

ARTICLES

The Exporting of Copper from eastern Slovakia to western Europe in the first third of the 14th century

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Exporting of copper from eastern Slovakia through Poland and the Hanseatic ports on the Baltic coast to Flanders is documented from the 1320s and 1330s at a time when convoys of galleys operated between Venice and Flanders. As a result of its transit through Poland, it was called “Polish copper” (*Rame de Pollana*). It represented one of the important types of copper on the market at Bruges, from where it was transported in the form of rectangular plates to Venice. According to documents preserved in Venice from the papers of the copper merchant N. Paolini, he sold 108 hundredweight (centnars) (= c. 5.15 tonnes) of *Rame de Pollana* in 1324. In the Venetian foundries, it is mentioned in 1334 as one of the five basic types imported to the city. These records show that this trade was profitable in spite of the long voyage around Europe.

Key words: Eastern Slovak copper. Spiš copper. Middle Ages. Trade. Venice. Flanders. Hanse towns.

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In the Middle Ages copper was obtained in the territory of Slovakia from two main areas: central Slovak around Banská Bystrica and eastern Slovak or Spiš-Gemer. The problem of its export in the Middle Ages has been the subject of various works directed mainly towards the Banská Bystrica copper. At the end of the 15th and beginning of the 16th century its export with the mediation of the Turzo – Fugger company had a scale that can be described as global or pan-European, and this attracts attention to it. It remained in the historical consciousness not least thanks to its role in politics. The Fuggers with their finances derived

from the sale of Slovak copper as well as other sources, significantly contributed to the rise to power of the Habsburgs.

More than a century before the origin of this company, exports of Banská Bystrica copper to the Mediterranean with the mediation of the Florentine Medici, who were just as famous in finance and banking as the Fuggers. These exports headed mainly to Venice,¹ from where they could go further to Eastern markets. Some went directly from the Kingdom of Hungary through Dalmatian ports to Syria or Egypt.² In connection with the interest of the Venetians in copper, an ex-

- 1 In Venice, Banská Bystrica copper was called *Rame de Xolio* or *Solio* with the *x* read as a sharp “z”. Thus, the Venetians were well informed about the geographical origin of the copper. Banská Bystrica was named “New Zvolen”, Lat: *Novum Solium*, Ger.: *Neusohl*.
- 2 This study is an extended and improved version of my study published in the *Historický časopis*: ŠTEFÁNIK, Martin. „Rame di Pollana“. Spišsko-gemerská meď vo Flámsku a v Benátkach v prvej tretine 14. storočia. In *Historický časopis*, 2017, vol. 65, no. 2, p. 193-216. The problem of the export of Banská Bystrica copper has been considered by older Hungarian authors such as Oszkár Paulínyi, as well as by the Slovak authors Jozef Vlachovič and Peter Ratkoš, among more recent authors by Wolfgang von Stromer and in the context of the wider contacts between Germany and late medieval Venice, by the French historian Philippe Braunstein, in Hungary by Zsuzsa Teke and in Slovakia by Marián Skladaný and Martin Štefánik. PAULÍNYI, Oszkár. A középkori magyar réztermelés gazdasági jelentősége. (The economic importance of copper from Hungary in the Middle Ages). In *Károlyi Árpád – Emlékkönyv*. Budapest: Sárkány 1933, p. 402-439; PAULÍNYI, Oszkár. *Produkcija drahých kovov a všeobecný vývoj hospodárstva v Uhorsku v období raného a rozvíteného feudalizmu (1000–1526)*. (*Production of precious metals and general economic development in Hungary in the period of early and developed feudalism (1000–1526)*). Sekcia pre hospodárske a sociálne dejiny pri Slovenskej historickej spoločnosti, Študijné materiály vol.12, Bratislava 1973, p. 2-83; VLACHOVIČ, Jozef. *Slovenská meď v 16. a 17. storočí*. (*Slovak copper in the 16th and 17th centuries*). Bratislava: HÚ SAV, 1964; RATKOŠ, Peter. Predpoklady vzniku thurzovsko-fuggerovskej spoločnosti r. 1495 (Začiatky rafinovania a scedzovania banskobystrickej bohatkej medi). (The pre-conditions for the origin of the Thurzo-Fugger company in 1495 (Beginnings of the refining and Saiger process of Banská Bystrica rich copper)). In *Československý časopis historický XIV*, part 5, 1966, p. 758-765. ISSN 0045-6187; RATKOŠ, Peter. Das Kupferwesen in der Slowakei vor der Entstehung der Thurzo-Fuggerischen Handelsgesellschaft. In BOG, Ingomar (ed.). *Der Außenhandel Ostmitteleuropas 1450–1650*. Köln; Wien: Böhlau, 1971, p. 586. ISBN 3412410713; STROMER, Wolfgang von. Medici-Unternehmen in den Karpatenländern. Versuche zur Beherrschung des Weltmarkts für Buntmetalle. In *Aspetti della vita economica medievale. Atti del Convegno di Studi nel X anniversario della morte di Federico Melis*. Firenze: Università degli studi – Istituto di Storia economica, 1985, p. 370-397; BRAUNSTEIN, Philippe. *Les Allemands à Venise (1380–1520)*. Rome: École française de Rome, 2016 (Bibliothèque des Écoles françaises d’Athènes et de Rome; 372), p. 529-544. ISBN 9782728311255; TEKE, Zsuzsa. Operatori economici fiorentini in Ungheria nel tardo Trecento e primo Quattrocento. In *Archivio storico italiano CLIII*, 1995, N. 566 – Disp. IV (ottobre-dicembre), p. 699-707. ISSN 0391-7770; SKLADANÝ, Marián. Das erste frühkapitalistische Unternehmen im slowakischen Bergbau. In *Urbs – provintia – orbis (Contributiones ad historiam contactum carpathicarum in honorem O. R. Halaga edictae)*. Košice: SÚ SAV, 1993, s. 83-90; SKLADANÝ, Marián. Thurzovsko-fuggerovský mediarsky podnik v Banskej Bystrici a jeho európsky význam. (The Thurzo-Fugger copper company in

tensive discussion arose on whether they could have been motivated by the silver content of the Banská Bystrica “black” copper, whether the technique of separating silver by so-called Saiger process of copper (Ger.: Saigern, Saigerung) was already known in 14th century Venice, although its development has generally been dated only to the 15th century.³ Analysis of the Venetian documents and the more extensive economic and commercial context suggests that the Venetians did not know this technology in the 14th century, but they were interested in copper as such and not only from Slovakia, but also from other sources to which they had access as a world trade centre. It was an important raw material for both domestic consumption and international trade. Copper from various European markets was imported to Venice, where they refined and processed it in local foundries, marked with the symbol (seal, bull) of St. Mark, and exported to the whole world. It was called “signed” copper (rame di bolla) and was exported from Venice in the 14th century to Alexandria in Egypt, Damascus in Syria, Constantinople, Cyprus, Mallorca, Flanders and North Africa.⁴ Such exports of

Banská Bystrica and its European importance). In *Pätsté výročie vzniku thurzovsko-fuggerovského mediarskeho podniku v Banskej Bystrici*. Banská Bystrica: UMB, 1995, p. 8-37. ISBN 8085162857; ŠTEFÁNIK, Martin. Pramene o banskobystrickej medi v Benátkach z druhej polovice 14. storočia. (Sources on Banská Bystrica copper in Venice from the second half of the 14th century). In DANIŠ, Miroslav (ed.). *Štúdie z dejín baníctva a banského podnikania: zborník k životnému jubileu Mariána Skladaného*. Bratislava: Katedra všeobecných dejín FFUK, 2001, p. 48-63. ISBN 80889243.

- 3 On the problem of the Saiger process technique for Banská Bystrica copper see: STROMER, Wolfgang von. Die Saigerhütte. Deutsch-ungarischer Technologie-Transfer im Spätmittelalter bei der Entwicklung der Kupfer-Silber-Scheidkünste zur „*ars conflatoria separantia argentum a cupro cum plumbo vulgo saigerhütten nuncupatur*“. In FISCHER, H – SZABADVÁRY, F.(eds.). *Technologietransfer und Wissensaustausch zwischen Ungarn und Deutschland. Aspekte der historischen Beziehungen in Naturwissenschaft und Technik*. München: R. Oldenbourg Verlag 1995, p. 27-57. ISBN 348656174; SKLADANÝ, Marián. Die Entsilberung des Neusohler Schwarzkupfers als historiografisches Problem. In BARTELS, Christoph – DENZEL, Markus A. (eds.). *Konjunktoren im europäischen Bergbau in vorindustrieller Zeit. Festschrift für Ekkehard Westermann zum 60. Geburtstag Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte*, Beiheft 155, 2000, p. 173-187. ISBN 9783515076845. Lothar Suhling studied the technological aspect of the origin and development of the Saiger process in the history of metalurgy: SUHLING, Lothar. *Der Saigerhüttenproceß. Die Technologie des Kupferseigerns nach dem frühen metallurgischen Schrifttum*. Stuttgart 1976. ISBN 3446170979. ISBN 9783446170971.
- 4 ORLANDINI, V. – CESSI, Roberto. (eds). *Tarifa zoè noticia dy pexi e mexure di luogi e tere che s'adovra marcadantia per el mondo*. Venezia 1925, p. 28, 43, 52, 61, 64, 68. For the wider context see: ŠTEFÁNIK, Martin. Kupfer aus dem ungarischen Königreich im Spiegel der venezianischen Senatsprotokolle im 14. Jahrhundert. In TASSER, Rudolf – WESTERMANN, Ekkerhard (eds.). *Der Tiroler Bergbau und die Depression der europäischen Montanwirtschaft im 14. und 15. Jahrhundert : akten der internationalen bergbaugeschichtlichen Tagung Steinhaus.. – Innsbruck*. Wien; München; Bozen: Südtiroler Landesarchiv, 2004, p.

Slovak copper happened even earlier than the first documented export of copper from Banská Bystrica.

The eastern Slovak copper from the Spiš-Gemer region, which forms the subject of this article, is less noted than central Slovak copper in historiography, but it is the first type of copper known to have been exported from the territory now belonging to Slovakia. It represented an important article in trade between the Spiš towns and the Baltic region already from the end of the 13th century.⁵ Spiš or Spiš-Gemer copper was exported by mercatores de Hungaria through Sary Sącz to Krakow. Here, they had to offer it to Krakow merchants on the basis of the right to store copper granted to the burghers of Krakow in 1306 by the Duke of Krakow Vladislav Lokietok, who became king in 1320. Such a right of storage, which meant the exclusive right to trade in a certain product, concerned only imported copper, which is a relatively unusual case. Foreigners were allowed to trade between themselves in other goods. The extraordinary importance that Krakow city council attributed to copper in international trade is shown by the situation after the death of Vaclav III, the last Přemyslid in August 1306 during an expedition to Poland. Krakow opened its gates to Vladislav and immediately asked for this privilege as its reward. This was granted two weeks later on 12 September. Merchants from Hungary and elsewhere, including Poles from Sącz could not transport copper further north, only people from Krakow. Thus, control of the copper trade between Hungary and the Baltic Sea was an extremely important question and it is clear that this trade which promised high profits must have been flourishing for decades. This is also indicated by the fact that Vladislav solved copper in first place in the charter of privileges, and only then, and to a smaller extent, concerned himself with other questions such as removing customs duties from imports of fish, buying and selling of salt or the question

210-226. ISBN 3706518872; ŠTEFÁNIK, Martin. Italian involvement in metal mining in the central Slovakian region, from the thirteenth century to the reign of king Sigismund of Hungary. In *I Tatti Studies. The Harvard University Center for Italian Renaissance Studies: Essays in the Renaissance*, 2011–2012, vol. 14-15, p. 31. ISSN 0393-5949.

- 5 HALAGA, Ondrej R. Le grand commerce Occident–Orient et l'Europe centrale. In *Studi in memoria di Federigo Melis*, vol. II, Napoli: Giannini 1978, p. 21. ISBN 9788874311323; HALAGA, Ondrej R. *Košice – Balt. Výroba a obchod v styku východoslovenských miest s Pruskom. Obchodné styky Slovenska so zahraničím v stredoveku, diel 1. (Košice to the Baltic. Production and trade in the contact of the eastern Slovak towns with Prussia. Slovakia's foreign commercial contacts in the Middle Ages, part 1.)*. Košice: Východoslovenské vydavateľstvo 1975, p. 70. Important deposits were discovered, copper extracted and privileges granted to eastern Slovak towns already in the time of the Arpád dynasty, see: SZENDE, Katalin. Continuity and change in the urban network of Hungary in the early Angevin period. In *Banatica 26 - II Istorie*. Cluj-Napoca: Editura MEGA, 2016, p. 70. ISSN 1222-0612; WEISZ, Boglárka. Mining Town Privileges in Angevin Hungary. In *Hungarian Historical Review*, 2013, year 2, no. 2, p. 291. ISSN 2063-9961.

of building city walls between the royal castle and the city.⁶ Four years later in 1310, in the framework of a decision about a dispute between the burghers of Krakow and the Clarist convent at Stary Sącz, Vladislav freed copper imported by burghers of Krakow from payment of tolls, but this did not apply, for example, to lead or textiles, which were exported to Hungary.⁷ Later, in 1335 King Kazimír established a separate right of storage of copper in the town of Kazimierz on the Vistula immediately next to Krakow and now part of it.⁸ In a later period (1394), when Košice and Krakow concluded a trade agreement, people from Košice were allowed to export goods through Krakow further into Poland in spite of the right of storage, but they could not use the Vistula route to the coast of Prussia.⁹ Thus, the export route for exports of copper through Poland, along

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- 6 Krakow's right to store copper, supplement no. 1. On the context of its granting see STARZYŃSKI, Marcin. *Das mittelalterliche Krakau: Der Stadtrat im Herrschaftsgefüge der polnische Metropole*. Übersetzt von Christian Prüfer und Kai Witzlack-Makarevich. Köln; Weimar; Wien: Böhlau, 2015, p. 114-115. ISBN 9783412223823.
- 7 PIEKOSIŃSKI Franciszek (ed.). *Kodeks dyplomatyczny miasta Krakowa, vol. I (1257–1506). Codex diplomaticus civitatis cracoviensis in: Monumenta medii aevi historica res gestas Poloniae illustrantia*, tom. V., Cracoviae: Sumptibus Academiae literarum Cracoviensis, typis emeraldum „Czas“ 1879, p. 11, Nr. VII: 15. XII.1310. Seventy years later Louis the Great decreed that merchants from Sącz had to transport copper by the route through Krakow rather than avoiding it by using the rivers Dunajec and Vistula: „...ex Sandeczensi predictae nostrae Ciuitatis hominum, Incolarum, Ciuium et mercatorum nauigio seu transitu, quem fecerunt hucusque in aquis videlicet donauetz et Wisla, ...vt omnes et singuli dicte nostrae Ciuitatis Sandeczensis Ciues et Incole et Incolatores dimissis eorum transiitibus seu nauigijs in dictis aquis factis quomodocumque cum ferro, Cupro et alijs quibuscumque mercibus eorum in terra, et nullas alias, quam per Craccouiam nostram Ciuitatem et per alia consueta loca viarum et theloniorum nostrorum regalium in antea iugitur transseant et redeant...“ Ibid., p. 71-72, Nr. LVII: 11. XI. 1380.
- 8 „...depositum salis, plumbi vel cupri in ciuitate Casimieriensi, quod ciues ibidem inter metalla duxerint eligendum, gratantissime faciemus“ PIEKOSIŃSKI, *Kodeks I*, ref. 7, p. 21, Nr. XIX: 27 February 1335.
- 9 On the context see HALAGA, Ondrej R. *Kaufleute und Handelsgüter der Hanse im Karpatengebiet*. In *Hansische Geschichtsblätter* 85, Köln; Graz: Böhlau, 1967, p. 66. ISSN 0073-0327. In the Polish version, which I used when writing the original Slovak version of this study (ref. 1), and which is also cited by Halaga, the date 1324 is given. PIEKOSIŃSKI, *Kodeks I*, ref. 2, p. 17, Nr. XV: 25 February 1324. However, this date is not correct. Pietrosiński's edition gives the date 1324 both in the heading and in the text, but he cites only a copy of the Krakow copy of the agreement, which is clearly mistaken. The correct date is 1394, as is proved by a mention of a person living in the 1390s (Mayor Iacob von Kylian), and by the original Košice copy of the agreement, preserved in the Košice archives, see MNL DF (= Magyar Nemzeti Levéltár, Diplomatikai Fényképgyűjtemény – Hungarian National Archives, Photographic Collection) 269218: 4. 3. 1394, edition CDH X/2 (= FEJÉR, Georgius (ed.). *Codex diplomaticus Hungariae ecclesiasticus ac civilis X/2*. Budae: Typis typogr. regiae Universitatis ungaricae, 1834, p. 259 Nr. CXLVII. The Hungarian researcher Boglárka Weisz has pointed to irregularities in the Polish edition in her recent works. WEISZ, Boglárka. *Vásárok és le-rakatok a középkori Magyar Királyságban (Markets and suppliers in the medieval Kingdom*

the Vistula to the coast by merchants from Krakow or Kazimierz was intensively used in the 14th century and clearly had royal support.

The Hanse towns were a further stopping place in the export of eastern Slovak copper. The Hanse was originally a defensive trading alliance of north German merchants with a network represented in various towns. It gradually grew into an organization of up to 200 towns on the coasts of the North and Baltic seas with representatives in all important ports. It extended from western Russia to the English Channel. The Hanse's period of greatest flowering began at the end of the 13th century. It was a true great power, although it did not have its own territory, currency or government. It was represented in important cities such as Novgorod, Stockholm, Gdansk, Torun, Szczecin (Germ. Stettin), Hamburg and Lübeck with London and Bruges in the west. The most important transit point for Spiš copper on the Polish route was the city of Torun, which it reached by the advantageous water route of the river Vistula. The route along the Oder through Wrocław (Germ. Breslau) to Szczecin was an alternative.¹⁰

Evidence of the presence of eastern Slovak copper in the Hanse towns in this period comes directly from the "heart" of the whole Hanse, namely Lübeck in north Germany. An important Lübeck merchant and member of the city council Bernard of Kusefeld had his agents transport 70 hundred weight of copper worth 30 silver marks from the Hanse town of Elblag on the Gulf of Gdansk to Flanders by ship.¹¹

It is possible to say that the Hanse took most of the copper from the Carpathian region, partly for its own use and partly to export further. Copper had a wide range of uses: in construction as a roof covering, in food production for kettles, vessels and utensils for both commercial and domestic use, as a raw material for making bells, and not least in coin production for alloying with gold and silver or in some cases for striking copper coins.¹² In Flanders, the westernmost Hanse territory, the copper from eastern Slovakia was already seen as "Polish" because of its transit route.¹³ It was exported to the city of Bruges,

of Hungary). Budapest: MTA BTK Történettudományi Intézet 2012, p. 107 note 766. ISBN 9789639627451; WEISZ, Boglárka. Právne pozadie obchodného života Košíc. (The legal background to the commercial life of Košice). In HAJDUOVÁ, Mária – BARTOŠ, Martin (eds.). *Košice v súradniciach európskych dejín*. Košice: Mesto Košice, Archív mesta Košice 2014, p. 116, note 52. ISBN 9788097186944.

10 IRSIGLER, Franz. Hansischer Kupferhandel im 15. und in der ersten Hälfte des 16. Jahrhunderts. In *Hansische Geschichtsblätter* 97, Köln; Wien: Böhlau 1979, p. 20. ISSN 0073-0327.

11 See Supplement no. 2. In Lübeck a hundred weight was 112 pounds = 54.2 kg.

12 IRSIGLER, ref. 10, p. 15-16, 18.

13 „*Dou royaume de Hongrie vient cire, or et argent en plate... Dou royaume de Polane vient or et argent en plate, cire, vairs et gris et coivre.*“ This list of countries and goods imported to Bruges comes from the last third of the 13th century. HÖHLBAUM, Konstantin (ed.). *Hansi-*

the Flemish centre of trade with the most influential among all the foreign representatives – the Hanse kontor, already established at the time of the grant of privileges by Countess Margaret of Flanders in 1252/1253, and representing the interests of north German merchants in Bruges. The “Latin” and “Germanic” worlds met in this city with about 40,000 inhabitants in the 14th century. Goods from the East and West, North and South of Europe were exchanged here. It was one of the richest regions, comparable to contemporary Florence or Venice. Bruges owed its flowering to the Zwin channel, which originated after a flood in 1134 and joined it to the transit point of Damm, which linked it with the sea, from the 14th century as a result of its gradual filling up, the town of Sluis (Latin *Clusa*, *Clusia*) another 10 km away on the present Belgian – Netherlands frontier, fulfilled the role of port of Bruges. The larger ocean-going ships could dock there. In a way, Bruges with its system of canals resembled Venice. A contemporary, the Venetian traveller and merchant Marin Sanudo the elder (who should not be confused with the historian Marin Sanudo the younger, who lived two centuries later and came from a different branch of this prominent family), has left us a brief account of the naval strength of the Hanse especially in connection with Bruges. The elder Sanudo wrote a Latin work addressed to the Pope and referring in part to the German lands he had visited in 1321. He sailed on Venetian commercial galleys to the port of Sluis, where he considered the fleet of German ships comparable to the Venetian navy. Hundreds of merchants from all corners of the world gathered in Bruges, a city with extensive autonomy or almost complete independence from the Count of Flanders. The city already had streets for people from Lübeck, Hamburg, England, Spain, Florence, Gascony, Venice, Scotland and Denmark in the 13th century. However, in contrast to other Hanse kontor, foreign merchants in Bruges were not limited to a designated building for their residence in the city or subjected to strict supervision, as happened, for example, at the German store (*Fondaco dei Tedeschi*) in Venice. Until they acquired their own *Osterlingen-Haus* in 1478, the Hanse merchants, called *Osterlinge* from their “eastern” origin were accommodated with their trading partners or in inns (herberges) scattered across the city and provided by the burghers of Bruges, their hosts. They stored their goods in the same places. In contrast to the gradually declining markets in Champagne, the markets of Bruges were not time limited. The local merchants did not actively concentrate on foreign trade except to England and the west coast of France, but more on a mediating or brokering role between the foreign merchants. However, the inn-

sches Urkundenbuch Bd. III, Halle: Verlag der Buchhandlung des Waisenhauses 1882–1886, p. 419 Nr. 624 note 1. Copper was not mined in Poland. With regard to the above mentioned context of the Krakow right of storage, it is clear that Spiš or Gelnica copper was involved here.

keepers who accommodated the foreigners played an extraordinarily important role in trade. For the accommodated foreigner, the typical innkeeper was also a broker, who sought customers for his guest's goods. He also represented the guest before the city authorities, guaranteed his debts, and interpreted between languages when necessary. In the guest's absence, he looked after stored goods and collected payments for them. The guild of brokers founded in 1293 was the most influential guild in the city, and the mediation of its members was generally obligatory when deals were concluded between foreigners. From 1309, some goods including copper had to be brought directly to Bruges. An important privilege was that German merchants were allowed to trade with each other without using brokers. The importance of Bruges as a centre of mediated trade is also shown by the fact that one of the most important patrician brokering – innkeeping families in the city van der Beurse, apparently named from the Latin word *borsa* (pouch, purse) gave its name to the modern bourse institution. They owned various houses where Hanse merchants were accommodated from the 13th century, perhaps including those trading in eastern Slovak copper. Members of the family were in contact with Italian bankers already from the 13th century. One of their properties, the *Haus zur Börse* was bought in 1397 by the Venetians, who moved their consulate into it. They had already had a consulate in Bruges from 1319 as mentioned below. Representatives of Genoa and Florence, merchants from Lucca in Tuscany and from Spain gradually settled close to this house. The square on which these representative offices were located became known in the 15th century by the original name of the house, namely as the *Platz der Börse*, as mentioned by the Nuremberg physician Hieronymus Münzer in his travel account from the end of the 15th century. The name was transferred to the bourse institution in Antwerp, to where many foreign merchants moved. The gradual adoption of the name “bourse” for the conclusion of commercial transactions by the French and English from the name of the family, in Italian *della Borsa*, was described by the Florentine immigrant Lodovico Guiciardini after 25 years of life in Flanders.¹⁴

14 SEGGERN, Harm von. Fremde Kaufleute in Brügge. Zur Entstehung der Börse im 14./15. Jahrhundert. In FELTEN, Franz J. (ed.). *Mittelalterliche Kaufhäuser im europäischen Vergleich*. Mainzer Vorträge 18, Stuttgart: Franz Steiner Verlag 2015, p. 105-107, 111, 114-115, 117, 119-121. ISBN 9783515109833; MURRAY, James. That Well-Grounded Error: Bruges as *Hansestadt*. In WUBS-MROZEWICZ, Justyna – JENKS, Stuart (eds.). *The Hanse in Medieval and Early Modern Europe*. Leiden; Boston: Brill 2013, p. 183, 186-187, 189. ISBN 9789004212527; van HOUTTE, J. A. The Rise and Decline of the Market of Bruges. In *The economic History Review*, second series vol. XIX, Utrecht: Economic History Society, N.V.A. Oosthoek's Uitgevers Mij 1966, p. 33, 35-36, 39. ISSN 1468-0289; HÄPKE, Rudolf. *Brüggens Entwicklung zum mittelalterlichen Weltmarkt*. Abhandlungen zur Verkehrs- und Seegeschichte im Auftrag des Hansischen Geschichtsvereins. Hrsg. V. Dietrich Schäfer. Bd.

Precisely because of the connection with the Italians and especially the Venetians already in the 14th century, it is very possible that precisely here, in the environment of generations of the commercial brokering van der Beurse family, copper was actively traded, and that with the brokers' mediation, it passed from the hands of Hanse merchants into the possession of Italian, especially Venetian merchants.

Commercial manuals for travelling merchants, surviving especially from the Tuscan and Venetian environments, show the importance of copper on the market in Bruges from the Italian point of view. We know a lot about these manuals because more than twenty of them have survived from late medieval Italy.¹⁵ They originated to assist travelling merchants doing deals in international markets. They contained information needed for navigation and orientation, a large amount of practical advice aimed especially at dealing with a multitude of local weights and measures, different coins and how to calculate correctly. It is assumed that, for example, the Venetian traveller Marco Polo had such a manual with him when he wrote about his experiences of travels in China while in a Genoese prison. They are very trustworthy sources of information, because their primary aim was to provide the business community with the most accurate and practical information. In the second decade of the 14th century, an unknown Venetian author compiled the manual *Zibaldone da Canal*, in which he already mentions silver imported from Hungary.¹⁶

I. Berlin: Karl Curtius, 1908, p. 105-108, 157-159, 207-209, 222; DAENELL, Ernst. *Die Blütezeit der deutschen Hanse* Bd. I, Berlin: Georg Reimer, 1905, p. 8, 12-15. On permission for German merchants to import copper see *ibid.*, p. 16. On the origin of the Hanse kontor in Bruges see *ibid.* Bd. II p. 54-55, 71. On the contacts of the van der Beurse family with Italians see *ibid.*, p. 151. Sanudo's description from the 1320s: „*Iam ego praesens capitulum consumaveram, & ecce per mare de Venetiis ad portum Clusae in Flandriam, cum galeis armatis veniens, ibi à fide dignis accepi, & pro parte oculis meis vidi, quod maritima Alamanie, in qua dictus portus existit, valdè nostrae maritimae Venetae est conformis...*“ SANUDO, Marin. *Liber secretorum fidelium crucis super Terrae sanctae recuperatione et conservatione*. Hanoviae: Typis Wecheliani apud heredes Ioannis Aubri, 1611 (Reprint Toronto: Prelum academicum universitatis Torontonensis, 1972, p. 72 (years 40-43).

15 SPUFFORD, Peter. Late Medieval Merchant Notebooks. In DENZEL, Markus A. (ed.). *Kaufmannsbücher und Handelspraktiken vom Spätmittelalter bis zum beginnenden 20. Jahrhundert*. Merchant's Books and Mercantile *Pratiche* from the Late Middle Ages to the Beginning of the 20th Century. In *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte*, Beiheft 163. Stuttgart: Franz Steiner Verlag, 2002, p. 49-50. ISBN 9783515081870.

16 STUSSI, Alfredo. *Zibaldone da Canal*. *Manoscritto mercantile del secolo XIV*. Fonti per la storia di Venezia, sezione V, Fondi vari. Venezia: Comitato per la pubblicazione delle fonti relative alla storia di Venezia 1967, p. LIV-LV, 7; DOTSON, John E. *Merchant Culture in Fourteenth Century Venice. The Zibaldone Da Canal*. Binghamton (NY): Center for Medieval and Early Renaissance Studies, State University of New York and Binghamton, 1994, p. 32. ISBN 0866981128.

However, the most extensive and important manual of this kind was the so-called *Libro di divisamenti di paesi e di misure di mercatantie* or *La Pratica della mercatura* compiled about 1340 by the Florentine Francesco Balducci Pegolotti on the basis of his journeys in the service of one of the most prominent merchant banking families of the time, the Bardis of Florence, from Flanders to Cyprus and the Black Sea in the 1320s and 1330s.¹⁷ The title can be freely translated as *Book describing the differences between countries and the measures they use – A manual for trade*. In it, Pegolotti describes among other things the situation in the markets of Bruges in the early decades of the 14th century. Merchants came to Bruges from northern France and Germany, as well as from the Baltic and England, which sought spices and silk. Genoese ships came from the south, and each year also a state organized convoy of Venetian galleys, which the Venetians called “*muda*”.¹⁸

Pegolotti gives a detailed description of the copper offered for sale: According to him, they sold various types at Bruges. He also specifies their quality and practical uses. There was a wide range of types, from the lowest quality “hard copper” (*rame duro*) intended for production of bells and mortars, to the highest quality “Venetian copper”. The specification of types of copper includes descriptions of their appearance: Hard copper had the form of flat “loaf” shaped ingots with roughly cut surfaces, while Venetian copper had the form of small loaves resembling actual loaves of bread in shape and reddish in colour. Venetian copper (*rame della bolla di San Marco di Vinegia*) also had the form of plates with dimensions of one ell by half an ell (cca 68 x 34 cm) and a thickness of 0.25 cm. They weighed about 5 kg. The types coming from Central Europe fell somewhere in the middle of the quality range. The first of them was the eastern Slovak copper, which was called “Polish” copper – *Rame di Pollana*.¹⁹ Accord-

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- 17 DOTSON, John. Fourteenth Century Merchant Manuals and Merchant Culture. In DENZEL, Markus A. (ed.). *Kaufmannsbücher und Handelspraktiken vom Spätmittelalter bis zum beginnenden 20. Jahrhundert*. Merchant's Books and Mercantile *Pratiche* from the Late Middle Ages to the Beginning of the 20th Century. In *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte*, Beiheft 163. Stuttgart: Franz Steiner Verlag, 2002, p. 77. ISBN 9783515081870; ORLANDINI – CESSI, (eds). *Tarifa*, ref. 4, p. 4; HEYD, Wilhelm. *Geschichte des Levantehandels im Mittelalter*, Bd. I. Stuttgart: Cotta, 1889, p. XIII – XIV.
- 18 LUZZATTO, Gino. *Storia economica di Venezia dall'XI al XVI secolo*. Venezia: Centro internazionale delle Arti e del costume 1961, p. 77; DINI, Bruno. *L'Economia fiorentina e l'Europa centro-orientale nei secoli XIV e XV*. In *Archivio storico italiano* 153, 1995, dispaccio IV, p. 635. ISSN 0391-7770; DINI, Bruno. *I mercanti italiani nel medioevo*. In *Saggi su economia-mondo. Firenze e l'Italia fra Mediterraneo ed Europa* (sec. XIII-XVI). Ospedaletto: Pagine editore, 1995, p. 123.
- 19 *Pollana* was the designation for Poland used by Italians of the period, as well as *Pollonia*. Compare the use of these terms, for example, by the Florentine chronicler Villani in his account of Hungarian – Polish events in 1345. VILLANI Giovanni. *Nuova Cronica*. Edizione

ding to Pegolotti, it was yellowish in colour and was transported in the form of long flat rectangular plates. It was used for the production of cauldrons, buckets and various kitchen utensils. He specifically mentions its use in coins because of its malleability. Its price varied from 44–46 gros Tournois for a Bruges hundredweight (= 45.87 kg). Pegolotti also mentions German copper from Goslar (*Rame di Gossellare*), which had a similar form to the “Polish”, but the plates were a little smaller and redder, which meant it was higher quality and was used for the production of finer implements. It had a price of 52–54 gros. Quality was tested by striking the edge of an ingot or copper plate with a hammer. If copper was pliable and uncracked, this testified to its quality. In conclusion, Pegolotti mentions *del lene*. According to more recent research, it could have come from the upper valley of the river Enns in north-western Styria, location of the mining region of Schladming – Öblarn.²⁰

The copper market in Bruges was very interesting for Venetian merchants, who brought oriental goods, especially spices, on which they could make good profits, because the difference in price between Venice and Flanders was about 100–200%. Such a profit was substantially greater than that from trading voyages in the Mediterranean to Syria or Egypt, where profits were generally in tens of percent.²¹ On the journey back home from Flanders, they transported not only

critica a cura di Giuseppe PORTA, vol. III (Libri XII-XIII). Parma: Fondazione Pietro Bembo / Ugo Ganda Editore, 1991, p. 412, Libro tredicesimo Cap. XLVIII. ISBN 8877465174.

- 20 Pegolotti's manual comp. supplement no. 3. The Bruges hundredweight was 100 pounds and one pound was 14 ounces, comp. data from Pegolotti according to whom 1000 Venetian pounds, that is a Venetian milliar (=477 kg) was equal to 1040 Bruges pounds. Thus 1 Bruges pound = $477/1040 = 0.4587$ kg. In Bruges copper was sold in hundredweights (*centinaio*) and the hundredweight was 45.87 kg. Ibid., p. 237-238, 248. For Venetian weights comp. LANE, Frederick C. – MUELLER, Reinhold C. *Coins and moneys of account. Money and Banking in Medieval and Renaissance Venice, vol. I*. Baltimore and London: The John Hopkins University Press, 1985, p. 558-560 (Table C2-C3). ISBN 9780801831577. The literature on textiles gives the weight of the Bruges pound as 0.464 kg, so that the hundredweight would be 46.4 kg. MUNRO, John D. The 'Industrial Crisis' of the English Textile Towns, c. 1290–1330. In PRESWITCH, Michael – BRITNELL, Richard – FRAME, Robin (eds.). *Thirteenth Century England VII. Proceedings of the Durham Conference 1997*. Woodbridge: Boydell Press, 1999, p. 110. ISBN 085115719, ISSN 0269-6967. On the dimensions of copper plates and the provenience of the copper of the *del lene* type comp. ELBL, Martin M. “From Venice to the Tuat: Trans-Saharan Copper Trade and Francesco di Marco Datini of Prato.” In ARMSTRONG Lawrin – ELBL Ivana – ELBL, Martin M. *Markets and Trade in Late Medieval Europe, Essays in Honour of John H.A. Munro*. Leiden; Boston: Brill 2007, p. 421, 448. ISBN 9789004156333. On the processing of copper in the Venetian “Ghetto” in the 13th century comp. ŠTEFÁNIK, Kupfer, ref. 3, p. 210-211.
- 21 LANE, Frederick C. *I mercanti di Venezia*. Torino: Einaudi 1982, p. 190. ISBN 8806142623; SIEVEKING, Heinrich. Aus venetianischen Handlungsbüchern. In *Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft im Deutschen Reich* 26 (1902), p. 193.

the famous Flemish cloth,²² but also metals including eastern Slovak copper, which continued to appear in Venice in the 1320s and 1330s under the name “*Rame di Pollana*”. The fact that it had this designation in Venice is evidence that this raw material had sailed almost all the way around Europe.

Apart from its value as an article of trade, copper had great practical importance on ships. It and other metals were used as ballast (*pro savorna*) to balance ships, making up a quarter of their total weight, as is mentioned in the records of Flemish galleys from 1321–1322.²³ Transport between Flanders and Venice was secured on private cargo ships or in organized convoys of galleys, about which we are relatively well informed by Venetian sources. There were two basic types of ship in the 14th century: “long” galleys with a proportion of width to length of 1:7 driven by oars with sails only as a supplement, and “round” cargo ships with a proportion of 1:3, the most common type being the so-called cog, driven using sails. Galleys were very safe, fast and especially manoeuvrable. When necessary, the oarsmen became warriors and formed their main “armament”. However, for these reasons, they had little space for cargo and so substantially lower carrying capacity. As a result of their crews of 140–180 men with military abilities, they are called *naves armatae* – armed ships in Venetian sources. They mostly belonged to the state because their construction and operation was very expensive and they were used mainly in naval battles. When the state was not using them, they were hired out by means of “public competitions” – auctions held on the square in front of the Doge’s Palace, to private businessmen, who used them to transport their goods or further hired out the space. The use of galleys by private shippers was subject to strict state regulation, the most important element of which was the rule that they had to sail in convoys, which regularly sailed from Venice to Constantinople, Syria, Egypt and the Black Sea. The state, which meant the Venetian Senate, determined the number of ships in a convoy, the time it sailed and who commanded it. Among other things, favourable conditions for merchants at their destinations – cancellation or reduction of customs duties, privileged trading and so on – were mostly agreed and guaranteed on the government level.²⁴ The main reason for the whole system was security because

22 „...aducentes drapparia de Flandria cum galeis...“ CESSI, Roberto – SAMBIN, Paolo (eds). *Le Deliberazioni del Consiglio dei Rogati (Senato) serie «Mixtorum» vol. I, Libri I-XIV*, Venezia: Deputazione di Storia patria per le Venezie, 1960, p. 152 n. 73 (November 1314).

23 „Possint levare [galee Flandrie] usque milliaria LXXX subtilia de ferro, plumbo, rame, stagno, et aliis metallis pro savorna et de aliis mercationibus,...Item possint recipere [galee Flandrie] pro saorna, de ferro, plumbo, stagno, rame et de alio metallo et de aliis mercationibus, scilicet lana, drappis et aliis, usque ad milliaria CC...“ CESSI – SAMBIN, *Deliberazioni I*, ref. 22, p. 228 nr. 89 (28 January 1321), p. 242 nr. 241 (January 1322). Comp. also supplement no. 5.

24 For example, the complete cancellation of duties in Flanders for a certain period was nego-

it eliminated the main danger – pirates, who could not venture to attack a convoy with several more or less military galleys. This system was already developed in the 13th century for voyages in the Mediterranean and it was well tested.²⁵

Most of the ships used by the Venetians were of the round type, which were used for commercial purposes and were cheaper to operate. Although some rules especially technical norms had to be observed, their commanders could freely decide when and to where they would sail on the basis of the interests of the ship's owner, whose name was placed on the ship. However, for long voyages to Flanders only the largest kogs with capacities of more than 240 tonnes could be considered. There may have been several dozen of these in Venice, although round cargo ships numbered several hundred. However, they were exposed to a lot of dangers especially on voyages outside the Mediterranean, with changing political relations and more demanding navigation in the Atlantic, so they usually travelled in convoys. As a sort of compromise between the two opposing demands for manoeuvrability / security against greater load, a new type of galley was constructed in the first third of the 14th century – the so-called heavy or commercial galley (*galera grossa, galera da mercato*), which was larger than earlier galleys and so more suitable for the transport of goods. Its carrying capacity was up to 150 tonnes or more and there was a crew of more than 200 men. These galleys could be owned by private people, who also paid for the crew and equipment, but they were still subject to state regulation. The state “approved” their routes in convoys on the basis of the above mentioned rules, especially the time of sailing, the prescribed route and stops, a single commander. The owners had to deposit a financial guarantee (*navigia Venetorum possunt ire in Flandriam dando plezariam pro exequendo viagio*) that they would really sail and were obliged to sail together. This method of “authorized” voyages of convoys of galleys also applied to the so-called Flemish convoys, which Venice actually practiced from 1315, although various organizational rules were declared by the Senate

tiated in the name of Venice by Giovanni Lion in 1328. PREDELLI, Ricardo (ed.). *I Libri commemoriali della Repubblica di Venezia, tomo II*. Venezia: Deputazione di Storia patria per le Venezie, 1878, p. 22 n. 130 (15 March 1328).

25 LANE, Frederick C. *Storia di Venezia*. Torino: Einaudi, 1994, p. 56-60, 144-148. ISBN 8806127888; LUZZATTO, Storia economica, ref. 18, p. 44; BRAGADIN, Marcantonio. Le navi, loro strutture e attrezzature nell'alto medioevo. In *La navigazione mediterranea nell'alto medioevo, tomo primo*. Settimane di studio del CISAM, Spoleto: Centro italiano di studi sull'alto medioevo, 1978, p. 389-412. ISBN 8879880241; LANE, Frederick C. *Le navi di Venezia fra i secoli XIII e XVI*. Torino: Einaudi, 1983, p. 45-47, 78-79, 149, 157-158, 173, 217. ISBN 8806056662; CRACCO, Giorgio. Venezia nel medioevo. „Un altro mondo“. In GALASSO, Giuseppe (ed.). *Storia d'Italia I*, Torino: UTET 1987, p. 123. ISBN 887750188; HYNEK, Vladimír – KLUČINA, Petr. *Válečné lodě I. Lodě veslové a plachetní do roku 1860. (War ships I. Ships with oars and sails up to 1860)*. Praha: Naše vojsko, 1985, p. 91-94. ISBN 2805385.

already in 1313/1314, so we sometimes find earlier dates in the literature. Before then voyages to Flanders were organized by the private owners of ships.²⁶ The importance of sailing together in convoys is shown by an episode from 1336, which can be mentioned as a historical curiosity: A storm divided two loaded Venetian ships from their convoy. They found shelter on the coast of Sicily, but were attacked and robbed there by the Genoese Carlo Grimaldi, founder of the family that still rules Monaco. After political struggles in Genoa, he was driven out of the city as a Guelf, and seized the castle of Monaco, which remains in the possession of the Grimaldi family as centre of the Principality of Monaco. He made some additional income with such pirate attacks.²⁷

The Flemish convoys are very well documented in the surviving registers and records from the sessions of the Venetian Senate, which directed the foreign and commercial policy of the republic. They were such a huge success from the economic point of view that private customers made ever greater efforts to increase the carrying capacity of galleys intended for this trade route. For example, in 1317–1318 Dardi Bembo had huge galleys built and the government agreed only as an after thought. This fact alone testifies to the great volume and profitability of the transported goods. Dardi Bembo was a key figure in the Flemish trade in the decade following the establishment of the convoys. From 1328 Marin Cappello stood at the head of the consortium that financed the Flemish convoy. It was a huge investment. For example, only the pay for the crews of more than 1000 men meant cash of at least 100,000 grossi.²⁸ The Venetians regularly

26 LANE, *Le navi*, ref. 25, p. 4-6, 25, 50-52, 57, 60, 62, 64, 67, 70. Lane also corrects views in older literature about the sending of Flemish convoys in 1313 or 1314. Ibid. p. 64 (note 34). LUZZATTO, *Storia economica*, ref. 18, p. 47-48. On the guarantee to actually sail to Flanders compare CESSI – SAMBIN, *Deliberazioni I*, ref. 22, p. 164 nr. 206 (april 1316). On the obligation to travel together ...*iste V galee iture in Flandriam teneantur ire ed redire in conserva..* ibid. p. 205 nr. 327 (April 1319). On the number of oarsmen: *Habere debeat galea quelibet vogeros CLXXV de numero illorum CC quos debet habere*. Ibid. p. 327 nr. 45 (December 1326). Comp. also supplement no. 5

27 LANE, *Storia*, ref. 25, p. 152. „...*pro facto istarum galearum Flandrie captarum per galeas quatuor extrinsecorum Ianuensium mittantur in continenti litere domino regi Roberto... una alia persona possit ire Monacum*“. LEDUC, Francois Xavier (ed.). *Venezia – Senato. Deliberazioni miste. Vol. 4. Registre XVII (1335–1339)*, p. 275-276 n. 710-711 (1 November 1336), p. 284 n. 732 (12 January 1337), p. 300 n. 778-779 (3 April 1337). ISBN 9788888143873. On the context comp. PETTI BALBI, Giovanna (ed.). *Georgii et Iohannis Stellae Annales genuenses*. Racolta degli storici italiani dal Cinquecento al Millecinquecento ordinata da L. A. Muratori, Nuova edizione. Eds. Giosuè Carducci, Vittorio Fiorini, tomo XVII parte I. Bologna: Zanichelli 1975, p. 126-127. On Carlo Grimaldi comp. *Dizionario biografico degli italiani* (accessible on the internet): [http://www.treccani.it/enciclopedia/carlo-grimaldi_\(Dizionario-Biografico\)/](http://www.treccani.it/enciclopedia/carlo-grimaldi_(Dizionario-Biografico)/) (27 Nov 2016)

28 LANE, *Le navi*, ref. 25, p. 65, 69-70. CESSI – SAMBIN, *Deliberazioni I*, ref. 22, p. 360 n. 21 (May 1328).

allowed foreigners to sail on the galleys on condition that they brought back from Flanders the equivalent of what they had taken there,²⁹ so it was theoretically possible for Germans to transport eastern Slovak copper all the way to Venice. It was usual for about 8 galleys to participate in the Flemish convoys, with a minimum of two in 1318 and a maximum of 10 in 1334. They most frequently went to Bruges or its additional harbour of Sluis nearer the sea, but exceptionally to Antwerp. If the political situation in Flanders was not appropriate they preferred Brabant.³⁰ In 1319, the Venetian ambassador to the Count of Flanders and specifically to Bruges city council negotiated various privileges of a practical commercial character: establishment of their own consulate with jurisdiction over Venetians, permission for free sale of goods and reduction of brokerage fees for 3 years. In 1322 this was extended for another three years. In 1325 Dardi Bembo was entrusted with negotiations. In the name of the Venetian government he promised annual payments of 200 gold florins in return for the granting of privileges. Two years later Bembo was commander of the Flemish convoy and consul representing the interests of the Venetian merchants.³¹ When the Flemish convoy did not sail in 1333, it had to be replaced using the overland route through Germany with the result that all the merchants tried to declare various German goods, which were subject to higher customs duties (2 solidi = 24 denarii for one pound, meaning 10%) as Flemish goods, which had a lower tariff (6 denarii for one pound). The fraud reached such dimensions that in spring 1333 the Senate had to intervene and unify the customs duties at the higher level. The source on this adjustment of customs duties also mentions copper. As an import from Flanders it remained on the level of 6 denarii to one pound at the expense

29 „*Forenses etiam possint ire et redire cum ipsis.*“ CESSI – SAMBIN, *Deliberazioni I*, ref. 22, p. 152 n. 74 (November 1314), „...*forenses possint ducere et portare...*“ *ibid.* p. 164 n. 206 (April 1316), „*Forenses possint ire et redire cum eis secundum usum, conditione tamen quod quantum extraxerint de Veneciis possint conducere...*“ *ibid.* p. 327 n. 45 (December 1326), p. 374 n. 186 (January 1329).

30 CESSI, Roberto. Le relazioni commerciali tra Venezia e le Fiandre nel secolo XIV. In *Politica ed economia di Venezia nel Trecento*. Saggi. Storia e letteratura, Racolta di Studi e testi 40, Roma: Edizioni di storia e letteratura, 1952, p. 89, 93, 98-99; LANE, *Le navi*, ref. 25, p. 79 tab. I. „...*si tamen illi de Brozes haberent gueram cum rege Francie portum faciant in Angversa*“ CESSI – SAMBIN, *Deliberazioni I*, ref. 22, p. 366 n. 78 (August 1328).

31 PREDELLI, Riccardo (ed.). *I libri commemoriali della Repubblica di Venezia, tomo I*. Venezia: Deputazione di Storia patria per le Venezie 1876, p. 213 n. 202 (1319), p. 241 n. 321 (22 May 1322) n. 322 (8 June 1322). CESSI – SAMBIN, *Deliberazioni I*, ref. 22, p. 313 n 179 (February 1326), p. 343 n. 207 (July 1327). Extension of privileges at Bruges in 1332: CESSI, Roberto – BRUNETTI, Mario (eds). *Le Deliberazioni del Consiglio dei Rogati (Senato) serie «Mixtorum» vol. II, Libri XV-XVI*. Venezia: Deputazione di Storia patria per le Venezie, 1961, p. 13 n. 40 (23 March 1332).

of the merchant.³² In the autumn of the same year a public auction was again organized with the aim of equipping a convoy of eight galleys to sail to Flanders in the following year – 1534. The transport of copper back from Flanders was mentioned.³³ Copper was also mentioned in connection with the return of the galleys from Flanders to Venice in 1335, when the conditions were announced for the next year's convoy and the conditions for the transport of copper were set. There were disagreements between the merchants and the ship owners concerning the transport of copper plates. Until then, payment had been calculated according to the number of plates and not by weight. However, it often happened that a plate broke in the middle and the shipper regarded it as two pieces, which harmed the owner of the copper, who had to pay double for transport of the same amount of copper. From this time, the price of transporting copper had to be worked out only from its weight. According to the context and position of the record, it was clearly concerned with transport on the return from Flanders, and in this case it was very probably a matter of eastern Slovak copper (*Rame di Pollana*) or perhaps Goslar copper, which travelled in the form of plates, as described by Pegolotti.³⁴

Various Venetian documents from the 1320s and 1330s testify to the quantities of eastern Slovak copper processed and sold in Venice. This is not only a matter of unspecified deliveries of copper from Flanders to Venice (1321),³⁵ but also of various specific documents in Venice itself. The first is an inventory of the estate of the Venetian merchant Niccolo Paolini from 1324. Today it is deposited in the collection of the Procuratori di San Marco. It comes from an important office in Venice responsible for the administration of wills. The authorizations (*Commissarie*) are usually called by the name of the testator and often a personal archive of the deceased with his financial agenda is found in addition to the documents of the procurators. Such processes often led to the inventorization and sale of property or remaining assets, and this happened in the case of Niccolo Paolini. It appears that he was a really large scale trader in copper, since he left a large amount of processed and unprocessed copper of various kinds, which the two procurators (Graton Dandolo and Niccolò Falier sold to pay for his bequests.

32 „...*solvantur denarios VI pro libra...sicut de rame et stagno observatur*“. Archivio di Stato di Venezia (hereinafter ASVE), Senato Misti vol. 15 f. 65v (6 March 1333). Regest publ. CESSI – BRUNETTI, *Le Deliberazioni vol. II*, ref. 31, p. 133 n. 469. The usual customs duty on copper transported by ship had been 5% since the beginning of the century: *Rame et stagnum portentur cum navibus solvendo denarios XII pro libra non faciendo portum intra culfum*. CESSI – SAMBIN, *Deliberazioni I*, ref. 22, p. 6 Nr. 32 (March 1300).

33 Comp. supplement no. 5.

34 Comp. supplement no. 6 and supplement no. 3.

35 „*De rame et stagno de Flandria conducetur Venetias, detur ordo etc.*“ CESSI – SAMBIN, *Deliberazioni I*, ref. 22, p. 229 n. 95 (January 1321).

Paolini had in stock various types of copper. Apart from “hard” copper, Venetian copper with the seal of St. Mark, copper of the type “R”,³⁶ there was also copper of the *rame de Polana* type. It is chronologically arranged in a list with the sale and unit price in the left column, and the sums received from buyers gradually placed to the right as they paid the price.³⁷ In the case of *Rame de Polana* there were 4 sales between 28 July 1324 and 11 September 1324³⁸ representing almost 108 hundredweight or 10.8 milliari (= cca 5.15 tonnes)³⁹ of eastern Slovak *Rame de Polana* copper. The record of the sales includes a note that it is copper in plates (*in tabulis*), which confirms Pegolotti’s description. The individual prices are given in grossi or Venetian pounds. The names of the buyers are also given including Niccolò Miani from the parish of St. Cassian in Venice, a copper-smith (*batirame*) Andriolo from the parish of St. Luke in Venice and the money-changer Bonaventura Rizzo. The price of eastern Slovak copper *de Polana* varied in individual transactions from 157.5 to 180 Venetian grossi per hundredweight.⁴⁰ Since it is possible to work out the exchange rate for the relevant year 1324

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- 36 R. = *Romania*, was copper from the territories traditionally considered “Byzantine”, which meant not only the Greek peninsula and islands in the Aegean Sea, but all the territories that had formerly belonged to Byzantium as a continuation of the Roman Empire. LANE, *Storia*, ref. 25, p. 38, 81. BRAUNSTEIN, Philippe. Le marché du cuivre à Venise à la fin du Moyen-âge. In KELLENBENZ, Herman (ed.). *Schwerpunkte der Kupferproduktion und des Kupferhandels in Europa 1500–1650*. Kölner Kolloquium zur internationalen Sozial- und Wirtschaftsgeschichte Bd. 3. Köln; Wien: Böhlau, 1977, p. 85. ISBN 341205576, ISBN 9783412055769.
- 37 The records give two forms with double and single “l” (*Pollana, Polana*). In contrast to standard Italian, Venetian dialect, even today, does not use doubled consonants (so-called *doppie*).
- 38 The individual sales involved 3069 pounds (=30.69 hundredweight), 3979 pounds (= 39.79 cwt.), 9 pounds (=0,09 cwt.) and 3727 pounds (=37.27 cwt.) of copper. The Venetian hundredweight was 47.7 kg. Comp. LANE – MUELLER. *Coins and moneys*, ref. 20, p. 558-560 (Table C2-C3)
- 39 Eastern Slovak copper of the “Rame de Polana” type represented about a fifth of the total quantity of copper that remained in Paolini’s possession. Comp. BRAUNSTEIN, *Les Allemands*, ref. 2, p. 528, note 114.
- 40 Comp. supplement no. 4. Prices of copper per hundredweight in individual sales: 15 solidi grossi, or 21–23 lb *ad parv.* (=157.5 to 180 gr./cwt.). In the sources, sale prices and unit prices are given in money of account: *librae grossorum, librae grossorum mancae, librae ad parvos* and *librae ad grossos* (Italian lira di grossi, lira di grossi manca, lira di piccoli/lira veneta, lira a grossi), which we count according to the exchange rates available in the literature. LANE, Frederic C.: *Le vecchie monete di conto veneziane ed il ritorno all’oro*. In *Atti dell’Istituto Veneto di Scienze, Lettere ed Arti 117*, Venezia 1958–1959, p. 54-55, 57, 59 (note 1). Reprinted in LANE, Frederic C. *Studies in Venetian Social and Economic History* (ed. By Benjamin G. KOHL and Reinhold C. MUELLER), London 1987. ISBN 0860782026, ISBN 9780860782025; LANE, Frederick C. *The first Infidelities of the Venetian Lire*. In MISKIMIN, H. A. – HERLIHY, D. – UDOVICH, A. L. *The Medieval City*. New Haven; London: Yale University Press 1977, p. 47-52. ISBN 0300020813, ISBN 9780300020816.

between the gros tournois and the Venetian grosso through the Florentine gold florin, the equivalent sums for the same weight are 85–97.4 gros tournois.⁴¹ In this way we gain orientation on the profitability of the trade in eastern Slovak copper between Bruges and Venice: Pegolotti spoke of 44–46 gros tournois for 1 Bruges hundredweight (see above), and although his price relations cannot be dated exactly to 1324, they are sufficiently illustrative to enable us to estimate that the price in Venice was about double.

In the case of the last recorded sale of *Rame de Polana* from 11 September 1324, it is stated that the copper is located in the Ghetto (*ad Getum*). The Ghetto, designated as *iactus ramis* in Latin (in Venetian dialect *Geto* or *Gheto*, which means casting (of copper), was the locality in the Cannaregio quarter of Venice, where the state foundries were concentrated.⁴² The place was separated from its surroundings by canals so that it represented a sort of “island” connected with its surroundings by only one bridge (today two). On the etymology of the expression, it is necessary to explain that when the foundry production was transferred to the mainland in the 16th century, the Jews of Venice were ordered to live in the abandoned locality of the Ghetto, because with its isolation, small extent and high density of multi-storey buildings like medieval skyscrapers, it was very suitable for the purpose. The term then passed into other languages and came to mean a territory designated for the segregation of Jews.⁴³ However, in the 14th century the term Ghetto relates to the processing of copper in a given locality. A further important record of eastern Slovak copper delivered to the Ghetto has survived from this period. The extent and importance of processing of copper increased in the 1330s and so did the demand for high quality raw material. The criteria for purchase of copper for the Ghetto changed. Representatives of the Ghetto did not always have to buy the copper imported by merchants if its quality was too poor for local processing (*pro affinatura*), for which relatively large amounts were paid. If a merchant did not want to deliver copper to the Ghetto for

41 In the calculation we start from the following rates: 1 Venetian grosso = 32 den., 1 Florentine florin = 24 Venetian grossi, and 1 florin = 13 ½ gros tournois, comp. SPUFFORD, Peter with the assistance of Wendy Wilkinson and Sarah Tolley. *Handbook of medieval Exchange*. London: Royal historical Society, 1986, p. 85-86, 186. ISBN 086193105, ISBN 9780861931057. The calculation takes into account the difference between the Venetian hundredweight (47,7 kg) and the Bruges hundredweight (45,87 kg). The last sum corresponds to the Bruges hundredweight. Comp. note 20.

42 CESSI, Roberto (ed). *Deliberazioni del Maggior Consiglio di Venezia. Volume terzo*. Bologna: Nicola Zanichelli, 1934, p. 387 (Liber Pilosus, no. 77, 25. September 1295), p. 388 (no. 84, 13. October 1295).

43 TASSINI, Giuseppe. *Curiosità veneziane*. Venezia: Filippi editore 1990 (Ristampa IX^a edizione), p. 285-286; ROMANIN, Samuele. *Storia documentata di Venezia, tomo 2*. III^a edizione. Venezia: Filippi, 1973, p. 271.

processing or it was not accepted there, for example, because of an excessively long wait, a payment for certain types of copper was set, a sort of “licence to sell copper”, which authorized the owner to have it processed elsewhere or to sell it. The licence fee represented about half the payment for processing and varied for individual types of copper. However, it was necessary because Venice controlled and concentrated the copper trade in state hands and processing in the Ghetto. The policy of fees and the associated regulations were directed towards this aim. Eastern Slovak *Rame de Pollana* is mentioned in the designation of five basic types of copper that were delivered to the Ghetto in Venice for which the fee was raised from 22 to 25 Venetian account pounds, that is by 12%.⁴⁴ Together with N. Paolini’s will, it is evidence of the importance of eastern Slovak copper for Venice in this period.

The state convoys from Venice to Flanders and back prospered from 1315 for about 20 successful years, but they were stopped in 1339 because of the Hundred Years War and started again only in 1374. However, trade with Flanders still functioned, the interruption did not concern private ships although such voyages occurred only sporadically because of their length and the risks.⁴⁵ For a long time the sea connection with Flanders was replaced by the land route through Germany, especially through Nuremberg. Importing of copper from Flanders to Venice continued. In 1346, about the time of Pegolotti’s descriptions of the Bruges market, the customs duty on this copper was temporarily reduced from 10–11% to 5%, and it is possible that some of this copper came from Slovakia. The original customs duty was a serious burden on the merchants, as was mentioned in the resolution of the Senate.⁴⁶

In the following decades there are no known mentions of *Rame de Pollana* and central Slovak or Banská Bystrica copper came into the foreground with increasing intensity. Even the Medicis of Florence were interested in it. The first direct mention of the presence of Banská Bystrica copper in Venice dates from 1368.⁴⁷ However, it is thought to have appeared in Venetian markets earlier. In the first stages it may have been presented as eastern Slovak copper because that

44 Comp. Supplement no. 7. For more details on the political concentration of copper in Venice comp. ŠTEFÁNIK, Pramene, ref. 2, p. 48-63; ŠTEFÁNIK, Kupfer, ref. 4, p. 210-226.

45 Attempts to revive the Flemish convoys in 1347 and 1357-58 were not successful. CESSI, Le relazioni, ref. 30, p. 127, 132-138, 153-156, 160, 169-171; LANE, *Storia*, ref. 25, p. 223.

46 Comp. Supplement no. 8 and note 32. The customs duty on imports of copper was again reduced from 10–11% to 5% in 1382. ASVE, ref. 32, Senato, Deliberazioni, Misti, Registro 37, f. 82r. (30 May 1382).

47 ASVE, ref. 32, Senato, Deliberazioni, Misti, Registro 33, f. 42r (18 December 1368). Publ. SIMONSFELD, Henry (ed.). *Der Fondaco dei Tedeschi in Venedig und die deutsch-venetianischen Handelsbeziehungen Bd. I (Urkunden von 1225–1653)*. Stuttgart: Verlag der Cotta’schen Buchhandlung, 1887, p. 96-97 (Nr. 216).

was already established in the markets.⁴⁸ Half a century later in 1385, agreements concluded by the Medicis with the Venetian government already consider deliveries of Banská Bystrica copper, mention deliveries to Flanders, which they excluded from limitations concerning direct deliveries from Banská Bystrica to Venice and allowed exports from Hungary to Flanders by the overland route.⁴⁹ Thus, there was a logical connection of the described exports and the usual direction of commercial contacts.

In every case, it is possible to state that in the first decades of the 14th century eastern Slovak copper represented an important export article from Slovakia and under the name “Polish copper” it was found not only in the Baltic – Hanse region including Bruges,⁵⁰ but also reached Venice and the Mediterranean under this designation. This was a sufficiently profitable direction of transport in spite of the substantial distance and difficulty of the complex journey around Europe. It is necessary to underline that mentions under the name *rame di Pollana* come only from the period of functioning of the convoys of ships to Flanders, and vanish after their interruption. This is a logical consequence of a change of transport route, since it meant that the copper had to be transported overland through Germany. The transit through northern Poland, which led to use of the expression *de Pollana*, lost its justification. Copper began to be transported through Wrocław to Nuremberg. Wrocław can be regarded as the base for Nuremberg’s eastern trade. This persisted into the following century.⁵¹ They stopped designa-

48 HALAGA, *Košice – Balt*, ref. 5, p. 186, 206.

49 A proposed agreement in the records of the Venetian Senate: ASVE, ref. 32, Senato, Deliberazioni, Misti, Registro 39, f. 57v (original pagination), 61v (modern pagination), 24 March 1385. The agreement was recorded in the series of so-called Memory Books of the Venetian Republic (*Libri Commemoriali*): „...*participes montanearum*...[a Raminie Hungarie]... *non navigabunt nec navigari facient vendent nec vendi facient pro se vel aliis alicui persone aliquid de raminibus dictarum montanearum tam affinitis quam non affinitis salvo quod pro portando in Flandriam per terram*“. ASVE, ref. 32, Libri commemoriali vol. VIII c. 99r-101r (98r-100r), Nr. 199-200: 3 April 1385.

50 HALAGA, *Košice – Balt*, ref. 5, s. 186, 206.

51 IRSIGLER, *Hansischer Kupferhandel*, ref. 10, p. 22. On the complexity of the transportation of metals in the trade connections of Central Europe with Southern and Western Europe.. ZAORAL, Roman. *České země a Benátky: k obchodním stykům v 13. století*. (The Czech Lands and Venice, commercial ties in the 13th century). In SOMMER, Peter – LIŠČÁK, Vladimír (eds.). *Odorik z Pordenone: z Benátek do Pekinga a zpět. Setkávání na cestách Starého světa ve 13.–14. století*. Colloquia mediaevalia Pragensia 10. Praha: Centrum mediévistických studií 2008, p. 76. ISBN 9788070072745; ZAORAL, Roman. Coin reforms in the Czech lands in the context of the 13th century trade revolution. In PASZKIEWICZ, Borys. (ed.). *Upieniężnienie – kiedy moneta staje się pieniądzem*. Nowa Sól: Muzeum Miejskie w Nowej Soli, 2011, p. 91. ISBN 9788360681138; ZAORAL, Roman. Silver and Glass in Trade Contacts between Bohemia and Venice. In *Forschungen in Lauriacum*. Band 15. Eds. Michael Alram, Hubert Emmerig, Reinhardt Harreither. Enns; Linz, 2014, p. 149, 151. ISBN 9783902299093.

ting it “Polish” and gradually began to distinguish the specific localities from which it came.⁵²

In the period immediately after the interruption of the Flemish convoys there was serious economic turbulence throughout Europe: First there were sharp changes in the precious metals market, then the financial and economic crisis of 1342–1346 brought a wave of bankruptcies of large Florentine firms or banks known in the literature as “giants on feet of clay” (Bardi, Peruzzi), and the crisis culminated in social catastrophe in the form of the plague epidemic of 1347–1351. After the general crisis, the European financial system changed. The space left by the Bardi was filled by the Alberti and especially the Medici representing a more modern system of management no longer based on the mother firm in Florence with a larger number of foreign branches, such as the 25 Bardi branches in Europe and the Mediterranean, but on a “system” of firms comparable to today’s holding companies.⁵³ The changes were also manifested in the incorporation of the Kingdom of Hungary into international trade: The Medici financed Banská Bystrica copper ore mining in the last third of the century, improved the system of processing and especially the exporting of the extracted raw material, moving the business to a qualitatively and quantitatively higher level. During their activity, copper in Venice was already designated as “Hungarian” or “from Banská Bystrica”. However, that is already a different, later chapter in the exporting of copper from Slovakia to the Mediterranean region.

52 In Lübeck in 1339 and 1342 they mention Krompachy copper (*cuprum Crumbacis*), in Flanders in 1394 Tichá Voda copper (*Stilbacher coper*), in Brugges documents from 1395 and 1404 mention Gelnica copper (*Gilnisser coper*) and in Malbork Nová Ves copper (*Neudorffer kopper*). HALAGA, *Košice – Balt*, ref. 5, p. 190, 192, 195; HALAGA, *Kauflute und Handelsgüter*, ref. 8, p. 75

53 DINI, *I mercanti*, ref. 18, p. 127-128; ŠTEFÁNIK, Martin. Úloha kremnického zlata v európskej finančno-hospodárskej kríze 14. storočia. (The role of Kremnica gold in the European financial – economic crisis of the 14th century). In *Slovenská numizmatika*, 2011, year 19, p. 66-67. ISBN 9788097081904.

SUPPLEMENTS

Supplement no. 1

Krakow's right to store copper. 12 September 1306

Nos Wladislaus dei gracia dux Cracouiensis, Sandomiriensis, Syradie, Lancicie et Cuyauie, notumfacimus vniuersis presentes literas inspecturis, Quod Ciuitatis nostre Cracouiensis utilitatibus et profectibus intendentes, damus et concedimus Ciuibus nostris Cracouiensibus, ut deposicionem omium mercium et Rerum venalium in dicta Ciuitate habeant, prout melius et utilius pro Ciuitatis comodo poterunt edictare. Volumus eciam et promittimus, ut omnes Mercatores de quibuscumque Regionum partibus cum Mercibus ad dictam uenientes Ciuitatem, omnia ipsorum Mercimonia siue Merces vendere possunt hospitibus extraneis, uel alijs ementibus quibuscumque, excepto solo cupro, si adductum fuerit de Hungaria uel de Sandecz, uel de quibuscumque aliarum Regionum partibus siue locis, nulli extraneo, nisi Ciuibus nostris Cracouiensibus debet vendi; Et dicti mercatores nullatenus, nisi rebus et mercibus venditis, dictam nostram Ciuitatem Cracouiensem audeant pertransire. Ceterum addimus, ut predicti Mercatores de Hungaria uel de Sandecz, et de locis alijs quibuscumque cum cupro et alijs Mercibus uersus Thorun super acquis non audeant nauigare, neque in terra deducere, nisi prius dictum Cuprum et Mercimonia Cracouie deductum deponatur, et ibidem... Ciuibus nostris vendantur, prout superius est expressum. Amplius contractum empconis bonorum... Comitibus Dobeslai infra muros ciuitatis, que rite et racionabiliter annis pluribus possiderunt, eisdem Ciuibus nostris fauorabiliter confirmamus. Insuper omnibus Mercatoribus Pisces uel Allecia Cracouiam adducentibus, indulgemus integraliter, quod nullam partem cuiquam hominum soluere debeant de eisdem. Item admitimus et concedimus, ut quicumque... Ciuium nostrorum sepedicte Ciuitatis Sal apud nostros emerint Zupparios, vendendi idem Sal in Ciuitate nostra Cracouiensi liberam habeant facultatem. Bona eciam predicti Comitibus Dobeslai extra muros prope Ciuitatem predicti Ciues Nostri tenere debent et habere, quemadmodum bona eiusdem infra muros possident atque tenent. Ceterum promittimus firmiter predictis nostris... Ciuibus et spondemus, quod nunquam Muros construere volumus inter Castrum et Ciuitatem nostram sepedictam, per quos Muros dictum Castrum Ciuitati predicte uniretur; Sed semper Castrum per se et Ciuitatem per se diuisim volumus remanere. – In cuius concessionis et donacionis euidentiam, presentes fieri mandauimus, nostri sigilli munimine roboratas. Actum presentibus hijs testibus: Venerabili domino Iohanne Episcopo Cracouiensi, domino Alberto Palatino Sandomiriensi, domino Nicolao Palatino Cracouiensi, domino Prandotha Castellano Sandomiriensi, domino Pacoslao Iudice Cracouiensi, domino Alexandro Castellano Wisliciensi, et domino Clemente Cancellario Curie nostre. Datum Cracouie, Anno domini Millesimo Trecentesimo sexto, pridie Idus Septembris, Indicione et Epacta quarta, concurrente vero quinto.

The original has not survived but the text of the privilege is known from the copy of the Bishop of Krakow Peter Wysz from 1401. PIEKOSIŃSKI, Franciszek (ed.). Kodeks dyplomatyczny miasta Krakowa, vol. I (1257–1506). Codex diplomaticus civitatis cracouiensis. In *Monumenta media*

aeui historica res gestas Poloniae illustrantia, tom. V. Cracoviae: Sumptibus Academiae literarum Cracoviensis, typis emeridum „Czas“ 1879, p. 8-9, Nr. IV: 12 Nov 1306. Copy ibid. p. 133-135, Nr. XCVI: 8. VI. 1401

Supplement no. 2

A consignment of 70 hundredweight of copper from Elblag to Flanders. Commercial correspondence before 1301 (dated by the death of the addressee Bernard of Kusfeld member of the town council, killed in 1301).

Reuerentissimo domino suo, Bernhardo de Cusuelde, Gerhardus de Cusuelde, eius famulus,

subditus in culmine seruicij quantum potest ac honoris. Significo vestre dominacioni, quod uobis transmitto per Rutgerum de Cusuelde LX marcas || puri cum dimidia marca. Postea sciatis, quod transmisi uersus Flandriam LXX centenarios cupri et unum talentum cere. Illa bona || Johanni de Gustrowe misi. Cuprum predictum prouenit de bonis, que dominus meus Se[ghe]bodo de Crispin et uos in simul habuistis. De cupro prefato ego Gerhardus, vester famulus, persolui XXX marcas puri de bonis, que duco ex parte uestri. Postea sciatis, illa (s) sexaginta marcas cum dimidia, que [quas] uobis mitto per Rutgerum prefatum, similiter sunt de bonis uestris, que ego duco, et talentum cere, quod uersus Flandriam misi, constat X marc[is] minus quartali cum illo, quod ultra ponderabat, et similiter est de uestris bonis, que ego duco. Et sciatis, quod uersus Flandriam cum primis nauibus nulla plura bona mittam, quam audistis in precedentibus, et si uobis uideatur, quod cum illis bonis, que uersus Flandriam misi, persoluere non possitis, tunc mando uobis, ut tanta Flandriam transmittatis, quod ibidem persoluetis, quia spero, quod michi in breui bona debeant fieri persoluta in cupro uel in argento, et rogo, ut michi demandetis, utrum Lubeke uel Flandriam debeam transmittere. His uisis sciatis, quod cuprum prefatum per Conradum de Rekelinchusen in Elbingum misi, et nescio, in qua[m] nauim idem Conradus cuprum prefatum cum talento cere conducit, igitur uobis non demando, et me super hoc non cogitetis, quod argentum non est commytatum, quia in die Palmarum michi primo fiebat persolutum. Littera facta proxima sexta feria post Pascha.

According to ed. *Urkunden der Stadt Lübeck. Hrsg. v. dem Vereine für Lübeckische Geschichte und Alterthumskunde, Bd. III. (Urkunden bis 1350). Codex diplomaticus Lubecensis. Lübeck: Ferdinand Grautoff 1871, p. 36-37, Nr. XXXIV, ods. D.*

Supplement no. 3

Libro di divisamenti di paesi e di misure di mercatantie or La Pratica della mercatura. It gives a description of the types of copper including eastern Slovak copper (*Rame di Pol-*

lana) on the market at Bruges according to F. B. Pegolotti, agent of the Bardi company of Florence, cca 1340.

Rame si è di due maniere come diremo qio appresso, cioè:

Rame duro ch'è in grandi pani fatti a modo di grandi migliacci così fatto: , ispugnoso e raschioso, e fannosene campane e mortai da speciale, e 'l suo corso si è in Brugia e in Fiandra a comunale pregio da 36 grossi tornesi d'argento il centinaio di Bruggia, e da lire ... a grossi in Vinegia, e in Cipri da 25 in 28 saracinati il cantaro di Cipri.

Rame di Pollana dolce che sono grande pezze e delicate così fatte: , in colore gialletto e pezze lunghette e piane, e fannosene bacini e caldaie e secchie et altre stoviglie, e allegasene monete per la sua dolcezza, e suo comunale pregio si è in Bruggia in Fiandra da 44 in 46 tornesi grossi d'ariento il centinaio di Bruggia.

Rame di Gossellare, rame di Rocca mangna sono in pezze lunghette fatte al modo di quelle di Pollana, ma sono minori pezze così fatte:  ed è più rosso rame che quello di Pollane, e fassene più sottili lavori siccome da frenai e altri più sottili lavorii. E queste due ragioni sono quasi d'una bontà, e sono d'una bontade come rame di Massa, e suo comunale pregio in Bruggia si è da 52 in 54 grossi tornesi d'ariento il centinaio a peso di Bruggia.

Rame di Papa, rame della bolla di San Marco di Vinegia sono quasi d'una ragione, ed è rame affinato e in piccioli pani a maniera di pani da mangiare così fatto:  ed è molto vermiglio e rosso, e suo comunal pregio si è in Bruggia da 65 in 66 tornesi grossi il centinaio.

Rame affinato e messo in tavole a Vinegia si sono le tavole fatte in questo modo:  lunghe 1 braccio e ampie 1/2, e chiamasi rame in tavole dolce; e pruovasi in questo modo, che dall'uno de' cantoni si vi si dà suso col martello sopra l'ancudine, e se si tiene al martello e si piega senza schiantarsi si è buono e dolce, e se non si tiene al martello e schiantasi si è tenuto agro e non è buono; e queste cotali tavole di rame non è rosso come lo rame in pani anzi è in colore d'ottone giallo.

Rame ch'è in piccioli pani come i pani piccioli della bolla di San Marco di Vinegia che si chiama rame del lene in Vinegia, ed è quasi di bontà come quello della bolla o poco meno, e così rosso, et vale da ... per centinaio peggio che quello della bolla perchè non à la bolla di San Marco.

The original has not survived, copy made in 1471 by Filippo di Niccolò Frescobaldi, manuscript kept in the Biblioteca Riccardiana (Palazzo Medici-Riccardi, Florence, Italy) nr. 2441. BALDUCCI PEGOLOTTI, Francesco. *La Pratica della mercatura*. Ed. Allan Evans. Cambridge; Massachusetts: Kraus Reprint, 1936, p. 380-381.

Supplement no. 4

Prices of copper of the *Rame de Pollana* type in Venice according to the recorded sales in the will of Niccolò Paolini. 28 July 1324 – 11 September 1324.

MCCCXXIII mense Iulii die XXVIII vendidimus libras III^MLXVIII Nicolao Miani S. Cassiani de Rame de Polana in racione de s. XV grossorum pro quolibet centenario. Quod rame erat proiecto in tabulis.

...libr. XXII dnr. III grossorum et parv. VIII

...

Item eodem anno mense augusti vendidimus dicto Nicolao Miani libr. III^MD-CCCCLXXVIII de rame de Pollana in tabulis in racione de libr. XXIII ad parvos pro quolibet centenario. ...libr. DCCCCXIII s. XVIII dnr. VIII valentes libr. XXVIII s. XI dnr. Grossorum et parvorum XXI

...

Item vendidimus libr. VIII de dicto rame Andriolo Batirame S. Luce in dicta racione. ...grossorum XV et parv. XVII

...

Item MCCCXXIII mense septembris die XI inc. Vendidimus libr. III^MDCCXXVII de Rame de Polana quod erat ad getum Bonaventure Rizo campori in racione de libr. XXI pro centenario ad parvos.

...libr. DCCLXXXIII s. XV dnr. V ad parvos valentes libr. XXIII s. X dnr. V grossorum et parvos XXI.

Archivio di Stato di Venezia, Procuratori di San Marco, Misti, Busta 79 (Commissaria Niccolò Paolini), f. 2v-3r.

Supplement no. 5

Minutes from register of the Senate on equipping the Flemish convoy for 1334
25 November 1333

The final part of the record includes a proposal from N. Cocco and M. Capello declaring a raising of the limit for the loading of ships returning from Flanders taking into account transported metals including copper, from 70 to 80 “gross” miliaria (1 gross miliarium = 477 kg, comp. note 20). In practice such a weight represented several tens of tonnes. The proposal is signed as *Capta* (= approved), but the original lacks a cross, which was always added to an accepted proposal.

Pars dominorum Nicolai Mauroceni, Bernardi Iustiniani sapientorum et Zanin Dandolo capitibus

Capta.

Quod ad viagium Flandris armentur per speciales personas galee VIII ita quod non sint plures nec pauciores, et quod illi qui voluerint armare ad ipsum viagium compareant et faciant se scribi ad curiam maiorem infra VIII dies dando plezariam de exequendo

dictum viagium secundum usum. Et quicumque se scribi fecerint ad ipsum viagium possint facere fieri galeas novas ad mensuram galearum quae nunc sunt pro dicto viagio, sev ad mensuras ad quas facte fuerunt secundum q. scripte sunt dicte mesure ad officium levantis non consilio novo de mensura galearum Flandriae, cum conditione quod dicte galee possint portare miliaria CCLXXX ad pondus subtile de mercimoniis de quibus teneantur portare ad minus miliaria CXX de havere subtili pro qualibet. Intelligendo quod bombex filatus, curamen conciatum, lumen de roza, ruba macinata, fustagni, uva passa et pulvis zuchari sint mercimonia grossa, verum si per mercationes vel alios eis presentaretur usque per tres dies ante diem sui termini caricandi, havere subtile ultra predictam quantitatem, teneantur illud recipere et caricare loco grossi, discaricando propterea de havere grosso quantum fuerit necesse pro recipiendo dictum havere subtile, et hoc sub pena dupplici nauli. Et si predictae galee non portarent predicta miliaria CXX de havere subtili, cadant de soldis XX grossorum pro quolibet miliario, de qua pena habeant officiales levantis tercium, accusator per quem veritas sciat tercium et teneatur de credencia, et Commune tercium. Et si non reperientur qui arment dictas VIII galeas non possint armari alique galee hoc anno in Flandris.

...

...

Dominorum Nicolao Cocho, Marini Capello

Capta

Item quod in redictu sicut poterant reducere pro sua savorna usque ad miliaria LXX ad pondus grossum de ferro plumbo rame stagno et alio metalo, sic possint reducere miliaria LXXX ad pondus grossum de dictis metalis.

Archivio di Stato di Venezia, Senato, Deliberazioni, Misti, Registro 16, f. 42r (25 November 1333). Partially publ. ROMANIN, Samuele. *Storia documentata di Venezia tomo 3.* (IIIa edizione). Venezia: Filippi 1973, p. 274-275, doc. III (25.november 1333).
Regest publ. CESSI – BRUNETTI, *Le Deliberazioni*, ref. 31, p. 256-257 n. 284.

Supplement no. 6

Excerpt from the register of the Senate concerning the transport of copper in the 1336 Flemish convoy
28 November 1335.

Die XXVIII novembris

† *Item cum oriatur sepe questio inter armatores et mercatores dictarum galearum, eo quod ramum quod caricatur datur solum in peciis et ad numerum peciarum et non per pondus, que pecie aliquando per medium franguntur et datur media pecia pro una in damnum mercatorum, vadit pars quod dictum ramum recipiatur et detur per pondus, ut omnis questionis materia extollatur.*

Archivio di Stato di Venezia, Senato, Deliberazioni, Misti, Registro 17 f. 37v (28 November 1335).

Publ. LEDUC, Francois Xavier (ed.). *Venezia – Senato. Deliberazioni miste. Vol. 4. Registre XVII (1335–1339)*. Venise: Istituto Veneto di Scienze, Lettere ed Arti, 2007, p. 153, nr. 392. ISBN 9788888143873.

Supplement no. 7

Measures proposed by the *Procuratori del Comun* office in Venice for the purpose of eliminating losses arising from the current situation in the buying and processing of copper in the foundries of the Ghetto quarter of Venice. They mention types of copper delivered to the Ghetto, including eastern Slovak copper (*ramen de Pollana*)

19 November 1334

1334, die XIX novembris, secunde indictionis.

Per rellationem officialium Geti raminis coram provisoribus communis factam clare constat, maximum damnum et damagium commune subtinuisse. Et super inde anditis et examinatis pluribus personis de huiusmodi negocio informatis, consulunt, quod super hoc est providendum, et quod aliquod remedium reperiat, ut commune non recipiat tantum damnum; quibus examinatis per dictos provisosores communis, propterea consulunt provisosores communis, quod de omnibus raminiibus, que ponentur in geto communis, videlicet tamen sancti Marci, ramen a duabus bullis, ramen dal R., ramen de Pollana et ramen de Ragusio solvi debeat communi pro affinatura sicut hactenus solitum est solvere, hac conditione, quod mediatores teneantur et debeant dimittere et relaxare in geto predicto, ut officiales geti de cetero non teneantur emere ramina, que emere tenebantur pro satisfactione mercatorum, quibus ramen deficiebat.

Item quod si aliquis voluerit in toto tempore officialium fieri facere gratiam de ramine de Pollana quod sicut solebant solvi libras XXII pro milliaro communi ita solvi debeant ipsi communi libras XXV ad grossos pro milliaro.

Item quod si aliquis voluerit in ipso tempore fieri facere gratiam de ramine Sancti Marci solvere debeat ipsi communi libras XXXII ad grossos pro milliaro.

Item quod si aliquis voluerit infra temporis VIII mensium in quibus non recipitur ramen in Geto facere laborari Ramen Sancti Marci extra getum vel ipsum mittere extra terram non affinatum, solvere debeat communi libras XIII ad grossos pro milliaro, remanentibus in sua firmitate Raminibus a duabus bullis et dal R. scilicet solventibus libras X ad grossos pro milliaro / non intercluso in hoc Ramine dato ad laborandum extra terram gettum nec de illo de quo laborando cum magistris fuerit in concordia usque heri per diem s. XVIII presentis mensis dando sacramentum tam mercatoribus quam magistris s. de tanta quantitate expressa pro qua pepigerit cum magistris.

Item quod sicut ramen de Ragusio solvere solebat libras XXX ad grossos pro affinatura pro milliaro, sic de cetero solvere debeat libras XXXII ad grossos pro milliaro.

Archivio di Stato di Venezia, Libri commemoriali vol. III c. 143v (137v), Nr. 394.

Supplement no. 8

Reduction of customs duty on copper and tin transported from Flanders to Venice
29 July 1346

Capta

† *Cum de rame et stagno conducitur Venecias de partibus Flandrie solvantur decem sev undecim pro centenario et ista de causa mercatores non conducant de ipso eo quod propter gravitatem dacia nichil lucentur. Vadit pars, pro bono comunis et mercatorum, quod sicut de ipso rame et stagno solvantur undecim pro centenario, ita amodo possit conduci Venecias solvendo solum quinque pro centenario et sic consulunt provisores comunis et sapientes daciorem. Et si consilium et cetera.*

Archivio di Stato di Venezia, Senato, Deliberazioni, Misti, Registro 23 f. 54v (29. júl 1346). Publ. GIRARDI, Francesca (ed.). *Venezia – Senato. Deliberazioni miste. Vol. 10. Registro XXIII (1345–1347)*. Venezia: Istituto Veneto di Scienze, Lettere ed Arti, 2004, p. 176, nr. 518. ISBN 888143580.

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Die Kupferausfuhr aus dem Gebiet der Ostslowakei nach Westeuropa im ersten Drittel des 14. Jahrhundert

MARTIN Š T E F Á N I K

Die ersten dokumentierten Exporte des slowakischen Kupfers ins Ausland im Mittelalter stellte bereits am Anfang des 14. Jh. die Ausfuhr des ostslowakischen Kupfers aus Zips und Gemer-Region über den polnischen Weg (Route Alt Sandez–Krakau-Thorn mit der Alternative über Breslau-Stettin) und weiter durch die Hansestädte bis nach Flandern dar. Dort wurde es wegen diesem Transit als „polnisches Kupfer“ (Rame di Pollana) bezeichnet. Im Zentrum des flämischen Handels – Brügge – begegnete die „germanische“ der „romanischen“ Welt. Eine detaillierte Beschreibung der Handelsbräuche in Brügge verfasste gegen 1340 ein Agent der florentinischen Bankgesellschaft Bardi, Fr. Balducci Pegolotti, in Form eines für die reisenden Kaufleute vorgesehenen Kompendiums (*Pratica della mercatura*). Laut Pegolotti war das gelblich gefarbte und für die Herstellung des Geschirrs sowie Kupfermünzen bestimmte Rame di Pollana auf dem Brügger Markt stark vertreten. Aus Brügge wurde es in Form der langen Flachplatten auf den Galleerenkonvois (sog. *mude*) nach Venedig gebracht. U.a. dienten die Platten auch für die richtige Gewichtsverteilung beim Schiffahrtstransport. Aus venezianischen Archiven

verfügen wir über zahlreichen Belege über die Anwesenheit des Rame de Pollana in der Lagunenstadt: bei der Nachlassauseinandersetzung des verstorbenen venezianischen Kaufmannes Niccolo Paolini im Jahre 1324 erwähnt man 4 Verkäufe im Gesamtmenge von 108 Zentner (= ungefähr 5,15 Tonnen) solchen Kupfers. Die venezianischen Kaufleute übergaben das Kupfer in das sog. Ghetto (was im damaligen Kontext ein Ort mit Schmelzöfen im venezianischen Viertel Cannareggio bezeichnete), wo es unter der Aufsicht staatlicher Fachleute weiter verarbeitet wurde. In der Nennungsliste von 5 Kupfersorten im Jahre 1334 wird auch das ostslowakische Rame de Pollana erwähnt, wessen Bearbeitungsgebühr damals um 12% erhöht wurde. Der Transport auf den flämischen Konvois unter der Umleitung Europas lohnte sich und erwies sich trotz großer Entfernung und Dauer als lukrativ. Erst als man 1339 für eine längere Zeit die flämischen Konvois eingestellt hatte, verschwinden gleichzeitig die Belege über das Kupfer Rame de Pollana. In den folgenden Jahren trat das in der Umgebung von Neusohl (slow. Banská Bystrica) abgebautes Kupfer in den Vordergrund, welches als Rame de Xolio bezeichnet und nach Venedig unter der starken Finanzbeteiligung der florentinischen Medici-Gesellschaft geliefert wurde.

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