of the coins, enabling comprehensive examination of their shape, condition, and surface characteristics.

These advanced tools offered a deeper understanding of the dirhams' physical and cultural attributes, contributing to the growing field of numismatics. The inclusion of 3D models and high-resolution images in the study provides a valuable resource for future researchers. This chapter underscores the importance of leveraging modern technology to uncover the hidden details and historical significance of medieval coins.

Conclusion

This dissertation presents a comprehensive examination of the Máramaros "Huszt" hoard, situating it within the broader context of tenth-century numismatics. The analysis explores the economic, cultural, and trade networks of the Carpathian Basin, with a comparative focus on other significant hoards, particularly the Bezlyudovka hoard from South Russia. This comparison reveals patterns of coin circulation, regional preferences, and variations in silver content, providing a deeper understanding of the interconnected trade networks that defined the medieval period.

The integration of archaeometric techniques such as X-ray fluorescence and 3D measurements has provided new insights into the silver content and metallurgical characteristics of the Máramaros dirhams. This study demonstrates that variations in silver purity were closely tied to mint origin and production processes, with high silver content dirhams, especially Volga

Bulgar imitations, highlighting the Carpathian Basin's role as a crucial center for Islamic coin circulation during the tenth century.

One of the key findings is the identification of a dirham from Jászfelsőszentgyörgy, which challenges previous assumptions regarding the earliest Islamic coins associated with the Hungarian conquest period. This discovery opens new research avenues into the flow of Islamic coins into the Carpathian Basin, particularly in relation to the Volga Bulgar trade networks.

Furthermore, comparisons with other European hoards reveal the absence of certain mints, particularly Volga Bulgar imitations, in existing scholarship. This highlights the unique and underexplored contributions of the Máramaros "Huszt" hoard to our understanding of medieval coin circulation.

The use of advanced imaging techniques and 3D measurements has proven essential in documenting and analyzing the dirhams. These methods provide high-resolution visual data and detailed models, enhancing the study of dirham inscriptions, surface features, and metallurgical composition. By integrating these interdisciplinary approaches, the research enriches the broader field of numismatics, contributing to our understanding of medieval coinage.

In conclusion, the Máramaros "Huszt" hoard exemplifies the complex interplay of economic, political, and cultural factors in the medieval Carpathian Basin. This study, grounded in historical, archaeological, and metallurgical methodologies, provides new insights into the trade networks, coin circulation, and minting practices of the tenth century. The findings presented here pave the way for further research into similar hoards, contributing to a more comprehensive understanding of medieval European history.

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- From Late Antiquity to the Ottoman Period in the Levant Conference on NearEast Archeology. Presenter in English, Budapest (26/09/2023 – 27/09/2023).
- 11th Interdisciplinary Doctoral Conference 2022. Presenter in English, Pécs (25/11/2022 – 26/11/2022).
- Tavaszi Szél Konferencia. Presenter in English, Pécs (06/05/2022 – 08/05/2022)
- Fiatal Kutatók A Pázmány Régészeti Műhelyéből. Presenter in Hungarian, Budapest (24/09/2021 – 24/09/202).
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