

Some remarks about the metrology of the Moldavian petty coinage struck until the mid 15th century

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During the first years of the new century, coin dealers and auction houses from U.S.A. sold individual Moldavian medieval petty coins and lots of up to tenths of such coins, all conventionally called "half groats". All these coins share common features, such as the fact that they were struck in silver alloys and the fact that they have a crown above the so-called "traditional shield" on the reverse, the Hungarian-Anjou divided shield, with bars in the right side and lilies in the left. Such common features show that all these coins were part of a hoard sorted and dispersed in the biggest numismatic and antiquities market in the world. Collectors from U.S.A., Romania and Moldavia acquired a large number of the coins belonging to this hoard. With their help and cooperation I could assemble a lot of 100 such Moldavian petty coins on the website developed together with Bogdan Costin and dedicated to Romanian medieval coins, "The Coins of Moldavia and Wallachia"¹ (<<http://romaniancoins.ancients.info>> or <<http://monederomanesti.cimec.ro>>). More than 90% of them are probably part of the hoard.

Such petty coins aren't common finds in Moldavia region of Romania², but they are unearthed more frequently in the southwestern part of Ukraine, in the area of Cetatea Albă, now Bjelgorod-Dnestrovskij, as revealed by discussions with collectors from Republic of Moldavia and Ukraine, who have similar coins in their collections. In U.S.A. some coin dealers still have such coins, as I was informed by one of them, so assembling all these remarks, it is obvious that we're talking about a big hoard of at least hundreds of coins, found probably in the Ukraine, in the area of Cetatea Albă, now Bjelgorod-Dnestrovskij, probably not long before the first coins were released on the market.

These petty coins are attributed in the main reference of the Moldavian medieval coins to Stephen, the son of Alexander, who reigned between 1433 and 1447. This attribution was done probably by stylistic means, as the coins have no inscription, but it isn't doubtless. The real issuer between the two half-brothers, Stephen and Elias, who

¹ The primary intent of this site was to make known the Moldavian and Wallachian medieval coinage to the foreign collectors, as well as to local ones. As in time many collectors offered us images and metrological data of coins from their collections, the site grew up, in size, now displaying around 700 coins, and in objectives, currently offering a database of archived auctions of Romanian medieval coins, a section containing papers about our field of interest and bibliographical references.

² In O. Luchian, G. Buzdugan and C. C. Oprescu's catalogue of Romanian medieval coins – *Monede și bancnote românești*, 1977 (in the following lines abbreviated *MBR*) – MBR 514 type at page 70, which best describes this type of petty coins, is marked as rare.

reigned as co-rulers between 1436 and 1442 and both struck bigger denominations with crown above the shield on the reverse, can be found only with a comparative study of the punches used to make the dies of these petty coins and of the bigger denominations, along with clues revealed by the areas where these types were unearthed.

In this study were included only the coins preserved in some private collections from Romania³, several tenths of coins from the hoard being owned by a collector from U.S.A. who provided only the images of his coins, but, unfortunately, not the metrological data. From the 23 coins studied, one is certainly not part of the hoard (coin no. 23 in the catalogue), being unearthed in Ukraine and acquired from this country. The other 22 came, probably, from the hoard.

All the coins show no traces of wear, excepting one coin (coin no. 7 in the catalogue), in the whole lot of 100. This coin is, also, struck in an alloy with higher silver content. It was acquired together with a lot of ten more such petty coins, so it is very probably that it came from the same hoard. The silver wash is preserved on many coins. Only two very similar varieties of the type are present in this fragment of the hoard⁴, separated by the presence or absence of an "F" in the right hand side of the reverse shield. But both the varieties are struck by dies that share a common fault of the punch used to strike the lilies in the die, a part missing in the left petal. The conclusion is straightforward: this is a so-called mint or "banker" hoard, which includes large amount of coins, of identical types, which can be supposed to have been concealed soon after leaving the mint, with no or very little "contamination" of local circulating medium⁵. These characteristics, along with the rarity of the hoards from the troubled years that followed the death of Alexander till the reign of Stephen the Great⁶, make it very significant for metrological studies.

First, the weights were arranged in a table and, based on it, is created a graph showing the distribution of weights in the lot. In the table was added the weight of the only coin of this type published in Buzdugan, Luchian and Oprescu's reference of Moldavian medieval coins⁷, making a total of 24 coins studied.

Next, the weights of the coins were arranged in three tables, sorted in ascending order. With light gray are highlighted the coins that do not came from the hoard and with dark gray the coin that shows traces of wear. In the second and third table are counted only the coins supposed to be from the hoard, from the last table the coin showing traces of wear being excluded too.

³ I wish to thank my friend and partner Bogdan Costin for providing me the metrological data of the coins from this hoard in his collection.

⁴ Displayed at <<http://romaniancoins.ancients.info/st2.htm>>.

⁵ American Numismatic Society, *Introduction to Numismatic Terms and Methods*, 3.3 Hoards <http://www.numismatics.org/dpubs/termsandmethods/#body.1_div0.3_div1.3>

⁶ Only 9 hoards published (Suceava – 1954, 1960, 1969; Rădăuți – before 1935; unknown site in Moldavia – before 1935; Roman – before 1969, 1975; Leorda – 1900; Cetatea Albă – unknown date), only 5 containing petty coins. I wish to thank Mr. Ernest Oberländer-Târnoveanu for the information.

⁷ MBR, p. 70: 514 – anepigraphical; billon, 13 mm, 0.36 g.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0.34	0.38	0.30	0.26	0.35	0.40	0.40	0.19	0.38	0.29	0.31	0.31	0.27	0.43	0.44	0.27	0.38	0.40	0.30	0.41	0.34	0.29	0.28	0.36

8	4	13	16	23	10	22	3	19	11	12	1	21	5	24	2	9	17	6	7	18	20	14	15
0.19	0.26	0.27	0.27	0.28	0.29	0.29	0.30	0.30	0.31	0.31	0.34	0.34	0.35	0.36	0.38	0.38	0.38	0.40	0.40	0.40	0.41	0.43	0.44

Average weight = 0.3367 g
Median = 0.34 g
Standard deviation = 0.0629 g

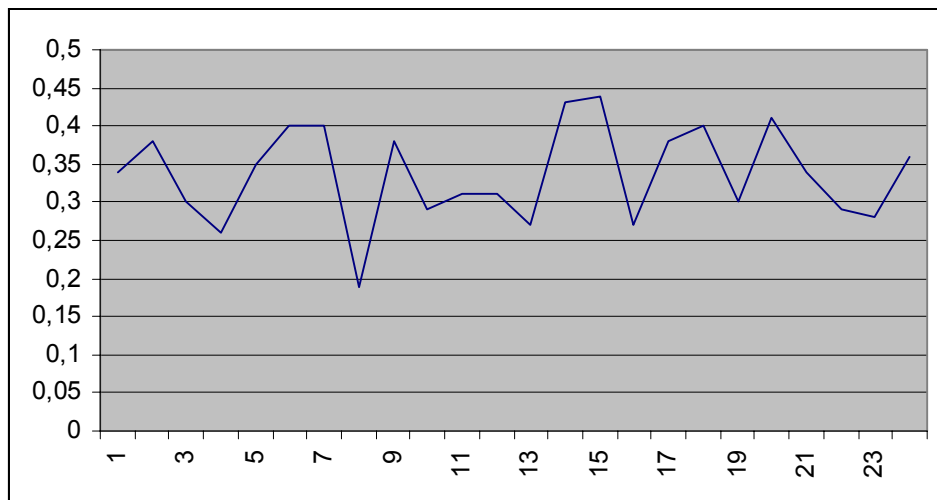


Figure 1. Range of weights in the lot studied

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
0.34	0.38	0.30	0.26	0.35	0.40	0.40	0.19	0.38	0.29	0.31	0.31	0.27	0.43	0.44	0.27	0.38	0.40	0.30	0.41	0.34	0.29

8	4	13	16	10	22	3	19	11	12	1	21	5	2	9	17	6	7	18	20	14	15
0.19	0.26	0.27	0.27	0.29	0.29	0.30	0.30	0.31	0.31	0.34	0.34	0.35	0.38	0.38	0.38	0.40	0.40	0.40	0.41	0.43	0.44

Average weight = 0.3382 g
Median = 0.34 g
Standard deviation = 0.0645 g

1	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
0.34	0.38	0.30	0.26	0.35	0.40	0.19	0.38	0.29	0.31	0.31	0.27	0.43	0.44	0.27	0.38	0.40	0.30	0.41	0.34	0.29

8	4	13	16	10	22	3	19	11	12	1	21	5	2	9	17	6	18	20	14	15
0.19	0.26	0.27	0.27	0.29	0.29	0.3	0.3	0.31	0.31	0.34	0.34	0.35	0.38	0.38	0.38	0.4	0.4	0.41	0.43	0.44

Average weight = 0.3352 g
Median = 0.34 g
Standard deviation = 0.0645 g

The calculations show an average weight almost equal with the median, which confirms a uniform distribution of weights for this fragment of the hoard. A very small standard deviation reveals the attention paid by the mint workers to respect the legal

weight – the common practice in the medieval mints was to observe the legal weight even when the silver fineness of the alloy was reduced⁸. The 95% confidence interval covers all the weights of the coins in the lot excepting one and the 68% confidence interval covers 80% of the weights of the coins, all showing that the lot studied is a representative sample of the issue. In conclusion, the statistical data, the average weight around 0.335 g, the median of 0.34 g and the standard deviation of 0.063 g show a coin struck in low-silver alloy, according to a weight standard around 0.34 g.

This standard is very similar to the one used to strike the deniers in Poland in the same period, the reign of Wladyslaw III and the beginning of the reign of Casimir IV. In fact, during Wladyslaw's III reign, between 1434 and 1444, in Poland were issued only deniers struck in low-silver alloy, having between 98‰ ÷ 217‰ silver finesses and 0.35 g legal weight⁹. Even the silver finesses of the Moldavian petty coins from this hoard are low, probably being close to the Polish standard.

This conclusion contradicts the traditional metrological approach to the Moldavian petty coinage. Conventionally, all the issues of petty coins, regardless of the silver finesses, were named "half groats". The metrological theory behind this, developed by O. Iliescu, assumed a monetary unit named "groat", having around 0.90 g legal weight and a multiple of one and a half "groat" of 1.35 g legal weight, thus the petty coins being half of the "groat", having around 0.45 g legal weight¹⁰. This "local" standard's theory is almost 100 years old, presented first around 1920 by C. Moisil in the form of "groat" – "double groat" – "half groat"¹¹, in a period in which the first Moldavian issues of petty coins were not known.

Rudolf Gassauer, in 1933, first published a petty coin attributed to Peter¹², who first issued coins and ruled between around 1375 and around 1391. It has 12 mm and 0.24 g. Despite this, the existence of Peter's petty coins issues was not accepted easily, the main cause being the fact that the first published coin was in a private collection and the image published was a line drawing¹³. Octavian Iliescu finally accepted the existence of this coin in 1980¹⁴, when he concluded that the problem of determining the ratio to the so-called "groats" issued by Peter is controversial. Although he raised the hypothesis that the petty coins worth a fourth of the groats, based on a legal weight for the groats around 0.96 - 0.98 g, and he also noticed the equivalence with Polish deniers issued by Casimir and Hedwiga¹⁵, he continued to name this coin "half groat" till the end of his study¹⁶.

⁸ K. Pârvan, B. Constantinescu, *Tezaurul de groși moldovenești din secolul al XIV-lea descoperit la Mărmureni, com. Oniceni, jud. Neamț*, in *Cercetări Numismatice IX-XI*, 2005, p. 236.

⁹ E. Oberländer-Tâmoveanu, *Emisiunile monetare pe teritoriul Moldovei în vremea lui Ștefan cel Mare (1457-1504) - o analiză critică*, in *Cercetări Numismatice IX-XI*, 2005, p. 316.

¹⁰ O. Iliescu, *Émissions monétaires moldaves pour Kilia en 1426-1428*, in *Études byzantines et post-byzantines IV*, 2001, p. 164.

¹¹ O. Iliescu, *Îndreptări și întregiri mărunte cu privire la unele emisiuni monetare feudale ale țărilor române*, *Studii și Cercetări Numismatice*, I, 1957, p. 221, footnote 1, quoting C. Moisil, *Istoria monedei în România*, in *C.N.A.*, I, 1921-1922, p. 77-78.

¹² R. Gassauer, *Tipuri de monede moldovenești inedite (cu o tabelă de monete)*, in *Anuarul Liceului „Ștefan cel Mare” Suceava*, 1933, p. 8.

¹³ O. Iliescu mentions with reserves this type of petty coin in *Moneda în România. 481-1864*, published in 1970.

¹⁴ O. Iliescu, *Moneda divizionară emisă de Petru Mușat*, in *Cercetări numismatice*, III, 1980, p. 87-92.

¹⁵ *Idem*, p. 88.

¹⁶ *Idem*, p. 89, the caption of the line drawing of the coin: „petty coin issued by Peter (probably half groat) and p. 90: „after 1377 Peter issued petty coins, probably half groats“.

In the last 40 years were discovered several more petty coins issued by Peter, two in a hoard unearthed in 1985 at Buruiești, Neamț county¹⁷, weighing 0.23 and 0.22 g, one in 1970 in Rotopănești, Suceava county, having 12.5 mm in diameter and weighing 0.2 g¹⁸ and one, fragmentary, in the numismatic collections of the former Numismatic Cabinet of the Romanian Academy Library, returned from Moscow, weighing 0.18 g and having 530‰ silver fineness¹⁹. The average weight of the 5 known specimens is 0.214 g; the median being 0.22 g. Excluding the fragmentary coin, the average weight is 0.2225 g and the median 0.225 g.

It is obvious that this type of petty coin couldn't be, from a metrological point of view, half of the standard issue of Peter, conventionally named "groat", which followed closely the evolution of the Russian kwartniks issued in Lemberg. From 1370 till 1382 they constantly lost weight, from around 1.12 g to around 0.85 g²⁰.

The key to understand the parity between the two issues of Peter I is the study of the metrology of the monetary issues in the Polish-Lithuanian space, which could provide models to the newly created neighboring Moldavian state. Casimir the Great reformed the Polish monetary system in the 14th century, introducing the Cracovian groat. It weighted 3.1 g and it was struck in an alloy with 875‰ silver fineness. It was divided into two kwartniks, weighing 1.55 g²¹, 16 deniers and 32 obols, thus giving an 8:1 ratio between the denier and the kwartnik²². The metrological base unit was the Cracovian mark, weighing in the 14th century 196.26 g, divided into 48 groats of account. During Casimir's III reign were struck 768 deniers from a mark, while, some decades later, during Wladyslaw Jagello's reign, were struck 864 deniers²³, thus giving a standard weight for the deniers between 0.2562 and 0.2278 g, during the final half of the 14th century. It is obvious that the Moldavian petty coins issued by Peter I followed the same standard, thus being deniers in weight and in value, and not half of the Moldavian "groats" (equivalent to Polish kwartniks). Moreover, the general aspect and the diameter of the contemporary Polish deniers are very similar to those of the Moldavian counterparts. Examples of Polish deniers struck in the end of the 14th century and the beginning of the 15th century are shown on plate 4²⁴.

In Poland, Casimir III quickly abandoned the issuing of groats so, in Moldavia, during the reign of Peter I, were issued only coins similar to the contemporary Polish issues, the kwartnik and the denier. The ratio between the Moldavian coins was, obviously, not 2:1, but neither 8:1, as the kwartnik was depreciated till the issue of the

¹⁷ Elena Petrișor, *Date preliminare asupra tezaurului medieval de la Buruiești, com. Doljești, jud. Neamț*, in Mem. Antiq. XII-XIV, 1980-1982, p. 171-178.

¹⁸ P. V. Batariuc, *Monede moldovenești rare în colecțiile Muzeului Bucovinei - Suceava*, paper presented on the 15th year celebration of Suceava's county branch of Romanian Numismatic Society, 23rd-25th of April 1993.

¹⁹ K. Pârvan, *Monede moldovenești rare din secolele XIV - XV*, in Cercetări Numismatice, VIII, 2002, p. 189. The author estimates the initial weight of the coin at 0.23 g and notices that this is the "standard weight".

²⁰ C. Știrbu, P. Stancu, *Monede din tezaurul de la Rachelu aflate în colecția Muzeului de Istorie al R. S. România și importanța lor istorică*, in Buletinul Societății Numismatice Române, LXVII-LXIX (1973-1975), p. 148.

²¹ *Idem*. The authors mention the debasement of the kwartnik up to 562‰ silver fineness (but keeping the legal weight) between 1368-1370.

²² Wikipedia, Grosz krakowski article <http://pl.wikipedia.org/wiki/Grosz_krakowski>.

²³ Wikipedia, Grzywna_krakowska article <http://pl.wikipedia.org/wiki/Grzywna_krakowska>.

²⁴ The images were taken from CoinArchives website, a database of numismatic auctions <<http://www.coinarchives.com>>.

first Moldavian coins. More probably the ratio of the so-called "half groat" to the Moldavian "groat" was 6:1, as we will try to prove.

These remarks confirm the identity between the standard used for striking the petty coins belonging to the hoard presented in the beginning and the one used in contemporary Polish mints to strike deniers.

So, it is normal and "natural" to assert that at least some of the issues of Moldavian petty coins in silver alloys, till the reign of Peter Aaron or the middle of the 15th century, observed a standard similar to the one used in contemporary Polish mints to strike deniers.

This parallel evolution of the metrological standards in Poland and in Moldavia was noticed by Romanian numismatists, in the particular case of the two linked reforms, the one of Wladyslaw II Jagello in Poland and the reformation of the Moldavian monetary system in Moldavia, around 1408, during the reign of Alexander I²⁵.

Indeed, Wladyslaw II Jagello, following the depreciation of the kwartnik in the second part of the 14th century, introduced the ternaries (the quarter groat), divided into 3 deniers. Alexander I followed the Polish model, issuing around 1408, according to O. Iliescu²⁶, a larger coin, conventionally named "double groat", equivalent to the new Polish kwartnik, the so-called Moldavian "groats" being equivalent to the ternaries and the petty coins to the deniers. So, the ratio between the "half groat" and the "double groat" was 6:1, and this conclusion may be extended to the equivalent issues of Peter I, giving a ratio of 6:1 for his issues too. This hypothesis would give a legal weight for the "groats" of Peter I around 1.2 g, more than the average weight of the issues of Peter. Two possible hypothesis arose from this remark: the first one that the possible bigger weight might have been balanced with lower silver fineness in the petty coins than in the "groats" and the second, more probable, that the petty coins had the same manufacturing prices as the "groats" but a higher intrinsic value, thus, their striking generating losses, they were quickly abandoned, now being very rare as a result.

During the first half of the 15th century some petty coinage issues were struck in metal having very low contents in silver, or having only traces of silver, as revealed by atomic and nuclear analysis techniques. The conventional name of "half groat" given to those issues is, obvious, completely not appropriate. The question of the value of these coins is an unsolved problem, till now²⁷, but a possible clue that can reveal the true value of some of the issues in common metal is a hoard found in Suceava at the Princely Court²⁸, consisting in 6 Moldavian copper petty coins and 351 Hungarian quartings, with legal value of a quarter Hungarian denier. The quartings were struck also in copper alloys, with traces of silver.

The conventional name of "half groat", used extensively till now for the petty coinage, originates in contemporary Moldavian documents. The first appearance of this name in the preserved documents is in a privilege of Moldovița Monastery given by Alexander, son of Elias, in 1453, in which the Moldavian ruler grants free taxes for some merchandise and, therefore, forbids any tax collector to take anything, "even worth of a half groat"²⁹. An easy interpretation of this passage is straightforward: the Moldavian

²⁵ K. Pârvan, *op. cit.*, p. 191, footnote 18.

²⁶ O. Iliescu, *Îndreptări la unele emisiuni monetare feudale ale Țărilor Române*, in *Studii și cercetări de numismatică*, I, 1957, p. 221 and *Moneda în România (491-1867)*, 1970, p. 27.

²⁷ O. Iliescu, *Émissions monétaires moldaves pour Kilia en 1426-1428*, in *Études byzantines et post-byzantines* IV, 2001, p. 164.

²⁸ M. Gogu, *Un tezaur de monedă mărunță descoperit la Curtea Domnească din Suceava*, in *Cercetări numismatice*, VIII, 2002, p. 213.

²⁹ DIR, A. Moldova, veacul XIV, XV, vol. I (1384-1485), nr. 321, p. 268.

coin named "half groat" was the smallest denomination issued by Moldavian rulers. But we must keep in mind that all the names of currency, which are mentioned in 15th century documents, such as the grivna or mark, the ruble, the groat and the half-groat, are, in fact, money of account, and not real coins, as outlined many times by E. Oberländer-Târnoveanu³⁰.

Future metrological studies may reveal other weight standards for different issues of the Moldavian petty coinage struck in silver alloys up to the middle of the 15th century. Their inspiration can be other denominations struck in Poland or Lithuania, such as the Lithuanian double denier of 0.41 g legal weight and 475‰ silver fineness³¹. An example of such a coin is shown on plate IV. It can be, also, a local standard of half the weight for the Moldavian "groat". Only the study of more hoards will solve this problem, revealing a system which today may seem difficult to understand, but which was probably coherent and well structured in those times.

³⁰ E. Oberländer-Târnoveanu, *Zlotul „românesc” sau „moldovenesc”, o monedă de calcul de tradiție bizantino-balcanică din Moldova secolelor XV-XVI*, in *Cercetări Numismatice*, VIII, 2002, p. 226.

³¹ E. Oberländer-Târnoveanu, *Emisiunile monetare pe teritoriul Moldovei în vremea lui Ștefan cel Mare (1457-1504) - o analiză critică*, in *Cercetări Numismatice* IX-XI, 2005, p. 317.

CATALOGUE

Petty coins conventionally named "half groats".

Obverse: anepigraphical; auroch head in frontal view, star with 5 rays between the horns, rose in the right field, crescent at left.

Reverse: anepigraphical; divided shield with three bars in the first field and seven lilies in the second, arranged 2, 2, 2, 1, crown above the shield.

Stephen, son of Alexander (1433 October – 1447 July 13; between 1436 and 1442 associated with Elias, his half-brother) (?):

1. *"F" in the right hand side of the shield*, double strike on obverse, linear circle, billon, 13 mm, 0.34 g, ↖
2. *Nothing in the right hand side of the shield*, linear circle, billon, 13 mm, 0.38 g, ↖
3. *"F" in the right hand side of the shield (?)*, linear circle, silvered billon, 13 mm, 0.30 g, ↑
4. *Nothing in the right hand side of the shield*, on obverse traces of the incuse reverse, linear circle, silvered billon, 13 mm, 0.26 g, ↘
5. *"F" in the right hand side of the shield*, linear circle, silvered billon, 13 mm, 0.35 g, ↗
6. *"F" in the right hand side of the shield (?)*, linear circle, silvered billon, 12x13 mm, 0.40 g, ↑
7. *Uncertain in the right hand side of the shield*, dotted circle, silver, 13 mm, 0.40 g, ↖
8. *Uncertain in the right hand side of the shield*, on obverse traces of the incuse reverse, linear circle, silvered billon, 12x13 mm, 0.19 g, ↑
9. *"F" in the right hand side of the shield*, on obverse traces of the incuse reverse, linear circle, silvered billon, 13 mm, 0.38 g, ↙
10. *Nothing in the right hand side of the shield*, linear circle on obverse, dotted circle on reverse, silvered billon, 13 mm, 0.29 g, ←
11. *"F" in the right hand side of the shield*, on obverse traces of the incuse reverse, linear circle, silvered billon, 14 mm, 0.31 g, ↓
12. *"F" in the right hand side of the shield*, on obverse traces of the incuse reverse, linear circle, silvered billon, 13 mm, 0.31 g, →
13. *"F" in the right hand side of the shield*, linear circle, silvered billon, 12x13 mm, 0.27 g, ↙
14. *"F" in the right hand side of the shield*, linear circle, silvered billon, 13 mm, 0.43 g, ↗
15. *Nothing in the right hand side of the shield*, linear circle, silvered billon, 12 mm, 0.44 g, →

16. *"F" in the right hand side of the shield*, linear circle,
silvered billon, 12x13 mm, 0.27 g, ↓
17. *"F" in the right hand side of the shield (?)*, linear circle,
billon, 11.5x12.5 mm, 0.38 g, ↑
18. *"F" in the right hand side of the shield (?)*, linear circle,
billon, 12.5x13 mm, 0.40 g, ↖
19. *"F" in the right hand side of the shield*, linear circle,
billon, 13.5x14 mm, 0.30 g, ↗
20. *Uncertain in the right hand side of the shield*, linear circle,
billon, 12x12.5 mm, 0.41 g, ↙
21. *Uncertain in the right hand side of the shield*, linear circle,
billon, 12x13 mm, 0.34 g, ↓
22. *Uncertain in the right hand side of the shield*, double struck, beaded circle on
obverse, linear circle on reverse,
billon, 13x14 mm, 0.29 g, →
23. *"F" in the right hand side of the shield (?)*, dotted circle,
billon, 11.5x13 mm, 0.8 g, ↗



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Plate 1



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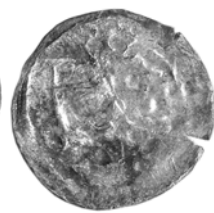


20

Plate 2



21



22



23

Plate 3



Denier issued by Louis of Anjou (1370-1382),
struck in Krakow,
Gumowski —, Kopicki 345x, 0.22 g



Denier issued by Louis of Anjou (1370-1382), struck in Lemberg, Gumowski —,
Kopicki —, 0.18 g



Denier issued by Jadwiga (1384-1399),
Gumowski 404, 0.19 g



Denier issued by Wladyslaw Jagello (1386-1434), struck in Fraustadt, Gumowski 410,
Kopicki 8419, 0.22 g



Denier issued by Wladyslaw Jagello (1386-1434), struck in Fraustadt, Gumowski 410,
Kopicki 8419, 0.30 g



Double denier issued by Svitrigaila (1430-1432), struck in Vilnius,
Gumowski 434 var., Kopicki 4118 var.,
Sajauskas-Kaubrys 58, 0.41 g

Plate 4