

Byzantina et Slavica



Studies in Honour
of Professor
MACIEJ SALAMON

Historia
Iagellonica

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BYZANTINA ET SLAVICA. STUDIES IN HONOUR OF PROFESSOR MACIEJ SALAMON

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An anonymous Byzantine follis from Gródek upon the Bug River

INTRODUCTION

The aim of this report is to present the coin discovered in 1993 in the village of Gródek (Gródek upon the Bug River, Poland; *cf.* Fig. 1: 1) as well as the results of physicochemical studies of this coin and of selected other mid-Byzantine coins from the National Museum in Krakow.¹ The find from Gródek was primarily published by Borys Paszkiewicz.² We hope that the remarks presented below will provide new data for studies on the circulation of Byzantine coins in East Central Europe.

¹ This article was written as part of the project *The Golden Apple of Polish archaeology. Stronghold complexes at Czermno and Gródek (Cherven' Towns) — chronology and function in the light of past and current research*, part 2 (Ministry of Science and Higher Education, Warsaw, NPRH, Project No. 11H 18 0344 86).

² Paszkiewicz 1995.

We would like to dedicate our reflections to Professor Maciej Salamon, whose contribution to studies of Byzantine coins is invaluable. We should recall not only his excellent synthetic history of Byzantine coinage³ but also a series of analyses of individual (mid)Byzantine coin finds in Poland, including bronze ones.⁴ It is worth noting that the Professor also used results of physicochemical analyses of coins in these works.⁵

GRÓDEK UPON THE BUG RIVER — THE SITE

As we have mentioned, the coin in question was found in 1993 near the early medieval stronghold (site 1 [Polish names: *Gródek*, *Zamczysko*]), in the topsoil.

The stronghold at Gródek upon the Bug River, located several hundred metres from the river, is one of the most important archaeological sites in the Polish-Ruthenian borderland (Fig. 1: 2–4). For many years, studies on the Early Middle Ages in this region of Poland were neglected,⁶ but at present they are very dynamic; we should mention studies of individual sites, such as the hillfort in Sądziadka,⁷ towns like Chełm⁸ or whole regions (e.g. the Mazovian-Ruthenian borderland).⁹ The strongholds in Czermno and Gródek have been studied by an international team of scholars, financed from Polish and German funds.¹⁰

The stronghold at Gródek upon the Bug River (Polish: Gródek, Gródek nad Bugiem)¹¹ is part of a large early medieval settlement complex situated in an area which in administrative terms belongs to the villages of Gródek upon the Bug River and Tep-tiuków, and which lies near the confluence of the Huczwa and Bug Rivers, very close to the Polish border (Fig. 1: 2).

The main element of the early medieval settlement complex is the stronghold (*Zamczysko*, site 1A; cf. Fig. 1: 3); the northern part of the stronghold has been damaged by the Huczwa River gradually eroding the loess promontory. The stronghold

³ Salamon 1987.

⁴ Salamon 1980; 1983; 1999. We wrote about the Professor's studies on early Byzantine coins elsewhere; see Bodzek, Tunia, Wołoszyn 2018.

⁵ Salamon 2009.

⁶ Wołoszyn 2017a; see also Wołoszyn (ed.) 2017.

⁷ Kalaga (ed.) 2013.

⁸ Buko, Gołub (eds.) 2016.

⁹ Buko (ed.) 2019.

¹⁰ Main publications: Florek, Wołoszyn (ed.) 2016; Auch 2017; Wołoszyn (ed.) 2017; 2018a; 2018b. Comprehensive information about the studies can be found on the website <https://grodczyerwienskie.pl/> (accessed on 30.09.2019).

¹¹ The proper administrative name of the village where the settlement complex is situated is Gródek. The name originates from a Slavic word for earthen fortifications or strongholds, and it is a quite common place name (cf. Zschieschang 2017: 181). Therefore, to distinguish the site in question from other "Gródek" locations, the name of the nearby river is commonly added to that of the village. As a result, in the archaeological literature it is referred to by names such as Gródek Nadbużny and Gródek nad Bugiem (both meaning Gródek upon the Bug River). In this paper we use the name Gródek upon the Bug River.

neighbours (cf. Fig. 1: 2) at least partly contemporaneous open settlements (Gródek, sites 1B, 1C, 2, 3, 4, 5). They are situated on the banks of the Huczwa (Gródek, sites 2, 3, 4, 5) and along a loess ridge which runs from the mouth of the Huczwa along the edge of the Bug valley towards the south, culminating in a small hill known as *Bocian*, *Bocianowa Góra*, *Zamek*, or *Horodyszcze* (Gródek, site 1C). Other early medieval settlements are known to the north of the stronghold, on the other (left) side of the Huczwa River (in Teptiuków village). The stronghold at the mouth of the Huczwa (*Zamczysko*) and the site of *Zamek* (*Horodyszcze* — Gródek site 1C) were reportedly connected by a double rampart with a ditch, still existing in the 19th c., known as *Okopy Chrobrego* (King Bolesław I's Ditch). A richly furnished warrior grave — dated to the 13th c. — discovered in 1983 is most likely part of an inhumation cemetery situated in *Zamek* — *Horodyszcze* (Gródek, site 1C), which may have included burials under barrows. Another inhumation cemetery of 466 graves was found within the ramparts of the Gródek stronghold.

Another element of the settlement complex at Gródek is a large mound known as *Księżycowa Mogiła*, situated about 800 m north of the stronghold on lands belonging to Teptiuków village. The mound is better known as the barrow of Husynne (Husynne, site 1), and it was raised in place of an older settlement from the 9th–10th century. In fact, the mound may be the remains of a bank on which a wooden tower house (*motte*) was built.¹²

The village of Gródek was already known to Jan Długosz, who informs us that the fortifications had originally been called *Volhyn*. As shown years ago by Andrzej Poppe, this identification is highly likely.¹³ The stronghold of *Volhyn* was first mentioned in the context of the expedition of the first Polish king, Bolesław I, to Kiev. In the summer of 1018 the Polish army clashed against the troops of Yaroslav the Wise near the stronghold.¹⁴

As we have mentioned, studied of the Polish-Ruthenian borderland have intensified only in the last few years. Unfortunately, since the 1980s, the problem of treasure hunters — equipped in more and more effective metal detectors — robbing Gródek upon the Bug River has been increasing. In the last few decades, scholars have published numerous heritage objects from Gródek¹⁵ most recently, a catalogue of finds from this site kept in the Museum in Hrubieszów has been published.¹⁶

Unfortunately, detailed information about the findspots of these objects is not available, which is also the case of the coin in question. It cannot be confirmed whether it was found in the stronghold or elsewhere. However, the studies conducted recently allow us to deduce with certainty that there was settlement in Gródek at the turn of

¹² For Gródek see papers in Wołoszyn (ed.) 2018a; esp. Dzieńkowski 2018.

¹³ Poppe 1957; see also Jusupović 2017.

¹⁴ For the expedition of 1018 see e.g. Salamon 1993; see also Wołoszyn 2017b.

¹⁵ See e.g. Kokowska, Kokowski 1993; 1997; 1998.

¹⁶ Wołoszyn (ed.) 2018b.

the 10th and 11th c. This is to some extent confirmed by written sources (the mentioned Battle of the Bug River in 1018), but mainly by archaeological data and the information collected by a team of geographers led by Radosław Dobrowolski. Gródek has produced not only Avar finds (dated to the 8th c.), but also very characteristic belt buckles, commonly dated to the turn of the 10th and 11th c.¹⁷ Meanwhile, geographical finds confirm that the area of Gródek was seriously deforested in the period in question. Moreover, the series of radiocarbon dates obtained in 2016 and 2018 (tests conducted in laboratories in Poznań (Tomasz Goslar) and (Irka Hajdas) shows that the cemetery in the stronghold's ward dates back not to the 13th–15th c. (as was presumed until recently), but rather to the 11th–13th c.¹⁸

To sum up the remarks about early medieval Gródek, it is worth noting two problems which have been cleared up as a result of studies conducted in recent years.

1) Gródek upon the Bug River is situated in the Polish-Rus' borderland, but the site should definitely be regarded as Rus'. With all the restrictions related to the ethnic interpretation of material culture artefacts,¹⁹ there is no doubt that the finds discovered there should be linked to the material culture of Kiev Rus' or, more broadly speaking, the Byzantine Commonwealth.

2) Until recently, Gródek upon the Bug River (like nearby Czermno — Cherven') was treated as one of the border fortresses, a small castle mainly inhabited by knights. However, the enormous amounts of finds discovered in Gródek, including hundreds of devotional articles and objects related to trade, such as Drohiczyn-type small lead seals, require us to change our notions about this site. The final factor which requires us to redefine Gródek is the fact that a large number of fragments of silk fabrics was discovered here.²⁰

It should therefore be very strongly emphasised that the Byzantine coin discussed in this article was not discovered in a God-forsaken border castle. There is much to indicate that Gródek was an important centre located on a trade and transportation route; it seems that it can be classified as a so-called gateway city.²¹

GRÓDEK UPON THE BUG RIVER — THE COIN

The basic information about the coin in question is presented below:

Obverse: an image of Christ within a cruciform halo, with the book of Gospel in his left hand; the poor condition of the coin means that it is difficult to confirm whether there is a dot on each bar of the cross

¹⁷ Wołoszyn (ed.) 2018b: Finds Nos. 80–83, 85–91.

¹⁸ Unpublished materials.

¹⁹ Brather 2004.

²⁰ Cybulska, Marciniak, Sielski 2018.

²¹ For more on this topic see Siemianowska 2014.

Reverse: the field of the coin is filled with three lines of the inscription *IhSUS
XRISTUS BASILEUS BASILLE'*

Fig. 1: 1

dimensions: diameter 30.4 mm; weight 11.51 g

Note: the shape of the coin is irregular.

Place of storage: Father Stanisław Staszic Museum in Hrubieszów, Inv. No. MH/N/2414.

Borys Paszkiewicz, who was the first to publish the coin from Gródek, described it as an anonymous Class A follis according to Margaret E. Thompson's classification,²² attributed to Basil II (976–1025) or Constantine VIII (10125–1028)²³; he also referred to a well-known catalogue by Pierre Justin Sabatier.²⁴ Using the catalogue of coins from the Dumbarton Oaks centre, we can conclude that it is A 2.1 or A 2.1.a, dated to 976–1030/35.²⁵

A small number of bronze Byzantine coins come from Polish lands. Many years ago, Maciej Salamon noted that their findspots focused in south-eastern Poland.²⁶ The catalogue published a decade ago by Adam Gliskman confirmed the Professor's observations.²⁷ The validity of these observations is not affected by the fact that information about bronze coins from Great Poland (Ostrów Lednicki) has appeared recently.²⁸

Singular mid-Byzantine bronze coins from south-eastern Poland include a follis of Alexios I Komnenos (1081–1118) from Biecz²⁹ and a follis of Michael IV (1034–1041), discovered in 1976 in Zamość.³⁰

²² Thompson 1954.

²³ Paszkiewicz 1995: 157.

²⁴ Sabatier 1862: 143, No. 8, Pl. XLVIII:5.

²⁵ Bellinger, Grierson 1993: 650, Pl. 24.

²⁶ Salamon 1980.

²⁷ Gliksman 2009.

²⁸ Tabaka 2013: 24, 36, 54 (Cat. No. B:II:1).

²⁹ Unfortunately, the coin was stolen from the Regional Museum in Biecz. The only source of information about its appearance is a photograph in an article by Andrzej Żaki, which sadly is not of greatest quality; the obverse certainly shows an image of a figure within a halo (Christ?; cf. Żaki 1963: 46, Fig. 21). Stefan Skowronek described this coin as a Sabatier II: 85 type (the information is published in the volume *Polish Early Medieval Treasures*, see Haisig, Kiersnowski, Reyman 1966: 13, Cat. No. 1). The object was discovered before 1939 on Queen Jadwiga's Hill, situated among the hills surrounding Biecz (Castle Hill /// Queen Jadwiga's Hill /// Salomon's Hill). A bronze coin of Justinian I was also found in Biecz; it is difficult to tell whether they were two loose finds or a hoard; see *Notatka Redakcji (Editor's note)* 1961; Kunysz 1963: 66; Wołoszyn 2009: 497–498, Cat. No. 2; cf. *Frühmittelalterliche Münzfunde* IV, Cat. No. 3.

³⁰ The object is in private hands; the authors owe the information about it to Mr Jacek Feduszko (Museum in Zamość; query in 1999 and many more in the following years; on this coin see Wołoszyn 2003, vol. V, Zamość / [2]); *Frühmittelalterliche...IV*, Cat. No. 115.

We should rule out Pińczów from the list of authentic findspots. Eligia Gąssowska informs us about the discovery of a bronze coin of Isaaq II Angelos (1185–1195) there. E. Gąssowska does not provide any data about this find, it is only listed in a table and the object is not discussed in the analytical part of the work (cf. Gąssowska 1979: 209, Table VIII, Cat. No. 5). There are no coins of this type in the Museum in

However, the discovery from Gródek should be analysed in a broader geographical context, which also includes finds from Eastern Europe and the Carpathian Basin.

Unfortunately, for many years there has been no corpus of Byzantine coins from Eastern Europe which would update the data collected by Vladislav V. Kropotkin³¹ and Volodymir Zocenko.³² There have been quite numerous studies analysing finds from the very region.³³ However, we lack a new reference database including some synthetic works, which is a significant problem. It is, among others, thanks to Kiryl Myzgin³⁴ that we know how fast the number of finds from the Pre-Roman, Roman or the Migration Period has been increasing in Eastern Europe; this is certainly also the case of coins from the 10th–13th c.³⁵ In this context, we should mention coins recently discovered in Volhyn and kept in the collection of Museum in Liuboml or by private collectors: they contain bronze coins from the 10th–11th c., including anonymous folles.³⁶

Bronze coins, including anonymous folles from the 10th–11th c., are also known from the Carpathian Basin,³⁷ also from its north-eastern part.³⁸

Hungarian warriors took part in the mentioned expedition of Bolesław the Bold to Kiev, so it is conceivable that the follis from Gródek arrived there from Carpathian Basin as a result of this campaign. The bronze Byzantine coin could, of course, have also been brought to the site by Rus' or Polish knights. We deliberately do not want to speculate in this way. Helle Horsnaes recently concluded, when discussing Scandinavian Byzantine coins, "The Nordic finds of Byzantine coins and the Byzantine impact on Nordic and Scandinavian coinages have sometimes been related directly to the literary evidence of the Varangian Guard in Constantinople or even the travels of King Har-ald Hardrade, but it seems time to liberate the studies of the coins from this straightjacket".³⁹

In this case we decided to make our study more comprehensive by performing chemical analyses and including their results. While gold and silver coins are quite frequently the subject of metallurgical analyses, the chemical composition of bronze coins, especially mid-Byzantine ones, has not been studied much so far.

As comparative material for the percentage composition of the alloy of the coin found in Gródek, we selected ten Byzantine coins of a similar type from the collection of the National Museum in Krakow (Polish: Muzeum Narodowe w Krakowie, MNK).

Pińczów (information from Dariusz Gren; 17.09.2019). The mention about this specimen is most likely a mistake.

³¹ Kropotkin 1962; see also the French edition: Kropotkin 2006.

³² Zocenko 1991.

³³ Noonan 1980; Jankowiak 2016.

³⁴ Myzgin 2016.

³⁵ Guruleva, Musin 2015: 311.

³⁶ Guruleva, Musin, Ostapjuk 2017: 283–284, Fig. 2.

³⁷ Kovács 1989; Prohászka 2018.

³⁸ Hunka 2013; Prohászka 2012: 80, Table 15; Musteață 2014

³⁹ Horsnaes 2015: 55 (emphasis by the authors).

THE MID-BYZANTINE BRONZE COINS — CHEMICAL ANALYSES

NATIONAL MUSEUM IN KRAKOW — SELECTED MID-BYZANTINE COINS

Unfortunately, only in the case of four of these ten coins we were able to identify the provenance of the objects. The other ones came to the Museum before 1939 and it is currently impossible to establish from whom and how they were acquired. During WWII, the numismatic collection of the MNK was mixed up and some of the archival documents were destroyed.⁴⁰ As a consequence, in many cases we do not know the provenance of the objects acquired by the Museum. The mentioned four coins with an established provenance came into the collection of the Museum after WWII. An anonymous Class A3 follis with the inventory number MNK VII-A-6074 came from the collection of Karol Wilhelm Halama (1870–1948). Halama vel Hallama, a resident of the town of Żywiec in Western Galicia, in the Beskid Mountains, gifted his collection of ancient coins to the National Museum in Kraków in 1946.⁴¹ The collection contained 2,574 ancient coins, including some Byzantine ones. Unfortunately, it is impossible to establish where Halama acquired the coin which is currently in the possession of the MNK. He probably built his collection taking various opportunities to “acquire” the items that interested him. Despite residing in a small town, where he worked as a postal clerk and later as a postmaster, Halama maintained extensive contacts with other coin and medal collectors. He was an active member of numismatic societies in Kraków and Vienna and wrote articles for the periodicals published under the auspices of these societies, such as “Wiadomości Numizmatyczno-Archeologiczne”, “Monatsblatt der Numismatischen Gesellschaft” in Vienna and “Mittheilungen der Österreichischen Gesellschaft für Münz- und Medaillenkunde” in Vienna. When building his collection, Halama probably used the services of international numismatic companies or acquired objects through direct contacts with other collectors. The coin in question may have, therefore, ended up in his collection in this way. On the other hand, however, we know that the collector from Żywiec also acquired coins from discoveries. He was, for instance, believed to possess a gold coin of Justinian I, allegedly found somewhere in Little Poland.⁴² In the light of currently available archival materials this information cannot, however, be confirmed.⁴³ When acquiring ancient coins, Halama did not limit himself to the area where he resided and there are known cases of him obtaining objects discovered in distant places. One of such cases are the coins from a hoard of Roman denarii from the area near Przewodów in what is present-day eastern Lublin Voivodeship

⁴⁰ Bodzek 1997.

⁴¹ Anon. 1949; Kalkowski 1949; Bodzek 1997: 65, 72; Bodzek 2003a.

⁴² Gąssowska 1979: 26, fn. 21.

⁴³ Bodzek, Tunia, Wołoszyn 2017: 10 and fn. 18.

in Poland, i.e. the region from which the discussed find from Gródek came.⁴⁴ However, due to the lack of any documents regarding the possible provenance and the way in which the anonymous follis no. MNK VII-A-6074 came into the collection of Karol Halama, any speculations on this subject are baseless.

The situation is similar in the case of the other three coins with the established provenance. The mentioned anonymous Class A3 folles with the inventory numbers MNK VII-A-6163, MNK VII-A-6164 and MNK VII-A-6166 came to the National Museum in Kraków as a gift of Lech Kokociński (b. 1944), the greatest donor to the numismatic collection of the MNK in the 21st century.⁴⁵ He is among the most outstanding collectors of ancient coins in the period between the second half of the 20th c. and the early 21st c. in Poland. His numismatic interests focus on ancient and Polish coins, paper money and counterfeit money. Lech Kokociński's donations to the MNK, given regularly from the beginning of the 21st c., have exceeded 10,000 items, including 3,500 ancient coins. They also include a group of several dozen Byzantine coins. Unfortunately, in the case of the three mentioned anonymous folles there is little we can say about their provenance, except that they were acquired on the antiquarian market.

CHEMICAL ANALYSES

A total of 11 coins, the one under question and ten reference objects from the Numismatic Cabinet of the National Museum in Krakow, were analysed in the Laboratory of Analysis and Non-Destructive Investigation of Heritage Objects of the National Museum in Krakow. The examined reference coins vary in diameter between 26.5 and 33.4 mm, their weight can fluctuate from 6.4–17.1 g, and their thickness was approximately 1.0 mm. The coins were analysed as received without any previous cleaning treatment. The results are summarised in the section below.⁴⁶

INSTRUMENTAL ANALYSIS

The coins were analysed using an S1 Titan handheld X-ray fluorescence (XRF) spectrometer (Bruker, Germany), equipped with a Rh tube and an X-Flash[®] SDD detector. The S1 Titan has an analysis spot of 5 mm and operates at 50 kV and 15 μ A, while the acquisition time employed was 60 s. This instrument allowed performing qualitative and quantitative analyses of the coins since it has several internal calibrations for metal alloys that are based on the fundamental parameter method. The S1RemoteCtrl and the S1Sync software were employed for instrument control, while the Artax software (Spectra 5.3) was also used for qualitative analysis of the spectra.

In addition, a Phenom Pro X (Phenom-World, Eindhoven, NL) scanning electron microscope coupled with energy dispersive X-ray analysis (SEM/EDX) was used

⁴⁴ Skowronek 1965; Bodzek 2009

⁴⁵ Bodzek 2003b; Fischer-Bossert, Bodzek 2017: 15; Bodzek 2018: 11f.

⁴⁶ For an analysis of the late Roman and Byzantine coins see: Scott 1991; Guerra 2000; Demortier 2004; Canovaro et al. 2013; Gorghinian et al. 2013.

to analyse one of the coins. This microscope is equipped with a CeB_6 electron source, a 4-segment backscattered electron detector, and a silicon drift detector for EDX analysis. The Phenom Pro Suite software was used to carry out the element identification as part of EDX analysis.

RESULTS AND DISCUSSION

A characteristic XRF spectrum obtained for coin number 6074 is presented in Fig. 2: 1. A clear dominance of copper (Cu) can be noticed. Other elements include silicon (Si), lead (Pb), calcium (Ca), iron (Fe), and zinc (Zn). Cu sum peaks can be observed in the 15.5–17 keV region, while signals between 2.5 and 3.0 keV are due to the rhodium (Rh) excitation source of the instrument. Quantitative results are shown as the average of two measurements, one from the obverse and one from the reverse. Accompanying elements detected at trace levels are only reported in terms of their presence or absence. The results are summarised in Table 1.

With the exception of one reference coin (Inv. No. MNK-VII-A 7166), all evaluated coins, including the one from Gródek, had a high Cu content in the 94.1–98.7% range. Minor elements included Si (1.2–3.5%), Pb (0.5–1.3%), and Zn (~0.7%). Trace levels of Ca and Fe were detected in almost all the coins, while trace levels of Zn were found for some of the coins including the one under investigation. Si, Ca, and Fe are associated with the burial environment, while Pb and Zn at trace levels are associated with impurities of the Cu. The latter also showed a low content of P of about 1.1%. Ag was found in two of the reference coins (Inv. No. MNK-VII-A 7163; Inv. No. MNK-VII-A 7166). The coin under investigation remains within the larger group of coins with a Cu content of 94.1%. This coin also showed presence of Si (3.5%) and P as well as trace levels of Pb, Ca, and Fe. Coin Inv. No. Inv. No. MNK-VII-A 7166 was a clear outlier from the group showing a lower Cu content of 54.3% and a relatively higher Pb content of about 23% when compared to other coins. Other elements detected on the surface of this coin include Si (6.7%), Fe (3.5%), Ag (5.9%), and P (0.9%). The deviation of this coin from the rest of the group could be explained by several factors. However, attempting to explain this effect is outside the scope of the current article. In order to better understand this result, a larger number of coins from this time period would need to be analysed. Due to the nature of the coins, the accuracy of the results can be influenced by a number of factors including: the existence of corrosion products or the depletion of some elements. Therefore, it must be stressed that since XRF results are not necessarily representative of the chemical composition of the bulk material, studying the coins as a group with the aim of identifying similarities or differences in elemental composition is a better approach than trying to obtain accurate values for each of the elements detected on individual coins.

Coin Inv. No. MNK-VII-A 6075 was analysed by scanning electron microscopy coupled with energy dispersive X-ray microanalysis (SEM/EDX). Analysis of an uncorroded area of this coin (Fig 2: 2) revealed that the Cu content was approximately

87%. Other elements detected included Si, Zn, and Cl. At the microscopic level, the percent of Zn found in the alloy was 8.8%, while Si and Cl showed weight concentrations of 3.3 and 1.2%, respectively. Si is associated with the burial environment, while Cl is associated with corrosion of Cu. An EDX spectrum of the zone shown in Fig. 2: 2 is presented in Fig. 2: 3.

CONCLUSIONS

We have no information about the close archaeological context of the findspot of the anonymous follis at Gródek upon the Bug River. We still have no answer if it was a stray, a grave find or a part of a hoard. However, looking from a broader perspective, we can assume that the find is a piece of important evidence of contacts between early medieval Rus' and the Byzantine Empire⁴⁷. Along with other artefacts, like lead seals of Drohiczyn type, it also attests to the fact that Gródek upon the Bug used to play a more complex role than simply that of a stronghold in the Early Middle Ages. It was an important trade centre, located on a mayor route between the North and the South. The chemical analysis of the folles from Gródek and from the National Museum in Krakow conducted in the Laboratory of Analysis and Non-Destructive Investigation of Heritage Objects of the National Museum in Krakow should be treated as a first step towards further research. We submit that similar analyses should be performed on all accessible mid-Byzantine coins found in Central, Eastern and Northern Europe and that the results should be compared to the outcomes of other analyses conducted on bronze artefacts from the very area dated to the Early Middle Ages. This could help us recognise the role played by bronze Byzantine coins in early medieval Rus'. Should we treat them as a means of exchange, signs of prestige, magical artefacts or just as a raw material? We hope that further research will make it possible to solve the problem.

⁴⁷ On Rus'-Byzantine contacts in 9th-11th centuries according to numismatic data see Shevtsov 2018 (with further literature).

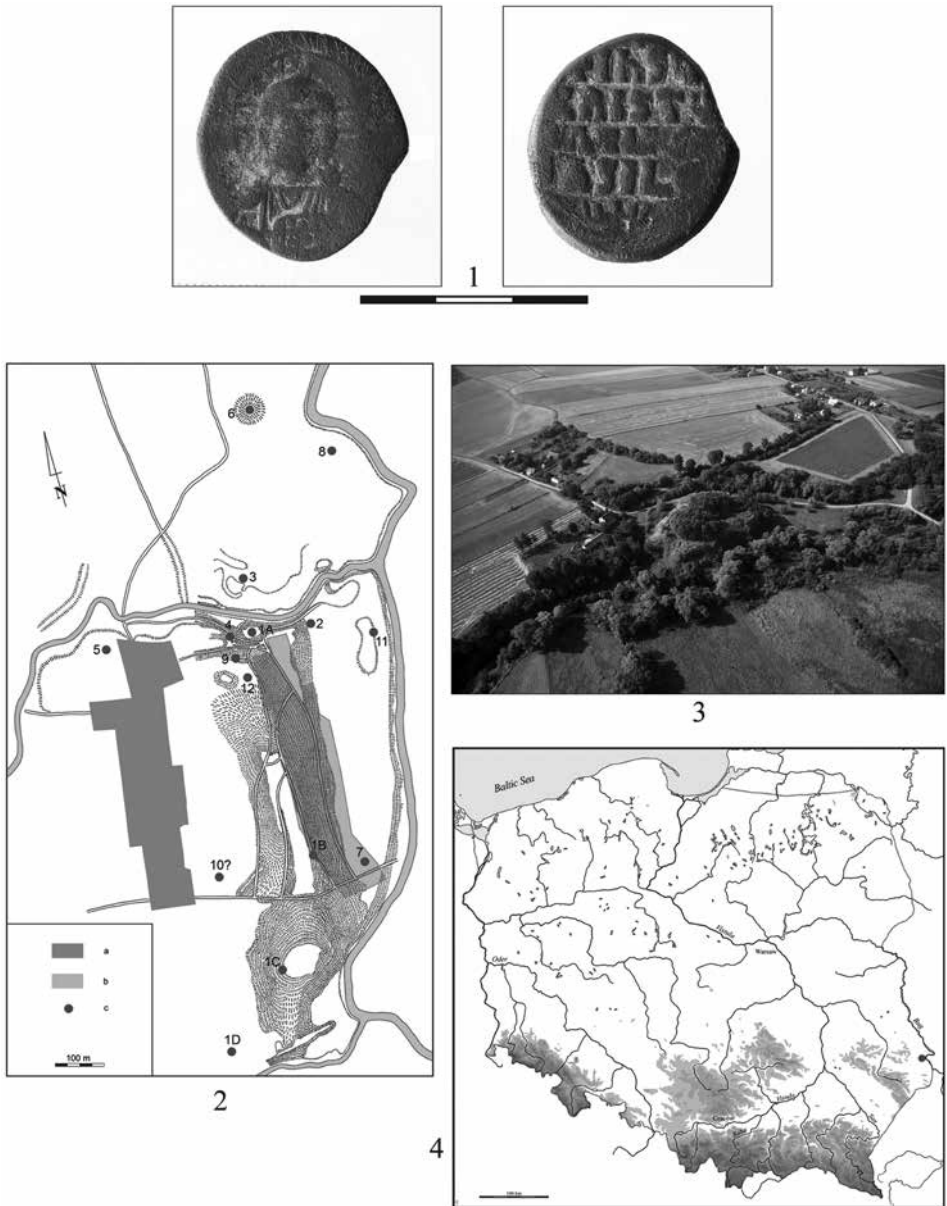


Fig. 1. Gródek upon the Bug River, district Hrubieszów, Poland. The Byzantine coin and the site; Photo by T. Bochnak (a) and K. Treła (c), drawn by T. Dzieńkowski, J. Ożóg (b) and I. Jordan (d).

1 — an anonymous Byzantine follis; 2 — the view at the stronghold (from the North); 3 — location of the sites excavated in the settlement complex in Gródek upon the Bug River in which early medieval material was discovered (a — the village of Gródek; b — the former village of Gródek; c — archaeological sites); 4 — location of the site within the Polish borders.

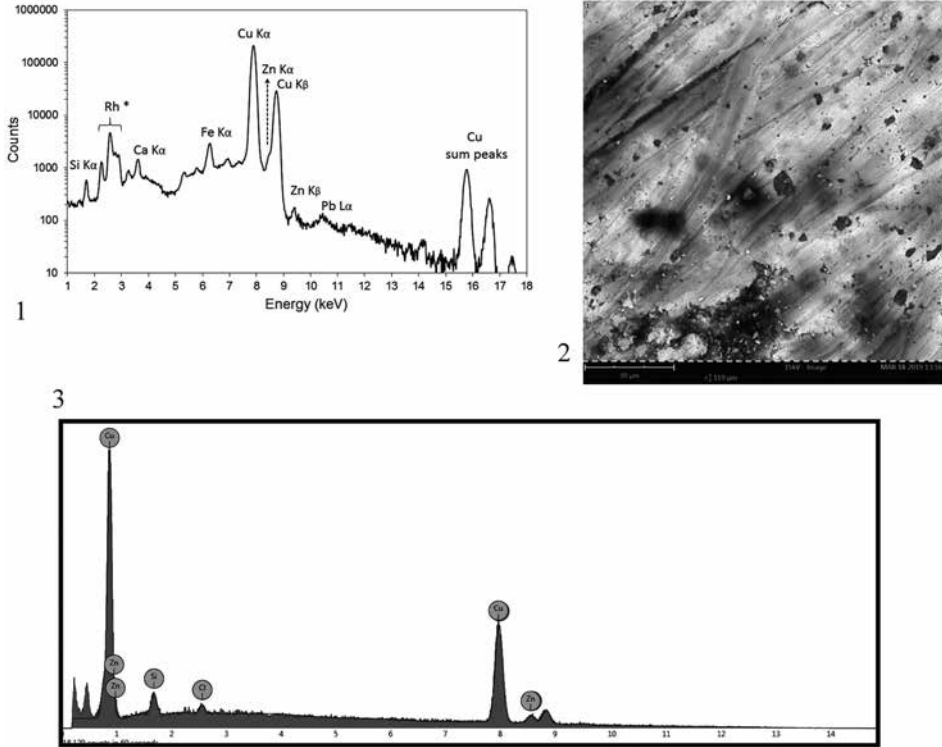


Fig. 2. Chemical Analyses of selected coins from Numismatic Cabinet of the MNK; prepared by Julio M. del Hoyo-Meléndez.

1 — micro-beam XRF spectra of coin Inv. No. MNK-VII-A 6074. The rhodium (Rh) signal originates from the excitation source; 2 — scanning electron microscope image of an uncorroded area of coin Inv. No. MNK-VII-A 6075; 3 — energy dispersive X-ray (EDX) spectrum obtained for a zone of coin shown in Fig. 2: 3.

Table 1. Summary of XRF results obtained for the investigated coin from Gródek and ten reference coins from the Numismatic Cabinet of the MNK (The presence or absence of trace elements is indicated by the symbols ✓ or -, respectively); prepared by Julio M. del Hoyo-Meléndez.

| Inv. Number | Description | Element (%) | | | | | | | |
|----------------|--|-------------|-----|------|----|-----|-----|-----|-----|
| | | Cu | Si | Pb | Ca | Fe | Zn | Ag | P |
| MH/N/2414 | Coin from Gródek upon the Bug River | 94.1 | 3.5 | ✓ | ✓ | ✓ | - | - | 1.1 |
| MNK-VII-A 6059 | Constantinople mint, John I (969–976) | 95.8 | 1.5 | 0.7 | ✓ | ✓ | ✓ | - | - |
| MNK-VII-A 6060 | Constantinople mint, John I (969–976) | 96.5 | 1.7 | 0.5 | ✓ | ✓ | ✓ | - | - |
| MNK-VII-A 6065 | Constantinople mint, John I (969–976) | 97.2 | 1.3 | ✓ | ✓ | ✓ | ✓ | - | - |
| MNK-VII-A 6066 | Constantinople mint, John I (969–976) | 96.6 | 1.5 | ✓ | ✓ | ✓ | 0.6 | - | - |
| MNK-VII-A 6074 | Constantinople mint, Romanos III (1028–1034) | 96.8 | 1.3 | 1.3 | ✓ | ✓ | ✓ | - | - |
| MNK-VII-A 6075 | Constantinople mint, Romanos III (1028–1034) | 96.5 | 1.5 | | ✓ | ✓ | 0.7 | - | - |
| MNK-VII-A 6076 | Constantinople mint, Romanos III (1028–1034) | 95.2 | 1.6 | 1.3 | ✓ | ✓ | ✓ | - | - |
| MNK-VII-A 7163 | Constantinople mint, Basil II (976–1025) or Constantine VIII (1023–1028) | 98.7 | - | - | - | ✓ | - | 0.5 | - |
| MNK-VII-A 7164 | Constantinople mint, Basil II (976–1025) or Constantine VIII (1023–1028) | 94.4 | 1.2 | 0.5 | ✓ | ✓ | 0.7 | - | - |
| MNK-VII-A 7166 | Constantinople mint, Basil II (976–1025) or Constantine VIII (1023–1028) | 54.3 | 6.7 | 22.9 | ✓ | 3.5 | - | 5.9 | 0.9 |

BIBLIOGRAPHY

- Anon. (1949): Zbiór Ś.p. K. Hallamy, *Komunikaty Warszawskiego Towarzystwa Numizmatycznego* 3 (7): 25.03.1949.
- Auch M. (2017): *Early medieval settlement complex at Czermno in the light of results from past research (up to 2010). Pottery finds = Wczesnośredniowieczny zespół osadniczy w Czermnie w świetle wyników badań dawnych (do 2010). Ceramika naczyniowa*, Kraków–Leipzig–Rzeszów–Warszawa.

- Bellinger A., Grierson Ph. (1993): *Catalogue of the Byzantine coins in the Dumbarton Oaks Collection and in the Whittemore Collection*, Washington D.C., vol. III, *Leo III to Nicephorus III (717–1081)*, part 2, *Basil I to Nicephorus III (867–1081)*.
- Bodzek J. (1997): Historia kolekcji monet starożytnych Muzeum Narodowego w Krakowie, [in:] B. Haczewska (ed.), *Emeryk Hutten-Czapski. An Exhibition of his Collection on the Centenary of his Death*, Kraków: 60–67.
- Bodzek J. (2003a): Karol Wilhelm Halama (Hallama) (1871–1948), [in:] Bodzek, *Korczyńska 2003*: 66–70.
- Bodzek J. (2003b): Lech Kokociński (ur. 1944), [in:] Bodzek, *Korczyńska 2003*: 72–74.
- Bodzek J. (2009 [2010]): Znaleźiska monet rzymskich w Przewodowie rozpatrzone na nowo, *Numismatický sborník 24*: 133–140
- Bodzek J. (2018): *Sylloge Nummorum Graecorum. Poland*, Kraków–Warszawa, vol. III, *The National Museum in Cracow*, part 3, *Thrace and Pontus*.
- Bodzek J., Korczyńska E. (eds.) (2003): *Memoriae donatorum. W hołdzie ofiarodawcom Gabinet Numizmatyczny Muzeum Narodowego w Krakowie*, Kraków.
- Bodzek J., Tunia K., Wołoszyn M. (2017): Ze studiów nad obiegiem monety bizantyńskiej na terenie Polski w VI–VII w. Znaleźiska z Sędowic oraz Zakopanego(?), [in:] J. Bonarek, S. Turlej (eds.), *Hypomnemata Byzantina. Prace ofiarowane Maciejowi Salamoniowi, Piotrków Trybunalski*: 7–26.
- Brather S. (2004): *Ethnische Interpretation in der frühgeschichtlichen Archäologie. Geschichte, Grundlagen und Alternativen*, Berlin–New York.
- Buko A. (ed.) (2019): *Początki chrześcijaństwa na pograniczu mazowiecko-ruskim w świetle wyników badań wybranych cmentarzysk*, Warszawa.
- Buko A., Gołub S. (eds) (2016): *Od cerkwi katedralnej króla Daniela Romanowicza do bazyliki p.w. Narodzenia NMP w Chetmie*, Chełm.
- Canovaro C., Calliari I., Asolati M., Grazzi F., Scherillo A. (2013): Characterization of bronze Roman coins of the fifth century called *nummi* through different analytical techniques, *Applied Physics B 113*: 1019–1028.
- Cybulska M., Marciniak M., Sielski J. (2018): The early medieval textile finds from Gródek upon the Bug River. An analysis of materials, manufacturing techniques and origin = Tekstylne znaleźiska z wczesnośredniowiecznego Gródka nad Bugiem, stan. 1A. Analiza materiałów, techniki wykonania i pochodzenie, [in:] Wołoszyn (ed.) (2018a): 735–799.
- Demortier G. (2004): Precious metals artefacts, [in:] K. Janssens, R. van Grieken (eds.), *Non-destructive microanalysis of cultural heritage materials*, Amsterdam: 493–564.
- Dzięnkowski T. (2018): *Early medieval settlement in the area of the mouth of the Huczwa River to the Bug River in the light of surface surveys and research excavations, as well as stray finds = Wczesnośredniowieczne osadnictwo w rejonie ujścia Huczwy do Bugu w świetle badań powierzchniowych i wykopaliskowych oraz znaleźisk luźnych*, [in:] Wołoszyn M. (ed.) (2018a): 75–138.
- Eniosova N., Puškina T. (2013): Finds of Byzantine origin from the early urban centra Gnezdo-vo in the light of the contacts between Rus' and Constantinople (10th – early 11th centuries AD), [in:] L. Bjerg, J. H. Lind, S. M. Sindbak (eds.), *From Goths to Varangians. Communication and cultural exchange between the Baltic and the Black Sea*, Aarhus: 216–220.
- Fischer-Bossert W., Bodzek J. (2017): Ancient Sicilian Coins in the National Museum in Krakow, *Notae Numismaticae — Zapiski Numizmatyczne 12*: 13–32.

- Florek M., Wołoszyn M. (ed.) (2016): *The early medieval settlement complex at Czermno in the light of results from past research (up to 2010). Material evidence = Wczesnośredniowieczny zespół osadniczy w Czermnie w świetle wyników badań dawnych (do 2010). Podstawy źródłowe*, Kraków–Leipzig–Rzeszów–Warszawa, vol. I–II.
- Frühmittelalterliche... (2013): M. Bogucki, P. Ilisch St. Suchodolski (eds.), *Frühmittelalterliche Münzfunde aus Polen. Inventar IV, Klempolen und Schlesien*, Warszawa.
- Gąssowska E. (1979): *Bizancjum a ziemię północno-zachodnio słowiańskie we wczesnym średniowieczu*, Wrocław–Warszawa–Kraków–Gdańsk.
- Gliksman A. (2009): Some remarks on the beginning of influx of Byzantine coins into Wielkopolska in the 10th century, [in:] M. Wołoszyn (ed.), *Byzantine coins in Central Europe between the 5th and 10th century*, Kraków: 605–624.
- Gorghinian A., Esposito A., Ferretti M., Catalli F. (2013): XRF analysis of Roman Imperial coins, *Nuclear Instruments and Methods in Physics Research B* 309: 268–271.
- Guerra M.F. (2000): The study of the characterisation and provenance of coins and other metalwork using XRF, PIXE and Activation Analysis, [in:] D.C Creagh, D.A Bradley (eds.), *Radiation in art and archaeometry*, Amsterdam: 378–416.
- Guruleva V., Musin A. (2015): review: B. Reyman-Walaczak, P. Ilisch. D. Malarczyk, T. Nowakiewicz in Zusammenarbeit mit M. Widawski und M. Woźniak, *Frühmittelalterliche Münzfunde aus Klempolen*; B. Reyman-Walaczak, P. Ilisch. D. Malarczyk, T. Nowakiewicz in Zusammenarbeit mit W. Nakielski, *Frühmittelalterliche Münzfunde aus Schlesien, Frühmittelalterliche Münzfunde aus Polen. Inventar, 4*, Varsovie, PAN, 2013, 494 p., ill., *Notae Numismataeae — Zapiski Numizmatyczne* 10: 304–315.
- Guruleva V., Musin A., Ostapjuk A. (2017): Nakhodka latinskikh i “bolgarskikh” imitacyi vizantijskikh monet na Volyni i problemy denezhnogo obrashcheniya XIII–XIV vekov v Vostochnoy Evrope, *Minule i suchasne Volyni ta Polissya* 63: 281–292.
- Haisig M., Kiersnowski R., Reyman J. (1966): *Wczesnośredniowieczne skarby srebrne z Małopolski, Śląska, Warmii i Mazur. Materiały*, Wrocław–Warszawa–Kraków.
- Horsnæs H. (2015): Byzantine coins from Viking Age Denmark, [in:] T. Talvio, M. Wijk (eds.), *Myntstudier, Festskrift til Kenneth Jonsson*, Stockholm: 51–63.
- Hunka J. (2013): Vyznam nalezov byzantskych minci zo 6. az 13. storocia na Slovensku, [in:] J. Gancarski (ed.), *Transkarpackie kontakty kulturowe w okresie latenskim, rzymskim i wczesnym sredniowieczu*, Krosno: 531–546.
- Jankowiak M. (2016): Byzantine coins in Viking-Age northern lands, [in:] F. Androschuk, J. Shepard and M. White (eds.), *Byzantium and the Viking World*, Uppsala: 117–39.
- Jusupović A. (2017): „Червень и иные грады” or „гроды Червеньскыя”? *History of the domain of Cherven’ in the written record (10th–13th centuries)* = „Червень и иные грады” czy też „гроды Червеньскыя”? *Dzieje ziemi czerwieńskiej w źródłach pisanych (X–XIII wiek)*, [in:] Wołoszyn (ed.) (2017): vol. I: 31–105.
- Kalaga J. (ed.) (2013): *Sutiejsk. Gród pogranicza polsko-ruskiego w X–XIII w. Studium interdyscyplinarne*, Warszawa–Pętkowice.
- Kalkowski T. (1949): Śp. Karol Hallama, *Zapiski Numizmatyczne* (Wrocław) 1: 5–6.
- Kokowska E., Kokowski A. (1993): *Trzy znaleziska wczesnośredniowieczne z Gródka nad Bugiem, woj. Zamość*, *Archeologia Polski* 37: 209–214.
- Kokowska E., Kokowski A. (1997): *Miniaturowe relikwiarze-enkolpiony z Gródka nad Bugiem*, *Archeologia Polski Środkowo-Wschodniej* 2: 287–289.

- Kokowska E., Kokowski A. (1998): *Dalsze wczesnośredniowieczne relikwiarze-enkolpiony i metalowe krzyżyki z Gródka nad Bugiem*, *Archeologia Polski Środkowo-Wschodniej* 3: 300–302.
- Kovács L. (1989): *Münzen aus der ungarischen Landnahmzeit. Archäologische Untersuchung der arabischen, byzantinischen, westeuropäischen und römischen Münzen aus dem Karpatenbecken des 10. Jahrhunderts*, Budapest.
- Kropotkin V.V. (1962): *Klady vizantijskikh monet na territorii SSSR*, Moskva.
- Kropotkin V.V. (2006): *Les trouvailles de monnaies byzantines en U.R.S.S.*, Wetteren.
- Kunysz A. (1963): Przyczynki archeologiczne do najdawniejszych dziejów Biecza, [in:] R. Kaleta (ed.), *Biecz. Studia historyczne*, Wrocław–Warszawa–Kraków: 64–81.
- Musteață S. (2014): *Moneda bizantină în regiunile carpato-nistrene în secolele V–X*, Chișinău.
- Myzgin K. (2016): New finds of Roman Republican Coins from Ukraine and Belarus, *Wiadomości Numizmatyczne* 60: 89–136.
- notatka Redakcji [=Editor's note] 1961: Biecz, pow. Gorlice, *Wiadomości Numizmatyczne* 5:1 (15): 177.
- Noonan Th. S. (1980): The Circulation of Byzantine Coins in Kievan Rus', *Byzantine Studies* 7: 143–181.
- Paszkwicz B. (1995): Gródek (Gródek Nadbużny), gm. Hrubieszów, woj. Zamość, *Wiadomości Numizmatyczne* 39: 157–158.
- Poppe A. (1957): Gród Wołyń. Z zagadnień osadnictwa wczesnośredniowiecznego na pograniczu polsko-ruskim, *Studia Wczesnośredniowieczne* 4: 227–300.
- Prohászka P. (2012): Bemerkungen zum byzantinischen Münzverkehr der ungarischen Landnahmzeit und der Staatsgründung im Karpatenbecken, [in:] T. Bendeguz (ed.), *Die Archäologie der frühen Ungarn — Chronologie, Technologie und Methodik*, Mainz: 67–87.
- Prohászka P. (2018): Ein Solidus von Konstantin VII. und Romanos II. aus Marosujvar/Ocna Mures (RO), *Acta Archaeologica Academiae Scientiarum Hungaricae* 69: 331–338.
- Sabatier J. (1862): *Description générale des monnaies byzantines*, Paris.
- Salamon M. (1980): *Złota i brązowa moneta bizantyńska w Polsce od VI do XI wieku*, Sprawozdania z Posiedzeń Komisji Naukowych PAN / Oddział w Krakowie, vol. 22: 1 (1978): 6–8.
- Salamon M. (1983): *Próbna moneta bizantyńska znaleziona w Krakowie*, [in:] A. Karpowicz (ed.), *VII Sesja Numizmatyczna w Nowej Soli. Moneta miedziana w Polsce*, Zielona Góra: 34–41.
- Salamon M. (1987): *Mennictwo bizantyńskie*, Kraków.
- Salamon M. (1993): “Amicus” or “hostis”? Boleslav the Valiant and Byzantium, *Byzantinoslavica* 54: 114–120.
- Salamon M. (1999): Ułamek monety bizantyńskiej ze skarbu z Gniezna (w sprawie zaniku miliaresionów w skarbach wczesnośredniowiecznych), *Notae Numismatae; Zapiski Numizmatyczne* 3/4: 213–219.
- Salamon M. (2009): A Gilded Miliarsion from Excavations in the Market Square in Cracow, [in:] M. Wołoszyn (ed.), *Byzantine Coins in Central Europe between the 5th and 10th century*, Kraków: 625–634.
- Scott D.A. (1991): *Metallography and microstructure of ancient and historic metals*, The J. Paul Getty Trust, Los Angeles.

- Shevtsov A. (2018): Kolleksiia vizantiiskikh monet Gnezdova i Kieva v kontekste kontaktov Rusi i Vizantii v IX–XI vv., [in:] S.Yu. Kaunov (ed.), *Gnezdovskii arkheologicheskii kompleks. Materialy i issledovaniya*, Moskva: 482–509.
- Siemianowska E. (2014): O zastosowaniu niektórych modeli teoretycznych w badaniach nad ośrodkami miejskimi w średniowieczu, *Archaeologia Historica Polona* 22: 27–54.
- Skowronek S. (1965): Znaleźisko denarów rzymskich z Przewodowa, *Wiadomości Numizmatyczne* 9: 203–208.
- Tabaka A. (2013): Monety i biżuteria z Ostrowa Lednickiego i okolicy. Analiza i historyczna kwerenda znalezisk = Coins and Jewellery from Ostrów Lednicki and Its Vicinity. Analysis and Historical Investigation of Finds, [in:] A. Tabaka, A.A. Wyrwa (eds.), *Monety i biżuteria z Ostrowa Lednickiego i okolicy = Coins and jewellery from Ostrów Lednicki and its vicinity*, Lednica: 17–140.
- Thompson M. (1954): *Coins from the Roman through the Venetian period*, The Athenian Agora 2, Princeton–New Jersey.
- Wołoszyn M. (2003): *Archeologiczne zabytki ruchome pochodzenia bizantyńskiego i ruskiego z okresu od połowy X. do połowy XIII. w. z obszaru Polski południowej* (typescript of the Ph.D. thesis in the archive of the Jagiellonian Library of the Jagiellonian University, Cracow), vol. I–VII.
- Wołoszyn M. (2009): Byzantinische Münzen aus dem 6.–7. Jh. in Polen, [in:] M. Wołoszyn (ed.), *Byzantine coins in Central Europe between the 5th and 10th century*, Kraków: 473–530.
- Wołoszyn M. (2017a): Zaraz po wojnie. Z historii badań nad pograniczem polsko-ruskim w latach 1945–1956 (ze szczególnym uwzględnieniem Grodów Czerwieńskich), *Przegląd Archeologiczny* 65: 199–224.
- Wołoszyn M. (2017b): Poles, Ruthenes and Saxons on the River Bug in 1018. The formation of the Polish-Rus' border zone in 10th–13th century, [in:] S. Semple, C. Orsini, S. Mui (eds.), *Life on the Edge: Social, Religious and Political Frontiers in Early Medieval Europe*, Wendeberg: 239–252.
- Wołoszyn M. (ed.) (2017): *From Cherven' Towns to Curzon Line. The lands on the Middle Bug during the Middle Ages and the historiographic perspective on the formation of Poland's eastern border, 18th–21st cc. = Od Grodów Czerwieńskich do linii Curzona. Dzieje środkowego Pobuża w wiekach średnich oraz postrzeżenie formowania się wschodniej granicy Polski w historiografii XVIII–XXI w.*, Kraków–Leipzig–Rzeszów–Warszawa, vol. I–II.
- Wołoszyn M. (ed.) (2018a): *The medieval settlement complex at Gródek upon the Bug River in the light of results from past research (1952–1955). Material evidence = Wczesnośredniowieczny zespół osadniczy w Gródku nad Bugiem w świetle wyników badań dawnych (1952–1955). Podstawy źródłowe*, Kraków–Leipzig–Rzeszów–Warszawa.
- Wołoszyn M. (ed.) (2018b): *The medieval settlement complex at Gródek upon the Bug River in the light of stray finds collected by Father Stanisław Staszic Museum in Hrubieszów. Catalogue, typological and chronological analysis = Wczesnośredniowieczny zespół osadniczy w Gródku nad Bugiem w świetle znalezisk luźnych w zbiorach Muzeum im. księdza Stanisława Staszica w Hrubieszowie. Katalog, analiza typologiczno-chronologiczna*, Kraków–Leipzig–Rzeszów–Warszawa.
- Zocenko V. (1991): *Vizantijskaya moneta v srednem Podneprovye*, [in:] P. P. Tolochko (ed.), *Juzhnaja Rus' i Vizantiya. Sbornik nauchnych trudov (k XVIII kongressu vizantinistov)*, Kiev: 57–79.

Zschieschang Ch. (2017): Das früh- und hochmittelalterliche Siedlungsumfeld von Trepcza, Czeremno und Gródek im Lichte der Toponomastik. Eine methodische und areale Standortbestimmung = Osadnictwo wokół Trepczy, Czeremna i Gródka we wczesnym średniowieczu okiem językoznawcy. Uwagi metodyczne i analiza przestrzenna, [in:] Wołoszyn (ed.) (2017), vol. I: 161–229.

Żaki A. (1963): Biecz i kasztelania biecka w zaraniu dziejów. Szkic archeologiczno-historyczny, [in:] R. Kaleta (ed.), *Biecz. Studia historyczne*, Wrocław–Warszawa–Kraków: 34–63.

An anonymous Byzantine follis from Gródek upon the Bug River

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SUMMARY

The report presents an anonymous Byzantine follis (DOC A 2.1 or A 2.1.a; 976–1030/35) discovered in 1993 in the village of Gródek (Gródek upon the Bug River). The find was primarily published by Borys Paszkiewicz. The article presents the state of the research currently undertaken in the stronghold in Gródek (medieval Volhyn) and refers to examples of similar coins discovered in present-day western Ukraine and the Carpathian Basin. The numismatic analysis is supplemented with the results of physico-chemical studies: the coin from Gródek is compared with selected mid-Byzantine coins from the National Museum in Krakow.

Keywords: Poland; Volhyn; Carpathian Basin; Byzantine bronze coins; physico-chemical studies