

## NEW COIN HOARD FINDINGS OF MOLDOVAN DIVISIONAL SPECIMENS. CONTRIBUTIONS TO THE KNOWLEDGE OF MONETARY SYSTEM OF ALEXANDER I (1399/1400-1432)

DERGACIOVA Lilia\*

**Rezumat.** În articol de față vor fi prezentate descoperiri recente de tezaur de monede moldovenești, atestate în Republica Moldova și Ucraina. Tezaurul este compus din monede anepigrafe de cupru, emise în a doua parte de domnie a lui Alexandru I (1399/1400-1432).

*Aria de răspândire a acestor emisiuni, ca și metrologia lor specifică, ne-a permis înaintarea unor ipoteze privind apariția și introducerea nominalului respectiv în sistemul monetar moldovenesc. Drept exemplu pentru crearea pieselor analizate a servit sistemul monetar al Hoardei de Aur, care a influențat sistemele monetare ale Rusiei de Halici, Rusiei Moscovite etc. Probabil, introducerea acestui nominal nou a fost necesară pentru suplinirea deficitului bănesc în circulația monetară internă. Ținând cont de cele expuse, propunem ca monedele moldovenești de cupru, emise în anii '20-'30 ai secolului al XV-lea de Alexandru I, să fie numite puluri moldovenești (în loc de denumirea depășită de jumătate de groș).*

**Abstract.** The article deals with new coin hoard finding, recently discovered on the territory of Republic of Moldova and Ukraine. Coin hoards consist of Moldovan divisional copper coins, minted in the second part of the reign of Alexander I (1399/1400-1432).

*Territory of the spread of such issues and their specific metrology allowed us to advance a hypothesis regarding the creation and introduction of this small item into Moldovan monetary system. As an example for creation of this copper items served the monetary system of Golden Horde, which influenced also other monetary systems of neighboring countries (for example Galician and Moscow Russia). Perhaps, with the introduction of new copper coins Moldovan state solved the problem of money needed for the local market. Thus, we propose to call the Moldovan divisional copper coins minted in 20's – 30's of 15<sup>th</sup> century – Moldovan pul (instead of old denomination half-groat).*

**Cuvinte-cheie:** Numismatică medievală, monede anepigrafe moldovenești, pul (puluri).

**Keywords:** Medieval numismatics, Moldovan divisional coins, Pul.

According to numismatic literature, Moldovan monetary system knew three monetary specimens at the beginning of the 15<sup>th</sup> century. They were based on the system of groat known from the 14<sup>th</sup> century. That specimen was complemented by two others – one smaller and one bigger. Taking into consideration the weight and diameter of the pieces, the smaller item was called *half-groat*, and a bigger one – *double groat*<sup>1</sup>, recently renamed – *one and a half-groat*<sup>2</sup>. Epigraphic coins – groat and one and a half-groat were minted from silver and billon, divisional specimens (without inscription) – from silver, billon or even from copper. The last category of pieces was named *half-groat*<sup>3</sup>. In point of view of Octavian Iliescu, coins of one and a

\* PhD in History, superior scientific researcher, Institute of Cultural Heritage, Academy of Sciences of Moldova. Chisinau, Republic of Moldova, e-mail: dergaciova.lili@gmail.com.

<sup>1</sup>Constantin Moisil, *Istoria monetei în România. Expunere sumară. 13. Activitatea monetară a lui Alexandru cel Bun*, in „Cronica numismatică și arheologică”, year II, no. 11-12, București, 1922, pp. 76-80; Octavian Iliescu, *Moneda în România*, București, 1970, pp. 26-28; Costin Kirîțescu, *Sistemul bănesc al leului și precursorii lui*, vol. I, București, 1997, pp. 84-85; Octavian Iliescu, *Aspecte ale economiei monetare în Moldova sub domnia lui Alexandru cel Bun*, in „Revista Istorică”, tom XI, no. 1-2, București, 2000, pp. 59-95 etc.

<sup>2</sup>Octavian Iliescu, *Aspecte ale economiei monetare...*, pp. 65-69; Lilia Dergaciova, *Stanovlenie deneznoj sistemy Moldavskogo gosudarstva i monetnaja reforma 1408 g.*, in *Materialy mezhdunarodnoj nauchnoj konferencii „Pruto-Dnestrovskij region. Dialog kultur”, posvjashchennyy 650-letiju moldavskoj gosudarstvennosti i 300-letiju so dnja rojdenija Antioha Kantemira*, Sankt-Petersburg, 2010, ss. 41-48.

<sup>3</sup>Constantin Moisil, *art. cit.*, in *loc. cit.*, pp. 76-80; Corneliu Secășanu, *Vechile monete moldovenești*, in *Cunoștiințe folositoare, „Știința pentru toți”*, seria A, no. 85, București, 1942, pp. 135-139; Octavian Iliescu, *Îndreptări și întregiri mărunte cu privire la unele emisiuni monetare feudale ale Țărilor Române*, in „Studii și Cercetări de Numismatică”, no. 1, București, 1957, pp. 221-222, 231-232; Idem, *Numismatică medievală și modernă a țării noastre, oglindită în colecțiile restituite de la Moscova*, in *Studii asupra tezaurului restituit de U.R.S.S.*, București, 1958, pp. 23-24; Idem, *Moneda în România...*, pp. 26-28; George Buzdugan, Octavian Luchian, Constantin Oprescu, *Monede și bancnote Românești*, București, 1977, pp. 58-65; Costin Kirîțescu, *op. cit.*, pp. 84-85; Pavel Bîrnea, Nikolaj Russev, *Monety srednevekovoj Moldavii (Istoriko-numizmatičeskie očerki)*, in „Stratum plus”, no. 6, Sankt-Petersburg, Chișinău, Odessa, 1999, pp. 185-188 etc. Although some of the first researchers gave its account of the difference between the coins minted from silver and those produced from copper (cf. Ernst Fischer, *Beitrag zur Münzkunde des Fürstenthumes Moldau*, in *Jahrbuch des Bukowiner Landes-Museums*, no. 9, Cernăuți, 1901, pp. 3-53).

half-groat had an average weight of 1.35 grams with a diameter of 21 mm; one groat – 0.90 grams to 18 mm; half-groat – 0.45 grams to 15 mm. Regardless to the period of production and metal they were executed, the metrological data remained unchanged for all types and monetary specimens<sup>4</sup>.

In opinion of Romanian scholars, copper coins were issued in the second part of the reign of Alexander I, most likely after 1425, but before 1430<sup>5</sup>. Having no circular inscription they entered the category of half groats<sup>6</sup>. We would like to attract your attention namely on these coins.

They are characterized by the presence of bull's head with five-point star between the horns, a rose to the right and a crescent to the left side on obverse; a shield per pale with three bars in the first and seven fleurs-de-lys in the second field on the reverse; letter "A" to the right side of the shield (Fig. 1). Metrological data were calculated on the basis of 235 items from the coin hoard of Dudulești (see Attachment). The calculated average weight is 0.65 grams (ranging between 1.52 and 0.34 grams), the diameter is about 15.6 mm (ranging between 17.9 and 11.6 mm).

We must submit that this coin type was minted in one manner and knows no other subtypes. From the other hand, metrological data has never been calculated strictly for copper coins. The average weight and the diameter shows that the copper coins are significantly heavier as other divisional specimens, minted from silver or billon. That brought us to idea, that this coin type was unusual for the Moldovan monetary system. Even the metal they were minted from does not correspond to the metal of the coins, which were created as a small fraction of silver groats. Also, from the very beginning of the Moldovan monetary system existence and until the reign of Alexander I there were no any coin specimens produced from copper. At the same time, the analysis of the coins of previous types demonstrates that a small quantity of divisional silver and billon coins issued by Alexander I was insufficient for local monetary circulation. Moldova had no silver mine, therefore she was dependent on its imports.

Comparing Moldovan divisional copper coins with currencies from the other monetary systems we established some similarities. Coin specimens minted from copper were widespread in the monetary system of the Golden Horde. They were called *pul*. The *pul* had a forced rate, its nominal value was significantly higher than the copper costs. A certain number of such coins could be changed to a silver coin (the exchange rate was prescribed by local authorities)<sup>7</sup>.

The states, which had a direct influence of the Golden Horde formation picked up this small denomination and used it in the local transaction. For example, a specimen from copper with an average weight of 0.93-0.81 grams was minted in Red Russia during the period of 1353-1382<sup>8</sup>. The currencies had a certain exchange rate to the silver coins. Polish and Ukrainian scholars call this species the *Russian-Galician coins of copper, copper dinar* or *Russian pul*<sup>9</sup>.

In the system of Moscow Russia also existed a specimen from copper, called *pul* or *pulo*. It was minted by Russian cities like Moscow, Pskov, Novgorod, Tver in the early 15<sup>th</sup> century. It had a certain exchange rate to silver coins, called *denga*<sup>10</sup>.

The territory of the future Moldovan State (namely Țara de Jos) was familiarized with the monetary system of the Golden Horde. Moreover in the middle 14<sup>th</sup> century here were even produced local copper issues of so-called Costești-Gârlea type<sup>11</sup> and other copper coins minted by New Town (Șehr al-Cedid)<sup>12</sup>. Also, experience of using the monetary system of the neighbouring countries as an example for creation of

<sup>4</sup>Octavian Iliescu, *Aspecte ale economiei monetare...*, pp. 79-83.

<sup>5</sup>*Ibidem*, p. 82.

<sup>6</sup>Constantin Moisil, *art. cit. in loc. cit.*, p. 78; Octavian Iliescu, *Moneda în România...*, p. 28; Costin Kirîțescu, *op. cit.*, p. 85; Pavel Bîrneu, Nikolaj Russev, *art. cit. in loc. cit.*, ss. 186-188; Octavian Iliescu, *Aspecte ale economiei monetare...*, p. 82 etc.

<sup>7</sup>Gherman Fedorov-Davydov, *Monety – svideteli proshlogo*, Moskva, 1985, pp. 92-96.

<sup>8</sup>Andrij Kryžaniwskij, *Denejnoe obraščenie v Galickoj Rusi v XIV-XV vv.*, in „Stratum plus”, no. 6 (2003-2004), Sankt-Petersburg, Chișinău, Odessa, București, 2005, ss. 417-418; Idem, *L'vivs'kij monetnij dvir u XIV-XV stolittjah*, L'viv, 2007, ss. 65-70.

<sup>9</sup>Andrij Kryžaniwskij, *Denejnoe obraščenie...*, ss. 417-418; Borys Paszkiewicz, *Rutenia Roșie între Italia, Hoarda de Aur și Marea Baltică: originea standardelor monetare de la Lwow și secolul al XIV-lea (cu un supliment)*, in „Cercetări Numismatice”, XIV, București, 2008, pp. 340-344.

<sup>10</sup>Ivan Spasskij, *Russkaia monetnaia sistema. Istoriko-numizmatičeskij očerk*, Leningrad, 1970, ss. 95-96.

<sup>11</sup>Lazar' Polevoj, *Monety iz raskopok i sborov na poselenii Costești-Gârlea (1946-19595 gg.)*, in „Dalekoe prošloe Moldavii”, Chișinău, 1969, pp. 146-161; Eugen Nicolae, *Monedele de tip Costești-Gârlea*, in *Simpozion de Numismatică dedicat Centenarului Societății Numismatice Române (1902-2003)*, Chișinău, 26-28 noiembrie 2003, *Comunicări, studii și note*, București, 2005, pp. 89-104.

<sup>12</sup>Svetlana Janina, „Novyj gorod” (=Jangi-Șehr = Șehr al-Djedid) – monetnyj dvor Zolotoj Ordy i ego mestopolojenie, in „Numizmatičeskij Sbornik”, čast' 5, vypusk 1, Moskva, 1977, ss. 193-213; Eugen Nicolae, *Monedele de cupru bătute în Orașul Nou (Șehr al-Cedid)*, in *Simpozion de Numismatică dedicat împlinirii a 125 de ani de la proclamarea independenței României*, Chișinău, 24-26 septembrie 2002, *Comunicări, studii și note*, București, 2003, pp. 167-179.

Moldovan own, is well known along the existence of the state.

At the same time, the group of researchers established on the basis of X-ray analysis that the title of the metal of Moldovan copper coins is the same as that of the Tatars. According to the one of the researchers, Eugen Nicolae, Tatar copper coins which still served local money trade in the early 15<sup>th</sup> century have been taken out of circulation, melted down and used for the issue of Moldovan copper currencies<sup>13</sup>.

All these lead us to the conclusion that in this period, under the pressure of political and economical circumstances Alexander I was forced to put in circulation some new currencies. With the introduction of new copper coins, which were produced in huge amounts, Moldovan state solved the problem of money needed for the local market. The copper coins (which spread on the territory of the state, just as Tatar copper coins before) were introduced after certain conventional rate.

Moldovan pul was used in internal economical relations and also in the international ones. The clearest evidence is the currency itself. It was found on all the Moldovan medieval settlements of the 15<sup>th</sup> century, as well as outside the country, on the trade routes and at the cities Moldova had close economic relations with. For example, some of the copper coins were found on the territory of Red Russia, Moscow Russia, Poland, Crimea and others. We know many coin hoards consisted from copper coins of Alexander I. Most of them were already reported in the numismatic literature:

- SUCEAVA, Suceava district, Rumania 1957/1967 – in total 38 pul<sup>14</sup>;
  - SUCEAVA, Suceava district, Rumania 1969 – in total 33 items (20 pul)<sup>15</sup>;
  - IAȘI, Iași district, Rumania 1958 – in total 19 items (15 pul)<sup>16</sup>;
  - IAȘI, Iași district, Rumania 1979 – in total 15 pul<sup>17</sup>;
  - CETATEA ALBĂ/ BILHOROD-DNISTROVSKYJ, Odessa region, Ukraine 1946 – in total 34 pul<sup>18</sup>;
  - CETATEA ALBĂ/ BILHOROD-DNISTROVSKYJ, Odessa region, Ukraine 1974 – in total 26 items (from them 25 pul)<sup>19</sup>;
  - SIMFEROPOL, Simferopol district, Crimea 2010 – about 1200 items, kept 379 items (364 pul)<sup>20</sup>;
  - RĂDĂUTI, Iași district, Rumania 1935 – in total 24 items (17 pul)<sup>21</sup>;
  - ROMAN, Neamț district, Rumania 1975 – in total 92 items (49 pul)<sup>22</sup>;
  - TARASOVA, Rezina region, Republic of Moldova ante 2009 – in total about 110 pul<sup>23</sup>;
  - PRUTENI, Fălești region, Republic of Moldova 2008 – in total 59 items (57 pul)<sup>24</sup> and others.
- These are supplemented by other five coin hoards, recently found in the Republic of Moldova and

<sup>13</sup>Eugen Nicolae, Roxana Bugoi, Bogdan Constantinescu, *Compositional analyses of some Golden Horde period copper coins*, in *Studia Arheologiae et Historiae Antiquae*. Chișinău. 2009. pp. 385-388; Eugen Nicolae, *Întemeierea Moldovei în lumina descoperirilor monetare dintre Prut și Nistru*, in Conferința științifică internațională. „Probleme actuale ale arheologiei, etnologiei și studiului artelor”. Programul și rezumatele comunicărilor, Chișinău, 2015. pp. 34-35.

<sup>14</sup>Grigore Foiț, *Noi tezaure monetare medievale descoperite în regiunea Suceava*, in „Suceava”, I, Suceava. 1967, p. 8.

<sup>15</sup>Grigore Foiț, Alexandru Artimon, *Noi descoperiri monetare la Suceava*, in „Suceava”, III, Suceava, 1973, pp. 299-301, 305; Grigore Foiț, *Suceava – centru de interes major pentru numismatica medievală a Moldovei*, in „Suceava”, VIII, Suceava, 1981, p. 71, no. B.

<sup>16</sup>Eugenia Neamțu, *Tezaurul de monede anepigrafe de aramă de la Alexandru cel Bun descoperite la Iași*, in „Arheologia Moldovei”, II-III, Iași, 1964, pp. 496-503 (all 19 items considered half groats); Viorel Butnariu (ed.), *Tezaure din Moldova. Secolele XII-XIX*. Iași, 2013, pp. 10-11 (all 19 items were described as half-groats).

<sup>17</sup>Viorel Butnariu (ed.), *Corpus Nummorum Moldaviae-II. Monnaies et parures du Musée d'Histoire de Iași*. Iași, 1998, p. 57, no. 10.

<sup>18</sup>Lilia Dergaciova, Irina Karashevich, *Tezaur de monedă moldovenească din sec. XV, descoperit la Cetatea Albă (Bilhorod-Dnistrovs'kyi. Odes ka oblast, Ucraina)*, in *Al XXVII-lea Simpozion Național de Numismatică. Rezumatele comunicărilor*. Râmnicu l'âlcea, 2010. pp. 17-18 (brief presentation).

<sup>19</sup>Avraam Nudelman, *Nahordki monet epohi feodalizma iz raskopok i sborov 1974-1976 gg. v Dnestrovsko-Prutskom regione*, in *Arheologičeskie issledovanija v Moldavii v 1974-1976 gg.*, Chișinău, 1981, s. 184; Lilia Dergaciova, *Tezavracia Aleksandra Dobrogo v Belgorod-Dnestrovske*, in „Tyragetia”. S.N., vol. I [XVI], no. 2, Chișinău, 2007, pp. 87-93 (structure of the coin hoard after this work); Eadem, *Monede medievale moldovenești descoperite la Cetatea Albă (Bilgorod-Dnistrovskij, reg. Odessa, Ucraina) (secolul al XI-lea)*, in „Cercetări Numismatice”, XIV, București, 2008, pp. 409-414.

<sup>20</sup>Lilia Dergaciova, *Klad moldavskih monet XI v., najdenyj v okrestnostjah Simferopolja*, in „Stratum plus”. no. 6. Sankt-Petersburg, Chișinău, Odessa, București, 2012, ss. 199-221.

<sup>21</sup>Katiușa Pârvan, *Monede moldovenești păstrate la Muzeul Național de Istorie a României*, in „Suceava”. XXVI-XXVII-XXVIII (1999-2000-2001), Suceava, 2001, pp. 357-361, 371-374 (we consider that from 20 of the coins, described as copper half-groats of Alexander I, only 17 items are copper pul, another three coins are half-groats with reduction weight).

<sup>22</sup>Domnița Hordilă, *Tezaurul de monede medievale descoperit în 1975 la Roman*, in „Memoria Antiquitatis”. Piatra-Neamț, XIX, 1994, pp. 401-422.

<sup>23</sup>Eugen Nicolae, *Date noi privind monedele și contramărcile de tip Asprokastron*, in *Studia Varia in Honorem Professoris Ștefan Ștefănescu Octogenarii*, București-Brăila, 2009, p. 220 and footnote 12 (brief presentation).

<sup>24</sup>Lilia Dergaciova, Nikolaj Telnov, *Monede medievale moldovenești din colecții particulare din Republica Moldova (III)*, in „Cercetări Numismatice”. XV, București, 2009, pp. 177-182.

Ukraine (see Attachment):

- DUDULEȘTI, UTAG, Republic of Moldova 2014 – 253 items, kept 247 items (236 pul);
- CERNĂUȚI REGION, Ukraine 2010 – about 9 items (6 pul);
- REPUBLIC OF MOLDOVA *passim* 2009 – about 14 items (14 pul);
- REPUBLIC OF MOLDOVA north 2011 – about 13 items (12 pul);
- BLACK SEA coast, Republic of Moldova or Ukraine 2011 – in total 30 pul.

Therefore we have a representative number of “similar” coin hoards. Also, we need to submit that no other specimens of Moldovan currency were spread over the territory of South-Eastern Europe as these small coins of Alexander I.

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Although the Russian pul had its own typology and metrological similarity, the economical context which approved its introduction into the monetary system of Red and Moscow Russia and similar development of the Moldovan monetary system bring us to the idea to propose certain terminological changes for the Moldovan system. We propose to call Moldovan divisional coins minted from copper – *Moldovan pul* (singular *pul*, plural *puluri* in Rumanian).

That change of the terms will make a difference between divisional coins minted from silver or billon, which will be considered as a legal part of epigraphic coins, but specimens minted from copper will be treated separately as an exception.

#### Attachment

We had opportunity to study directly the first two coins hoards, therefore all the data and type description will be presented in detail (see catalogue I-II; plate I-VIII). For the last three coin hoards we have no metrological data, information about them being collected from different Web sources and numismatic forums. Technically, we have some general information and images of the coins. Therefore we gave no data in catalogues, only the images on the plates (see plate IX-XII).

First coin hoard was found in DUDULEȘTI village, UTAG, Republic of Moldova in 2014. It consisted of 253 divisional coins. Six coins were lost and we had an opportunity to examine the 247 remained items (see catalogue I, plate I-VII). They can be separated into two groups: original 235 copper pul (see catalogue I, nr. 1-235) and 12 copper counterfeits (see catalogue I, nr. 236-247). According to the information, related by the owner other six pieces are identical to the original copper coins of Alexander I. Original pul have been already described above. Copper counterfeits basically imitate the image of the original copper pul – bull’s head with heraldic elements on obverse, shield per pale on reverse. Sometimes we have a good copy with clumsy expression only (see catalogue I, nr. 236-242; plate VII, nr. 236-242), othertimes images are reversed and some elements are missing (see catalogue I, nr. 243-247; plate VII, nr. 243-247). The metrological data of counterfeits correspond to those of the original copper coins: the weight is ranging between 0.84 and 0.35 grams, diameter – between 16.5 and 14 mm.

The second coin hoard was found probably in the region of Cernăuți, Ukraine in 2010 (see catalogue II; plate VIII). At least nine specimens are known from his structure: two half groats with reduced weight<sup>25</sup> (see catalogue II, nr. 1-2; plate VIII, nr. 1-2), six original copper pul (see catalogue II, nr. 3-8; plate VIII, nr. 3-8) and one copper counterfeight after a copper pul (see catalogue II, nr. 9; plate VIII, nr. 9).

The third coin hoard was found on the territory of Republic of Moldova in 2009. Unfortunately, we don’t know the region of the finding. All we know that 14 coins from the hoard were place for determination on a Moldovan forum in 2009<sup>26</sup>. As we can see from the images, all 14 coins are original copper pul (see plate IX).

The fourth coin hoard was discovered in the north of the Republic of Moldova in 2011. It content at least 13 divisional original coins: half groat with reduced weight<sup>27</sup> and 12 copper pul (see plate X).

The last, fifth coin hoard was found on the coast of Black Sea 2011, somewhere on the territory of Republic of Moldova or Ukraine. The hoard was composed of 30 original copper pul<sup>28</sup> (see plate XI-XII).

<sup>25</sup>These two coins were published in Lilia Dergaciova, *Monede medievale descoperite la Rezeni. Contribuții la tipologia emisiunilor moldovenești*, in „Studii și Cercetări de Numismatică”, vol. II (XIV) 2011, București, 2012, p. 77, no. 2, 4.

<sup>26</sup>Accessed January 9<sup>th</sup> 2009, today site no longer exist. <http://moldovamap.ru/index.php?do=forum&showtopic=268>.

<sup>27</sup>This coin was published in Lilia Dergaciova, *Monede medievale descoperite la Rezeni...*, p. 77, no. 3.

<sup>28</sup>Accessed Mai 29<sup>th</sup> 2011 - <http://forum.violity.kiev.ua/viewtopic.php?t=457346>

## CATALOGUE I

Moldova  
Alexander I (1399/1400-1432)  
Suceava  
Pul (1425-1430)

Obverse. Bull's head with five-point star between the horns, a rose to the right side and a crescent to the left side; circle of dots.

Reverse. A shield per pale: I field – three bars, II field – seven fleurs-de-lys; letter "A" to the right side of the shield; circle of dots.

George Buzdugan, Octavian Luchian, Constantin Oprescu, *Monede și bancnote Românești*, București, 1977, p. 62, no. 418.

1. AE, 1.52 g, 17.2x14.8 mm, 10.30h
2. AE, 1.40 g, 15.6 mm, 2h
3. AE, 1.28 g, 15 mm, 6h
4. AE, 1.27 g, 15.5 mm, 2h
5. AE, 1.26 g, 14.8 mm, 1h, double striking on obverse and reverse
6. AE, 1.23 g, 15.8x14.2 mm, 3h
7. AE, 1.23 g, 15 mm, 1h
8. AE, 1.20 g, 15.2 mm, 5h
9. AE, 1.19 g, 14.8 mm, 8h
10. AE, 1.17 g, 15.7 mm, 12h
11. AE, 1.16 g, 16.2x14.2 mm, 10h
12. AE, 1.15 g, 15.9 mm, 1h
13. AE, 1.12 g, 14.5x12.3 mm, 4h
14. AE, 1.11 g, 15.2 mm, 8h
15. AE, 1.11 g, 14.7 mm, 7h
16. AE, 1.09 g, 14.4 mm, 8h
17. AE, 1.08 g, 16.9x14.9 mm, 8h
18. AE, 1.07 g, 14.9 mm, ?h reverse incusum, double striking on obverse
19. AE, 1.06 g, 15.4 mm, 7h
20. AE, 1.03 g, 15.3 mm, 3h
21. AE, 1.03 g, 15.3x13.4 mm, 7h
22. AE, 1.03 g, 15.3x11.8 mm, 11h
23. AE, 1.01 g, 15.5x13.9 mm, 10h
24. AE, 1.01 g, 15.2x13.4 mm, 5h
25. AE, 1.01 g, 15 mm, 10h
26. AE, 1.00 g, 15.5x14.5 mm, 9h
27. AE, 1.00 g, 14.2 mm, 5h
28. AE, 0.99 g, 15.1 mm, 8h
29. AE, 0.98 g, 15.2 mm, 4h
30. AE, 0.96 g, 14.9 mm, 1h
31. AE, 0.96 g, 14.8 mm, 1h
32. AE, 0.96 g, 14.5 mm, 9h
33. AE, 0.96 g, 14 mm, 7.30h
34. AE, 0.95 g, 14.7x14.2 mm, 1h
35. AE, 0.95 g, 14.4x13 mm, ?h obverse incusum
36. AE, 0.94 g, 15.8x14.4 mm, 10h
37. AE, 0.93 g, 16.2 mm, 12h
38. AE, 0.92 g, 17.3x14.4 mm, ?h reverse incusum
39. AE, 0.91 g, 15.8 mm, 4h
40. AE, 0.91 g, 15.5 mm, 6h
41. AE, 0.91 g, 15.5 mm, 4h
42. AE, 0.91 g, 14.7 mm, 12h
43. AE, 0.90 g, 16.9 mm, 6h

44. AE, 0.90 g, 15.5 mm, 11h
45. AE, 0.90 g, 15.4 mm, 10h
46. AE, 0.90 g, 14.5 mm, 9h
47. AE, 0.89 g, 15 mm, 6,30h
48. AE, 0.89 g, 14.2 mm, 7h, double striking on obverse and reverse
49. AE, 0.88 g, 15.1x14 mm, 5h
50. AE, 0.88 g, 14.5 mm, 10h
51. AE, 0.88 g, 14.5 mm, 4h
52. AE, 0.87 g, 15.5 mm, 8h
53. AE, 0.87 g, 15.4 mm, 4h
54. AE, 0.87 g, 15.3 mm, 8h
55. AE, 0.86 g, 15.9 mm, 10h
56. AE, 0.86 g, 15.7 mm, 8h
57. AE, 0.85 g, 14.9 mm, 5.30h
58. AE, 0.84 g, 15.2x14.1 mm, 10h
59. AE, 0.84 g, 14.8 mm, 1h
60. AE, 0.84 g, 14.5 mm, 7h
61. AE, 0.84 g, 14.4 mm, 7h
62. AE, 0.84 g, 14.3 mm, 4h
63. AE, 0.83 g, 15.7x13.5 mm, 1h
64. AE, 0.82 g, 15.9 mm, 4h
65. AE, 0.82 g, 15.5 mm, 8h
66. AE, 0.82 g, 15.4 mm, 6h
67. AE, 0.82 g, 14.8 mm, 7h
68. AE, 0.82 g, 14.6 mm, 2h
69. AE, 0.82 g, 14.3x12.2 mm, 4h
70. AE, 0.81 g, 17.2 mm, 9h
71. AE, 0.81 g, 16.2 mm, 8h
72. AE, 0.81 g, 16.2x13.3 mm, 9h
73. AE, 0.81 g, 16.1 mm, 9.30h
74. AE, 0.81 g, 16 mm, 10h
75. AE, 0.81 g, 15.9 mm, 2h
76. AE, 0.81 g, 15.9 mm, 10h
77. AE, 0.81 g, 15.8 mm, 10h
78. AE, 0.81 g, 15.8 mm, 12h, double striking on obverse
79. AE, 0.81 g, 15.8x14 mm, 10h
80. AE, 0.81 g, 15.2 mm, 7h
81. AE, 0.81 g, 14.2x12.8 mm, 1h
82. AE, 0.80 g, 16 mm, 3h
83. AE, 0.80 g, 15.6 mm, 7h
84. AE, 0.80 g, 15.2 mm, 11h
85. AE, 0.80 g, 15 mm, 10h
86. AE, 0.80 g, 14.9 mm, 5h
87. AE, 0.80 g, 14.9x13.2 mm, ?h reverse incusum
88. AE, 0.80 g, 14.5 mm, 12h
89. AE, 0.79 g, 15.8 mm, 1.30h
90. AE, 0.79 g, 15.2x13.5 mm, 6h
91. AE, 0.78 g, 16.3x12.8 mm, 10h
92. AE, 0.78 g, 16 mm, 2h
93. AE, 0.78 g, 15.5 mm, ?h double striking on reverse
94. AE, 0.78 g, 15.2 mm, 5h
95. AE, 0.78 g, 15 mm, 8h
96. AE, 0.78 g, 15 mm, 3h
97. AE, 0.78 g, 14.8 mm, 5h
98. AE, 0.78 g, 14.6 mm, 5.30h

99. AE, 0.78 g, 14.4 mm, 1h  
 100. AE, 0.77 g, 15 mm, 1h  
 101. AE, 0.76 g, 15.8 mm, 1h  
 102. AE, 0.75 g, 14.7 mm, 3h  
 103. AE, 0.74 g, 16.3 mm, 10h  
 104. AE, 0.74 g, 14.3x13 mm, 7h  
 105. AE, 0.73 g, 14.3 mm, 9.30 h  
 106. AE, 0.72 g, 16.9 mm, 5h  
 107. AE, 0.72 g, 16.2x14.2 mm, 8h, double striking on obverse and reverse  
 108. AE, 0.72 g, 15.5x13.2 mm, 9h  
 109. AE, 0.72 g, 15.2x13,3 mm, 2h  
 110. AE, 0.72 g, 14.7 mm, 4h  
 111. AE, 0.72 g, 14.5 mm, 1h  
 112. AE, 0.71 g, 15.6 mm, 8h  
 113. AE, 0.71 g, 15 mm, 7h  
 114. AE, 0.71 g, 14.5 mm, 8h  
 115. AE, 0.70 g, 15.2 mm, 5h  
 116. AE, 0.70 g, 15.2 mm, ?h obverse incusum  
 117. AE, 0.70 g, 15 mm, 10,30h  
 118. AE, 0.70 g, 14.8x13.8 mm, 10h  
 119. AE, 0.70 g, 14.2 mm, 8h  
 120. AE, 0.69 g, 15.9 mm, ?h obverse incusum, double striking on reverse  
 121. AE, 0.69 g, 15.4 mm, 6.30h  
 122. AE, 0.69 g, 15 mm, 10h  
 123. AE, 0.69 g, 14.8 mm, 8h  
 124. AE, 0.69 g, 14.6 mm, 7h  
 125. AE, 0.69 g, 14.5x13.5 mm, 10h  
 126. AE, 0.69 g, 13.3 mm, 11.30h  
 127. AE, 0.68 g, 16.5x12.6 mm, 5h  
 128. AE, 0.68 g, 16.4x13.3 mm, 1h  
 129. AE, 0.68 g, 15.8x13.3 mm, 11h  
 130. AE, 0.68 g, 15.7 mm, 10h  
 131. AE, 0.68 g, 15.2x13.5 mm, 9h  
 132. AE, 0.68 g, 14.8x14 mm, 7h  
 133. AE, 0.67 g, 16.3x15.5 mm, 8h  
 134. AE, 0.67 g, 15.5 mm, 11h  
 135. AE, 0.67 g, 15.4 mm, 10h  
 136. AE, 0.67 g, 15.3x13.8 mm, 6h  
 137. AE, 0.67 g, 14.2 mm, 12h  
 138. AE, 0.67 g, 13.9x12.8 mm, 5h  
 139. AE, 0.66 g, 16.4x14 mm, 2h  
 140. AE, 0.66 g, 16.2 mm, ?h reverse incusum  
 141. AE, 0.66 g, 16x13 mm, 3h, double striking on reverse  
 142. AE, 0.66 g, 15.8x13.9 mm, 5.30h  
 143. AE, 0.66 g, 15.5x13.9 mm, 7h  
 144. AE, 0.66 g, 15.3x13 mm, 10h  
 145. AE, 0.66 g, 14.9 mm, 6.30h  
 146. AE, 0.66 g, 14.8 mm, 1h, double striking on reverse  
 147. AE, 0.65 g, 15.8 mm, 2h, double striking on reverse  
 148. AE, 0.65 g, 15.7x14.1 mm, 11h  
 149. AE, 0.65 g, 14.6x13.3 mm, 1h  
 150. AE, 0.65 g, 14.4 mm, 10h  
 151. AE, 0.65 g, 14x11.6 mm, 1h  
 152. AE, 0.65 g, 13.8x12.8 mm, 11h  
 153. AE, 0.64 g, 16x14.4 mm, 9h

154. AE, 0.64 g, 16x14.2 mm, 3h  
155. AE, 0.64 g, 16x13.8 mm, 5h  
156. AE, 0.64 g, 15.8 mm, 6h  
157. AE, 0.64 g, 15.4 mm, 6.30h  
158. AE, 0.64 g, 15.2 mm, 2h  
159. AE, 0.64 g, 14.4 mm, 5h  
160. AE, 0.63 g, 16.9x14.5 mm, 8h  
161. AE, 0.63 g, 16.7x14 mm, 1h  
162. AE, 0.63 g, 15.3 mm, 6h  
163. AE, 0.63 g, 15 mm, 12h  
164. AE, 0.63 g, 15x13.3 mm, 11h  
165. AE, 0.63 g, 14.8 mm, 6.30h  
166. AE, 0.63 g, 14.5 mm, 3h  
167. AE, 0.62 g, 16.5x15.8 mm, ?h obverse incusum  
168. AE, 0.62 g, 15.2x14.2 mm, 7h  
169. AE, 0.62 g, 15 mm, 3.30h  
170. AE, 0.62 g, 14 mm, 7h  
171. AE, 0.61 g, 17.9x15.8 mm, ?h double striking on reverse  
172. AE, 0.61 g, 15.7 mm, 5.30h  
173. AE, 0.61 g, 15.3 mm, 8h, double striking on obverse and reverse  
174. AE, 0.61 g, 15.3 mm, 8h, double striking on obverse  
175. AE, 0.61 g, 14.8 mm, 7h  
176. AE, 0.60 g, 17 mm, 1h, double striking on reverse  
177. AE, 0.60 g, 15.9x12.4 mm, 1h  
178. AE, 0.60 g, 15.5 mm, 4h  
179. AE, 0.60 g, 15.3 mm, 5h, double striking on reverse  
180. AE, 0.60 g, 15.3x12.8 mm, 4h  
181. AE, 0.60 g, 15.2 mm, 8h  
182. AE, 0.60 g, 15.2x12.8 mm, 6h  
183. AE, 0.60 g, 15 mm, 5h  
184. AE, 0.60 g, 14.6 mm, 10h  
185. AE, 0.60 g, 14.2x12.5 mm, 1h  
186. AE, 0.60 g, 14.1 mm, 10h  
187. AE, 0.59 g, 15.8 mm, 1h  
188. AE, 0.59 g, 15.6x12.6 mm, 1h  
189. AE, 0.59 g, 15.1 mm, 7.30h  
190. AE, 0.59 g, 14.9 mm, 6h  
191. AE, 0.59 g, 14.3x13 mm, 10h  
192. AE, 0.59 g, 13.4x12.2 mm, 4h  
193. AE, 0.58 g, 15.8 mm, 10h  
194. AE, 0.58 g, 15.5x12.7 mm, 5h  
195. AE, 0.58 g, 15.2 mm, 7h  
196. AE, 0.58 g, 14.5x12.5 mm, 10h  
197. AE, 0.57 g, 15.2 mm, 3h  
198. AE, 0.57 g, 15.1x12.5 mm, 2h  
199. AE, 0.57 g, 14.9x17.7 mm, 6h  
200. AE, 0.57 g, 14.8 mm, 5h  
201. AE, 0.57 g, 14.2 mm, 1h  
202. AE, 0.57 g, 14.2x13.2 mm, ?h reverse incusum  
203. AE, 0.56 g, 16.1x13.9 mm, 11h  
204. AE, 0.56 g, 15.5x14.3 mm, 7h  
205. AE, 0.55 g, 15.7 mm, 10h  
206. AE, 0.55 g, 14.8 mm, 5h  
207. AE, 0.55 g, 14.7x14 mm, ?h reverse incusum  
208. AE, 0.54 g, 16.6x13.6 mm, 8h



209. AE, 0.54 g, 14.4x12.9 mm, 5h  
 210. AE, 0.54 g, 14. mm, 1h  
 211. AE, 0.53 g, 15.9x13.6 mm, 9h  
 212. AE, 0.53 g, 15.1x14.2 mm, 9h  
 213. AE, 0.53 g, 14.8 mm, ?h obverse incusum  
 214. AE, 0.52 g, 14.8x17 mm, 2h  
 215. AE, 0.52 g, 14.8x13 mm, 9h  
 216. AE, 0.51 g, 14.5 mm, 2h  
 217. AE, 0.50 g, 15.8 mm, 5h  
 218. AE, 0.50 g, 15.8x14.5 mm, 1.30h  
 219. AE, 0.50 g, 15.2 mm, 6h  
 220. AE, 0.50 g, 13.9x12.4 mm, 3h  
 221. AE, 0.48 g, 15.4 mm, 11h  
 222. AE, 0.48 g, 15.4x12.4 mm, 1h  
 223. AE, 0.48 g, 15.2 mm, 10h  
 224. AE, 0.48 g, 15.2x13.8 mm, 4h, double striking on reverse  
 225. AE, 0.48 g, 14.4x12.2 mm, 5h  
 226. AE, 0.44 g, 14.8x13.2 mm, 7h  
 227. AE, 0.42 g, 15.9 mm, 10h  
 228. AE, 0.42 g, 15 mm, 8h  
 229. AE, 0.42 g, 14.5x12.4 mm, 1h  
 230. AE, 0.42 g, 14.2x11.8 mm, 1h  
 231. AE, 0.40 g, 15.5 mm, ?h reverse incusum  
 232. AE, 0.38 g, 15.8 mm, 11h  
 233. AE, 0.37 g, 16.2x13 mm, 7h  
 234. AE, 0.36 g, 15 mm, 10h  
 235. AE, 0.34 g, 14.8 mm, 11h

Copper counterfeits after pul

Obverse. Bull's head with five-point star between the horns, a rose to the right side and a crescent to the left side; circle of dots.

Reverse. A shield per pale: I field – three bars, II field – various number of fleurs-de-lys; letter "A" to the right side of the shield; circle of dots.

Cf. George Buzdugan, Octavian Luchian, Constantin Oprescu, *Monede și bancnote Românești*, București, 1977, pp. 63-64.

236. AE, 0.76 g, 16.5 mm, 2h, five or seven fleurs-de-lys on revers, letter "A" missing

237. AE, 0.73 g, 14.9 mm, 1h, five or seven fleurs-de-lys on revers

238. AE, 0.68 g, 15.6 mm, 8h, five, seven or nine fleurs-de-lys on revers, unidentified letter to the right side of the shield

239. AE, 0.56 g, 14 mm, 1h, unidentified number of fleurs-de-lys on revers, letter "A" missing

240. AE, 0.55 g, 15 mm, 9.30h

241. AE, 0.50 g, 15.3 mm, 5.30h, unidentified letter to the right side of the shield

242. AE, 0.40 g, 14.5 mm, 2h, unidentified letter to the right side of the shield

Obverse. Bull's head with five-point star between the horns, a crescent to the right side and a rose to the left side; circle of dots.

Reverse. A shield per pale: I field – various number of fleurs-de-lys, II field – three bars; letter to the right side of the shield; circle of dots.

Cf. George Buzdugan, Octavian Luchian, Constantin Oprescu, *Monede și bancnote Românești*, București, 1977, pp. 63-64.

243. AE, 0.84 g, 14 mm, 1h, six fleurs-de-lys on revers, unidentified letter to the right side of the shield

244. AE, 0.72 g, 14.9 mm, 9h, six fleurs-de-lys on revers, unidentified letter to the right side of the shield

245. AE, 0.72 g, 14.4 mm, 8.30h, six or seven fleurs-de-lys on revers, unidentified letter to the right side of the shield

246. AE, 0.58 g, 16.4 mm, 5h, six fleurs-de-lys on revers, unidentified letter to the right side of the shield

247. AE, 0.35 g, 14.8 mm, 6h, six fleurs-de-lys on revers, unidentified letter to the right side of the shield

## CATALOGUE II

Moldova  
Alexander I (1399/1400-1432)  
Suceava

## Half groats with reduced weight (1409-1425/1430)

Obverse. Bull's head with five-point star between the horns, a rose to the right side and a crescent to the left side; circle of dots.

Reverse. A shield per pale: I field – three bars, II field – three fleurs-de-lys; a rose above the shield; circle of dots.

1. AE silvered, 0.42 g, 11.5 mm

Lilia Dergaciova, *Klad moldavskih monet XV v., najdenyj v okrestnostjah Simferopolja*, in „Stratum plus”, no. 6, Sankt-Petersburg, Chişinău, Odessa, Bucureşti, 2012, p. 77, no. 4 (these coin).

2. AE silvered, 0.31 g, 12 mm

Lilia Dergaciova, *op. cit.*, p. 77, no. 2 (these coin).

## Pul (1425/1430)

Obverse. Bull's head with five-point star between the horns, a rose to the right side and a crescent to the left side; circle of dots.

Reverse. A shield per pale: I field – three bars, II field – seven fleurs-de-lys; letter “A” to the right side of the shield; circle of dots.

George Buzdugan, Octavian Luchian, Constantin Oprescu, *Monede și bancnote Românești*, Bucureşti, 1977, p. 62, no. 418.

3. AE, 0.81 g, 15 mm

4. AE, 0.70 g, 14.8 mm

5. AE, 0.67 g, 16 mm

6. AE, 0.64 g, 15.5 mm

7. AE, 0.58 g, 15 mm

8. AE, 0.49 g, 15 mm

## Copper counterfeits after pul

Obverse. Bull's head with five-point star between the horns, a crescent to the right side and a rose to the left side; circle of dots.

Reverse. A shield per pale: I field – six or seven fleurs-de-lys, II field – three bars; letter to the right side of the shield; circle of dots.

Cf. George Buzdugan, Octavian Luchian, Constantin Oprescu, *Monede și bancnote Românești*, Bucureşti, 1977, pp. 63-64.

9. AE, 0.30 g, 15 mm, unidentified letter to the right side of the shield

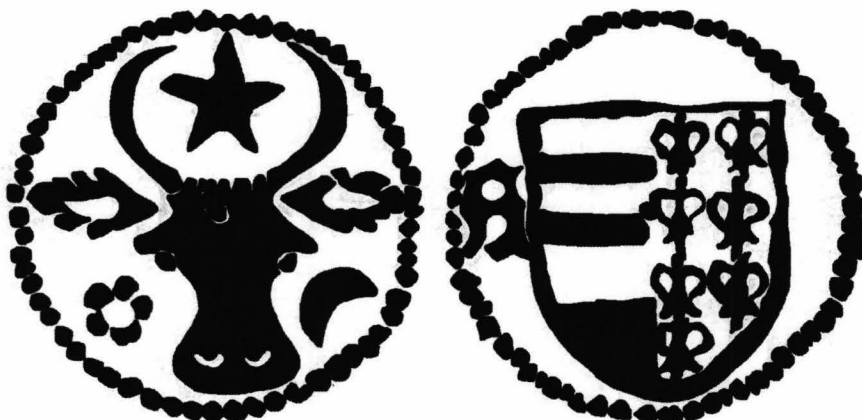


Plate I. Moldovan *pul* of Alexander I from the coin hoard of DUDULEȘTI.



Plate II. Moldovan *pul* of Alexander I from the coin hoard of DUDULEȘTI.





Plate III. Moldovan *pul* of Alexander I from the coin hoard of DUDULEȘTI.





Plate IV. Moldovan *pul* of Alexander I from the coin hoard of DUDULEȘTI.



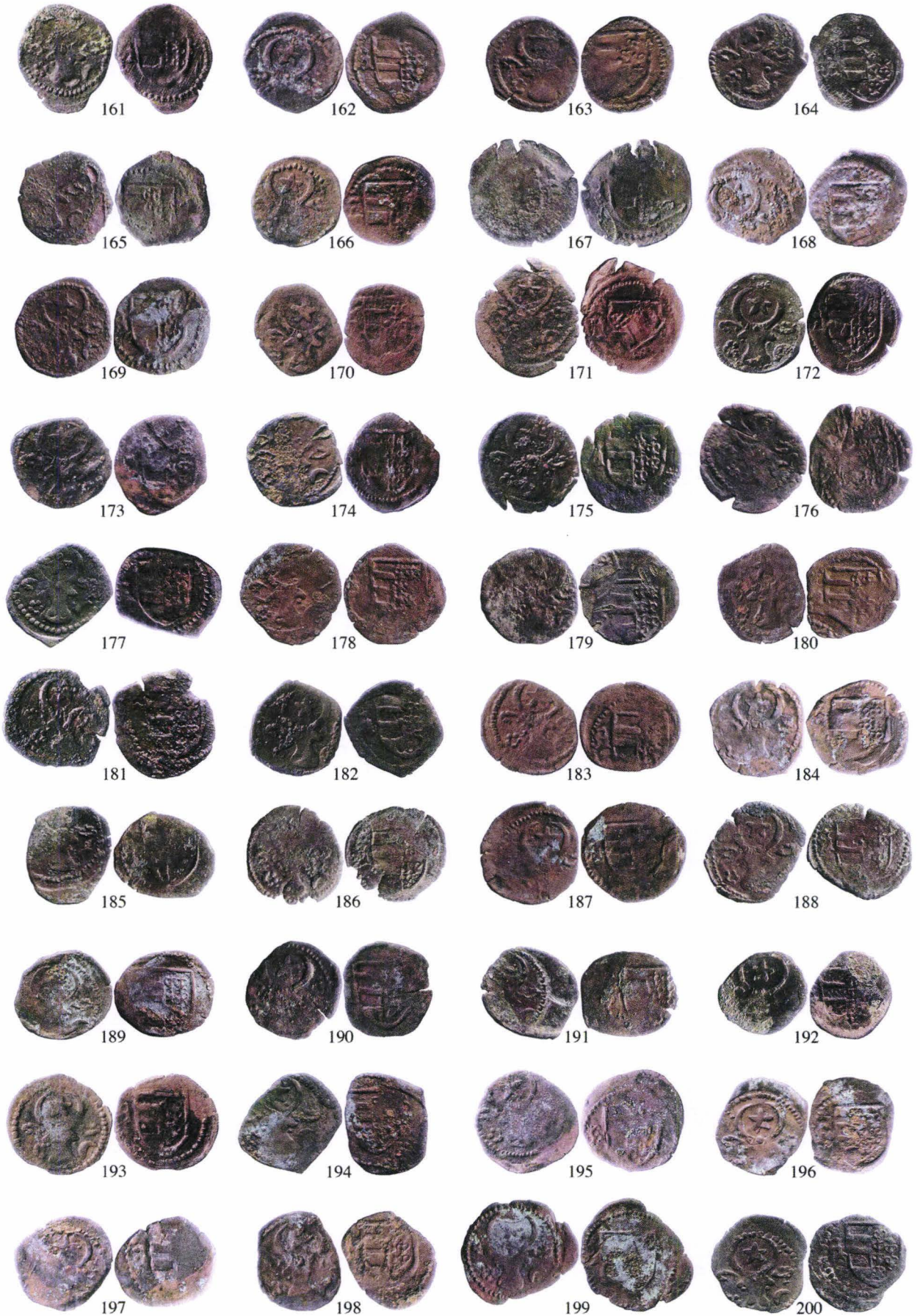


Plate V. Moldovan *pul* of Alexander I from the coin hoard of DUDULEȘTI.





Plate VI. Moldovan *pul* of Alexander I from the coin hoard of DUDULEȘTI.





Plate VII. Counterfeits after Moldovan *pul* of Alexander I from the coin hoard of DUDULEȘTI.



Plate IX. Moldovan *pul* of Alexander I from the coin hoard of REPUBLICA MOLDOVA *passim*.





Plate VIII. Moldovan divisional coins of Alexander I: half groat with reduced weight (1-2), *pul* (3-8); counterfeit after Moldovan *pul* of Alexander I from the coin hoard of CERNĂUȚI region.



Plate X. Moldovan divisional coins of Alexander I: half groat with reduced weight (1), *pul* (2-13) from the coin hoard of REPUBLIC of MOLDOVA north.

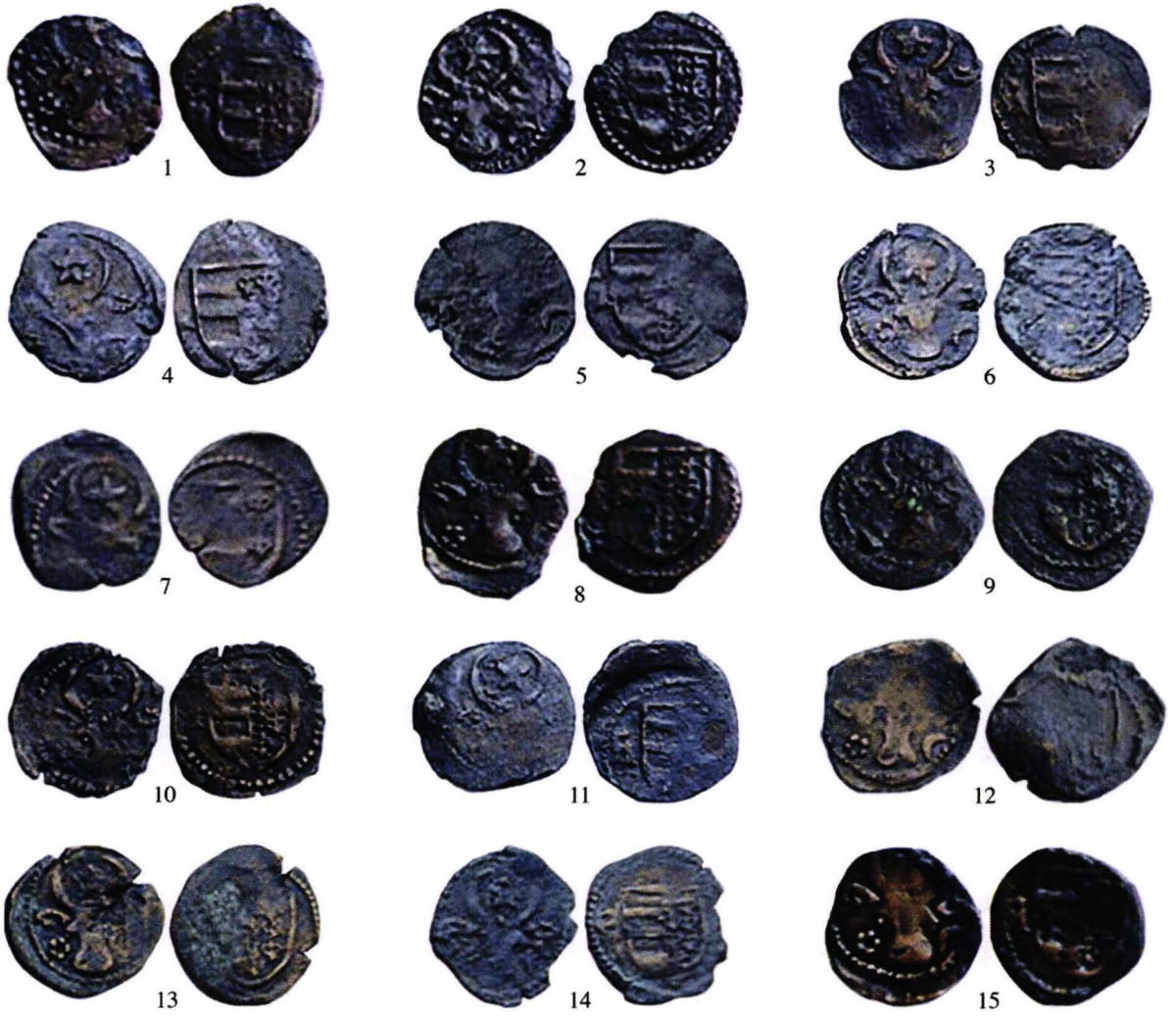


Plate XI. Moldovan *pul* of Alexander I from the coin hoard of BLACK SEA coast.





Plate XII. Moldovan *pul* of Alexander I from the coin hoard of BLACK SEA coast.

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