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**A COIN HOARD OF PRE-REFORM SHILLINGS OF THE GRAND MASTER
MICHAEL KÜCHMEISTER VON STERNBERG FOUND IN CHERNIHIVSCHYNA**

ABSTRAKT W XIV i XV wieku dla Wołynia i Podola kontakty handlowe z Zakonem Krzyżackim, włączając miasto Toruń, były działaniem naturalnym. Związki te wpłynęły na obieg monetarny na wspomnianych terenach, czego świadectwem jest obecność pieniędzy zakonu krzyżackiego. We wrześniu 2014 r. w Nizhinsky region, Tschernikhov oblast znaleziono skarb, w którym były monety Wielkiego Mistrza Michała Kuhmeistera von Sternberg i półgrosze Władysława Jagiełły. Do rąk autora publikacji dotarły monety krzyżackie, które opisane zostały w artykule

Słowa kluczowe: Zakon Krzyżacki, Wołyń, Podole, skarb, obieg monetarny

ABSTRACT In the 14th and 15th centuries the trading contacts of Volhynia and Podolia with the Teutonic Order ran through the city of Toruń, which was perfectly natural. Those contacts had an influence on the circulation of coinage in the two territories named above, which is attested to by the presence of coins of the Teutonic Order. In September 2014 in the Nizhinsky region, Tschernikhov oblast, was found a hoard in which were coins struck by the Grand Master Michael Kuhmeister von Sternberg and a half-groschen of Władysław Jagiełło. The coins of the Order, which are described in this article, passed through the hands of the author.

Key words: Teutonic Order, Volhynia, Podolia, coin hoard, coin circulation

АБСТРАКТ Для українсько-руських земель, особливо Волині та Поділля в XIV-XV ст. торгівельні зв'язки із містами держави Тевтонського Ордену в Пруссії, зокрема, м. Торунем були традиційними. Торгівельні взаємини забезпечували появу на грошовий ринок українських земель орденських монет і їхнє поширення навіть за традиційні ареали розповсюдження. У березні 2014 р. у Ніжинському районі Чернігівської області був знайдений монетний комплекс (гаманець) до складу якого входило сім дореформених шилінгів Великого магістра Міхаеля Кюхмайстер фон Штернберга та коронний кварталник (півгріш) Владислава Ягайла.

Ключові слова: Тевтонський орден, Волинь Поділля, монетний комплекс, грошовий ринок

At the beginning of the 15th century Chernihivschyna, as well as much of the Ukrainian and Rus lands of Volyn, Kyiv, Pereyaslav and Podillya regions, were parts of the Grand Duchy of Lithuania. The trade relations in the 14-15th centuries between Ukrainian and Rus (Southern-Rus) lands and the towns of the State of the Teutonic Order in Prussia, particularly, Torun were traditional despite the efforts to limit the Order's trade by the Polish kings (Casimir III the Great and Louis the Hungarian). These trade relations supplied the monetary market of the Ukrainian lands with coins struck by the Teutonic Order coins which spread far beyond the traditional areas of their circulation.

A coin hoard of eight coins (a purse) was found in Nizhyn district of Chernihiv region in March, 2014. There was a crown kvartnik (half groschen)

of Władysław Jagiełło's emission from the Krakow mint (1431-1434) and seven pre-reform shillings of the Grand Master Michael Küchmeister von Sternberg. We had the opportunity to study this find thoroughly. We also carried out x-ray fluorescence energodispersion analysis (XRFEDA) of the metal which had been used for minting the coins using the precise express-analyzer Expert 3L W108U. This find is very interesting for researchers of the monetary history of medieval Ukrainian lands as well as researchers of the coinage in the State of the Teutonic Order in Prussia. On the one hand, the coins once again confirm our assumptions about the presence of coins of the Teutonic Order on the Ukrainian money market from the second half of the 14th till the first quarter of the 16th century as a result of close trade, military and political relations between the Ukrainian lands and the state of

Teutonic Order in Prussia. On the other hand, we have a possibility to analyse the processes of minting coins in the period of the first years of rule of the Grand Master Michael Kuchmeister von Sternberg. Taking into consideration that the first problem of the availability of coins of the State of the Teutonic Order in Prussia on the monetary market of the Ukrainian lands in the late Middle Ages is evident, therefore we can study the second problem in detail, that is the process of coinage in the State of the Teutonic Order in Prussia in the 1414-1415. These are the first years after the crushing defeat of the Order in the Great War of 1409-1411.

The types of shillings are distributed chronologically and we analyzed them according to the classification suggested by the famous researcher of the Order numismatics and seals, Friedrich August Voßberg in the 19th century [3]. It is worthwhile noticing that the shillings found were minted at Torun Mint during 1414-1416, that is before the monetary reform of 1416.

The shillings of the Grand Master Michael Kuchmeister von Sternberg give us some idea about the process of their manufacture. The design on a coin stamp was engraved by hand and the minting process was also carried out manually.

The first of the analyzed shillings (Picture 1) corresponds to the type of coins described by Friedrich August Voßberg under the number 659.



Picture 1

Ob.: "MAGSTÿMÏchAbLÿPRI

Rv.: "MONbTAÿDNORôMÿPRô

The coin has a correct round shape with diameter 20×20 mm. and weight 1,43 g. The doubling of letters was probably caused by the displacement of the axis of the punch while minting the coinage manually. The line across the lower part of the left curve on the shield of the reverse was marked before image engraving. The image engraving has the following stages: marking of the inner and outer circles; making the image of the shield on obverse as we can clearly see that the big shield was marked after circular border; the final stage implied making letters.

The image of the shield on the reverse (the order of manufacturing): the upper horizontal part of the shield is the cross (horizontal and then vertical bars) – the left curve is one complete pass of a scriber – the upper right curve to the horizontal bar of the cross is the lower right segment of the shield.

On the obverse in the lower part of the shield there is a trace of the cutter's outgoing onto the inner cartouche. The coin was minted from the coin blank which contained the alloy with the following metals:

28Ni	0.070±0.022
29Cu	63.866±0.141
33As	0.290±0.025
47Ag	33.897±0.130
51Sb	0.528±0.078
79Au	0.117±0.017
82Pb	1.164±0.043
83Bi	0.068±0.020

Taking into account the weight of the coin (1,43 g.) and its qualitative composition including the percentage of silver (33.89%), we calculate the quantitative index of silver in the coin (0,48 gm.) with the help of a ratio.

The second shilling (Picture 2) corresponds to the type of coins described by Friedrich August Voßberg with number 660.



Picture 2

Ob.: "MAGST•MÏchAbL•PRI

Rv.: "MONbTA•DNORôM•PRô

The coin has an irregular round shape with diameter of 20×18 mm. and weight of 1,34 g. The reverse of the coin vividly shows the order of bringing on its elements: first shield, then cross and only then the legend. The same sequence of bringing on elements on the stamp is as in Picture 1. The defect we notice is the "outgo" of the vertical bar of the cross beyond the shield at the top. The line between the lower part of the vertical and left horizontal bar of the cross was made before the image. The order of coining the elements of the shield proves that there was one and the same engraver.

The coin was minted from the coin blank which contained the alloy with the following metals:

28Ni	0.542±0.031
29Cu	71.913±0.138
33As	0.710±0.027
47Ag	25.278±0.118
51Sb	0.817±0.085
79Au	0.089±0.018
82Pb	0.556±0.041
83Bi	0.095±0.019

Taking into account the qualitative composition of the coin alloy and the weight of the coin we calculate the quantitative index of silver in the coin – 0,34 g.

The third shilling (Picture 3) correspond to the type of coins described by Friedrich August Voßberg with number 669.



Picture 3

Ob.: "MAGST•MICHAbL•PRI•

Rv.: "MONbTA•DNORôM•PRô•

The coin has a correct round shape with a crack. The order of creating the image is similar to the order observed on the two previous coins: inner and outer circle borders, a big shield, a small shield, a cross, an eagle and the letters. But the order of creating the image of the shield on reverse is different: horizontal upper bar of the shield – left and right curves, the cross. Every curve was made with one pass of the scriber. The defects are the following: a crack at 2 o'clock on the obverse, a concave curve at 9-12 o'clock on the reverse and a convex-concave curve at 11-1 o'clock on the obverse. Probably these are the traces of the coin blank sticking while die striking, and the re-coining of the defect.

The diameter of the coin is 20×21 mm. and the weight is 1,24 g. The coin was minted from the coin blank which contained the alloy with the following metals:

26Fe	0.266±0.034
28Ni	0.771±0.036
29Cu	56.450±0.146
33As	0.426±0.027
47Ag	39.773±0.138
51Sb	0.840±0.088
79Au	0.133±0.016
82Pb	1.272±0.043
83Bi	0.071±0.020

Taking into account the qualitative composition of the coin alloy and the weight of the coin the quantitative index of silver in the coin is 0,49 g.

The fourth shilling (Picture 4) can be conditionally called "hybrid" as the obverse was coined with a stamp which corresponds to the type of coins described by Friedrich August Voßberg with number 714 and the reverse – stamp number 695.



Picture 4

Ob.: "MAGST"MIChAbL£PRI

Rv.: "MONbTA•DNORôM•PrôI•

The coin has almost a perfect round shape and a small manufacturing defect that is the displacement of the stamp on the obverse and reverse and the consequent incompleteness of the image on the reverse. A detailed study of the coin shows that the order of minting the elements of the shield on the reverse is similar to the previous coin. For minting images a scriber was used which is proved by the curved inner and outer circles, the right end of the cross tilted down, the arms shield etc on the obverse and reverse. The defects at 12 o'clock on the reverse (inner circle and letters are doubled) and a concave curve at the bottom of the reverse were possible outcomes of a double strike.

The diameter of the coin is 21×21 mm. and the weight is 1,69 g. The coin was minted from the coin blank which contained the alloy with the following metals:

26Fe	0.179±0.036
28Ni	0.043±0.019
29Cu	13.371±0.101
33As	0.179±0.026
47Ag	81.974±0.159
51Sb	1.309±0.134
79Au	0.207±0.015
82Pb	2.575±0.042
83Bi	0.162±0.021

Taking into account the qualitative composition of the coin alloy and the weight of the coin the quantitative index of silver in the coin is 1,38 g.

The fifth shilling (Picture 5) has considerable damage of the legends on the obverse and reverse which makes it impossible to identify it according to the system used above. But some elements of the legend, particularly the symbols Õ make it possible to attribute this shilling to the type of coins described by Friedrich August Voßberg under the numbers 740-743.



Picture 5

Ob.: "MAGSTÕMIChAbLÕ<...>

Rv.: "<...>NbTAÕDNORôMÕPRô

The coin has a correct round shape with a diameter of 21×21 mm. and the weight of 1,81 g. This coin was minted by a considerably worn pair of stamps. This is proved by the convexes in the images of shields on both sides of the coin. Moreover, the visible defects prove a double strike while minting.

That hand- engraving was used in the process of making this coin stamp which is proved by the arms of the shield on the obverse. The eagle is

clearly engraved in the small shield as if it was created after the shield had been imprinted. It is hardly possible to coin ideally with two punches of a shield and an eagle.

The coin was minted from the coin blank which contained the alloy with the following metals:

29Cu	63.532±0.140
33As	0.270±0.021
47Ag	34.736±0.131
51Sb	0.625±0.079
79Au	0.128±0.017
82Pb	0.674±0.036
83Bi	0.036±0.018

Taking into account the qualitative composition of the coin alloy and the weight of the coin the quantitative index of silver in the coin is 0,63 g.

The sixth shilling (Picture 6) has considerable legend damages on the obverse and reverse. But some legend elements, particularly, the symbols * and • make possible to attribute this shilling to the type of coins described by Friedrich August Voßberg with number 751.



Picture 6

Ob.: "MAGST*MIchAbL*PRI•

Rv.: "MONbTA*DNORôM*PR

The coin has an irregular round shape and manufacturing defects due to displacement of the stamp. The obverse was coined with a lower stamp and it probably sprang back. There is a design doubling on the shield and on the eagle in the inner shield. There are traces of a double strike with the coin overturn. The shield on the reverse has the traces of the elements of the shield of the obverse situated at 45 degrees to the left. It is possible that the coin stamps were engraved all over again and the reverse had image traces of the cross elements from obverse. But there are vivid traces of a double strike.

The diameter of the coin is 21×20 mm. and the weight is 1,34 g. The coin was minted from the coin blank which contained the alloy with the following metals:

26Fe	0.270±0.033
28Ni	0.155±0.024
29Cu	57.707±0.145
33As	0.460±0.026
47Ag	39.183±0.137
51Sb	0.872±0.088
79Au	0.106±0.017
82Pb	1.111±0.043
83Bi	0.137±0.020

Taking into account the qualitative composition of the coin alloy and the weight of the coin the quantitative index of silver in the coin is 0,52 g.

The seventh shilling (Picture 7) correspond to the type of coins described by Friedrich August Voßberg with number 759.



Picture 7

Ob.: "MAGST*MIchAbL*PRI

Rv.: "MONbTA*DNORôM*PRI

The coin has almost a perfect round shape and some defects similar to the coin in Picture 1. The order of imprinting the shield elements is similar to the one from Picture 3. We can see on the reverse that the legend was imprinted at the end as the letter overlays the rim. The diameter of the coin is 21×21 mm. and the weight is 1,70 g. The coin was minted from the coin blank which contained the alloy with the following metals:

29Cu	32.347±0.137
33As	0.111±0.028
47Ag	63.788±0.155
51Sb	0.928±0.117
79Au	0.179±0.016
82Pb	2.539±0.044
83Bi	0.108±0.021

Taking into account the qualitative composition of the coin alloy and the weight of the coin the quantitative index of silver in the coin is 1,08 g.

Having analyzed the available pre-reformed shillings of the Grand Master Michael Kuchmeister von Sternberg we cannot leave without paying attention the crown kvartnik (half groschen) of Władysław Jagiełło (Picture 8). According to the classification suggested by the Polish researcher Stanisława Kubiak [1] the coin corresponds to number 53 (without the minzmeister's mark) and was coined during 1431-1434 at Krakow Mint.



Picture 8

The coin has an ideally round shape and manufacturing defects – cracks. The diameter of the coin is 22,8×22,4 mm. and the weight is 1,45 g. The coin was minted from the coin blank which contained the alloy with the following metals:

29Cu	54.099±0.125
33As	0.151±0.015
47Ag	44.647±0.123
51Sb	0.371±0.064
80Hg	0.045±0.012
82Pb	0.345±0.028
83Bi	0.342±0.017

Taking into account the qualitative composition of the coin alloy and the weight of the coin the quantitative index of silver in the coin is 0,65 g.

Thus, we can see that all the coins were minted by hand and the process of manufacturing coin stamps included hand graving for making designs. All the shillings that were analysed had neither standard weight nor standard silver content in qualitative and quantitative dimensions. The example of the seven shillings shows that silver content varies from 0,34 g. to 1,38 g. and the weight of the coins varies from 1,24 g. to 1,81 g. The facts indicate that the mintage of valuable silver Teutonic shillings started in 1380 at the time of the Grand Master Winrich von Kniprode and changed into credit coins at the beginning of the 15th century. They had to circulate according to the established rate by the state. The coins had no fixed price and were mostly used as counting units. This situation in the coinage of the State of the Teutonic Order in Prussia indicated considerable crisis in the economy because of the defeat in the Great War of 1409-1411. After the tragic events of 1410 the economic crisis in the State of the Teutonic Order became especially noticeable. At that time the state officially spoiled the quality of coins decreasing the rate of the mark coin (hryvnia) to the mark of pure silver and even neglected

to maintain this rate. On the other hand there was the problem of the simultaneous circulation of coins of different emissions and the increasing number of counterfeit coins. The low quality technique in which the coins had been struck, and the decreasing content of silver made the activity of counterfeiters much easier. One of the ways to bring back order to the monetary market of the Order was to reform it and to put into circulation absolutely new types of coins with fixed legal value based on the silver content. This was done under the rule of the Grand Master Michael Kűchmeister von Sternberg in 1416. And the pre-reform shillings circulated along with the Polish kvartniks (half groschen).

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